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## Forty Years of Leverage: What Have We Learned About Sovereign Debt?<sup>†</sup>

By PETER BOONE AND SIMON JOHNSON\*

Financial crises frequently increase public sector borrowing and threaten some form of sovereign debt crisis. Until recently, high income countries were thought to have become less vulnerable to severe banking crises that have lasting negative effects on growth. Since 2007, crises and attempted reforms in the United States and Europe indicate that advanced countries remain acutely vulnerable. Best practice from developing country experience suggests that regulatory constraints on the financial sector should be strengthened, but this is hard to do in countries where finance has a great deal of political power and cultural prestige, and where leverage is already high.

### I. Lessons from Developing Countries

Private sector-led financial development can play an important role in sustaining economic growth and improving welfare. However, for more than 400 years and across a wide variety of monetary and credit systems, private financial structures have repeatedly proved prone to boom-bust cycles.<sup>1</sup>

Governments provide the legal and contracting systems that make private financial arrangements possible. Since the mid-nineteenth century, they have also acquired the responsibility for preventing a collapse of the banking system.

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<sup>1</sup>The classic study of financial booms and busts is Kindleberger (1978).

Developing countries that have tried to avoid this responsibility, for example by eschewing deposit insurance, have found that—in a crisis—stabilizing depositors' expectations becomes the top priority. When a financial panic breaks out, expert opinion—including from the World Bank and the International Monetary Fund—becomes adamant that retail depositors should be protected.<sup>2</sup>

Limiting the potential for severe financial crisis through well-designed regulation is a sensible goal—and an important lesson from the Great Depression. Unfortunately, such regulation has proved elusive in recent decades and seems unlikely in the foreseeable future.<sup>3</sup>

Properly managed sovereign debt is helpful to financial development because it provides a relatively low risk and liquid asset for both individuals and firms. It can also play an important role in stabilizing the macroeconomy when and if it enables the government to increase its budget deficit as the financial system comes under pressure and credit conditions tighten.

Since the 1990s, some larger developing countries have built up their reserves of foreign exchange, in part to create a greater degree of independence from the International Monetary Fund—and to allow government finances to operate in a countercyclical manner in the face of crisis.

Advanced and developing countries that can issue debt denominated in their own currency do not face the same external constraint on fiscal policy. And reserve currency status—e.g.,

<sup>2</sup>Recent experience in Cyprus provides a counterexample. But the adverse reaction to the proposed losses for small depositors suggests that this will not soon again be repeated.

<sup>3</sup>For example, the capital requirements required under Basel III are unlikely to prove sufficient over the next cycle. See the critique in Admati and Hellwig (2013).

for the dollar—can make it even easier to issue more debt at lower interest rates.

A stronger perceived backstop can increase expected stability for the financial system, and this both encourages a higher level of savings and attracts more foreign capital than would otherwise be the case. This implies a greater appetite for public sector debt, both to fund productive projects and to allow higher levels of current expenditure given tax revenues.

Unfortunately, the dynamics of this system are not entirely stable. Experience over the past decade suggests we have built a global financial system in which there is an incentive to build up unsustainable and dangerous levels of both private and public debt.

## II. The Bright Side of Financial Development

Following the Great Depression and World War II, the financial system in many countries was tightly controlled—meaning that people were limited in terms of their permitted investments, and the allowed product offerings of financial intermediaries were similarly constrained.

In the United States, the United Kingdom, and elsewhere this was partly to encourage the holding of public debt, which had been such an important part of paying for the war effort. From the 1950s, however, interest rates were liberalized, and a broader array of financial instruments became available. There was a further surge in financial development through the 1970s, which marked the beginning of a wave of deregulation.<sup>4</sup> Capital flows into developing countries also became increasingly liberalized, while in richer countries the postwar baby boom generation entered the work force, bought insurance, and began to save for retirement.

From the 1980s, derivatives markets took off, at the time seen as the ultimate indication of financial sophistication. By June 2012, the outstanding nominal value of derivatives contracts reached \$179 trillion in Europe, and

\$164 trillion in the United States, or 14.9 and 10.5 times GDP, respectively.<sup>5</sup>

This large financial system has become intrinsic to personal financial security for many people. Private financial companies manage important parts of the payment system, as well as key aspects of how we insure ourselves and how we save for the future, including through pensions. Allowing the financial system to experience widespread failure is not appealing from either an economic or political perspective.

## III. The Role of Sovereign Debt

Between 1970 and 2011, 80 percent of G20 nations experienced at least one systemic banking crisis. On average, when comparing data from three years into the crisis to one year before, cumulative output fell 28.6 percent, and public debt increased by 14.6 percent of GDP. Central banks injected an average 21.2 percent of liquidity, measured as a fraction of deposits and nonresident liabilities, into the banking system (Laeven and Valencia 2012).

Often central bank bailouts are kept secret, so official figures probably understate the sums used and the frequency of problems. In the IMF data, for example, Canada is not listed as suffering a systemic banking crisis in 2008–2009, yet Canada's banks received 7 percent of

<sup>4</sup> On the growth of the financial sector in the United States, see Philippon (2007). As a percent of GDP, the financial sector increased from about 1 percent before 1939 to nearly 9 percent before the crisis of 2008.

<sup>5</sup> Banks often have multiple contracts which, when netted, imply far lower exposures. The net market value of exposures at June 30, 2012 was 7.9 trillion of euro contracts, and 7.4 trillion of US dollar contracts. The netting of contracts is considered acceptable by regulators because if a client enters into liquidation, banks are permitted to immediately net the value of funds owed in different derivative contracts. However, there are two important instances where gross exposures matter. First, since the netting procedure during liquidation requires creditors to determine pricing of the contracts, there is significant risk that creditors will manipulate pricing to their benefit. This implies that liquidating banks with larger gross exposures would involve bigger losses than those with smaller gross exposures. Second, in the event of a breakup of the euro currency union, the denomination of the \$179 trillion in gross contracts would need to be assessed. It would not be reasonable to net two similar contracts if, following any exits from the euro, one of the contracts would be denominated in a different currency. (Data are calculated by the authors from Bank for International Settlements, Semi-Annual OTC Derivative Statistics at end-June 2012. Geneva.)

GDP in emergency assistance in March 2009 (MacDonald 2012).<sup>6</sup>

These IMF figures also do not capture other finance-related crises. For example, the bailout of Long Term Capital Management in the United States, and the unwinding of the tech bubble and related recession, are not reported as systemic banking crises in the United States, although they clearly involved major financial sector problems—as well as declines in asset values that affected the real economy.

The total cost of financial crises is rarely reported in its entirety. The US Treasury has argued that its recent bailouts were profitable for US taxpayers, because they managed to get back more than what they directly gave out. However, this argument is not compelling when considered more broadly.

To appreciate the full fiscal impact of the US financial crisis, changes in the Congressional Budget Office's baseline projections are informative. In January 2008, the CBO projected that total government debt in private hands—the best measure of what the government owes—would fall to \$5.1 trillion by 2018 (23 percent of GDP). As of January 2010, after the depth of the crisis had become clear, the CBO projected that over the next eight years debt would rise to \$13.7 trillion (over 65 percent of GDP)—a difference of \$8.6 trillion that be attributed directly to the cost of the finance induced recession (Congressional Budget Office 2008 and 2010).

Most of this fiscal impact is not due to the Troubled Assets Relief Program—and definitely not due to the part of that program which injected capital into failing banks. Of the change in CBO baseline, 57 percent is due to decreased tax revenues resulting from the financial crisis and recession; 17 percent is due to increases in discretionary spending, some of it the stimulus package necessitated by the financial crisis (and because the “automatic stabilizers” in the United States are relatively weak); and another 14 percent is due to increased interest payments on the

debt—because the United States now has more debt.

The Federal Reserve lowered the Fed Funds rate from 5.25 percent in August 2007 to essentially zero. Savers are subsidizing the financial sector in order that large banks and other firms can rebuild their equity capital.

The costs to societies of financial crises are invariably obfuscated by large indirect transfers and costs. This contributes to the fact that once the crisis is over, the regulatory system relaxes, and new risks build up.

Regulators are unable or unwilling to measure risks appropriately, and once a credit boom gets under way, poor lending and accounting practices can be hidden for years. Cumulative losses eventually lead to another crisis.

When crises occur, central banks and governments step in to ensure the system is stable. They lower interest rates, bail out institutions, and they increase fiscal spending.

The lesson from developing countries is there are advantages from keeping regulation tighter and capital requirements higher. This was the lesson drawn, for example, from the experience in 1982 in Chile and from 1997–1998 in Korea and other Asian countries. But the financial sector in those places is smaller and less powerful than in today's rich countries. Financial development transforms the political economy of finance.

#### IV. Hitting the Debt Limit

It is hard to know how much debt any government can safely issue before risk premiums start rising in a dangerous manner. Ghosh et al. (2011) attempted to measure “fiscal space,” meaning how much extra debt markets would tolerate, by examining the historical response of fiscal policy (measured by the primary budget balance) to changes in the debt stock. If, when debt stocks rise, policymakers raise the primary surplus enough to finance it, then investors may be confident that higher debts will be repaid.

This is a sensible but not very demanding test—it calls on governments to show willingness to reduce budget deficits enough to finance the interest costs of additional debt. Even so, after examining 23 advanced nations' responses to deficits, and their projected debt levels in 2015, the authors concluded nine nations were at or near their limits to accumulate additional

<sup>6</sup> Beyond this liquidity provided to Canadian banks, the relationship between government and banks in Canada also permits substantial implicit transfers at times of crisis. In January 2009 the CEO of Toronto Dominion Bank, Edmund Clark, rallied investors to buy preference shares that the bank was trying to issue by stating “Maybe not explicitly, but what are the chances that TD Bank is not going to be bailed out if it did something stupid?” (Bloomberg News, January 23, 2009).

debts—including Greece, Iceland, Italy, Japan, and Portugal.

Ito, Watanabe, and Yabu (2011) found that since 1970, Japan's fiscal regime has been on an explosive path—in the sense that there was no tendency to adjust budgets as debt levels rise. In contrast, they found that during the prewar era under the gold standard, as well as during the 1950s–1970s, Japan's debt policies were not on this explosive path.

This research paints a bleak picture for several nations, and Ghosh et al. correctly anticipated difficulties in Europe's periphery. However, it does not explain why there is a consistent upward trend in indebtedness in all G7 nations since 1972. Indeed, in the fiscal space models, if debt levels continue to drift upwards, then eventually all nations will reach their debt capacity, and at that point every nation would be on a path to crisis.<sup>7</sup>

When authors conclude that nations have manageable debt burdens, they make a key assumption that the behavioral response of nations to debt problems remains the same in the future as it was in the past. A plausible alternative assumption is that the responsiveness of fiscal policy to debt levels may weaken in many wealthy nations. Aging populations increase the median and mean age of voters, and this places more pressure on spending for health and pensions. The elderly are more likely to support debt finance as they are not required to service or repay the debt. Even if debts are on an unsustainable path, any crises may occur well after their lifetimes.

Low interest rates reduce incentives to cut budget deficits. Business lobbies and households with mortgages are key actors who pressure governments to cut deficits, hoping to reduce interest rates. This was a major factor behind Bill Clinton's steps to reduce the deficit during his first term in office (Johnson and Kwak 2012). However, real interest rates are currently at historic lows, and they may remain low for an extended period due to aging and the need to recapitalize parts of the economy.

Low interest rates also buttress the lobbies that call for more spending. Given high levels of leverage, it is no surprise that, in the aftermath

of crises, companies and households try to rebuild their equity capital. This drives up savings rates and lowers interest rates. It becomes reasonable to argue there is no better time for governments to invest in the future, as well as support demand, since the costs of such support are small compared to the benefits (DeLong and Summers 2012).

In the depths of crisis, there is near unanimous agreement that policymakers must appropriately provide emergency liquidity to prevent bank runs, and support the unemployed. Often the same people who guided the country in its run-up to the crisis turn now to design rescue programs for banks and new spending programs for governments.

The interest groups in favor of spending align with financial sector lobbyists calling for delays to reforms—arguing that such delays will help support lending. There is little appetite for tough reforms as the economy struggles to recover.

Once growth resumes, the case for financial sector reform seems less pressing. The high cultural prestige of finance, combined with the government's need to sell debt, means that financial sector executives continue to run fiscal policy (Johnson and Kwak 2010).

The scope for issuing more public sector debt makes it possible for rich countries to ignore the very large risks posed by the financial sector. President Obama's 2014 budget recommendations imply deficits would continue for a decade and the level of US debt relative to GDP would stabilize around current levels. There is no appetite for linking discussion of financial sector risks with implications for government debt over the medium term.

In the United Kingdom, while the current recession is far less severe than in 1991–1993, or the early eighties (as measured by unemployment), the government is running significantly larger budget deficits than in those recessions. From 2009–2012, the government ran cumulative deficits of 36 percent of GDP, and under the current program, deficits will continue such that the Debt/GDP ratio stabilizes only in 2016.

Across advanced economies, Germany currently stands out as a nation where sound fiscal policies are publicly supported. However, even Germany has built up large public debts, while letting its banking system sink into crisis, during the last three decades. It was the German and French governments that initially backed

<sup>7</sup> It also does not take into account off-balance liabilities such as unfunded pension schemes.



efforts to weaken Europe's stability and growth pact in the early 2000s. Today, Germany's new demands for fiscal rectitude probably reflect its (possibly temporary) role as a large creditor to other EU nations. Those credits arose as it provided well over 25 percent of GDP in opaque Bundesbank financing, as well as more direct support, to peripheral EU nations.<sup>8</sup>

These dynamics imply that government debt accumulation now will tend to follow a step function. With each crisis governments let budget deficits increase, and they effectively use public debt to bail out and otherwise support "systemic" and favored institutions. When the crisis ends, there is little appetite to reign in budgets or stick to tough regulations, so debt stays at the elevated level until the next crisis occurs. Thus, debt/GDP ratios continue to rise.<sup>9</sup>

## V. Reducing the Leverage Bias

There is a natural bias in advanced nations' political systems towards private debt finance with a contingent public debt backstop. This reflects aging populations and lack of representation from future generations who are expected to bear the cost of this debt. It also reflects opaque and complicated accounting, which invariably permits politicians to obfuscate the true costs of debt.

The balance of political forces is inclined against stability. In the financial sector, powerful firms can lobby and work with current politicians to relax or avoid regulation, and ultimately generate excessive credit expansions and other risks. Taxpayers are the main losers from such deals, but advanced countries have managed to postpone costs by issuing public sector debts, so ultimately it is future generations who pay for the damage caused by financial sector excess risk-taking today.

A first step to improving the political balance is to enlist the energy of creditors in favor of better capitalized private financial intermediaries. Creditors set the price for leverage at

institutions, and they can monitor them. If creditors expect they will lose money in crises, then they will be more likely to monitor and price risk appropriately.

There are measures that nations and regulators can take. We can implement strict "no bailout" laws which require creditor bail-in before public funds can be used. But these need to be time consistent—the failure of any "systemically important" financial institution will always tend to attract a bailout.

We can also require simple capital structures which permit regulators to impose losses on certain categories of creditors early in the process. Larger buffers of equity and contingent capital, as called for in Basel III, will help—but they are probably not enough.

The ability to implement resolution across borders is also essential. Ex ante crisis planning—the so-called living wills—needs to become much more transparent.

We should strengthen our regulators too. In many nations, policymakers and regulators can currently move freely between private and public service. In private service they lobby against or find loopholes in the same regulations they were supposed to support in public service. The fact that lucrative employment is available to regulators, and those setting policy, when they move to the private sector creates an important conflict of interest that undermines sound regulation. Multiyear restrictions which prevent such revolving door practices should be applied to financial sector policymakers.

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<sup>8</sup> Bundesbank financing is provided through the euro system payments mechanism. These claims of the Bundesbank on troubled EU nations amounted to over 25 percent of German GDP at end 2012. Any losses on these loans should legally be shared amongst euro system nations.

<sup>9</sup> In Boone and Johnson (2010) we suggested the term "doomsday cycle" for this phenomenon.

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