

Stephanie Kelton

University of Missouri - Kansas City,
USA

✉ keltons@umkc.edu

An earlier version of this paper was presented at the Annual Conference of the Allied Social Science Association in Denver, CO in January 2011.

Paper by invitation

Limitations of the Government Budget Constraint: Users vs. Issuers of the Currency

Summary: The financial crisis and ensuing economic meltdown has led to sharp increases in the deficits and debt levels of many advanced economies. The run-up in public sector indebtedness helped to restore private sector balance sheets, laying the foundation for economic recovery in these regions. But the so-called “sovereign” debt crisis in the Eurozone has undermined the fiscal resolve that has, thus far, kept truly sovereign governments from slipping into a bona fide depression. Fearful of becoming the next Greece, governments that could allow an unlimited fiscal adjustment to restore full employment, are methodically weakening their fiscal support mechanisms and setting themselves on a path to becoming the next Japan.

Key words: Fiscal policy, Deficit, Sovereign risk.

JEL: E62, H62, F34.

In 1943, Abba P. Lerner published an essay entitled “Functional Finance and the Federal Debt.”¹ It began with a recognition that “[a]part from the necessity of winning the war, there is no task facing society today so important as the elimination of economic insecurity” (1943, p. 38). At the time, the Allies were engaged in the most widespread war in history, and millions of people were still reeling from the harsh effects of the most severe economic depression the world has ever known. Yet Lerner insisted that the government address both problems, urging policymakers to unleash the full force of their fiscal arsenal to achieve victory on both the international and domestic warfronts. By 1945, the Allies had defeated Germany and Japan, and the post-war expansion ushered in nearly three decades of uninterrupted growth and economic prosperity.

Almost seventy years later, following the near collapse of the world’s financial system in 2007, war and economic insecurity are again ravaging much of the world’s population. Since the eve of the global economic crisis in 2007, the world has added 27.6 million people to the unemployment rolls, produced a vulnerable employment rate of 50.1%, created an additional 40 million working poor, and caused 1.7 million youths to simply drop out of the labor force altogether (United Nations, Non-Governmental Liaison Services (NGLS) 2011). But this time, instead of a steadfast commitment to an aggressive fiscal response, the European debt crisis has

¹ Lerner went on to develop these ideas in *The Economics of Control* (1944) and *The Economic of Employment* (1951).

spooked countries like the United States, Australia, Canada and the United Kingdom into behaving as if they, too, might be approaching a “tipping point” that could push them to the brink of default. To avoid such a calamity, these governments are attempting to reign in their deficits, succumbing to the argument that fiscal austerity is the logical pathway to economic prosperity. And it is all the tragic result of a flawed application of the Government Budget Constraint (GBC).

1. The Government Budget Constraint

In the wake of the financial meltdown, the world’s largest central banks responded by drastically reducing interest rates, and national governments in China, the U.S., the U.K. and elsewhere responded with a host of tax cuts and spending increases that helped to move their budgets deeply into deficit.² Critics of these policies immediately voiced their opposition.

In the U.S., Americans have been subjected to a daily barrage of deficit hysteria from every major media outlet – newspapers, radio and television “news” programs all routinely hype the notion that the country is “broke” or “going broke.” During one interview, President Obama went so far as to actually declare that the U.S. government had run “out of money” (C-SPAN 2009). More recently, his Fiscal Deficit Commission concluded that significant cuts to Medicare and Social Security must be made in order to prevent an imminent loss of confidence, a European-style debt crisis and a possible default on the debt. And it amounts to “one of the greatest misinformation campaigns of all time” (James K. Galbraith 2010).

Unfortunately, the core of our discipline has done nothing to help the public gain a better understanding of these issues. Instead, some of the most recognizable names in our field are responsible for providing the empirical ammunition that has been used to justify fiscal austerity and attacks on some of our most important social safety programs. For example, Alan J. Auerbach et al. (2003), Jagadeesh Gokhale and Kent Smetters (2003), and Laurence J. Kotlikoff and Scott Burns (2004) have offered highly formalistic models that purport to demonstrate that the U.S. is on an unsustainable fiscal path. Fiscal “sustainability”, as presented in this literature, is rooted in the Intertemporal Government Budget Constraint (IGBC), a construct that is derived from the Government Budget Constraint (GBC) and a key assumption that private credit markets set the long-term real interest rate on the national debt. To understand the argument, we begin with the well-known GBC:

$$G + iB^{Non-Govt} = T + \Delta B^{Non-Govt} + \Delta M$$

which shows that non-interest government spending (G) plus interest on the national debt held by the non-government sector ($iB^{Non-Govt}$) are equal to tax receipts (T), changes to the quantity of government bonds held by the non-government sector ($\Delta B^{Non-Govt}$), and changes to the monetary base (ΔM). It is then argued that: (1) “printing money” via ΔM is inflationary and something that should be avoided (Niall Fer-

² It is worth noting that significant budget deficits would have resulted even without proactive measures (e.g. stimulus packages) due to automatic stabilizers. It is also worth noting, as Greece is beginning to discover, that fiscal austerity tends to increase rather than decrease the deficit.

guson and Kotlikoff 2003); and (2) deficit spending is constrained *ex ante* by “market forces” (i.e. the government’s ability to borrow to cover the shortfall). This second proposition is then fortified with the orthodox assumption that the interest rate paid on the national debt is set in private financial markets as in the loanable funds framework. Together, the GBC and the orthodox treatment of real interest rate determination give rise to the Intertemporal Government Budget Constraint (IGBC) that is at the heart of the fiscal imbalance literature.

Following Olivier Blanchard et al. (1990), the GBC can be manipulated to yield an intertemporal budget constraint given by:

$$\Delta(B_t / Y_t) = (r - g) \frac{B_{t-1}}{Y_{t-1}} + \frac{(G_t - T_t)}{Y_t}$$

This equation shows that if the primary budget is balanced, public debt will increase at r , but the debt ratio will increase at $(r-g)$. And here we reach the familiar result that the public debt ratio (B_t/Y_t) will decline even when the primary deficit $(G_t - T_t)$ is increasing, as long as output growth (g) is sufficiently greater than the real interest rate (r). However, conventional theory tends to dismiss this possibility, arguing that persistent deficits will raise interest rates via a decline in national saving.³

The outcome is rooted in a loanable funds approach, which holds that real interest rates are set by “real economic forces” (i.e. saving, capital), whereas nominal rates simply account for inflation expectations (as in the Fisher effect). Thus, according to Eric Engen and Glenn R. Hubbard, “[a] standard benchmark for understanding and calibrating the potential effect of changes in government debt on interest rates is a standard model based on an aggregate production function for the economy in which government debt replaces, or ‘crowds out’, physical productive capital” (2004, p. 4).

In a similar vein, some recent work that builds on Martin S. Feldstein (1986) focuses on the effects of *anticipated* deficits. For example, Thomas Laubach (2003) and William G. Gale and Peter R. Orszag (2004) claim to show that a one percent increase in the five-year ahead (projected) deficit-to-GDP ratio raises five-year ahead long-term Treasury rates by anywhere from 20-60 basis points. If the projected deficits are large enough, the IGBC predicts unlimited growth in the interest burden and an ever-increasing fiscal imbalance. Calculated in this way, Gokhale and Smetters (2006) have argued that the U.S. faces a fiscal imbalance that could reach \$65 trillion. It therefore follows that the government must take immediate steps to drastically reduce *projected* deficits (e.g. through entitlement reform) in order to avoid the kinds of dire consequences that have been hyped by Kotlikoff and Burns, who warn:

“History is replete with examples of what happens when countries can’t pay their bills. They raise taxes to exorbitant levels, default on their explicit or implicit obligations, and begin printing money like mad. This triggers inflation, drives interest rates

³ For a discussion of the empirical evidence on the relationship between deficits and interest rates see Scott T. Fullwiler (2006).

through the roof, and sends exchange rates down the tubes. Businesses go belly up, and banks shut their doors. The result is financial and economic meltdown” (2004, xxiii).

In what follows, I shall argue that while history *is* “replete with examples of countries that can’t pay their bills,” it is *not* replete with examples that can be applied to the U.S. or to countries like it. Specifically, the IGBC (and the implications that follow from it) are not applicable to countries that issue debt denominated in a non-convertible sovereign currency.

2. The Importance of Sovereignty

The notion of “fiscal sustainability,” as described in the “fiscal imbalance” literature, is fundamentally flawed because it fails to distinguish a sovereign *issuer* of the currency from its non-sovereign *user(s)*. Specifically, the orthodox approach assumes that the issuer of a sovereign, non-convertible (i.e. flexible exchange rate) currency must, “like any other institution within the economy, accept the terms of credit imposed by ‘market forces’ as in the supply and demand for loanable funds framework” (Fullwiler 2006, p. 3). Thus, the dominant macroeconomic models predict that rising deficits and debt-to-GDP ratios will tend to spark inflation and undercut growth by driving up long-term interest rates. But this is simply not the case, as history has shown:

“In both the US and the UK ... there is no visible relationship between the public debt ratio and inflation. For example, the peak US public debt ratio of 109% in 1946 was followed by a decade of low inflation. Similarly, both American and British histories fail to show that high public debt is a drag on growth; in fact, peaks in the public debt ratio have been precursors to unusually strong economic growth” (David A. Levy and Srinivas Thiruvadhanthi 2010).

Unfortunately, such historical regularities have not prevented influential voices from insisting that the GBC’s dire predictions will materialize. For example, Arthur B. Laffer (2009) took aim at Federal Reserve Chairman Ben Bernanke and U.S. President Barack Obama, warning that their policies would eventually exact a huge price on the American economy. Specifically, Laffer (2009) predicted that the central bank’s monetary operations will lead to “rapidly rising prices,” and that the large U.S. budget deficits will cause “much, much higher interest rates”. He said:

“Here we stand more than a year into a grave economic crisis with a projected budget deficit of 13% of GDP...With U.S. GDP and federal tax receipts at about \$14 trillion and \$2.4 trillion respectively, such a debt all but guarantees higher interest rates, massive tax increases, and partial default on government promises.” (ibid.).

But Laffer’s arguments simply follow from the flawed application of the GBC to a sovereign issuer of a non-convertible currency.

In countries like the U.S., deficits tended to decrease, rather than increase, interest rates. This is because deficit spending leads to a net injection of reserves into the banking system. (And big deficits imply big injections of reserves.) When the banking system is flush with reserves, the price of those reserves – in the U.S. the

federal funds rate – can easily fall to zero. Unless a zero-bid is consistent with Fed policy, the central bank will begin selling bonds in order to drain excess reserves. The bond sales continue until the fed funds rate falls within the Fed's target band.⁴

Thus, the interest rate is a *policy* variable, and the Federal Reserve can always hit any nominal interest rate it chooses, regardless of the size of the budget deficit (or debt). Of course, this is also true for other sovereign issuers of non-convertible currencies. Take, for example, the case of Japan, where, despite a persistent debt-to-GDP ratio well in excess of 100%, the Bank of Japan (BOJ) never lost the ability to set the key overnight interest rate, which has remained below 1% for about a decade. And, because the BOJ, like the Fed, also has the power to move rates at the other end of the yield curve (e.g. through quantitative easing), rates on 10-yr government bonds trended sharply downward even as Japan's public sector debt exploded. In short, Laffer's prediction about the future trajectory of U.S. interest rates is based on a faulty understanding of the relationship between deficit spending, bank reserves and interest rates. The recent U.S. (and past Japanese) experience serves as prime examples of his flawed logic.

Another flaw in the orthodox approach stems from the notion that increases in the budget deficit (and the subsequent increase in the national debt) will require higher taxes in the future, as Laffer suggests. But as Bell (2000) showed for the case of the U.S., taxes do not, indeed cannot, “pay for” government purchases. Taxes drain reserves (an important function) and constrain aggregate demand, but they do not “finance” the past, present or future spending of a sovereign issuer of the currency. To appreciate the argument, one needs only to work through the balance sheet entries (as in Bell 2000) that are implied by the Treasury's fiscal operations. This somewhat rigorous analysis is beyond the scope of the current paper, and so we turn, again, to the historical record.

With the exception of a brief period in the late 1990s and early 2000s, the U.S. has been on a trajectory of rising deficits and debt levels since Ronald Reagan nearly tripled the size of the national debt in the mid-1980s. But the Reagan-Bush deficits only pushed the debt-to-GDP ratio to about 60 percent, nowhere near the highs that were reached in the post-WWII era, when the national debt as a percent of GDP topped 120 percent.

As we debate the relationship between current and projected deficits, it is, perhaps, instructive to recall that corporate taxes, as well as taxes on the wealthiest Americans, trended downward *for decades*, following the greatest run-up of public debt in the history of our nation. And, while payroll taxes have risen steadily over the past 40 years, tax revenues, as a percentage of GDP have barely budged in more than 50 years. Thus, Laffer's assertion that the current run-up in government debt will require “massive tax increases” simply isn't borne out by the U.S. experience. And, it wasn't the case in Japan either, where, despite an explosive increase in the government debt – near 200 percent of GDP at present – taxes remain among the lowest in the developed world.

⁴ Detailed explanations of reserve accounting and coordination between the U.S. Treasury and the Federal Reserve can be found in Stephanie A. Bell (2000) and Fullwiler (2005, 2006).

Finally, Laffer contends that a “partial default on government promises” is an inevitable consequence of the Obama administration’s “ill-conceived” fiscal policies. At best, a statement like this is misleading. At worst, it is intellectually dishonest. As any serious macro economist knows, a government like the United States – i.e. one that issues a sovereign, non-convertible currency – can meet any and all outstanding financial obligations, provided the debts are denominated in the national currency. This is a point that has been made by Alan Greenspan, who conceded that a “government cannot become insolvent with respect to obligations in its own currency...[it] can produce such claims without limit” (1997).

3. Then Why Are the PIIGS in Trouble?

Whereas the U.S., the U.K, Canada and Australia all have monetary systems that are in some sense “wedded” to their fiscal systems, there has been a “divorce” of fiscal and monetary institutions under Economic and Monetary Union (EMU) within the Eurozone. As Jan Kregel put it, “this represents a radical change in the monetary organization of Europe” (1999, p. 36), whereby fiscal power remains at the national level while monetary authority has been transferred to a single federal European System of Central Banks (ESCB). As a consequence, the relationship between control over money and the ability to sustain aggregate demand at full employment – the crux of Lerner’s Functional Finance – is severed under monetary union.

In the run-up to the launching of the euro, few economists recognized the significance of this change, focusing, instead, on the advantages of creating a truly independent central bank and the efficiency gains that would result from using a single currency. A notable exception was Charles Goodhart (1998), who questioned the plan to abandon the globally dominant “One Nation, One Money” model in favor of the current “One Market, One Money” model. John Smithin also raised concerns, very early on, arguing that the adoption of the euro carried “the most far-reaching implications for national sovereignty in public policy making, not only (as is obvious) with respect to monetary policy, but in other important areas also” (1999, p. 49). Thus, while everyone recognized that the national central banks – e.g. the Bundesbank and the Banc de France – would be handing their monetary policy-making authority over to the ECB, only a handful of economists understood that the member governments would be handing their fiscal policy-making authority over to the bond markets. Two economists who did recognize this were Barry Eichengreen and Jurgen von Hagen, who presciently wrote:

“Imagine that a government of a member state – call it Italy for illustrative purposes – experiences a revenue shortfall. It finds it difficult to service its debt. Bondholders concerned about the interruption of debt service begin to sell their bonds, depressing their price and forcing the Italian government to raise the interest rate it offers when it attempts to roll over maturing issues. The rise in interest rates further widens the gap between government revenues and expenditures, exacerbating the fiscal problem. Problems in the bond market threaten to spill over to other financial markets, because, for example, higher interest rates depress equity prices. In the worst-case scenario, the collapse of asset prices and the impact of higher interest rates on corporate profitability and the performance of outstanding loans can threaten the stability of the banking system” (1995, p. 224).

This is precisely the problem with the PIIGS.

By abandoning control over the issuance of their sovereign currencies, the governments of the EUR-16 have become *users* of a non-sovereign (stateless) money. Wynne Godley tried desperately to dissuade Europe from charting this course, arguing that it would “bring an end to the sovereignty of its component nations and their power to take independent action on major issues” (1992, p. 39). Similarly, Malcolm Sawyer warned that under the new arrangements, “national governments will no longer have the ability to ‘print money’ to pay interest on bonds, and their ability to pay depends on their ability to levy the necessary taxation” (1999, p. 11). Thus, while many expected the euro to transform the region into a sort of “United States of Europe”, it has actually left its individual member states looking more like California, Texas or New York, all of whom (as users of the currency) are constrained in their ability to run deficits.

Thus, unlike the U.S. government, which faces no external budget constraint, governments within the EUR-16 do face external financing constraints. Two important implications follow. First, member states must secure the funds required to spend in excess of current receipts *before* they can engage in deficit spending. Thus, their ability to deficit spend depends upon the willingness of private lenders to extend credit in advance. Second, unlike the bonds issued by the U.S. government, the obligations of the EUR-16 are no longer free of default risk, and this means that markets make lending decisions on the basis of their perception of member states’ creditworthiness. What matters, then, is the government’s ability “to balance its budget, to get a zero *ex post* deficit, so as to protect the banks against the risk of accumulating public debt” (Alain Parguez 1999, p. 72). Governments that manage to run relatively small deficits will be able to obtain credit on better terms (although the terms will still be dictated by financial markets). Those that experience rising deficits will be increasingly constrained by the pressure of fiscal competition.

Jerry L. Jordan stated the implications succinctly:

“The risk for the fiscal authorities of any member country is that the ‘dismal arithmetic’ of the budget constraint leaves few palatable alternatives. If the yield on government securities demanded by markets exceeds a country’s nominal income growth, then interest expense on the outstanding debt must become a relatively larger burden” (1997, p. 3).

Thus, the traditional link between the Treasury and the central bank has been severed under EMU, which means that unlike currencies that are “creatures of the state,” as Lerner put it, financial markets are now “the ultimate source of legitimacy” for the euro (Parguez 1999, p. 66).

4. Summary and Conclusions

As Lerner (1947) recognized in an essay entitled *Money as a Creature of the State*, there is an important link between sovereignty over money and sovereignty over policy. Governments that control their own currencies can coordinate their fiscal and monetary operations and prevent financial markets from dictating the terms of finance. They can spend first and borrow later, as Bell (2000) and Fullwiler (2006)

have shown. They can “afford” anything that is for sale in the domestic unit of account. They can sustain the debt at any level. They can restore growth and eliminate economic insecurity, implementing their policies in accordance with the principles of Functional Finance.

In contrast, governments that have broken the link between control over money and control over policy (e.g. the EUR-16) have found it impossible to sustain the kind of large-scale interventions that are needed to recover their depressed economies. They must borrow before they can spend. They must pay market rates. Their debts can become unsustainable. Their finances are dysfunctional. Until the link between money and policy is restored – either through full, political unification or through an expansion of lending facilities at the ECB – they will remain helpless against the harsh realities of the GBC.

References

- Auerbach, Alan J., William G. Gale, Peter R. Orszag, and Samara R. Potter.** 2003. "Budget Blues: The Fiscal Outlook and Options for Reform." In *Agenda for the Nation*, ed. Henry J. Aaron, James M. Lindsey, and Pietro S. Nivola, 109-145. Washington, D.C.: The Brookings Institution.
- Bell, Stephanie A.** 2000. "Do Taxes and Bonds Finance Government Spending?" *Journal of Economic Issues*, 34(3): 603-620.
- Blanchard, Olivier, Jean-Claude Chouraqui, Robert P. Hagemann, and Nicola Sartor.** 1990. "The Sustainability of Fiscal Policy: New Answers to an Old Question." *OECD Economic Studies*, 15: 7-36.
- C-SPAN.** 2009. Interview with U.S. President Barack H. Obama. <http://zerohedge.blogspot.com/2009/05/barack-obama-we-are-out-of-money.html> (accessed March 2, 2010).
- Eichengreen, Barry, and Jurgen von Hagen.** 1995. "Fiscal Policy and Monetary Union: Federalism, Fiscal Restrictions, and the No-Bailout Rule." In *Monetary Policy in an Integrated World Economy*, ed. Horst Siebert, 211-231. Schriftleitung: Harmen Lehment.
- Engen, Eric, and Glenn R. Hubbard.** 2004. "Federal Government Debts and Interest Rates." NBER Working Paper 10681.
- Feldstein, Martin S.** 1986. "Budget Deficits, Tax Rules, and Real Interest Rates." NBER Working Paper 1970.
- Ferguson, Niall, and Laurence J. Kotlikoff.** 2003. "Going Critical: American Power and the Consequences of Fiscal Overstretch." *The National Interest*, Fall: 22-32.
- Fullwiler, Scott T.** 2005. "Paying Interest on Reserve Balances: It's More Significant Than You Think." *Journal of Economic Issues*, 39(2): 543-550.
- Fullwiler, Scott T.** 2006. "Setting Interest Rates in the Modern Money Era." *Journal of Post Keynesian Economics*, 28(3): 495-525.
- Galbraith, James K.** 2010. "In Defense of Deficits." <http://www.thenation.com/article/defense-deficits> (accessed March 10, 2010).
- Gale, William G., and Peter R. Orszag.** 2004. "Budget Deficits, National Saving, and Interest Rates." *Brookings Papers on Economic Activity*, 2: 101-211.
- Godley, Wynne.** 1992. "Maastricht and All That: Letter from Europe." *London Review of Books*, 14(19): 3-4.
- Gokhale, Jagadeesh, and Kent Smetters.** 2003. "America's Budget Book-Keeping Scandal." *The Financial Times*. September 9, 2003.
- Gokhale, Jagadeesh, and Kent Smetters.** 2006. "Fiscal and Generational Imbalances: An Update." *Tax Policy and the Economy*, 20: 194-223.
- Goodhart, Charles.** 1998. "The Two Concepts of Money: Implications for the Analysis of Optimal Currency Areas." *European Journal of Political Economy*, 14: 407-432.
- Greenspan, Alan.** 1997. "Maintaining Financial Stability in a Global Economy." Remarks from a speech at the Annual Economic Symposium sponsored by the Federal Reserve Bank of Kansas City in Jackson Hole, Wyoming, August 29. http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=3629 (accessed May 5, 2007).

- Jordan, Jerry L.** 1997. "Money, Fiscal Discipline, and Growth." <http://www.clevelandfed.org/research/commentary/1997/0901.pdf>.
- Kotlikoff, Laurence J., and Scott Burns.** 2004. *The Coming Generational Storm*. Cambridge, MA: MIT Press.
- Kregel, Jan.** 1999. "Currency Stabilization Through Full Employment: Can EMU Combine Price Stability with Employment and Income Growth?" *Eastern Economic Journal*, 25: 35-47.
- Laffer, Arthur B.** 2009. "Get Ready for Inflation and Higher Interest Rates." *Wall Street Journal*. June 11, A15.
- Laubach, Thomas.** 2003. "New Evidence on the Interest Rate Effects of Budget Deficits and Debt." Federal Reserve Finance and Economics Discussion Series 2003-12.
- Lerner, Abba P.** 1943. "Functional Finance and the Federal Debt." *Social Research*, 10: 38-51.
- Lerner, Abba P.** 1944. *The Economics of Control*. New York: Macmillan.
- Lerner, Abba P.** 1947. "Money as a Creature of the State." *American Economic Review*, 37(2): 312-317.
- Lerner, Abba P.** 1951. *The Economics of Employment*. New York: McGraw-Hill.
- Levy, David A., and Srinivas Thiruvadanthi.** 2010. "America can Carry this Deficit." *Guardian*. October 20, 2010.
- Parguez, Alain.** 1999. "The Expected Failure of the European Economic and Monetary Union: A False Money against the Real Economy." *Eastern Economic Journal*, 25: 63-76.
- Sawyer, Malcolm.** 1999. "Minsky's Analysis, the European Single Currency, and the Global Financial System." Levy Economics Institute Working Paper 266.
- Smithin, John.** 1999. "Money and National Sovereignty in the Global Economy." *Eastern Economic Journal*, 25(1): 49-61.
- United Nations Non-Governmental Liaison Service.** 2011. "Global Employment Trends 2011: The Challenge of a Jobs Recovery." <http://www.un-ngls.org/spip.php?article3216> (accessed February 17, 2011).