

# Financial and Sovereign Debt Crises: Some Lessons Learned and Those Forgotten

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Even after one of the most severe crises on record (in its fifth year as of 2012) 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. Until 2007–08, the presumption was that they were not nearly as vulnerable to financial crises.<sup>1</sup> When events disabused the world of that notion, the idea still persisted that if a financial crisis does occur, advanced economies are much better at managing the aftermath, thanks to their ability to vigorously apply countercyclical policy. Even as the recovery consistently proved to be far weaker than most forecasters were expecting, policymakers continued to underestimate the depth and duration of the downturn.

In Europe, where the financial crisis transformed into sovereign debt crises in several countries, the current phase of the denial cycle is marked by an official policy approach predicated on the assumption that normal growth can be restored through a mix of austerity, forbearance, and growth. The claim is that advanced economies do not need to apply the standard toolkit used by emerging markets, including debt restructurings, higher inflation, capital controls, and significant financial repression. Advanced economies 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. Although the view that advanced country financial crises are completely different, and therefore should be handled completely differently, has been a recurrent refrain, notably in both the European sovereign debt crisis and the U.S. subprime mortgage crisis, this view is at odds with the historical track record of most advanced economies, in which debt restructuring or conversions, financial repres-

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<sup>1</sup> Reinhart and Rogoff (2008) present evidence to the contrary. Since the early 1800s, the incidence of banking crises is similar for advanced and emerging economies—the post-World War II period is the era when crises visited the wealthy economies with less frequency.

sion, and a tolerance for higher inflation have been integral parts 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 in the collective amnesia about advanced economy 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 final costs of deleveraging.

This chapter extends earlier work on pre-World War II 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. This chapter quantifies this largely forgotten episode of debt forgiveness (the debts were never repaid) in 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 U.S. creditor perspective.

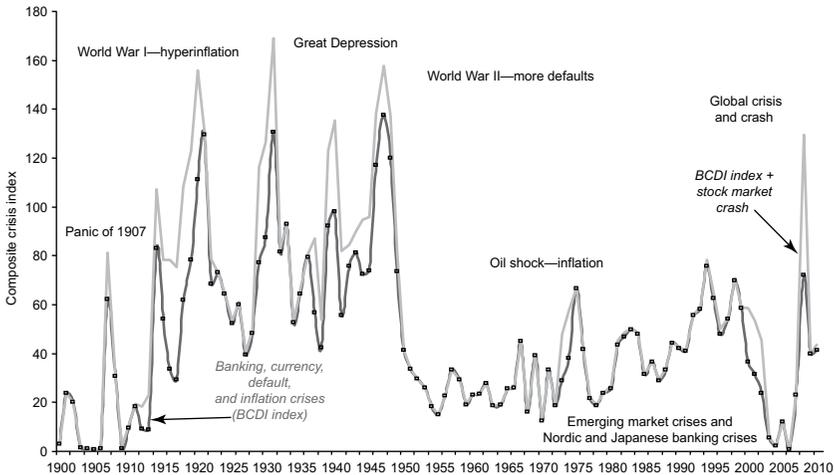
The chapter also illustrates the continuing depth of the debt overhang problem, which remains the overarching obstacle to faster recovery. Research shows that a debt overhang of this size is typically associated with a sustained period of sub-par growth, lasting two decades or more (Reinhart, Reinhart, and Rogoff, 2012, which includes a view of the scholarly literature, including critiques; see also the *World Economic Outlook*, October 2012 and April 2013). In light of this danger, the chapter reviews the possible options, concluding that the endgame to the global financial crisis is likely to require some combination of financial repression (a nontransparent form of debt restructuring), outright restructuring of public and private debt, conversions, somewhat higher inflation, and a variety of capital controls under the umbrella of macroprudential regulation. Although 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, understandably anathema to the current generation of advanced country policymakers, are more familiar to their economies than is commonly recognized. This opportunity is used to highlight four basic lessons from the historical track record, as well as those lessons economists, financial market participants, and policymakers seem to have collectively forgotten.

## **FINANCIAL LIBERALIZATION, FINANCIAL CRISES, AND CRISIS PREVENTION**

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

Although economists' understanding of financial crises has considerably deepened in recent years, periods of huge financial sector growth and development (often accompanied by steeply rising private indebtedness) will probably always generate waves of financial crises. As the late Diaz-Alejandro famously titled his 1985 paper "Good-bye Financial Repression, Hello Financial Crash," many crises are the result of financial liberalization gone amok. Diaz-Alejandro was writing about emerging markets, but he could have said very much the same thing for advanced economies. Figure 3.1 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 economies carry proportionately higher weights. The figure, and the longer analysis of crises in Reinhart and Rogoff (2009), show that the "financial repression" period, 1950–70 in particular, has markedly fewer crises than earlier.

"Financial repression" includes directed lending to government by captive domestic audiences (such as pension funds), explicit or implicit caps on interest



**Figure 3.1** 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)

Source: Authors' calculations.

Notes: The banking, currency, default (domestic and external), and inflation composite (*BCDI* index—solid line) can take a value between 0 and 5 (for any country in any given year) depending on the varieties of crises taking place in that year. (For instance, in 1998 the index took on a value of 5 for the Russian Federation because there was a currency crash, a banking and inflation crisis, and a sovereign default on both domestic and foreign debt obligations.) The 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 (shown in the figure for 1900 onward). The borderline banking cases identified in Laeven and Valencia (2010) for the period 2007–2010 have been added. In addition, the Barro and Ursua (2009) definition of a stock market crash has been used for the 25 countries in their sample (a subset of the 66-country sample, except for Switzerland) for the period 1864–2006; their crash definition was also updated through June 2010, to compile the *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). For each country the reading of the *BCDI+* index can range from zero crises per year to a maximum of six (banking, currency, inflation, domestic debt crisis, external debt crisis, and equity market crash). As there are 66 countries in the sample, the aggregate world reading can, in principle, reach a maximum value of 396 crises.

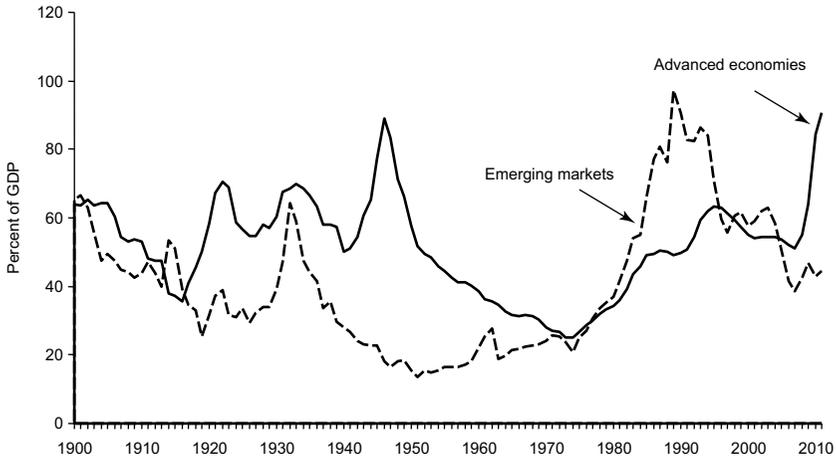
rates, regulation of cross-border capital movements, and generally a tighter connection between government and banks. It often masks a subtle type of debt restructuring. Recent work on monetary policy discussed in Brunnermeier and Sannikov (2012) suggests that even in “normal” times, redistribution of 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 (usually including governments). This redistributive channel, all too often neglected in standard macroeconomic analyses, can become a central one in periods in which 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 frequency of crises as Figure 3.1 illustrates. It is precisely for this reason that the dividing line between prudential regulation and financial repression is not always a sharp one.

## TODAY’S MULTIFACETED DEBT OVERHANG

*Lesson 2: On diagnosing and understanding the scope and depth of the risks and magnitudes of the debt. What is public and what is private? Domestic and external debt are not created equal. And debt is usually MUCH bigger than what 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 difficult in the best of circumstances. This burden has been significantly compounded by huge increases in government debt in the wake of the crisis, illustrated in Figure 3.2. The figure shows gross central government debt as a percentage of GDP for both advanced economies and emerging markets from 1900 through 2011. As the figure illustrates, the emerging markets actually deleveraged in the decade before 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.

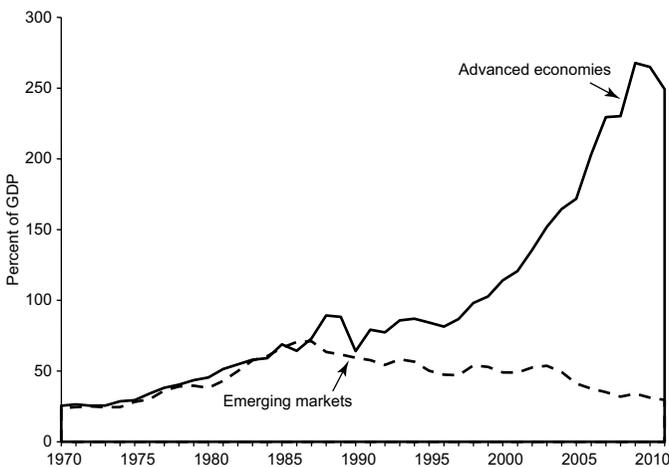
Broader debt measures that include state and local liabilities are unfortunately not available across a long historical period for many countries (Reinhart and Rogoff, 2009), but including them would almost surely make the present public debt burden seem even larger. Similarly, gross government debt is used instead of net government debt because, again, net debt data are not available for nearly as long a period or broad a range of countries. Another 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.



**Figure 3.2** Gross Central Government Debt as a Percentage of GDP: Advanced and Emerging Market Economies, 1860–2011 (unweighted average)

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

External debt is another important marker of overall vulnerability. Figure 3.3 illustrates the level of total external debt, including both public and private, relative to GDP. Again, a picture of deleveraging in emerging markets is clear, as is a dramatic increase in external debt for the advanced economies. Reinhart and Rogoff (2009, 2011) argue that total external debt is an important indicator because the boundaries between public and private debt can become blurred in a crisis. External private debt is one of the forms of “hidden debt” that can come jumping out of the



**Figure 3.3** Gross Total (public plus private) External Debt as a Percentage of GDP: 22 advanced and 25 emerging market economies, 1970–2011

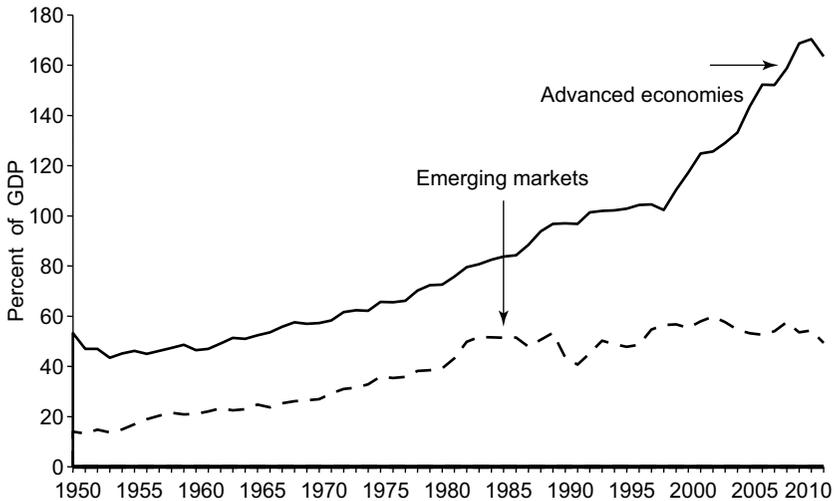
Sources: Lane and Milesi-Ferretti (2007); Reinhart and Rogoff (2009); Reinhart, Reinhart, and Rogoff (2012), and sources cited therein; World Bank *Quarterly External Debt Statistics*, various years; and World Bank *Global Development Finance*, various years.

woodwork in a crisis. Just as bank balance sheets before the 2007–09 financial crisis did not reflect the true economic risk these institutions faced, official measures of public debt are typically a significant understatement of vulnerability.

Admittedly, a major driving force behind the rise in advanced economy external debt involved the growth in intra-European debt. As the euro area is painfully learning, the lines between national debt and common currency area-wide debt 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. Financial repression has already been mentioned; 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 narrower for foreign-currency debt,

Finally, Figure 3.4 illustrates the explosion of private sector debt before the financial crisis. Unlike central government debt, for which the series are remarkably stationary over a two-century period, private sector debt shows a marked upward trend due to financial innovation and globalization, punctuated by volatility caused by periods of financial repression and financial liberalization. As the figure shows, the degree of deleveraging after the financial crisis has been limited. In essence, the



**Figure 3.4** Private Domestic Credit as a Percent of GDP, 1950–2011 (22 advanced and 28 emerging market economies)

Sources: IMF, *International Financial Statistics*, and *World Economic Outlook*, various issues; and Reinhart (2010) and sources cited therein.

### BOX 3.1 The Elements of Debt Reduction

1. Economic growth
2. Fiscal adjustment and austerity
3. Explicit default or restructuring
4. A sudden surprise burst in inflation
5. A steady dose of financial repression accompanied by an equally steady dose of inflation

advanced economies 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 may take longer to deleverage.

## HOW WILL DEBT BE REDUCED?

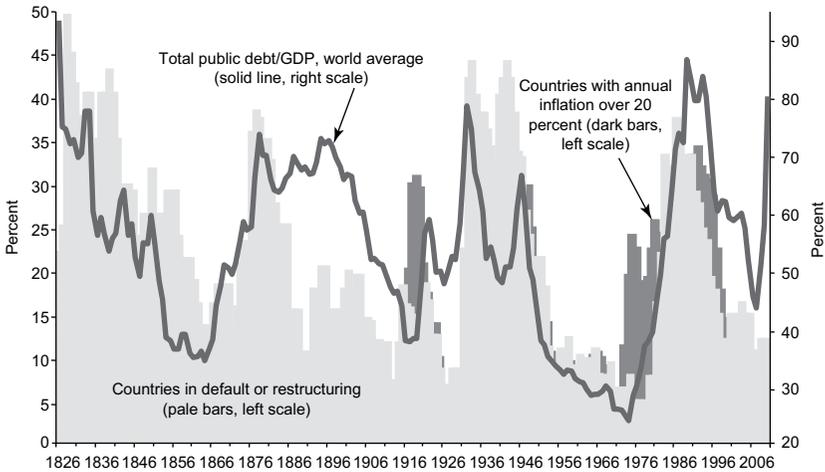
*Lesson 3: On crisis resolution. How different are advanced economies and emerging markets? Not as different as is widely believed.*

There are essentially five ways to reduce large debt-to-GDP ratios (Box 3.1). Most historical episodes have involved some combination of these.

The first on the list is relatively rare and the rest are difficult and unpopular.<sup>2</sup> Recent policy discussion has tended to forget options (3) and (5), arguing that advanced economies do not behave that way. In fact, option (5) was used extensively by advanced economies to deal with post-World War II debt (Reinhart and Sbrancia, 2011) and option (3) was common enough before World War II. Given the magnitude of today's debt and the likelihood of a period of very slow growth, it is doubtful that fiscal austerity will be sufficient, even combined with financial repression. Rather, the size of the problem suggests that there will need to be restructurings, particularly, for example, in the periphery of Europe, far beyond anything discussed in public to this point. Of course, mutualization of euro country debt effectively uses northern country taxpayer resources to bail out the periphery and reduces the need for restructuring. But the size 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.

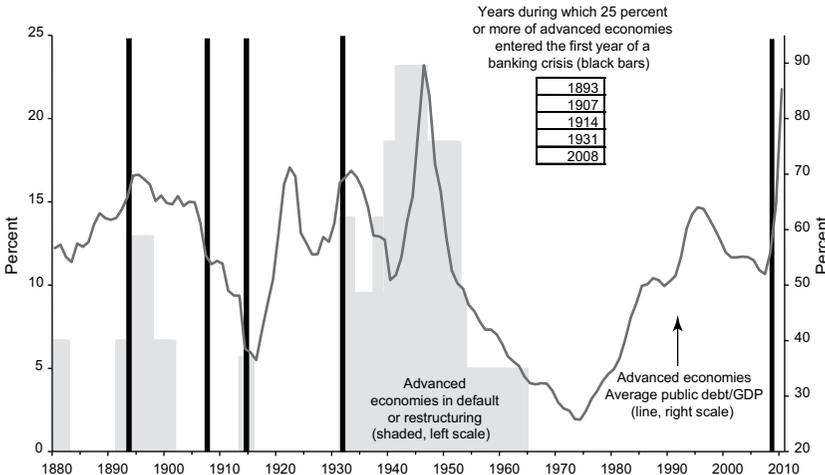
Historically, periods of high government debt such as the current one have led to marked increases in debt restructurings, as Figure 3.5 illustrates. The figure plots GDP-weighted central government debt against the percentage of countries experiencing inflation higher than 20 percent as well as the share of countries engaged in debt restructuring, from 1826 through 2010. The correlation is strongly statistically significant, and also holds at a more granular level, for example, when dividing the world into regions. Figure 3.6 illustrates the pattern

<sup>2</sup>See Reinhart, Rogoff, and Savastano (2003) on the post-World War II experience and Sturzenegger and Zettlemeyer (2006) on the more recent emerging market experiences.



**Figure 3.5** Sovereign Default, Total (domestic plus external) Public Debt, and Inflation Crises: World Aggregates, 1826–2010 (debt as a percent of GDP)

Source: Reinhart and Rogoff (2011).



**Figure 3.6** Sovereign Default, Total (domestic plus external) Public Debt, and Systemic Banking Crises: Advanced Economies, 1880–2010 (debt as a percent of GDP)

Source: Reinhart and Rogoff (2011).

of waves of sovereign defaults and restructurings that typically follow within a few years of an international wave of banking crises, again a relationship that can be demonstrated statistically, and one that also appears clearly in the individual country histories (as illustrated in Reinhart, 2010). The debt restructurings in Figures 3.5 and 3.6 do not include the numerous less-than-voluntary restructurings, in which domestic debtors were forced to accept inferior terms, or in which the tools of financial repression were used to reduce debt burdens.

Although the connection between indebtedness and default at the aggregate level depicted in Figures 3.5 and 3.6 for both advanced and emerging market economies is highly informative, Table 3.1 presents a selected chronology of domestic and external credit events from the 1920s through the 1960s for the advanced economies. The term “selected” is used not because familiar events are excluded but because, as noted in Reinhart and Rogoff (2009), domestic defaults, restructurings, or conversions are particularly difficult to document and can sometimes be disguised as “voluntary.” A broader definition of default would include financial repression and inflation as opaque mechanisms for reducing debt via restrictive regulations and taxes.

As Table 3.1 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 3.1 had, especially during the 1930s, wholesale private defaults, as evidenced by bank failures and nonfinancial corporate bankruptcies (Reinhart and Rogoff, 2009).

In many of the episodes listed in Table 3.1, it is difficult to document the magnitude of the debt reduction achieved by the credit event in question because

TABLE 3.1

Selected Episodes of Domestic or External Debt Default, Restructuring, or Conversions: Advanced Economies, 1920s–1960s		
Country	Dates	Commentary
Australia	1931–32	Domestic debt only. The Debt Conversion Agreement Act in 1931/32 appears to have done something similar to the later New Zealand–induced conversion. See New Zealand entry. <sup>1</sup>
Austria	1920–21 1932–33 1934 1938 1940–52	Hyperinflation erodes domestic debt. World War I debt (see Table 3.2); not repaid.  External debt was ultimately settled in 1952. Domestic default. Restoration of schilling (limit of 150 per person). Remainder placed in blocked accounts. In December 1947, large amounts of previously blocked schillings were invalidated and rendered worthless. Temporary blockage of 50 percent of deposits.
Belgium	1934	World War I debt (see Table 3.2); not repaid.
Canada (Alberta)	April 1935	The only province to default—the default lasted for about 10 years.
France	1934	World War I debt (see Table 3.2); not repaid.
Germany	1923–24 1932–53 June 20, 1948	Hyperinflation liquidates domestic currency debt. External debt. Largest Depression-time default. Monetary reform setting limit of 40 Deutschmark per person. Partial cancellation and blocking of all accounts.
Greece	1932  1932–64 1934 1941–44	Interest on domestic debt was reduced by 75 percent beginning in 1932. Domestic debt was about one-quarter of total public debt.  External arrears not resolved until 1964. World War I debt (see Table 3.2); not repaid. Hyperinflation eroded what little domestic debt there was.

(Continued)

TABLE 3.1 (Continued)

Selected Episodes of Domestic or External Debt Default, Restructuring, or Conversions: Advanced Economies, 1920s–1960s		
Country	Dates	Commentary
Italy	1920	Conversions of domestic debt in the 1920s; multiple attempts to reduce the high level of floating rate debt. Unclear how “voluntary” these conversions were; not counted as sovereign defaults.
	1924	
	1926	
	1930s	
	1934	
	1944	
Japan	1940–46	World War I debt (see Table 3.2); not repaid.
	1942–52	Inflation of 500 percent wipes out domestic debt.
	1945–47	External debt in default.
	March 2, 1946–52	External debt in default. Inflation of 150–600 percent 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 percent for ordinary debt and 3 percent 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 percent. <sup>1</sup>
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 U.S. dollar.
United Kingdom	1934	Most of the outstanding World War I debt was consolidated into a 3.5 percent perpetual annuity. This domestic debt conversion was apparently voluntary. World War I debt to the United States was defaulted on following the end of the Hoover 1931 moratorium. See Table 3.2.

Sources: *New York Times* (1934); United Nations (1948); Bailey (1950); Pick and Sedillot (1971); Lindert and Morton (1989); Dornbusch and Draghi (1990); Reinhart and Rogoff (2009); Redell (2012); and League of Nations, various issues.

<sup>1</sup> See Prichard (1970); Schedvin (1970); and Redell (2012) for accounts of the Australian and New Zealand conversions, respectively, during the Depression. Michael Redell kindly alerted the chapter authors to these episodes and references.

of the opaque nature of the default, restructuring, and renegotiation process; the imprecision of estimated recovery rates; the lack of data; or a combination. The problem is less severe for external default episodes for which the data are better, but even so it is a challenge. Exceptions, of course, are the hyperinflation or very high inflation episodes in which all or nearly all of the existing debt stocks were liquidated (Reinhart and Rogoff, 2009).

An interesting and exceptional episode for which the magnitude of the debt relief provided by default and ultimate debt forgiveness can be estimated with some degree of precision is the World War I debt to the United States (including 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 3.2 as having

borrowed from the United States during or right after the war, only Finland repaid its debt. (It is notable that Finland's debt was only 0.2 percent of Finnish GDP compared with burdens two orders of magnitude larger for France and the United Kingdom). The remaining countries received what in today's language is called debt forgiveness of the type usually associated only with highly indebted poor countries.

Table 3.2 presents the amounts of public debt to the United States that were defaulted on and presents information, where nominal GDP data are available, of the magnitude of the default or debt reduction as a percentage of GDP. The magnitude of debt relief is stunning. Perhaps not surprisingly, it is largest for France and the United Kingdom, who enjoyed debt-to-GDP reductions of 20–30 percent. This magnitude is comparable to a number of the emerging market defaults in the post-World War II era, once eventual recovery rates are taken into account. That is, although many emerging market debt burdens ultimately reached 60–100 percent of GDP, creditors typically received significant compensation with recovery rates often in excess of 50 percent, even in cases of dramatic default. By contrast, the defaults on World War I debt to the United States were

TABLE 3.2

Defaults on World War I Debt to the United States in the 1930s: Timing and Magnitude (US\$)				
Country	Wartime debt	Postwar debt	Total debt (excluding arrears)	Percent of GDP
Armenia	0	11,959,917.49	11,959,917.49	n.a.
Austria	0	24,055,708.92	24,055,708.92	1.7
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	24.2
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.
<b>Total (excluding arrears)</b>	<b>7,077,114,750.00</b>	<b>3,273,364,324.70</b>	<b>10,350,479,074.70</b>	<b>n.a.</b>
<b>Percent of U.S. GDP</b>				<b>15.70</b>
Memorandum item:				
<b>Total (including arrears)</b>			<b>11,628,311,614.94</b>	
<b>Percent of U.S. GDP</b>				<b>16.9</b>

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

Note: n.a. = not available.

near total. These estimates in Table 3.2 are conservative, being based on debt levels that do not include interest on arrears, so the effective defaults are in fact even larger.<sup>3</sup>

From the U.S. creditor vantage point, the collective default of World War I debt owed by foreign countries amounted to 15–16 percent of U.S. GDP. In this connection, it must be added that the United States had already defaulted on its sovereign debt in April 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 U.S. dollar also amounted to a debt haircut of about 16 percent 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 United States) to the United Kingdom. For the most part, these debts were also defaulted on and never repaid.

As unpleasant (*New York Times*, June 15, 1934)<sup>4</sup> as these credit events were, it is clear that they played a substantive role in reducing the debt overhang from both World War I and the Great Depression. In light of the historic public and private debt levels discussed above, it is difficult to envision a resolution to the five-year-old crisis that does not involve a greater role for explicit restructuring.

## THE RETURN OF FINANCIAL REPRESSION?

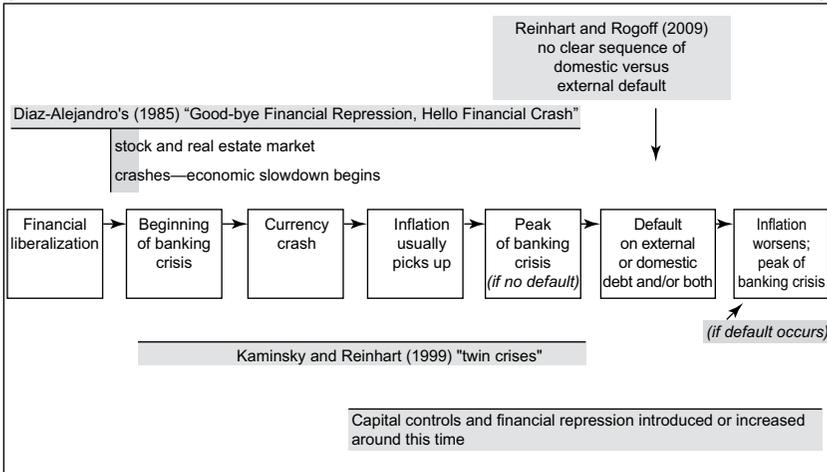
*Lesson 4: On international financial architecture after global crises—the return of financial repression.*

Figure 3.7, which extends the schematic in Reinhart and Rogoff (2009), highlights a “prototype” sequence of events after a financial crisis. In the typical sequence, 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 accompanies 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 (2011) document how, following World War II (when explicit defaults were limited to the losing side), financial repression via negative real interest rates reduced debt to the tune of 2–4 percent a year for the United States, and for the United Kingdom for the years with negative real interest rates.<sup>5</sup> For Italy and Australia, with their higher inflation rates, debt reduction from the financial repression “tax” was on a larger scale and closer to 5 percent per year. As documented in Reinhart (2012), financial repression is well under way in the current post-crisis experience.

<sup>3</sup> See memorandum item in Table 3.2.

<sup>4</sup> “Debts Dead, a View in Paris.”

<sup>5</sup> Negative real interest rates are a tax on bondholders and effect a transfer or redistribution from savers to borrowers.



**Figure 3.7** The Sequencing of Crises: The Big Picture

Source: Authors' illustration based on prototype sequencing pattern.

## FINAL THOUGHTS

Of course, if policymakers are fortunate, economic growth will provide a soft exit, reducing or eliminating the need for painful restructuring, repression, or inflation. The evidence on debt overhangs is not very heartening. 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 in which advanced country debt exceeded 90 percent of GDP, encompassing most or all of the episodes since World War II. (They tabulate the small number of cases in which 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 percent lower growth than individual country averages for non-overhang periods. Moreover, the average duration of the overhang episodes is 23 years. Of course, there are many other factors that determine longer-term GDP growth, including especially the rate of productivity growth. But given that official public debt is only one piece of the larger debt overhang issue, it is clear that the governments should be careful in their assumption that growth alone will be able to end the crisis. Instead, today's advanced economy governments may have to look increasingly to the approaches that have long been associated with emerging markets, and that advanced economies themselves once practiced not so long ago.

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