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Financial and Sovereign Debt Crises: Some Lessons Learned and Those Forgotten[1]

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Abstract

Even after one of the most severe multi-year crisis on record in the advanced economies, the received wisdom in policy circles clings to the notion that high-income countries are completely different from their emerging market counterparts. The current phase of the official policy approach is predicated on the assumption that debt sustainability can be achieved through a mix of austerity, forbearance and growth. The claim is that advanced countries do not need to resort to the standard toolkit of emerging markets, including debt restructurings and conversions, higher inflation, capital controls and other forms of financial repression. As we document, this claim is at odds with the historical track record of most advanced economies, where debt restructuring or conversions, financial repression, and a tolerance for higher inflation or a combination of these were an integral part of the resolution of significant past debt overhangs.

[1] This paper was prepared for the conference, ***Financial Crises: Causes, Consequences, and Policy Responses IMF*, Washington DC, September 14, 2012.** We were asked to ponder of the question of what lessons have been learned since the crisis began.

I. Introduction

Even after one of the most severe crisis on record (now in its fifth year) in the advanced world, the received wisdom in policy circles clings to the notion that advanced, wealthy economies are completely different animals from their emerging market counterparts. Up until 2007-2008, the presumption was that they were not nearly as vulnerable to financial crises.[2] When events disabused that notion, the noytion has persisted that if a financial crisis does occur, advanced countries are much better at managing the aftermath, thanks to their ability to vigorously apply countercyclical policy. Even as the recovery consistently came in far weaker than most forecasters were expecting, policymakers continued to underestimate the depth and duration of the downturn.

In Europe, where the financial crisis has morphed into a sovereign debt crisis in several countries, the current phase of the denial cycle is marked by an official policy approach that is predicated on the assumption that normal growth can be restored through a mix of austerity, forbearance and growth. The claim is that advanced countries do not need to resort to the standard toolkit of emerging markets, including debt restructurings, higher inflation, capital controls and significant financial repression. Advanced countries do not resort to such gimmicks, policymakers say. To do so would be to give up hard earned credibility, thereby destabilizing expectations and throwing the economy into a vicious circle. While the view that advanced country financial crises are completely different, and therefore should be handled

[2] Reinhart and Rogoff (2008) in "Banking Crises: An Equal Opportunity Menace," NBER Working Paper 14587 presented evidenced to the contrary. Since the early 1800s the incidence of banking crises is similar for advanced and emerging economies—the post WWII period is the era when crises visited the wealthy economies with less frequency.

completely differently, has been a recurrent refrain, notably in both the European sovereign debt crisis and the US mortgage crisis, this view is at odds with the historical track record of most advanced economies, where debt restructuring or conversions, financial repression, and a tolerance for higher inflation has been an integral part of the resolution of significant debt overhangs.

It is certainly true that policymakers need to manage public expectations. However, by consistently choosing instruments and calibrating responses based on overly optimistic medium-term scenarios, they risk ultimately losing credibility and destabilizing expectations rather than the reverse. Nowhere is the denial problem more acute than the collective amnesia on advanced country deleveraging experiences (especially, but not exclusively, before World War II) that involved a variety of sovereign and private restructuring, default, debt conversions and financial repression. This denial has led to policies that in some cases risk exacerbating the ultimate costs of deleveraging.

In this paper, we extend our earlier work on pre-WWII sovereign defaults by further documenting lesser known domestic default episodes but particularly by delving deeper into the widespread default by both advanced and emerging European nations on World War I debts to the United States during the 1930s. We quantify this largely forgotten episode of debt forgiveness (the debts were never repaid) in terms of both its incidence across countries (which is relatively well known) and its scale or orders of magnitude of default in comparison to the debtor countries' GDP as well as to what it collectively amounted to from the US creditor perspective.

We also illustrate the continuing depth of the debt overhang problem, which in our view remains the overarching obstacle to faster recovery. Research shows that debt overhang of this magnitude is typically associated with a sustained period of sub-par growth, lasting two decades or more.[3] In light of this danger, we review the possible options, concluding that the endgame to the global financial crisis is likely to require some combination of financial repression (a non-transparent form of debt restructuring), outright restructuring of public and private debt, conversions, somewhat higher inflation and a variety capital controls under the umbrella of macroprudential regulation. While austerity in varying degrees is necessary, in many cases it is not sufficient to cope with record public and private debt overhangs. All these options, while understandably anathema to the current generation of advanced country policymakers, are more familiar to their economies than is commonly recognized. We take this opportunity to highlight four basic of the lessons from the historical track record learned as well as those economists, financial market participants, and policy makers seem to have collectively forgotten.

II. Financial Liberalization, Financial Crises, and Crisis Prevention

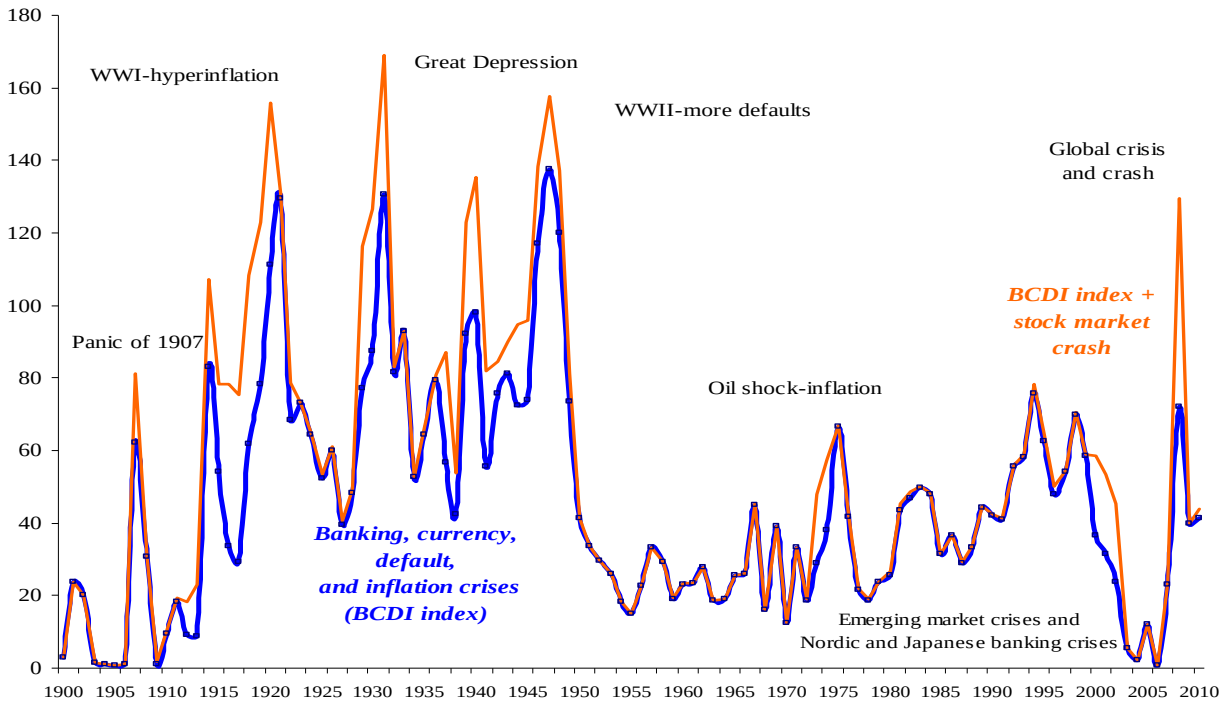
Lesson 1: *On prevention versus crisis management. We have done better at the latter rather than the former… We have doubts that this will change, as memories the crisis fade and financial market participants and their regulators become complacent.*

Although economists' understanding of financial crises has considerably deepened in recent years, we suspect that periods of huge financial sector growth and development (which is often accompanied by markedly rising private indebtedness) will always generate waves of financial crises. As the late Diaz-Alejandro famously titled his 1984 paper "Good-bye Financial Repression, Hello Financial Crash," many crises are the result of financial liberalizations gone

[3] Reinhart, Reinhart,and Rogoff, (2012).

amuck. Diaz-Alejandro was writing about emerging markets, but one could have said very much the same thing for advanced countries. Figure 1 presents a composite index of banking, currency, sovereign default and, inflation crises, and stock market crashes. Countries are weighted by their share of world income, so advanced countries carry a proportionately higher weight. Looking at the figure, and the longer analysis of crises in Reinhart and Rogoff (2009), we see that the "Financial repression" period 1950-1970 in particular, has markedly fewer crises than earlier.

Figure 1. Varieties of crises: World aggregate, 1900-2010
A composite index of banking, currency, sovereign default and, inflation crises, and stock market crashes (weighted by their share of world income)



Notes: The banking, currency, default (domestic and external) and inflation composite (*BCDI* index) can take a value between 0 and 5 (for any country in any given year) depending on the varieties of crises taking place on a particular year. For instance, in 1998 the index took on a value of 5 for Russia, as there was a currency crash, a banking and inflation crisis, and a sovereign default on both domestic and foreign debt obligations. This index is then weighted by the country's share in world income. This index is calculated annually for the 66 countries in the sample for 1800-2010:6 (shown above for 1900-onwards). We have added the borderline banking cases identified in Laeven and Valencia (2010) for the period 2007-2010. In addition, we use the Barro and Ursua (2009) definition of a stock market crash for the 25 countries in their sample (a subset of the 66-country sample-except for Switzerland) for the period 1864-2006; we update their crash definition through June 2010, to compile our *BCDI+* index. For the United States, for example, the index posts a reading of 2 (banking crisis and stock market crash) in 2008; for Australia and Mexico it also posts a reading of 2 (currency and stock market crash).

By "Financial repression" we include directed lending to government by captive domestic audiences (such as pension funds), explicit or implicit caps on interest rates, regulation of cross-border capital movements, and (generally) a tighter connection between government and

banks. It often masks a subtle type of debt restructuring. We note that recent work on monetary discussed by Brunnermier (2012) suggests that even in "normal" times, redistribution of wealth between savers and borrowers may be one of the central channels through which monetary policy operates. Periods of monetary tightening and high real interest rates benefit savers, and periods of loose monetary policy benefit borrowers (including usually governments.) This redistributive channel, all too often neglected in standard macroeconomic analyses, can become a central one in periods where governments restrict savers choices and opportunities. Financial repression is a form of taxation that, like any form of taxation, leads to distortions. However, perhaps because financial repression generally discourages financial excess, it is often associated with reduced crises frequency as the figure illustrates. It is precisely for this reason that the dividing line between prudential regulation and financial repression is not always a sharp one.

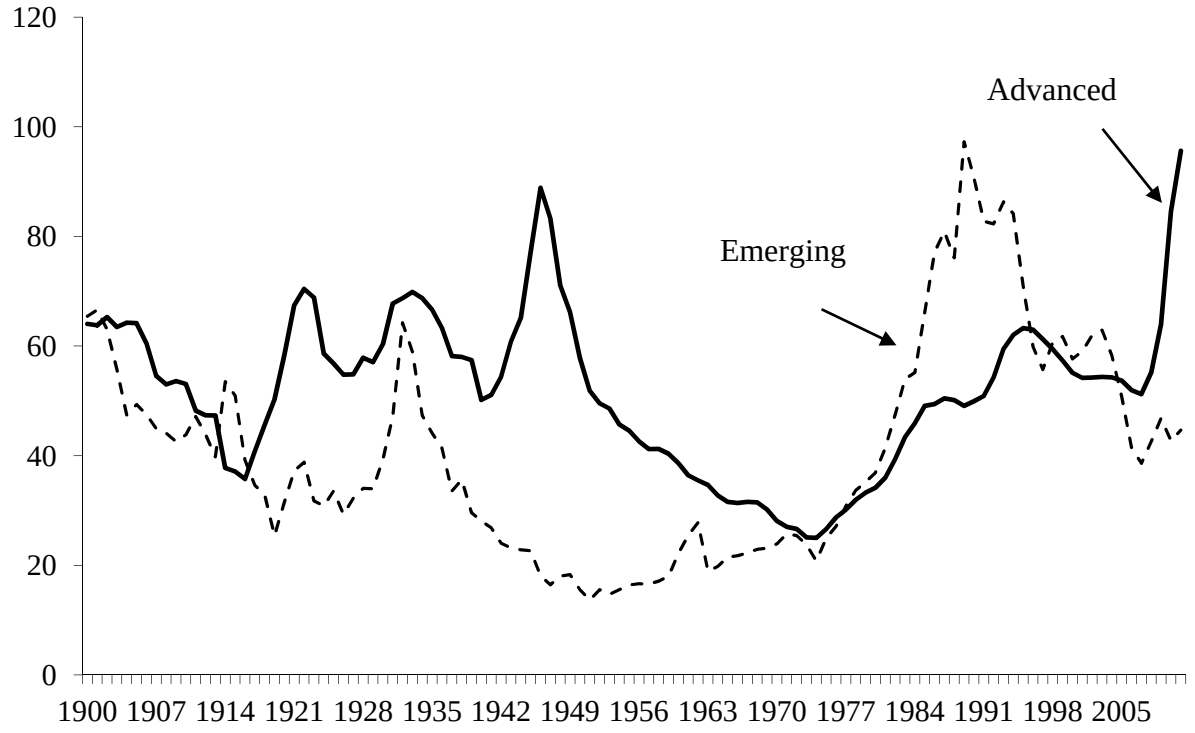
III. Today's Multifaceted Debt Overhang

Lesson 2. *Diagnosis or understanding the scope and depth of the risks and magnitudes of the debts. What is public and what is private? Lines are blurred; Domestic and external debt are not created equal—there are fewer options to deal with the latter; Hidden debts… (contingent liabilities, below the line arrears, local governments?*
Debts are usually MUCH bigger than meets the eye…

The magnitude of the overall debt problem facing advanced economies today is difficult to overstate. The mix of an aging society, an expanding social welfare state and stagnant population growth would be problematic in the best of circumstances. This burden has been significantly compounded by huge rise in government debt in the wake of the crisis, illustrated in figure 2. The figure gives gross central government debt as a percent of GDP for both advanced countries and emerging markets from 1900 to 2011. As the figure illustrates, the emerging markets actually deleveraged in the decade prior to the financial crisis whereas advanced

economies hit a peak not seen since the end of World War II. In fact, going back to 1800, the current level of central government debt in advanced economies is approaching a two century high water mark. Reinhart and Rogoff (2010) and Reinhart, Reinhart and Rogoff (2012) show that periods of high public debt have very often been associated with below trend growth.

Figure 2. Gross Central Government Debt as a Percent of GDP:
Advanced and Emerging Market Economies, 1860-2011
(unweighted averages)



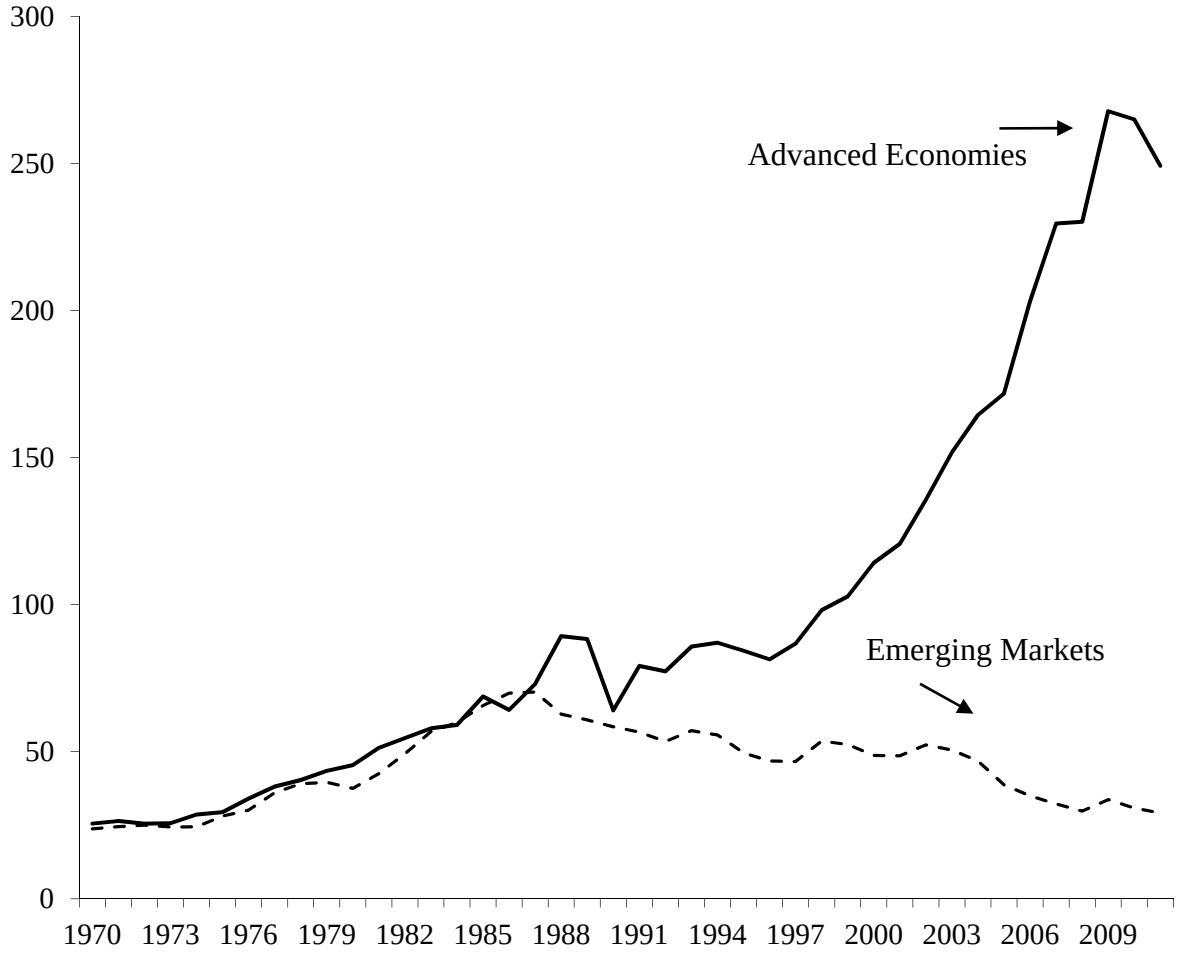
Sources: Reinhart and Rogoff (2010), Reinhart, Reinhart, and Rogoff (2012) and sources cited therein.

We note that broader debt measures including state and local liabilities are unfortunately not available across a long historical time period for many countries – see Reinhart and Rogoff, 2009 – but including them would almost surely make the present public debt burden seem even larger. Similarly, we note that we use gross government debt instead of net government debt because again, net debt data are not available for nearly as long a time period or broad a range of

countries. The main reason, however, is that net debt subtracts government old age trust fund holdings of government debt. Including the liability side of old age pensions and medical benefits would only make the overall debt picture much worse today relative to earlier periods.

External debt is another important marker of overall vulnerability. Figure 3 illustrates the level of total external debt, including public plus private, relative to GDP. Again, we see a picture of deleveraging in emerging markets, and a dramatic increase in external debt for the advanced countries. Reinhart and Rogoff (2009, 2011) argue total external debt is an important marker because the boundaries between public and private debt can become blurred in a crisis. External private debt is one of the forms they label "hidden debts" that can come jumping out the woodwork in a crisis. Just as bank balance sheets prior to the financial crisis did not reflect the true economic risk these institutions face, official measures of public debt are typically a significant understatement of vulnerability.

Figure 3. Gross Total (Public plus Private) External Debt as a Percent of GDP:
22 Advanced and 25 Emerging Market Economies, 1970-2011



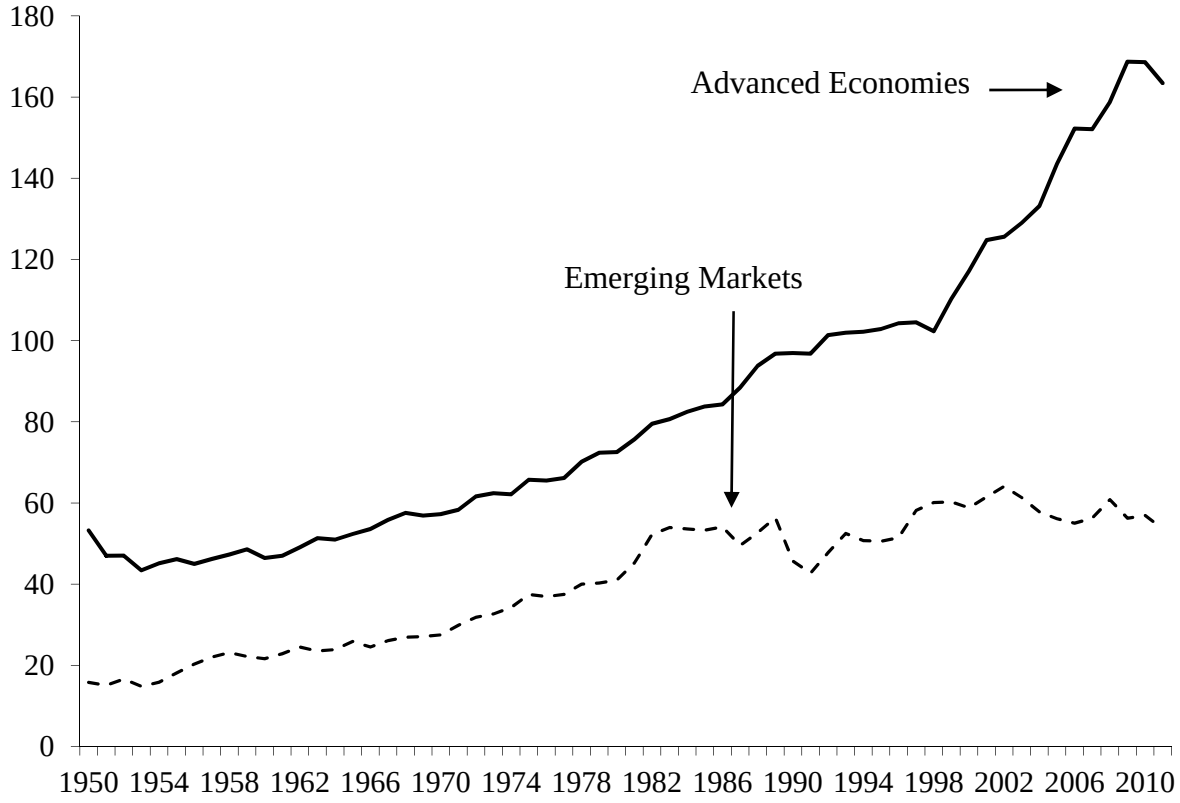
Sources: Lane and Milesi-Ferretti (2010), Reinhart and Rogoff (2009), Reinhart, Reinhart, and Rogoff (2012) and sources cited therein, *Quarterly External Debt Statistics*, Washington D.C.:World Bank, Various years. *Global Development Finance*. Washington D.C.: World Bank, Various years.

Admittedly, a significant driving force behind the rise in advanced country external debt has involved the growth in intra-European debt. As the euro-area is painfully learning, the lines between national debts and common currency area-wide debts can also become blurred in a financial crisis.

The distinction between external debt and domestic debt can be quite important, and as Reinhart and Rogoff (2009, 2010, 2011) argue, the thresholds for problems in growth and default crises are different for the two types of debt. Domestic debt issued in domestic currency typically offers a far wider range of partial default options than does foreign-currency denominated external debt. We have already talked about financial repression; governments can stuff debt into local pension funds and insurance companies, forcing them through regulation to accept far lower rates of return than they might otherwise demand. But domestic debt can also be reduced through inflation. As Reinhart and Sbrancia (2011) show, a mix of financial repression and inflation can be a particularly potent way of reducing domestic currency debt. The array of options is much less for foreign currency debt,

Finally, in Figure 4, we illustrate the explosion of private sector debt before the financial crisis. Unlike central government debt, where the series are remarkably stationary over a two century period, private sector shows marked upward trend due in financial innovation and globalization, punctuated by volatility due to periods of financial repression and financial liberalization. As the figure shows, the degree of deleveraging post financial crisis has been limited. In essence, this is because the advanced countries have exercised the government's capacity to borrow even after a crisis to prop up the system. This strategy likely made the initial post-crisis phase less acute. But it also implies that it make take more years to ultimately deleverage.

Figure 4. Private Domestic Credit as a Percent of GDP
(22 Advanced and 28 Emerging Market Economies, 1950-2011



Sources: *International Financial Statistics*, and *World Economic Outlook*, International Monetary Fund, Washington DC, Various issues and Reinhart (2010) and sources cited therein.

IV. How Will Debt be Reduced?

Lesson 3. *Crisis Resolution: How different are advanced economies and emerging markets??? Not as much as widely believed.*
There is an extensive "forgotten" history of pre-WWII credit events in advanced economies (default, restructurings, conversions and other forms of confiscation…). These credit events involved both private (junior and senior) and public (domestic and external) debts in varying degrees. It seems improbable that restructurings in the current crisis will be confined to Greece…

There are essentially five ways to reduce large debt to GDP ratios. Most historical episodes have involved some combination of these.

Box 1. The Elements of Debt Reduction

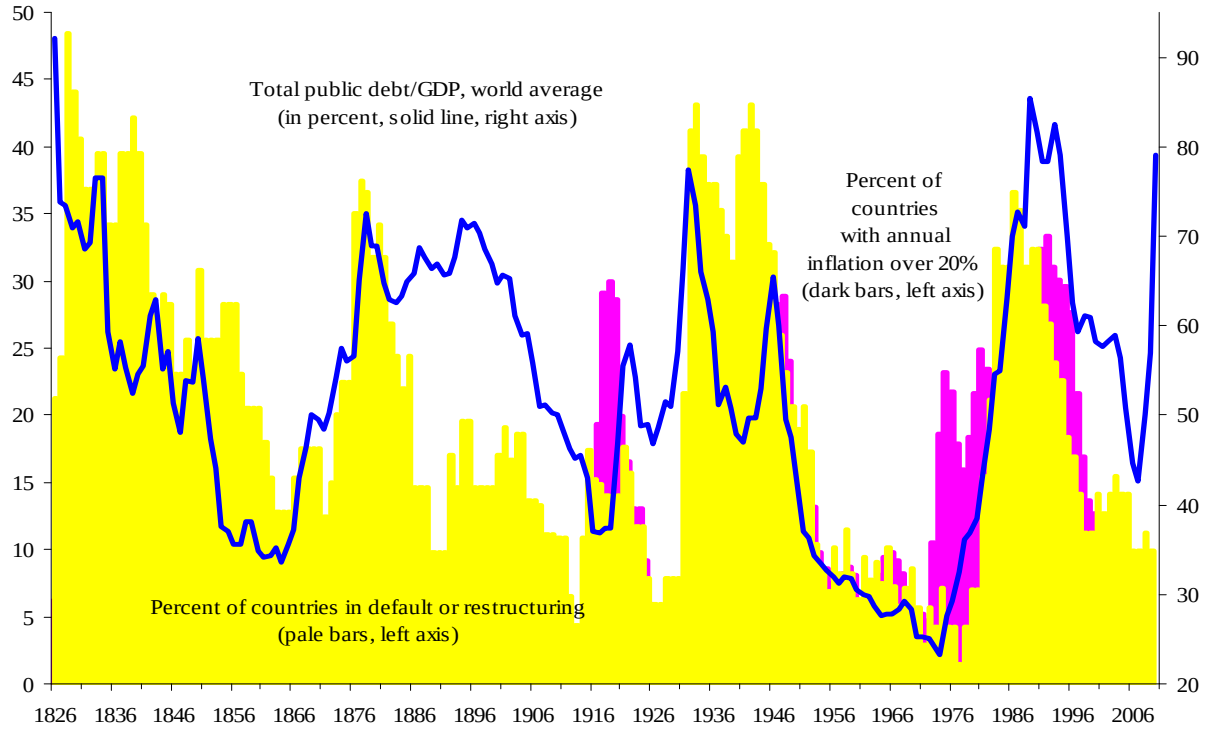
(i) economic growth;
(ii) fiscal adjustment/austerity;
(iii) explicit default or restructuring;
(iv) a sudden surprise burst in inflation; and
(v) a steady dosage of financial repression that is accompanied by an equally steady dosage of inflation.

The first on the list is relatively rare and the rest are difficult and unpopular.[4] Recent policy discussion had tended to forget options (iii) and (v), arguing that advanced countries do not behave that way. In fact, option (v) was used extensively by advanced countries to deal with post World War II debts (Reinhart and Sbancia, 2011) and option (iii) was common enough before World War II. Given the magnitude of today's debts and the likelihood of a period of very slow growth, we are doubtful that fiscal austerity will be sufficient even combined with financial repression. Rather, the magnitude of the problem suggests that there will need to be restructurings, particularly for example in the periphery of Europe, beyond anything so far discussed in public. Of course mutualization of euro country debt effectively uses northern country taxpayer resources to bail out the periphery reduces the need for restructuring. But the magnitude of the overall problem is such that mutualization could potentially result in continuing slow growth or even recession in the core countries, magnifying their own already challenging sustainability problems for debt and old age benefit programs.

[4] See Reinhart, Rogoff and Savastano (2003) on the post WWII experience and Sturzenegger and Zettlemeyer (2006) on the more recent emerging market experiences.

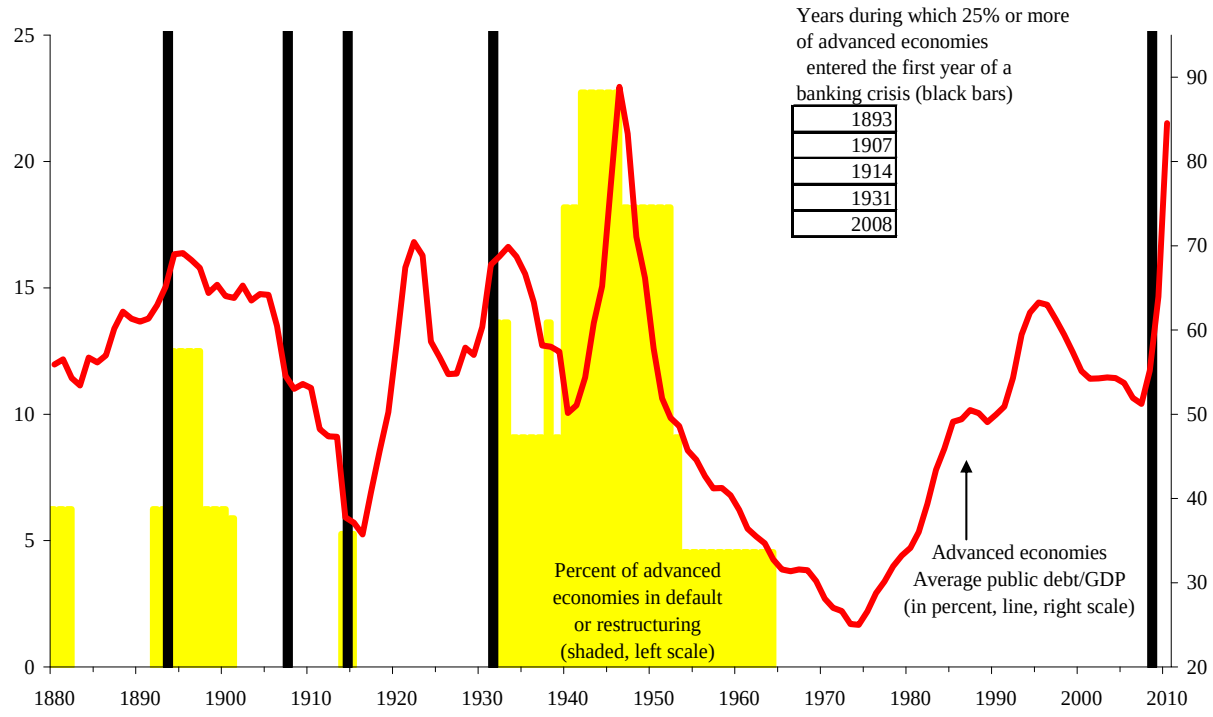
Historically, periods of high government debt such as the current one have led to marked increase in debt restructurings, as Figure 5 (from Reinhart and Rogoff, 2011) illustrates. The figure graphs GDP weighted central government debt versus the percent of countries experiencing inflation over 20% as well as the share of countries engaged in debt restructuring, from 1826-2010. The correlation is strongly statistically significant, and also appears at a more granular level, for example dividing the world into regions. Figure 6 illustrates the pattern that waves of sovereign defaults and restructurings typically follow within a few years of a international wave of banking crises, again a relationship that can be demonstrated statistically, and also appears clearly in the individual country histories (as illustrated in the Reinhart 2010 chartbook). The debt restructurings in figures 5 and 6 do not include the numerous "less than voluntary restructurings" where domestic debtors were forced to accept inferior terms, or where the tools of financial repression were used to reduce debt burdens.

Figure 5. Sovereign Default, Total (domestic plus external) Public Debt, and Inflation Crises: World Aggregates, 1826-2010 (debt % of GDP)



Source: Reinhart and Rogoff (2011).

Figure 6. Sovereign Default, Total (domestic plus external) Public Debt, and Systemic Banking Crises: Advanced Economies, 1880-2010 (debt as a % of GDP)



Source: Reinhart and Rogoff (2011).

While the connection between indebtedness and default at the aggregate level depicted in Figures 5 and 6 for both advanced and emerging economies is highly informative, Table 1 presents a selective chronology of domestic and external credit events over 1920s-1960s for the advanced economies. We use the term selective not because we decided to exclude events that we are familiar with but because as we note in Reinhart and Rogoff (2009) domestic defaults, restructurings or conversions are particularly difficult to document and can sometimes be disguised as "voluntary" or in the case of financial repression and inflation are an opaque way of reducing debt via restrictive regulations and taxes.

As Table 1 documents 13 of 21 advanced economies had at least one credit event involving the sovereign. A number of countries had multiple debt crises and an even larger number than those listed in Table 1 had, especially during the 1930s wholesale private defaults, as evidenced in bank failures and nonfinancial corporate bankruptcies (see Reinhart and Rogoff, 2009).

Table 1. Selected Episodes of Domestic or External Debt Default or Restructuring: Advanced Economies, 1920s–1960s

Country	Dates	Commentary
Australia	1931/1932	Domestic debt only. The Debt Conversion Agreement Act in 1931/32 which appears to have done something similar to the later NZ induced conversion. See New Zealand entry. [1]
Austria	1920-1921	Hyperinflation erodes domestic debt.
	1932-1933	WWI debt (see Table 2);not repaid.
	1934	
	1938	External debt was ultimately settled in 1952.
	1940-1952	Domestic default. Restoration of schilling (150 limit
	1945	per person). Remainder placed in blocked accounts. In December 1947, large amounts of previously blocked schillings invalidated and rendered worthless. Temporary blockage of 50 percent of deposits.
Belgium	1934	WWI debt (see Table 2); not repaid.
Canada (Alberta)	April 1935	The only province to default—which lasted for about 10 years.
France	1934	WWI debt (see Table 2) not repaid.
Germany	1923-1924	Hyperinflation liquidates domestic currency debt.
	1932-1953	External debt.
	June 20, 1948	Monetary reform limiting 40 Deutschemark per person. Partial cancellation and blocking of all accounts.
Greece	1932	Interest on domestic debt was reduced by 75 percent since 1932; Domestic debt was about 1/4 of total public debt.
	1932-1964	External arrears not resolved until 1964.
	1934	WWI debt (see Table 2); not repaid.
	1941-1944	Hyperinflation erodes what little domestic debt there was.

Table 1 (concluded). Selected Episodes of Domestic or External Debt Default or Restructuring: Advanced Economies, 1920s–1960s

Country	Dates	Commentary
Italy	1920 1924 1926 1930s 1934 1944 1940-1946	Conversions of domestic debt in the 1920s. These are multiple attempts to reduce the high level of floating rate debt. Domestic debt. Service on external debt was suspended in 1928. During the 1930s, interest payments included "arrears of expenditure and civil and military pensions." WWI debt (see Table 2); not repaid. 500% inflation wipes out domestic debt. External debt.
Japan	1942-1952 1945-1947 March 2, 1946–1952	External debt Inflation in 150-600% range wipes out domestic debt. After inflation, exchange of all bank notes for new issue (1 to 1) limited to 100 yen per person. Remaining balances were deposited in blocked accounts.
New Zealand	1933	In March 1933 the New Zealand Debt Conversion Act was passed providing for voluntary conversion of internal debt amounting to 113 million pounds to a basis of 4 per cent for ordinary debt and 3 per cent for tax-free debt. Holders had the option of dissenting but interest in the dissented portion was made subject to an interest tax of 33.3 per cent. [1]
Spain	October 1936–April 1939	Interest payments on external debt were suspended, arrears on domestic debt service.
United States	1933	Abrogation of the gold clause in conjunction with a 40 percent reduction in the gold content of the US dollar. The debt haircut amounted to about 16% of GDP.
United Kingdom	1934	Most of the outstanding WWI debt was consolidated into a 3.5 percent perpetual annuity. This domestic debt conversion was apparently voluntary. However, some of the WWI debts to the United States were issued under domestic (UK) law (and therefore classified as domestic debt) and these were defaulted on following the end of the Hoover 1931 moratorium. See Table 2.

[1] See Schedvin (1970) and Prichard (1970), for accounts of the Australian and New Zealand conversions, respectively, during the Depression. Michael Reddell kindly alerted us to these episodes and references.

In many of the episodes listed in Table , it is difficult to document the *magnitude* of the debt reduction achieved by the credit event in question. Due to the opaque nature of the default, restructuring and renegotiation process, the imprecision of estimated recovery rates, the lack of data, or a combination of these. The problem is less severe for external default episodes where the data is better, but even so it is a challenge. An exception, of course, are the hyperinflation or very high inflation episodes in which all or nearly all of the existing debt stocks were liquidated (see Reinhart and Rogoff, 2009).

An interesting and exceptional episode where one can estimate with some degree of precision the magnitude of the debt relief provided by a default and ultimate debt forgiveness is the case of World War I debts to the United States (this includes large-scale borrowing in the immediate aftermath of the war). These defaults came in the summer of 1934, following the end of President Hoover's temporary moratorium on debt payments. Of the 17 countries listed in Table 2 as having borrowed from the US during or right after the war, only Finland repaid its debt. (It is notable that Finlands debt was only0.2% of Finish GDP versus burdens two orders of magnitude larger for France and the UK.) The remaining countries received what in today's language is now called debt forgiveness of the type usually associated today with only with highly indebted poor countries.

Table 2 presents the amounts of public debt to the United States that was defaulted on and presents information, where nominal GDP data is available, of the magnitude of the default or debt reduction as a percent of GDP . The magnitude of debt relief is stunning. Perhaps not surprisingly, it is largest for France and the UK, who enjoyed debt/GDP reduction sof 20-30 percent. This magnitude is comparable to a number of the emerging market defaults in the post WWII era, once one takes into account eventually recovery rates. That is, although many

emerging market debt burdens ultimately reached 60-100 percent of GDP, creditors typically received significant compensation with typically recovery rates in excess of 50%, even in cases of dramatic default. By contrast the defaults on World War I debt to the US is near total. These estimates in Table 2 are conservative as they are based on debt levels that do not include interest on arrears, so the effective defaults are in fact even larger.[5]

From the US creditor vantage point, the collective default of World War I debt owed by foreign countries amounted to 15-16 percent of US GDP. In this connection, it must be added that the United States had already defaulted on its sovereign debt in April of 1933 to domestic and external creditors alike. The abrogation of the gold clause in conjunction with a 40 percent reduction in the gold content of the US dollar also amounted to a debt haircut amounted to about 16% of GDP. The magnitude and incidence of post World War I default worldwide is also understated by not considering in this exercise war debts owed by countries (other than the US) to the United Kingdm. For the most part, these debts were also defaulted on and never repaid.

As unpleasant (see *New York Times*, June 1934) as these credit events were, it is clear that they played a substantive role in reducing the WWI-Great Depression debt overhang. In light of the historic public and private debt levels discussed in Section III it is difficult to envision a resolution to the five year old crisis that does not involve a greater role for explicit restructuring.

[5] See memorandum item in Table 2.

Table 2. Defaults on WWI Debt to the US in the 1930s: Timing and Magnitude

	Wartime Debt	**Postwar Debt**	**Total Debt (ex. arrears)**	As a % of GDP
Armenia	0	11,959,917.49	11,959,917.49	1.7
Austria	0	24,055,708.92	24,055,708.92	n.a.
Belgium	171,780,000.00	207,307,200.43	379,087,200.43	3.3
Czechoslovakia	0	91,879,671.03	91,879,671.03	n.a.
Estonia	0	13,999,145.60	13,999,145.60	n.a.
Finland	0	8,281,926.17	8,281,926.17	0.2
France	1,970,000,000.00	1,434,818,945.01	3,404,818,945.01	29.4
Greece	0	27,167,000.00	27,167,000.00	8.9
Hungary	0	1,685,835.61	1,685,835.61	n.a.
Italy	1,031,000,000.00	617,034,050.90	1,648,034,050.90	19.1
Latvia	0	5,132,287.14	5,132,287.14	n.a.
Lithuania	0	4,981,628.03	4,981,628.03	n.a.
Poland	0	159,666,972.39	159,666,972.39	n.a.
Romania	0	37,911,152.92	37,911,152.92	n.a.
Russia	187,729,750.00	4,871,547.37	192,601,297.37	n.a.
United Kingdom	3,696,000,000.00	581,000,000.00	4,277,000,000.00	22.2
Yugoslavia	10,605,000.00	41,153,486.55	51,758,486.55	n.a.
total (ex. Arrears)	**7,077,114,750.00**	**3,273,364,324.70**	**10,350,479,074.70**	n.a.
as a % of US GDP			**15.70**	
Memorandum item:				
Total (including arrears)			**11,628,311,614.94**	
as a % of US GDP			16.9	

Sources: Bailey (1950), *New York Times*, June 1934, Reinhart and Rogoff (2009) and sources cited therein.

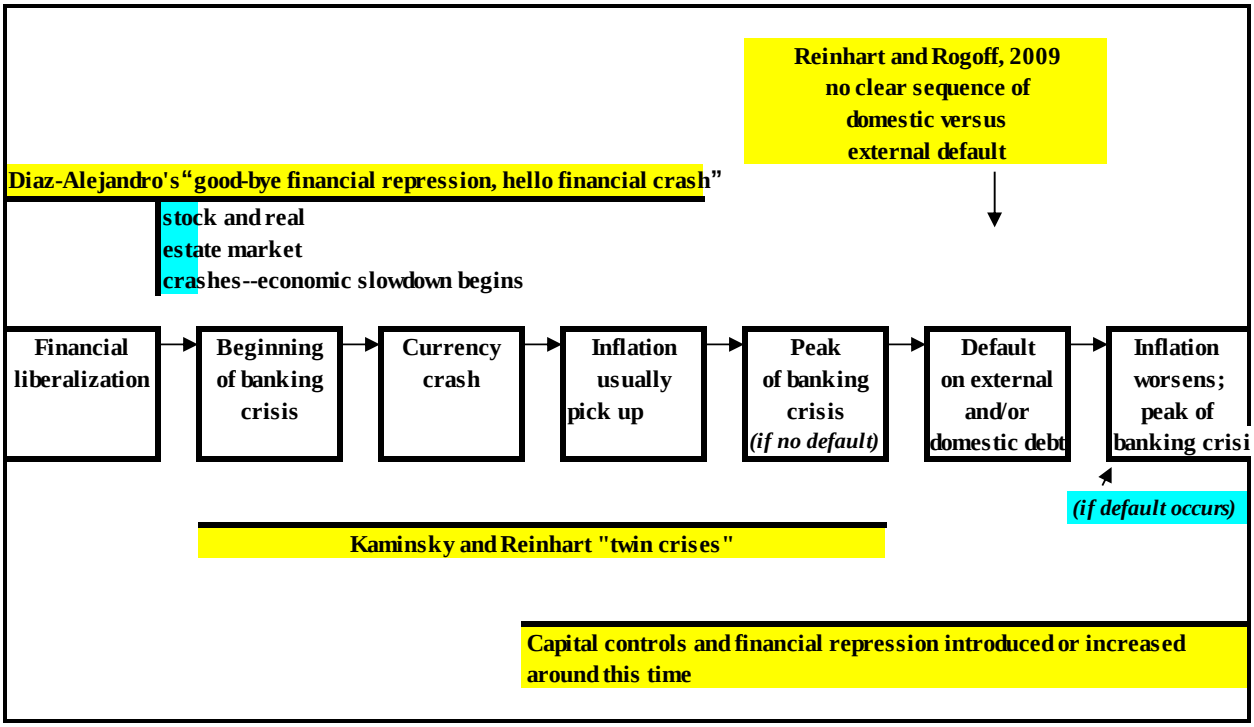
V. The Return of Financial Repression?

Lesson 4. After global crises: International financial architecture—the return of financial repression… There are recurring sequencing patterns in these events.

Figure 7, which extends the schematic in Reinhart and Rogoff (2009), highlights a "prototype" sequencing of events after a financial crisis. In the "typical" sequencing where the current stage often ends with some combination of capital controls, financial repression, inflation and default. This turn of the pendulum from liberalization back to more heavy handed regulation stems from both the greater aversion to risk that usually accompany severe financial crises, including the desire to prevent new ones from emerging as well as from the desire to maintain interest rates as low as possible to facilitate debt financing. Reinhart and Sbrancia (2009) document how following World War II (when explicit defaults were limited to the losing side) financial repression via negative real interest rate reduced debt to the tune of 2-4 percent a year for the US and UK for the years with negative real interest rates.[6] For Italy and Australia with higher inflation rates debt reduction from the financial repression "tax" was on a larger scale and closer to 5 percent per annum. As documented in Reinhart (2012) financial repression is well underway in the current post-crisis experience.

[6] Ne4gative real interest rates are a tax on bondholders and effect a transfer or redistribution from savers to borrowers.

Diagram 1. The sequencing of crises: The big picture



VI. Final Thoughts

Of course, if policymakers are fortunate, economic growth will provide a soft exit, reducing or eliminating the need for painful restructurings, repression or inflation. The evidence on debt overhangs is not very encouraging. Looking just at the public debt overhang, and not taking into account old age support programs, the picture is not encouraging. Reinhart, Reinhart and Rogoff (2012) consider 26 episodes where advanced country debt exceeded 90% of GDP, encompassing most or all of the episodes since World War II. (They tabulate the small number of cases where the debt overhang lasted less than five years, but do not include these in their overhang calculations.) They find that debt overhang episodes averaged 1.2% lower growth than individual country averages for non-overhang periods. Moreover the average duration of the

overhang episodes is 23 years. As Reinhart, Reinhart and Rogoff (2012) simulate, the staggering potential cumulative effect of 1.2% lower growth on the level of GDP; after 23 years, GDP is more than 25% lower than it otherwise would be. Of course there are many other factors that determine longer run GDP growth, including especially the rate of productivity growth. But given that official pubic debt is only one piece of larger debt overhang issue we have illustrated, it is clear the governments should be careful to assume that growth alone will be able to end the crisis. Instead, today's advanced country governments may have to look increasingly to the approaches that have long been associated with emerging markets, and that advanced countries themselves once practiced not so long ago.

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