On Keeping Your Powder Dry: Fiscal Foundations of Financial and Price Stability*

Maurice Obstfeld

University of California, Berkeley, CEPR, and NBER

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Abstract

Banking systems have rapidly grown to a point where for many countries bank assets amount to multiples of GDP. As a consequence, government's capacity to provide stability-enhancing fiscal guarantees against systemic crises can no longer be taken for granted. As regulation of dynamic financial markets will inevitably be imperfect, prudent governments need to adjust other facets of macroeconomic policy in order to mitigate financial instability. A precautionary approach to fiscal policy, leading to moderate levels of public debt relative to GDP over the medium term, is essential for the credibility of government promises to support the financial system, as well as the broader economy.

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1. Introduction

Six years of global financial crisis have forced economists to re-think the standard policy prescriptions for macroeconomic stability that dominated their thinking during the prior two decades. At the risk of considerable oversimplification, one could describe the consensus view of best-policy practice as follows: Monetary policy, if governed by flexible inflation targeting (perhaps of core inflation), will stabilize prices and output reasonably well in most circumstances. Fiscal policy should smooth tax rates over the business cycle, avoiding debt buildups that might threaten government solvency and relying primarily on automatic stabilizers to counter fluctuations.

Superficially, these guidelines seemed adequate for the benign environment of the "Great Moderation." However, they took virtually no account of financial markets. The tacit assumption was that these would function more or less efficiently, neither impeding the transmission of monetary policy nor generating disruptive shocks on their own. At the most, mainstream policy analysis acknowledged that financial markets might occasionally generate disturbances, while maintaining that these could be offset at low economic cost through conventional policy instruments, especially monetary policy.[1] (At the same time, of course, best-practice prudential policy, as codified in Basel II, took inadequate account of macroeconomic considerations.)

The global financial crisis of 2007-09 and its after-effects, including the ongoing crisis in the euro zone, have overturned earlier complacent views. Recent history teaches us that considerations of financial stability must be central to our thinking about the optimal frameworks

[1] For example, the 1992 Maastricht treaty underlying the architecture of the euro built explicit defenses against monetary and fiscal malpractice, but did not construct complementary defenses against financial instability. A number of observers, including myself (Obstfeld 2013), have pointed out that this omission is a central factor in the current euro crisis. Of course, several writers did emphasize the importance of financial factors for monetary policy before 2007, but their analyses were not taken to heart by the mainstream of the academic economics profession. Even among contributors to the present conference series, one could cite Goodfriend (2001) and White (2001).

for monetary and especially fiscal policy. This lesson is apparent in the interwar experience of the Great Depression, but it is also implied by much more recent episodes of economic crisis and stabilization, both in emerging markets and in industrial countries. The puzzle is to understand why policymakers in advanced economies, up until 2007 and even beyond, underestimated the hazards that those experiences revealed. The evidence before them included such episodes as the developing-country debt crisis of the 1980s, which could easily have wiped out the capital of United States money center banks, as well as Japan's post-bubble travails.

Our increasingly complex financial systems seem inherently prone to at least some instability, even in the face of efforts to regulate them. Because regulation of dynamic markets will inevitably be imperfect (an implication of Goodhart's Law), prudent governments need to adjust other facets of macroeconomic policy to mitigate financial instability and its effects. My main point today will be that a precautionary approach to fiscal policy, leading to moderate levels of public debt in relation to GDP, is essential for the credibility of government promises to support the financial system, as well as the broader economy. Clearly defined rules that limit fiscal exposure must also inform the endgame of winding down insolvent financial institutions.

Absent adequate fiscal space, financial instability will be worse and may lead to price instability or sovereign default, which themselves will further impair the functioning of financial markets, at great cost to the broader economy. Japan's current push to escape from decades of slow growth and deflation illustrates how dangerous it can be to tolerate large public debt buildups. An individual country's high debt is dangerous not only to itself, but also globally, as its own instability is likely to infect countries with which it has financial and trade linkages, along with those countries' trade partners.

2. Growth and Stability of Banking Systems

Deregulation, globalization, and technological innovation (including financial innovation) have supported a massive growth in global banking activities since the advent of floating exchange rates in 1973, and especially over the last two decades. It is by now a commonplace that cross-border gross assets and liabilities have reached high levels relative to national products – massive levels for countries that also serve as global financial hubs. Overall assets and liabilities of banking systems and shadow banking systems have expanded in parallel with international asset trade. This is no surprise, because a globalized financial market allows even banks headquartered in small countries to grow very big relative to GDP.

For a selection of OECD members, Figure 1 reports illustrative measures of bank assets relative to the GDPs of the banks' headquarter countries. (These data give only a very partial picture of the growth of financial intermediation, and therefore should be viewed as illustrative. In particular, the U.S. data take no account of a very large shadow banking system.) Accompanying the trend of increasing overall size of banking systems has been a trend of increasing *concentration* in banking – fewer banks with much larger balance sheets. Even in some of the larger European countries, there are individual banks with balance sheets comparable to, or exceeding, home-country GDP. The spectacular growth of banking, coupled with its increasing concentration and wider scope, has critical implications for all dimensions of macroeconomic stabilization policy.

Has a constellation of fewer banks with much larger balance sheets led to greater financial stability? There is some literature on the relationship between bank size and profitability, but it does not suggest that size promotes higher social returns (once the costs of

various government guarantees are incorporated; see Haldane 2012). Clearly, the changing banking environment has been associated over time with more crises, initially concentrated in the emerging markets, but now mostly in the advanced economies, including much of the euro area.

Figure 2, based on the banking crisis chronology of Laeven and Valencia (2012), illustrates the frequency of ongoing systemic or near-systemic banking crises since 1970. The figure does not establish causality – it may be that banking crises would have been even more frequent had banks been smaller, more limited in the scope of their activities, and more competitive. If that were the case, however, perhaps the low frequency of banking problems in the postwar period prior to the early 1970s would be the puzzle.

Recent banking crises have inflicted heavy costs on economies. To start, there is the direct (gross) cost to governments of reorganizing and recapitalizing failed banks, protecting depositors and other bank creditors, and the like. In the Asian crisis of 1997-98 and earlier crises in Latin America, such fiscal costs amounted to large fractions of GDP for some emerging market economies (EMEs), and a few richer countries have spent comparable sums after 2007. Table 1 reports selected estimates of direct fiscal costs in support of crisis-stricken banking systems. (Estimates do not include asset guarantees.) These costs have been upward of one-third of a year's GDP in some EME episodes, and, more recently, in Ireland (41 percent) and Iceland (44 percent).

Apart from Iceland, Ireland, and Greece, however, the advanced-economy fiscal costs mostly reside in the single digits. But direct fiscal costs are only part of the story. Banking crises generally bring lengthy recessions, implying a great deal of forgone output and substantial

Table 1 Direct Fiscal Outlays in Some Banking Crises (percent of GDP)	
Argentina (1980-82)	55
Belgium (2008-11)	6
Chile (1981-85)	43
China (1998)	18
Germany (2008-11)	2
Greece (2008-11)	27
Iceland (2008-11)	44
Indonesia (1997-2001)	57
Ireland (2008-11)	41
Japan (1997-2001)	14
Korea (1997-98)	31
Latvia (2008-11)	6
Mexico (1994-96)	19
Netherlands (2008-11)	13
Spain (2008-11)	4
Thailand (1997-2000)	44
Turkey (2000-01)	32
United Kingdom (2007-11)	9
United States (2007-11)	5
Source: Laeven and Valencia (2012)	

increases in public debt in support of the general economy (Reinhart and Rogoff 2009). Given political realities, high public debt is likely to constrain the exercise of expansionary fiscal policy leaving the central bank to bear the burden of stabilization through a low, even zero, policy interest rate. In turn, protracted expansionary monetary responses may subsidize banks but have

negative economic side effects that emerge only gradually and that are hard to quantify even after the fact.[2]

3. Fiscal and Monetary Implications of Financial Stabilization

Once one recognizes financial stability as a first-order concern, one necessarily recognizes a rich set of interactions with fiscal and monetary considerations. These interactions have been very apparent in earlier EME crises, including in Latin America and Asia, where extreme fiscal costs of supporting the financial sector (Table 1) have been associated with high inflation and with crises in sovereign debt and currency markets. Honohan's (2005) comprehensive discussion of the links among financial, fiscal, and monetary policy, based mostly on EME experience, now appears quite relevant to a broader set of economies. Much earlier, Díaz-Alejandro (1985) offered a remarkably prescient analysis of Chile's financial collapse of the early 1980s, the themes of which resonate strongly in subsequent crises including those that began in 2007. We must now acknowledge a range of financial stability safeguards as integral parts of the overall macro policy framework. The design and implementation of financial stability policy is much more than a sideshow to the main attraction of monetary *cum* fiscal policy.[3]

Countries erect ex ante barriers against domestic financial instability, but also intervene ex post with monetary and fiscal instruments once a crisis has nonetheless broken out. Market expectations about ex post responses will influence behavior in financial markets, and thereby

[2] For a recent discussion of potential negative effects of long-term monetary easing, see International Monetary Fund (2013, chapter 3). More generally, Laeven and Valencia (2012) argue that stabilization policies in advanced countries tend to delay financial-sector restructuring, lengthening the aftermaths of financial crisis. Japan, to which I return below, is a case in point.

[3] The Asian crisis provided some especially vivid examples of financial-sector considerations influencing policy responses, including fiscal and monetary policies implemented under IMF programs. See Fischer (2001).

the financial stability outcomes that trigger ex post interventions through monetary and fiscal means. Thus, the design of ex ante defenses cannot be separated from the likely policy response to a crisis. Regulations cannot be so strict as to stifle financial markets in performing legitimate functions of resource allocation over time and states of nature. Yet, they must take account of the economic costs – public and private – of a breakdown, as well as the expectations of financial actors about how the government will act in a crisis.[4]

A key consideration is the dynamic consistency of the promised rules of the game concerning liquidity support, its limits, and the consequences of a determination by the authorities that the line between illiquidity and insolvency has been crossed. Will ex post reactions of authorities coincide with the announced ex ante rules? A particular danger is that of collective moral hazard, as analyzed by Schneider and Tornell (2004) and Farhi and Tirole (2012). Unless ex ante constraints on financial actors are strong, the widespread understanding that the government ultimately will not let the economy collapse may lead to "bad equilibria" with very adverse and systemic low probability tail outcomes. In short, frenzies of competitive risk taking can arise, as arguably was the case in recent housing bubble episodes in the United States and elsewhere. In a memorable passage, Díaz-Alejandro (1985, p. 18) put it this way:

> It may be that private financial agents, domestic and foreign, lenders, borrowers and intermediaries, whether or not related to generals, know that the domestic political and judicial systems are not compatible with laissez-faire commitments which a misguided Minister of Finance or Central Bank President may occasionally utter in a moment of dogmatic exaltation. When a crisis hits, agents will reason, bankruptcy courts will break down; when almost everyone (who counts) is bankrupt, nobody is!

Such episodes make the macro-prudential perspective essential, because collective exuberance can inflate profits, capital, and collateral values, masking underlying threats. (In addition, the

[4] For a wide-ranging overview of regulatory issues in light of the global crisis, see Brunnermeier et al. (2009).

government's budgetary position will also appear deceptively strong, as in Ireland and Spain before 2008.) Many of the recent financial reform initiatives taken and proposed in the advanced economies represent attempts to erect credible structures that will both limit financial instability ex ante while minimizing the monetary and fiscal costs of the interventions that, of necessity, will still appear necessary at times.

As noted above, prudential restrictions so severe that crises become zero probability events are unlikely to allow the financial markets efficiently to allocate capital and its risks so as to promote economic growth. Moreover, regulators will forever play a game of catch-up with financial innovation and regulatory arbitrage. Thus, while regulation may limit the number of crises and perhaps even guard against the direst systemic events, certain government guarantees will remain necessary to reduce the risk of self-fulfilling panics and to support expectations of a stable overall economic environment on the part of firms and consumers. Such guarantees include insurance for small retail depositors, as well as official assurances that financial institutions, banks and even some non-banks, can be supported in the continuous performance of essential economic functions during times of crisis. Regulation's role in part is to limit the moral hazard that these guarantees would otherwise promote; in particular, there is in my view a strong case for limits on the size and/or interconnectedness of institutions when these become "too big to fail."[5] Post-crisis rules for reorganizing insolvent institutions also can play a role in limiting moral hazard.

Recent crises demonstrate that the central bank's classic lender of last resort function remains an essential component of the ex post policy toolkit (although in the U.S. as well as in

[5] Stein (2013) makes a persuasive case for regulation not only of banks, but also of non-bank financial intermediaries that could be forced into asset fire sales by creditor runs.

Europe the standards of "acceptable" collateral for central bank liquidity support have been stretched to new limits). Certain liquidity support operations could also be provided by national Treasuries if the fiscal situation is sound; Treasuries generally backstop national deposit insurance schemes. A potential cost of activist central bank liquidity support is a blurring of the line between monetary and fiscal policies, with potential political consequences for the central bank's independence to pursue price stability.[6] The fiscal implications of liquidity support become especially stark when the borderline of insolvency approaches (although even this determination can be subjective, leading to excessive cost to taxpayers and the economy). At this point, conventional wisdom has it that the problem becomes fiscal in its entirety, and falls at the door of the ministry of finance.

There is a growing official consensus that when financial institutions become insolvent, small depositors should be protected but fiscal costs should be borne by bank equity holders, by junior creditors, and, if necessary, by unsecured senior creditors, in that order. Last to be hit would be large, uninsured deposits. There is a strong case for debt instruments that automatically convert into equity in well-specified circumstances. In contrast, unsecured senior creditors and others were widely bailed out during recent advanced-country crises, as had occurred earlier in some emerging market episodes, promoting future moral hazard and leading to severe economic hardship in countries such as Ireland. In a joint statement last year, the Federal Deposit Insurance Corporation and the Bank of England advocated a resolution doctrine for large cross-border institutions in which haircuts on uninsured bank creditors play a key role.[7] Similar ideas underlie the European Commission's proposals for a Single Resolution Mechanism in the euro area (as

[6] See Goodfriend (2011) for an insightful discussion. In general, concern for a troubled banking system could deter a central bank from raising interest rates promptly in the face of an inflation threat.
[7] See: "Resolving Globally Active, Systemically Important, Financial Institutions," http://www.fdic.gov/about/srac/2012/gsifi.pdf

well as the inclusion of collective action clauses in euro area sovereign debt issues starting last January 1).

While a "bail-in" approach limits ex post taxpayer costs while deterring moral hazard, it also has the potential to increase instability in financial markets as unsecured bond creditors sell *en masse* to avoid losses. Thus, central bank lender-of-last-resort support for liquidity problems and perhaps even Treasury support become even more essential. Of course, the risk-taking behavior of banks and other financial intermediaries depends on the credibility of the threat that they can be closed and reorganized: as emphasized by Claessens, Herring and Schoenmaker (2010), the resolution endgame affects short-run behavior. If creditor bail-in is a component of that endgame, then its exercise must be credible and not subject to fears of financial contagion. (Recall the contagion concerns that postponed a Greek sovereign default for so long, as well as the prolonged efforts by authorities to avoid triggering credit default swaps on Greek debt.) It falls on supervisors to render ex post creditor haircuts safe (and therefore credible) through ex ante rules and interventions.

If fiscal resolution practices cannot be structured so as to limit taxpayer exposure and moral hazard, and if a crisis inflicts significant collateral damage on the economy, leading to bigger fiscal deficits, the government's credibility as a guarantor of the financial system can come into doubt. In a context such as the euro zone, where independent monetary policy is not available, sovereign debt will go to a discount, adding a negative balance-sheet shock to the harm already done by non-credible government guarantees, and as economic activity falls further, the government's fiscal space – and the price of its sovereign obligations – can plummet. Safe

assets disappear from the financial system. This "doom loop" linking banks and sovereigns is now well appreciated thanks to the euro crisis.[8]

In a context where the government can (in principle) print money to repay its debts, a possible outcome, seen in the past in many EMEs, is a resort to inflation to address the joint debt overhangs of the private and public sectors. These scenarios put us in the realm of the fiscal theory of the price level, as analyzed by Sims (1997) and Woodford (2001), because they tend to occur when the political capacity to resolve distributional disputes by nonmonetary means is lacking. I noted above the conventional view that while the central bank should address the illiquidity of banks, the fiscal authority must address insolvency. When the fiscal authority itself is overstretched, however, the central bank may again be brought into play, this time to resolve budgetary inconsistencies through inflation. If price stability is to be preserved, sound fiscal management is a prerequisite for financial stability. Furthermore, financial stability is hardly compatible with highly variable inflation.

Public debt itself does not seem to be a strong predictor of subsequent financial crises, unlike increases in private credit, which do have considerable predictive ability. Among other studies, Gourinchas and Obstfeld (2012) reach this conclusion for post-1970 data on a broad sample of emerging and advanced economies, whereas Jordà, Schularick, and Taylor (2013) reach the same conclusion using a long historical data sample (1870-2010) for a group of 17 advanced economies. However, it is still possible that countries entering financial crises with

[8] For an insightful model and evidence, see Acharya, Drechsler, and Schnabl (2011).

large initial public debts face deeper and longer lasting contractions, and this is exactly what Jordà, Schularick, and Taylor (2013) find on the basis of a nonlinear empirical model. [9]

For advanced countries, the historical record also suggests that financial crises lead to deflation, especially when public debt is initially high. Jordà, Schularick, and Taylor (2013) conjecture that this is due to resort to fiscal austerity once debt levels become too large. The pattern certainly would differ were the same exercise performed for EMEs. There, crises and big public debts have typically ended in "the time-honored route of washing out old financial mistakes via inflation (which is not allowed to be reflected in interest rates)" (Díaz-Alejandro 1985, p. 17). When the political system is brittle, this is the easiest way of reconciling competing distributional claims, as argued by Rajan and Tokatlidis (2005). This fate could be in store currently for some advanced countries, whose politics seem to have become more brittle in the face of recent crises. In any case, it is clear that the combination of financial crisis and high public debt has often undermined price stability in the past.

4. Implications

Far from being immune to serious financial instability before 2007, industrial countries also suffered from systemic financial crises as well as notable near misses. This makes it puzzling that alongside the conventional arguments against high levels of public debt, the need to maintain fiscal space in order to guard against systemic financial instability did not receive more prominence until recently. The most extreme recent problem cases involve small countries with

[9] In general, fiscal contraction is likely to be an especially appropriate response to big credit booms: the policy dampens demand, but simultaneously enhances the stock of precautionary fiscal resources available in case of a crash.

banking systems several times bigger than GDP, countries that clearly could not credibly backstop their financial systems without compromising government solvency or price stability. But across the industrial world, public debts remained high in the run up to the global crisis as banks and domestic credit expanded willy-nilly. The fiscal costs of bank support, augmented with the much greater fiscal costs of crisis-induced recessions, have now led to advanced-country debt levels that leave little room for further mishaps (see Figure 3, where Japan has a heavy weight in the advanced country group). In contrast, EMEs (apart from Central and Eastern Europe) avoided credit booms before the global crisis, maintained fiscal space, recovered quickly, and recently have enjoyed falling government debt ratios on average. Whether the EMEs' defenses will prove as effective next time they are tested remains to be seen.

Japan provides a leading example of advanced-country financial instability prior to 2007 – and the global crisis has not helped its plight. Its problems, which once seemed exceptional to economists, now appear to be more widely shared. According to the IMF, Japan's gross public debt stood at 230 percent of GDP in 2011 (its net public debt was 127 percent), and it is forecast to rise even higher and remain high for the near future. These conditions are the culmination of many years in which insolvent entities including banks received financial support, low short-term interest rates encouraged banks to buy government bonds rather than find new business customers, fiscal policy was ineffective, and deflation expectations became entrenched. Japanese authorities now propose to promote positive inflation expectations. However, to do so at current public debt levels, while avoiding financial instability and government financing problems as nominal interest rates inevitably rise, will require a delicate balancing act. Despite the evident risks, there is now no alternative to a radical policy shift; further postponement will only lower the chances of success.

Even justified warnings on the perils of debt do not imply that draconian austerity is always and everywhere the correct remedy, and certainly not in already depressed economies with weakened financial systems. The European Union has been trying that approach, with largely negative results. Once the horse has left the barn, austerity will not get it back. Empirically, outside of default, growth in GDP has been the prime method of successfully reducing high public debt ratios, and so growth-promoting structural reforms, as now are proposed by Japan's government, are essential. The realities of politics do not allow governments simultaneously to impose the pain of both austerity and reform. If a choice is necessary, political capital invested in reform is far more likely to yield a positive payoff. Success will be more durable if politicians at the same time can build institutional structures that return public debts to moderate levels over the long term.

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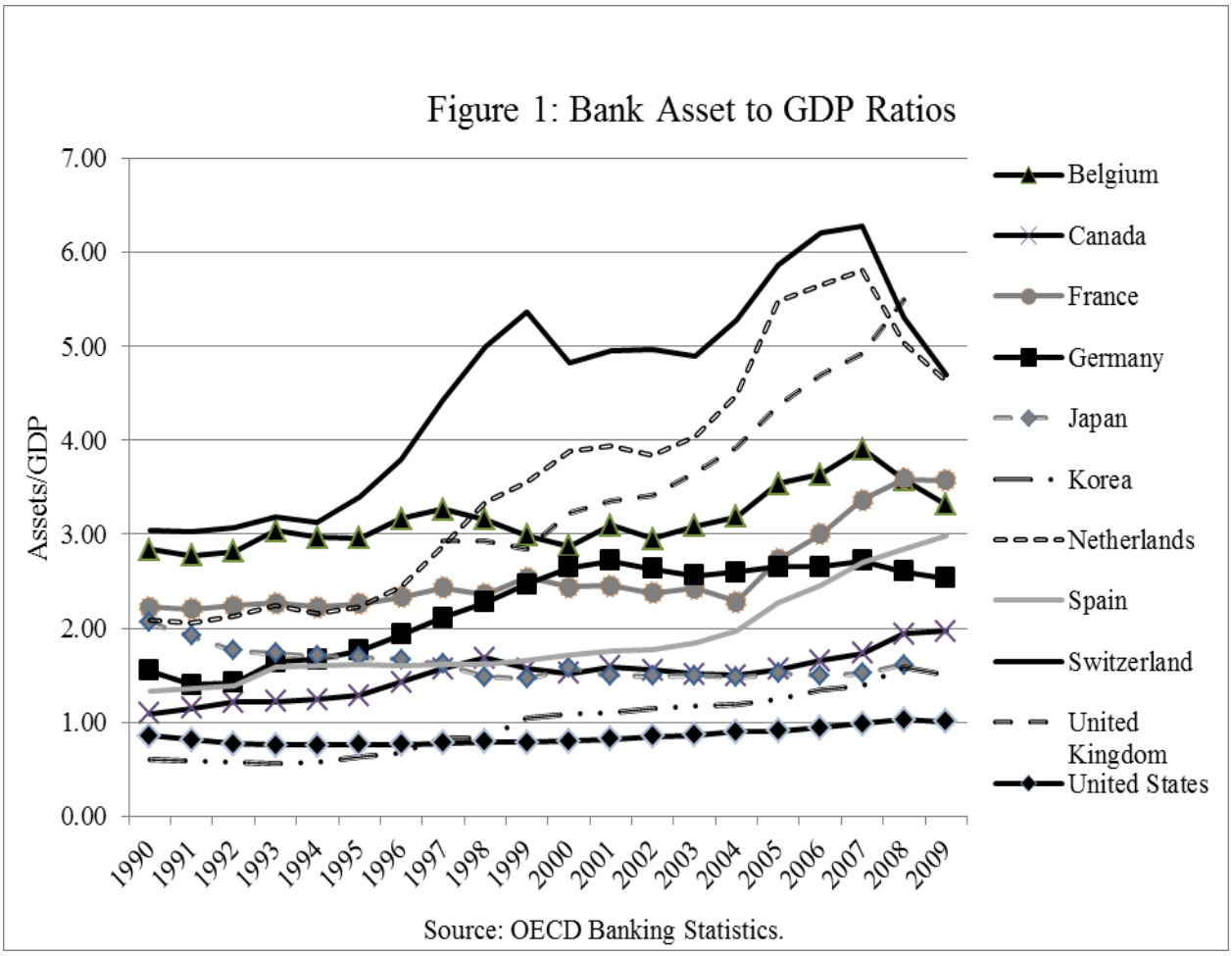
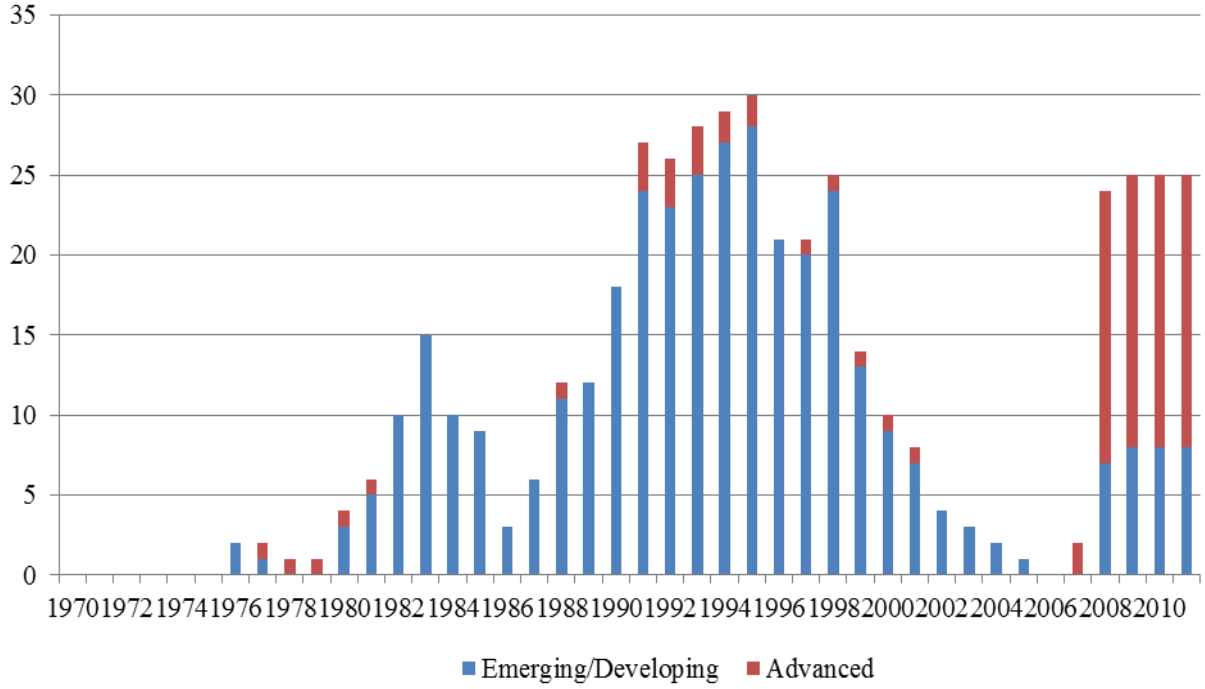
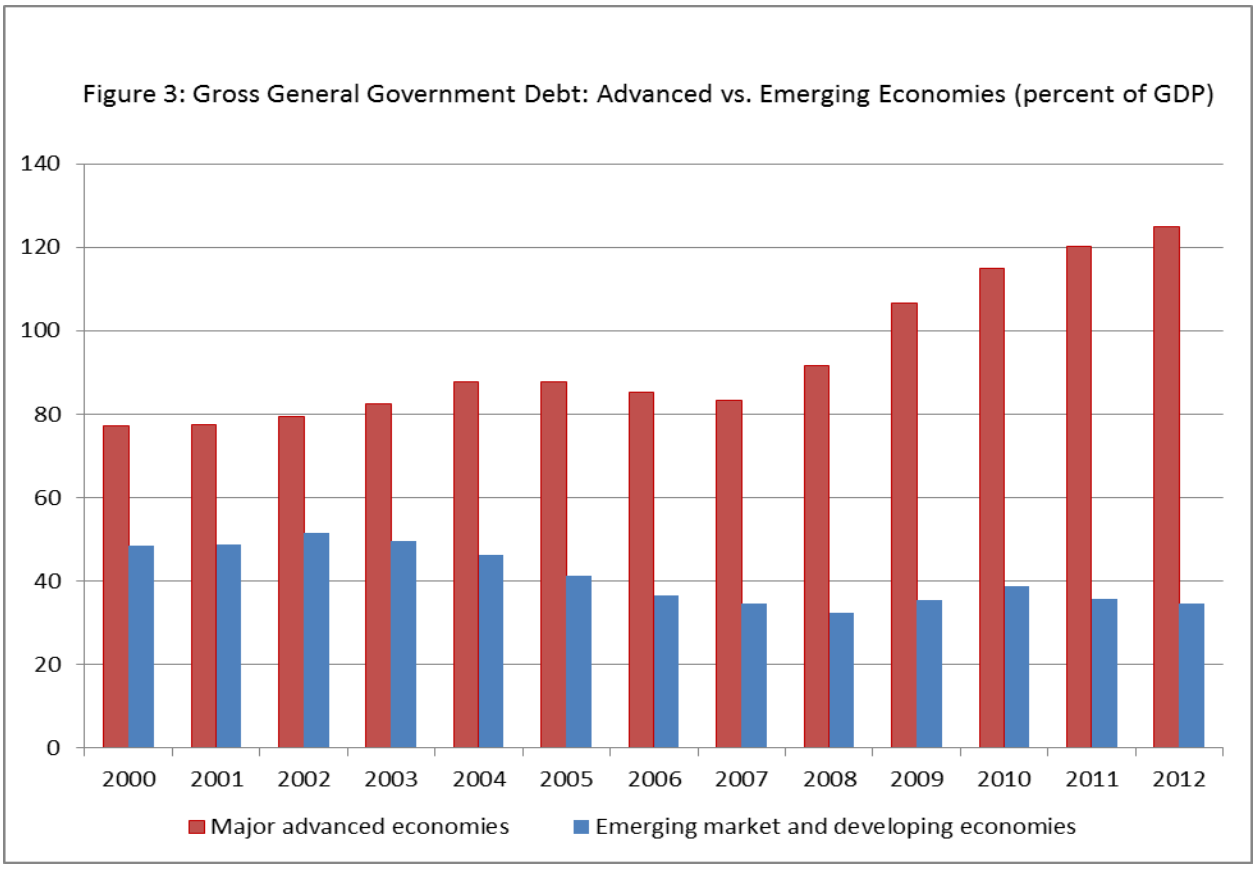


Figure 1: Bank Asset to GDP Ratios
Assets/GDP
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Belgium
Canada
France
Germany
Japan
Korea
Netherlands
Spain
Switzerland
United Kingdom
United States
Source: OECD Banking Statistics.

Figure 2: Annual Frequency of Ongoing Banking Crises (1970-2011)



Source: Author's calculations using Laeven and Valencia (2012) banking crisis dates



Source: IMF, WEO database, April 2013. The advanced country group consists of the G-7.