

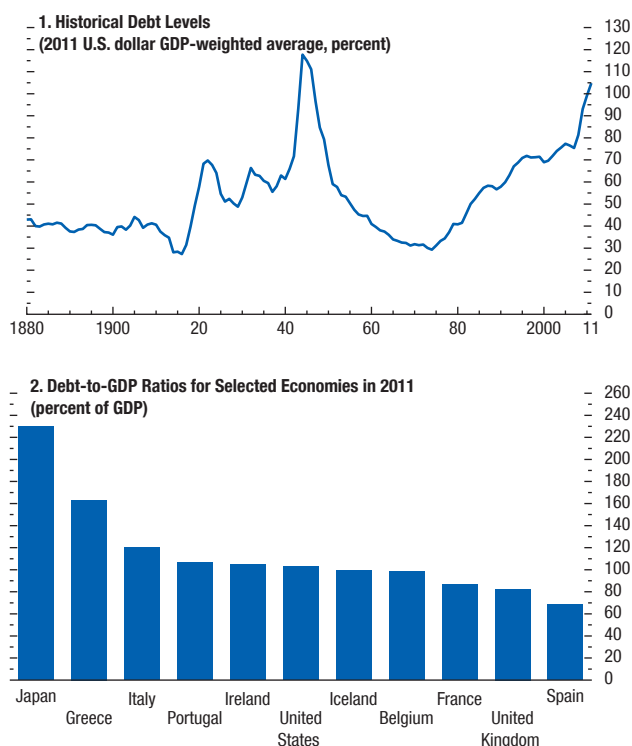
Throughout the past century, numerous advanced economies have faced public debt burdens as high, or higher, than those prevailing today. They responded with a wide variety of policy approaches. We analyze these experiences to draw lessons for today and reach three main conclusions. First, successful debt reduction requires fiscal consolidation and a policy mix that supports growth. Key elements of this policy mix are measures that address structural weaknesses in the economy and supportive monetary policy. Second, fiscal consolidation must emphasize persistent, structural reforms to public finances over temporary or short-lived fiscal measures. In this respect, fiscal institutions can help lock in any gains. Third, reducing public debt takes time, especially in the context of a weak external environment.

Public debt in advanced economies has climbed to its highest level since World War II. In Japan, the United States, and several European countries, it now exceeds 100 percent of GDP (Figure 3.1). Low growth, persistent budget deficits, and high future and contingent liabilities stemming from population-aging-related spending pressure and weak financial sectors have markedly heightened concerns about the sustainability of public finances. These concerns have been reflected in ratings downgrades and higher sovereign borrowing costs, especially for some European countries. Correcting fiscal imbalances and reducing public debt have therefore become high priorities.

There is, however, a widespread and ongoing debate over the most appropriate policy mix for achieving a successful adjustment. According to some, fiscal austerity is essential to resolve the current crisis. Others argue that fiscal austerity is self-defeating, given its contractionary effect on output, and that reinvigorating growth through fiscal

Figure 3.1. Public Debt in Advanced Economies

Gross public debt as a percent of GDP among advanced economies has reached historical highs: Japan, the United States, and many European countries currently have debt-to-GDP ratios close to or above 100 percent.



Sources: Abbas and others (2010); and IMF staff calculations.

The authors of this chapter are John Simon (team leader), Andrea Pescatori, and Damiano Sandri with support from Gavin Asdorian and Murad Omoev. Paolo Mauro, Cemile Sancak, and Ali Abbas provided helpful comments.

stimulus is more important.¹ Still others point to the experience of financial repression after World War II and suggest this as a model for resolving the current debt overhang.²

This chapter informs the current policy debate by reviewing the historical experiences of advanced economies that have reached debt-to-GDP ratios as high as today's. The policy responses differed greatly, as did the outcomes. The richness of this historical experience provides insight into the full spectrum of policy options currently under consideration. In particular, the chapter addresses the following questions:

- How successful were countries in reducing high public debt ratios in the past?
- Which policy mix proved most effective? What were the contributions of fiscal, monetary, and financial sector policies?
- What were the macroeconomic consequences of the policies pursued?
- What does historical experience suggest for countries dealing with high debt today?

To address these points, we do not focus only on large debt reductions, as done in previous studies, but we review more broadly “what happens next?” after debt rises above 100 percent of GDP. This allows us to take in the full range of possible outcomes rather than just the successes, which might paint a distorted picture of debt dynamics. Indeed, some of the most instructive episodes are those in which public debt increased.³

We focus on six case studies spanning almost 100 years, from the United Kingdom in the immediate aftermath of World War I, through the United States after World War II, to Belgium, Canada, Italy, and Japan in the 1980s and 1990s. These episodes cover

a full range of policy approaches and economic outcomes. In-depth analysis allows us to more clearly identify the policy mix pursued by each country and assess its *relative* effectiveness. Importantly, we not only focus on fiscal policies, but also consider the broader macroeconomic environment encompassing the countries' monetary stance, financial sector policies, and external environment. That said, past country experiences are not necessarily prescriptions for the future, given changes in economic structures and in policy and regulatory frameworks. Moreover, we review actual policy strategies and do not consider whether other policies would have produced better outcomes. These caveats must be taken into account when drawing implications for today. Finally, given the high starting point, even relatively successful debt reductions can still leave countries with high debt and, thus, a vulnerability to renewed setbacks. For example, in Belgium, where debt was reduced substantially between 1993 and 2007, debt levels are again approaching 100 percent because of the setbacks from the Great Recession.

The next section looks at the full historical record, focusing on episodes that begin when public debt rose above 100 percent of GDP and reviewing the macroeconomic environment and outcomes. The chapter then discusses how the six cases were selected before turning to the in-depth case studies. It then synthesizes the findings from the case studies and, finally, draws lessons for today.

Historical Overview

The IMF Fiscal Affairs Department recently compiled a comprehensive database on gross government debt-to-GDP ratios covering nearly the entire IMF membership back to 1875.⁴ We use these data to

¹See, for example, Krugman (2012).

²Financial repression occurs “when governments implement policies to channel to themselves funds that in a deregulated market environment would go elsewhere” (Reinhart, Kirkegaard, and Sbrancia, 2011). It commonly involves explicit or indirect caps on government debt interest rates, combined with other regulations to ensure a market for this debt. See also Reinhart and Sbrancia (2011).

³By selecting the sample of episodes on the basis of ex ante criteria rather than ex post success, this chapter is similar in spirit to, though distinct from and complementary to, the approach of Mauro (2011), which looks at large planned fiscal consolidations and compares plans against outcomes for the G7 countries and EU member countries during the past few decades.

⁴See Abbas and others (2010) for a detailed description of the database, which is available at www.imf.org/external/datamapper/index.php?db=DEBT. The use of gross debt data reflects the difficulty of collecting net debt data on a consistent basis across countries and over time. Nonetheless, even gross debt data may not be immune to measurement problems (see Dippelsman, Dziobek, and Gutiérrez Mangas, 2012). We also use supplementary data on interest payments and primary deficits for 19 advanced economies from Abbas and others (2011) as well as real GDP data from Maddison (2003) and other data from Reinhart and Rogoff (2010).

identify all advanced economy episodes that begin when gross public debt rises above 100 percent of GDP.⁵ High-debt episodes of emerging market and developing economies are not included in our analysis. This is not because they may not offer interesting insights. Rather, it is because their experiences typically differed in two important respects. First, their debt was mostly external and denominated in foreign currency, which presents different challenges from those faced by advanced economies today.⁶ Second, their economic structures and institutions can differ substantially from the structures and institutions of advanced economies, especially going back in time.⁷ Finally, narrowing our analysis to advanced economies is a simple and transparent criterion for selecting the sample.

The 100 percent threshold is used for a number of reasons. First, it is most relevant today given the number of countries currently close to or above that threshold. Second, 100 percent is high relative to historical experience: only 15 percent of the observations in our advanced economy database are above 100 percent. Third, our analysis suggests that political and economic forces do not tend to exert

⁵The starting date of an episode is the first year in which the debt-to-GDP ratio exceeds 100 percent, conditional on the ratio being below 100 percent in the previous year. In a few instances, missing data prevent us from identifying the exact year in which the debt-to-GDP ratio crossed the 100 percent threshold. In these cases, we interpolate the data linearly and date the episode from the time the interpolated data show the 100 percent threshold was crossed. Furthermore, given our focus on the 15 years after the 100 percent threshold is crossed, we consider only episodes that begin by 1997 and, thus, end by 2012. We have experimented with different windows (for example, 10 years and 20 years) and the results are essentially unchanged.

⁶The inability of emerging markets to borrow abroad in their own currency has been referred to in the literature as “original sin” (Eichengreen, Hausmann, and Panizza, 2005). In particular, a debt denominated in foreign currency, especially if issued at short-term maturities, introduces an exchange rate channel through which sharp depreciations of the currency, by increasing the debt burden, can fuel additional exchange rate depreciation and trigger a vicious cycle. The presence of this channel, then, has various *ex ante* implications—for example, posing a stricter limit on the amount of debt that can be issued and constraining the set of monetary policy options.

⁷Some of the earliest episodes in our sample involve economies that share features similar to those of emerging market economies (for example, Greece in 1888 or Greece in 1931). For the sake of completeness, we retain these episodes in the historical overview but do not include them in the case studies or draw important conclusions from them.

downward pressure on debt on average until public debt reaches this level.

The 26 identified episodes are shown in Figure 3.2, which also traces the evolution of the debt-to-GDP ratio for 15 years after the 100 percent threshold was crossed. The chart conveys three key insights.

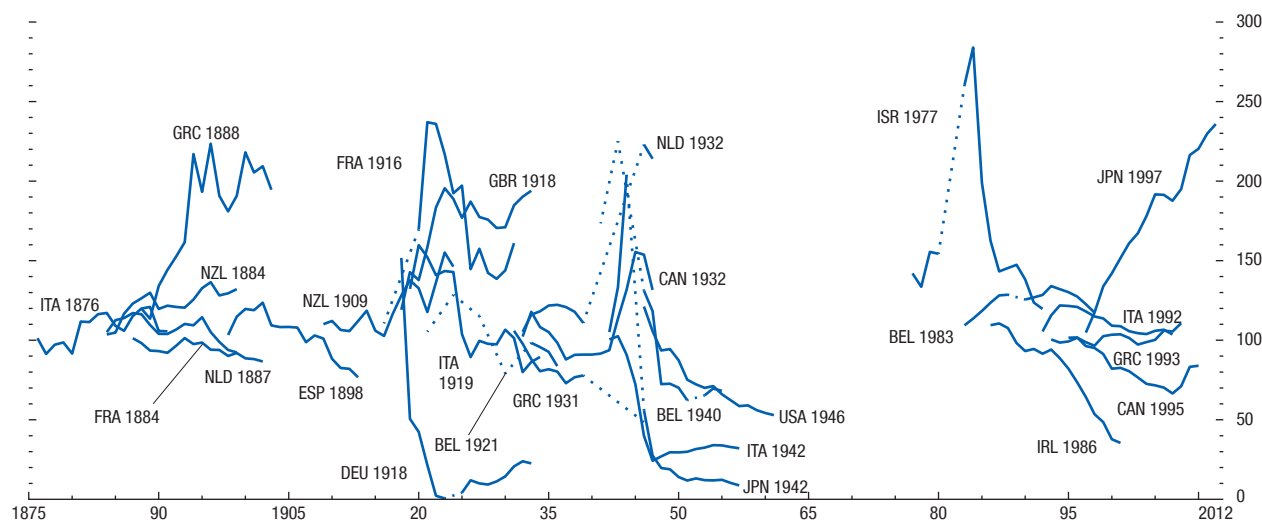
- Public debt levels above 100 percent of GDP are not uncommon. Of the 22 advanced economies for which there is good data coverage, more than half experienced at least one high-debt episode between 1875 and 1997. Furthermore, several countries had multiple episodes: three for Belgium and Italy and two for Canada, France, Greece, the Netherlands, and New Zealand.
- The dynamics of the debt-to-GDP ratios are quite diverse, with some countries experiencing additional large increases and others witnessing sharp reductions.
- The episodes are clustered around four major eras: the last quarter of the 19th century, the periods following the two world wars, and the last quarter of the 20th century. The 19th century debt buildup was related mainly to nation building and the railroad boom. The post–World War II episodes are connected with the enormous and widespread military effort and subsequent rebuilding, although some start earlier, during the Great Depression. The episodes in the last cluster during the 1980s and 1990s have their genesis in the breakdown of the Bretton Woods system, when government policy struggled with social issues and the transition to current economic systems.

Figure 3.3, panel 1, combines the full set of episodes to trace the distribution of the debt-to-GDP ratio for 15 years after debt crosses the 100 percent threshold. The range of experiences is broad: the 10th and 90th percentiles are associated with a reduction of 60 percentage points and an increase of 90 percentage points in debt, respectively. Focusing on the median, the debt ratio does tend to fall, but only at a moderate pace. After 15 years, the median debt-to-GDP ratio is only about 10 percentage points lower than in the first year after debt rises above 100 percent.

This pattern of falling median debt ratios emerges only at high original debt ratios. Panel 2 of Figure

Figure 3.2. Debt-to-GDP Dynamics after Public Debt Reaches 100 Percent of GDP
(Percent of GDP, advanced economies)

Increases in public debt to above 100 percent are reasonably frequent, with very diverse dynamics of the debt-to-GDP ratios. These episodes are clustered around four major eras: the last quarter of the 19th century, the periods following the two world wars, and the last quarter of the 20th century.



Sources: Abbas and others (2010); and IMF staff calculations.

Note: BEL = Belgium; CAN = Canada; DEU = Germany; ESP = Spain; FRA = France; GBR = United Kingdom; GRC = Greece; IRL = Ireland; ISR = Israel; ITA = Italy; JPN = Japan; NLD = Netherlands; NZL = New Zealand; USA = United States. We consider all historical episodes when gross public debt rose above 100 percent of GDP and trace the evolution of the debt-to-GDP ratios for the subsequent 15 years. Where data are missing, dotted lines represent linear interpolations between available observations.

3.3 repeats the same exercise shown in panel 1, but uses a 60 percent threshold. The interesting difference is that 15 years after debt rises above 60 percent, the median debt level shows no tendency to decrease, and the average debt level is actually higher (which can be inferred from the positively skewed distribution).

To provide a framework for thinking about the evolution of debt-to-GDP ratios during these episodes, one can think about four key variables that affect the stock of debt, b_t : the interest rate paid on the stock of debt, i_t ; the inflation rate of the GDP deflator, π_t ; the real GDP growth rate, g_t ; and the primary deficit-to-GDP ratio, d_t . The relationships among these variables are described by the following formula:

$$b_t = \frac{1 + i_t}{(1 + \pi_t)(1 + g_t)} b_{t-1} + d_t + e_t \quad (3.1)$$

in which e_t is a residual that takes into account valuation effects and other accounting adjustments not

fully captured by changes in the primary deficit.⁸ As a result of compounding over long periods, the difference between the real interest rate and real GDP growth plays a crucial role in determining the stability of public debt. While a high difference can set debt on an unstable path, the difference is normally close to zero. In particular, for the 22 advanced economies in our database, the average difference is -0.7 percent.⁹ Furthermore, primary deficits respond slowly to changes in debt—Ostry and others (2010)

⁸The residual can be significant and can vary across countries depending on, among other things, the accounting rules followed by governments (for further details see Appendix 4 of the September 2011 *Fiscal Monitor*). This residual is particularly pronounced in the periods preceding World War II, when accounting standards were not reliable or uniform.

⁹A differential of -0.7 percent implies that the term in front of b_{t-1} in the equation for debt dynamics is approximately equal to 0.99. Or, put another way, the half-life of public debt, abstracting from changes in the primary balance or other adjustments related to the stock of debt, would be almost 100 years. For additional details on the negative interest rate growth differential, see Escolano, Shabunina, and Woo (2011).

estimate that the elasticity of the primary balance to debt is quite low at about 0.05. Thus, the evolution of the stock of debt tends to be quite persistent and to undergo large, long swings, as evident in Figures 3.2 and 3.3.

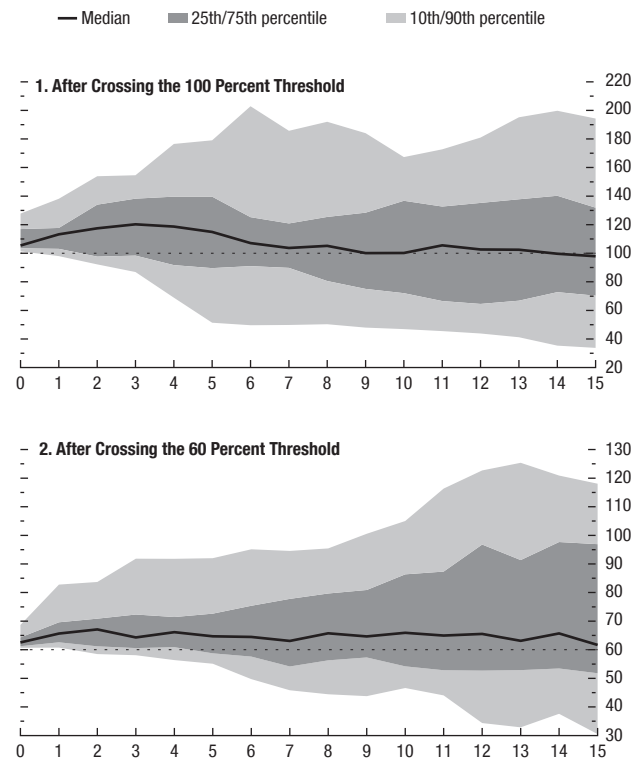
This framework helps us explore other aspects of these countries' experiences. Panel 1 of Figure 3.4 shows the average growth rate of real GDP per capita and the change in the debt-to-GDP ratio for each high-debt episode. With the exception of Greece (1931),¹⁰ the United Kingdom (1918) had the worst growth performance, with negative growth and a considerable increase in its debt burden. At the opposite extreme is Ireland (1986), with the fastest average growth rate, more than 6 percent, and substantial debt reduction. The largest debt reductions followed the world wars, usually as a result of hyperinflation. The United States (1946) stands out as an exception, as we discuss below; however, inflation was still an important contributor to debt reduction during this episode. Finally, there is no clear correlation between growth and debt reduction in this group of high-debt episodes.

Another way to look at these high-debt episodes is by tracking the average primary fiscal balance and the average inflation rate over the 15 years after public debt reaches 100 percent of GDP. Because these are the main targets of fiscal and monetary policy, they lay a foundation for examining the various policy approaches of the case studies. Figure 3.4, panel 2, shows that when these countries reached high levels of debt, their fiscal balances and inflation rates differed considerably. We see some obvious outliers in the United Kingdom (1918) and Japan (1997) along with a number of war-related high- or hyperinflation episodes, including in France, Germany, Greece, Italy, and Japan. By and large, however, the more modern episodes are much more tightly clustered, with modest inflation and modest primary surpluses. As is evident in the case studies below, the modern episodes differed in ways not readily apparent in the aggregate analysis.

Table 3.1 presents a third perspective on these episodes, which are separated into two broad

Figure 3.3. Debt-to-GDP Dynamics
(Percent of GDP, advanced economies)

After reaching 100 percent of GDP, the debt-to-GDP ratio tends to decline, even though at a very moderate pace. This tendency to reverse is not present at lower levels of debt, for example when debt rises above 60 percent of GDP.



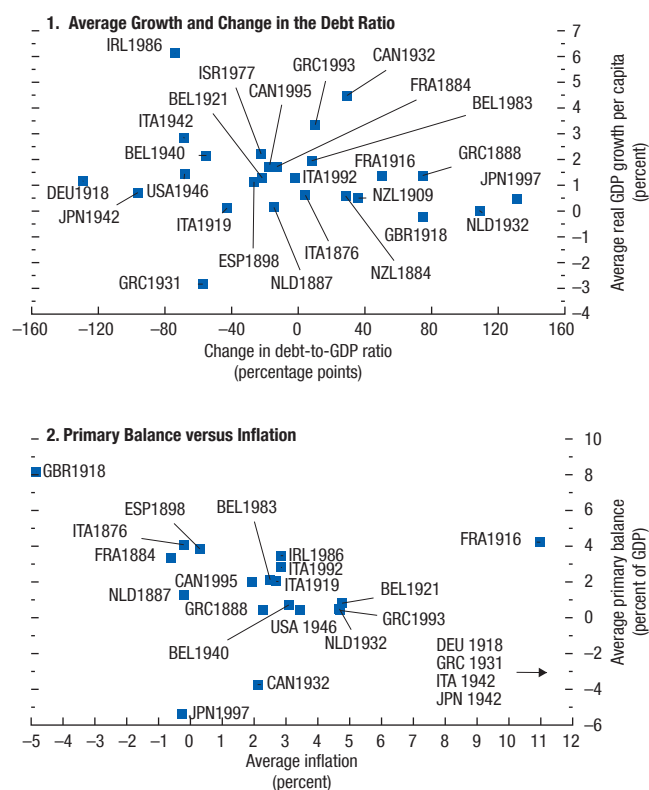
Source: IMF staff calculations.

Note: The horizontal axis shows the number of years after the debt-to-GDP ratio crosses the threshold.

¹⁰The poor economic performance of Greece is explained mainly by the deep internal political instability after the 1919–22 war with Turkey and the foreign occupation during World War II.

Figure 3.4. High Debt, Growth, and Inflation

After exceeding the 100 percent debt-to-GDP ratio, there is considerable variation in economies' growth, the change in their debt ratio, their primary fiscal balance, and their inflation rate.



Sources: Abbas and others (2010); Maddison (2003); Reinhart and Rogoff (2010); and IMF staff calculations.

Note: The change in debt ratio, average growth rates, inflation, and primary balance are computed over the 15 years after debt reaches 100 percent of GDP. BEL: Belgium; CAN: Canada; DEU: Germany; ESP: Spain; FRA: France; GBR: United Kingdom; GRC: Greece; IRL: Ireland; ISR: Israel; ITA: Italy; JPN: Japan; NLD: Netherlands; NZL: New Zealand; USA: United States.

groups: those in which debt levels increased and those in which debt levels decreased. The primary fiscal surplus is, on average, about 2.4 percent of GDP during episodes where the debt-to-GDP ratio decreases, but it is only 1.2 percent where the debt ratio increases. This foreshadows a finding from our case studies—debt reduction ultimately requires primary surpluses. The relationship between inflation and debt reduction is more ambiguous. Although hyperinflation is clearly associated with sharp debt reduction, when hyperinflation episodes are excluded, there is no clear association between the average inflation rate and the change in debt. Finally, a relatively stronger growth performance is associated with debt reduction when hyperinflation episodes are excluded.

Among our 26 episodes, only 3 feature default: Germany (1918), which suspended war reparations in 1932, and Greece (1888, 1931), which defaulted in 1894 and 1932, respectively. These episodes have little relevance for the challenges faced by advanced economies today for at least two reasons. First, they involve very peculiar features that set them apart from others: the post–World War I political instability in Germany, the nation-building effort of Greece at the turn of the 19th century and the subsequent Greco-Turkish war of 1897, and a period of deep internal political instability in Greece after the 1919–22 war with Turkey. Second, in these defaults a large proportion of public debt was denominated in foreign currency (or gold), which made debt repayment subject to exchange rate fluctuations. For example, the Greek episodes are more similar to the sovereign debt crises commonly experienced by emerging markets, during which a sharp drop in the exchange rate leads to a dramatic increase in the value of foreign-currency-denominated liabilities.

Public Debt and Economic Growth

One particular concern with high public debt ratios is that they may lower economic growth. Several empirical papers document a negative correlation between public debt and GDP growth, with some suggesting that a debt-to-GDP ratio of 90 percent or more may constrain growth (Kumar and Woo, 2010; Reinhart and Rogoff, 2010; Cecchetti,

Table 3.1. Differentiating Episodes by the Change in the Debt-to-GDP Ratio**1. Episodes with an Overall Reduction in Debt to GDP over 15 Years**

Episodes		Change in Debt to GDP (percent)	GDP Growth (percent)	Inflation (percent)	Primary Balance (percent of GDP)
Country	Start Year				
Germany	1918	-129	1.2	1.4×10 ¹⁰	...
Japan	1942	-96	0.7	91.4	3.8
Ireland	1986	-74	6.1	2.8	3.5
Italy	1942	-68	2.8	41.5	...
United States	1946	-68	1.4	3.0	1.7
Greece	1931	-57	-2.8	90.0	3.5
Belgium	1940	-55	2.2	3.1	0.7
Italy	1919	-43	0.1	2.7	2.0
Spain	1898	-27	1.1	0.3	3.9
Israel	1977	-22	2.2
Belgium	1921	-22	1.3	4.8	0.8
Canada	1995	-18	1.7	1.9	2.0
Netherlands	1887	-15	0.1	-0.2	1.3
France	1884	-13	1.7	-0.6	3.3
Italy	1992	-2	1.3	2.8	2.8
Average		-47	1.4	1.0×10 ⁹	2.4
Average Excluding Hyperinflation (>40 percent)		-33	1.8	2.1	2.2

2. Episodes with an Overall Increase in Debt to GDP over 15 Years

Episodes		Change in Debt to GDP (percent)	GDP Growth (percent)	Inflation (percent)	Primary Balance (percent of GDP)
Country	Start Year				
Italy	1876	4	0.6	-0.2	4.1
Belgium	1983	8	2.0	2.5	2.1
Greece	1993	10	3.3	4.7	0.4
New Zealand	1884	28	0.6	-1.6	...
Canada	1932	29	4.5	2.1	-3.7
New Zealand	1909	36	0.5	3.8	...
France	1916	50	1.4	11.0	4.2
Greece	1888	75	1.4	2.3	0.5
United Kingdom	1918	75	-0.2	-4.8	8.2
Netherlands	1932	109	0.0	4.7	0.5
Japan	1997	131	0.5	-0.3	-5.4
Average		51	1.3	2.2	1.2

Source: IMF staff calculations.

Mohanty, and Zampolli, 2011).¹¹ However, high debt may itself be the result of sluggish growth, or it could reflect a third factor that at the same time increases debt and reduces growth (for example, a war or a financial crisis). Indeed, Panizza and

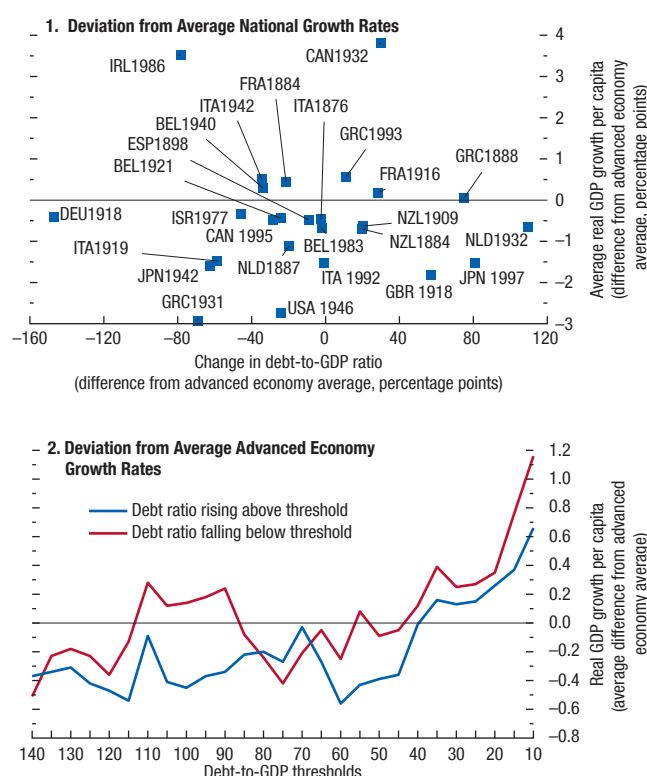
¹¹Reinhart, Reinhart, and Rogoff (2012) find that debt above 90 percent reduces growth by 1 percent. Kumar and Woo (2010) find that when debt is at 90 percent, an additional 10 percent increase in the debt ratio reduces future growth by about 1 percent for advanced economies and that this is not the case for some selected lower levels of debt. Cecchetti, Mohanty, and Zampolli (2011) obtain a similar result when debt is in a range of 85 percent of GDP.

Presbitero (2012), who use an instrumental variable approach to control for reverse causality, reject the hypothesis that high debt causes lower growth. We do not address the challenging causality issue here. Rather, by focusing on performance after a certain debt-to-GDP ratio has been crossed, we highlight a few additional and important stylized facts about debt and growth.

Figure 3.5, panel 1, explores whether entering a high-debt phase is followed by relatively low growth over the subsequent 15 years. Growth rates during each of the episodes are compared with those of a control

Figure 3.5. Debt and Growth Performance

Countries whose debt-to-GDP ratio rises above 100 percent tend to experience lower GDP growth than other advanced economies. However, countries with a debt level between 90 and 110 percent can actually grow faster than other advanced economies if debt is on a declining trajectory. In fact, the growth performance in countries whose debt is decreasing when crossing a given threshold is better than that in countries where it is increasing.



Sources: Abbas and others (2010); Maddison (2003); and IMF staff calculations.
 Note: The change in debt ratio and average growth rates are computed over the 15 years after the debt ratio crosses the specified threshold. The blue line in panel 2 shows the difference in average growth for economies whose debt ratio rises above the threshold specified on the horizontal axis with respect to the average growth among all advanced economies over the same periods. The red line denotes the growth rate differential when the debt ratio falls below each given threshold. BEL: Belgium; CAN: Canada; DEU: Germany; ESP: Spain; FRA: France; GBR: United Kingdom; GRC: Greece; IRL: Ireland; ISR: Israel; ITA: Italy; JPN: Japan; NLD: Netherlands; NZL: New Zealand; USA: United States.

group of all other advanced economies during the same periods. If growth rates are unrelated to debt levels, the growth of countries with high debt should be, on average, about the same as those of other countries—that is, the points plotted in Figure 3.5, panel 1, should be randomly scattered around zero. The scatter plot, however, shows that countries that crossed the 100 percent threshold typically experienced lower GDP growth than the advanced economy average. In this respect at least, these results are consistent with the findings of Reinhart and Rogoff (2010).

Figure 3.5, panel 2, explores debt levels and growth performance in more breadth. This figure is also based on the difference between the average growth rate during a set of high-debt episodes and the average growth rate for all advanced economies during matching periods. But the threshold for selecting episodes varies between 10 percent of GDP and 140 percent of GDP, with the threshold increasing in 5 percentage point increments. For each threshold, the average growth rate during the selected episodes is plotted against the advanced economy average. Furthermore, in addition to episodes where debt is increasing when the threshold is crossed, the figure also shows relative growth for episodes where debt is decreasing when the threshold is crossed. This yields two interesting observations. First, it matters whether a country's debt level is increasing or decreasing. Among countries with the same debt levels, the growth performance over the subsequent 15 years in countries for which debt is decreasing when the threshold is crossed is better than in countries for which it is increasing. This difference is statistically significant across the whole sample. It is particularly striking for debt levels between 90 and 115 percent of GDP (where average growth is 0.5 percentage point higher).¹² Second, there is no particular threshold that consistently precedes subpar growth performance. In fact, Figure 3.5, panel 2, shows that countries with a debt level between 90 and 110 percent outperform the control group when debt is on a declining trajectory.

¹²Countries with very low debt levels (for example, below 25 percent of GDP) tend to have higher public debt levels after 15 years. In such cases, whether debt is increasing or decreasing at the time they cross the threshold has much less of an effect on the level of debt at the end of the episode.

Our analysis is not meant to dispute the notion that, all else equal, higher levels of debt may lead to higher real interest rates. Rather it highlights that there is no simple relationship between debt and growth. In fact, our subsequent analysis emphasizes that there are many factors that matter for a country's growth and debt performance. Moreover, there is no single threshold for debt ratios that can delineate the "bad" from the "good." For this reason, we explore public debt dynamics, the macroeconomic environment, and policies in a number of case studies.

Case Studies

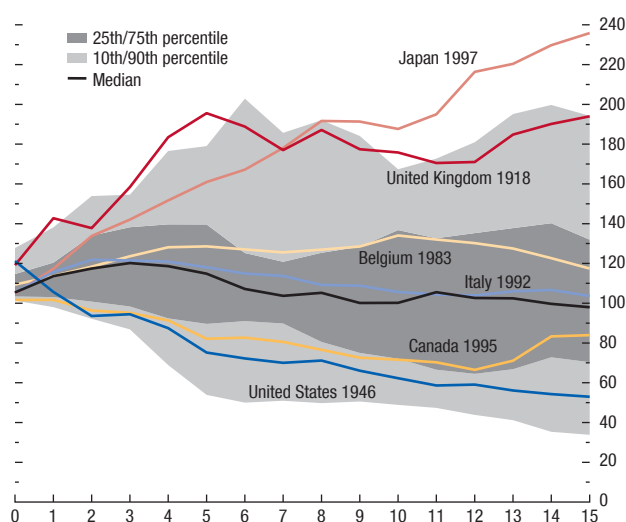
We turn now from the aggregate analysis of the 26 high-debt episodes to more detailed analyses of 6 individual cases: the United Kingdom (1918), the United States (1946), Belgium (1983), Italy (1992), Canada (1995), and Japan (1997) (Figure 3.6). The selected cases meet three criteria: the episodes cover each of the main eras of high debt; they reflect the full range of outcomes; and they cover the full range of macroeconomic policy approaches.

The case studies cover the two postwar eras and the most recent era of debt buildup in peacetime. High-debt episodes that occurred before World War I are excluded because of the lack of detailed data and because the structure of economies was substantially different during that era, making comparisons with today less meaningful. For the interwar period, we consider the United Kingdom (1918) because it provides important lessons about fiscal austerity and the difficulties created by deflation.¹³ Among post-World War II episodes, we analyze the United States (1946) because it is representative of the financial repression policies adopted after the war and that have recently been suggested as a possible solution to current debt problems (Reinhart and Sbrancia, 2011). The more recent cases of Belgium (1983), Canada (1995), Italy (1992), and Japan (1997)

¹³We did not select Germany because its experience was very extreme and that experience is already relatively well known: the limited ability to raise taxes combined with large expenditures and war-reparation requirements caused serious fiscal imbalances that led the Weimar Republic to monetize the fiscal deficits, producing bouts of hyperinflation.

Figure 3.6. Debt-to-GDP Dynamics after Crossing the 100 Percent Threshold
(Percent of GDP, advanced economies)

The selected case studies cover the broad range of debt-to-GDP dynamics historically experienced by advanced economies.



Sources: Abbas and others (2010); and IMF staff calculations.

Note: The horizontal axis shows the number of years after the debt-to-GDP ratio exceeds 100 percent.

capture a wide range of debt-to-GDP dynamics and policy approaches.¹⁴ Together, the case studies capture the full range of debt outcomes for countries whose public debt rises above 100 percent of GDP. The cases are also representative of the range of policies pursued to address high public debt (see Figure 3.4, panel 2). The United Kingdom (1918) is an extreme case of large fiscal surpluses and strong deflation. Japan (1997) also endured deflation but pursued the opposite fiscal stance, with large and persistent fiscal deficits. Finally, the United States (1946), Belgium (1983), Italy (1992), and Canada (1995) are representative of the fiscal primary surplus and positive inflation policy mix followed by the majority of countries since World War II.¹⁵

We start with the United Kingdom after World War I, whose experience set a clear foundation for all subsequent thinking about public debt and economic policy. We follow with the United States after World War II, where initial circumstances were very similar but outcomes were very different. We then turn to more modern examples and emphasize not the extremes but the more typical experiences of Belgium, Canada, and Italy. Nonetheless, to reinforce the message that the United Kingdom's experience with deflation after World War I has not been consigned to the dustbin of history, we discuss Japan since the 1990s.

The United Kingdom in 1918: Deflation

In the aftermath of World War I, the United Kingdom's stock of debt had ballooned to about 140 percent of GDP and prices were more than double

their prewar level. Policymakers' priorities were twofold. First, return to the gold standard at the prewar parity to restore British trade, prosperity, and prestige (Pollard, 1992, p. 106). Second, pay off the debt to preserve Britain's proverbial creditworthiness. Indeed, by returning to prewar parity, the United Kingdom intended to prove its commitment to repay its debt in real terms, rather than in devalued currency.¹⁶

To achieve its objectives the U.K. government implemented a policy mix of severe fiscal austerity and tight monetary policy. The primary surplus was kept near 7 percent of GDP throughout the 1920s.¹⁷ This was accomplished through large expenditure decreases, courtesy of the "Geddes axe," and a continuation of the higher tax levels introduced during the war.¹⁸ On the monetary front, the Bank of England raised interest rates to 7 percent in 1920 to support the return to the prewar parity, which—coupled with the ensuing deflation—delivered extraordinarily high real rates.

The United Kingdom's resulting economic performance was very poor. Economic growth was weak and considerably below the advanced economy average, unemployment was high, and deflation was the order of the day (Figure 3.7). Real output in 1938 was barely above the level in 1918, and growth averaged about ½ percent a year. This was not merely because of the Great Depression—real output in 1928 was also below that in 1918. The export sector was particularly weak as a result of the revaluation of the currency—the real exchange rate drifted up initially as price and wage reductions failed to keep up with the nominal appreciation. Unemployment reached 11 percent in 1921. Indeed, the weakness

¹⁴Among the recent episodes of substantial debt reduction, Ireland (1986) stands out. Starting from a relatively low level of GDP per capita, however, this remarkable decline was driven mainly by the very high growth rate resulting from the process of catching up with the other European economies. Ireland experienced a structural transformation in the late 1980s from an agriculture-based economy, which had already occurred earlier in many other advanced economies (see Honohan and Walsh, 2002; and Perotti, 2012). We therefore have not included this episode in our case studies because it does not seem repeatable by countries currently dealing with high public debt.

¹⁵A number of countries experienced primary deficits and positive (usually hyper-) inflation, but these were all war related, with Germany (1918) the most extreme example. We do not investigate these cases further here because of their limited relevance for today.

¹⁶David Lloyd George, prime minister from 1916 to 1922, said this about the desire to pay off the debt and return to the gold standard: "It was not policy that determined the action of the government in Britain. It is just because a Briton has an ineradicable habit of paying what he owes and it never occurred to him to abandon that habit because he had fought a victorious war. Great Britain thought it her duty to uphold her credit, even at the highest cost." Lloyd George (1928)

¹⁷The headline balance remained slightly negative given the size of the debt and the interest rate on it.

¹⁸Sir Eric Geddes was appointed to chair a committee on ways to reduce expenditures in August 1921. It was, on its terms, very successful. But, as Pollard (1992) puts it, "The Geddes axe became a by-word for callous meanness" (p. 106).

of the labor market was part and parcel of the policy to induce large reductions in prices and, perforce, wages. A comparison with the other continental powers, particularly France and even Germany, suggests that the costs of this mix of tight fiscal and monetary policies were high. These outcomes led to the cynical observation from Keynes (1928, p. 218) that “assuredly it does not pay to be good.”

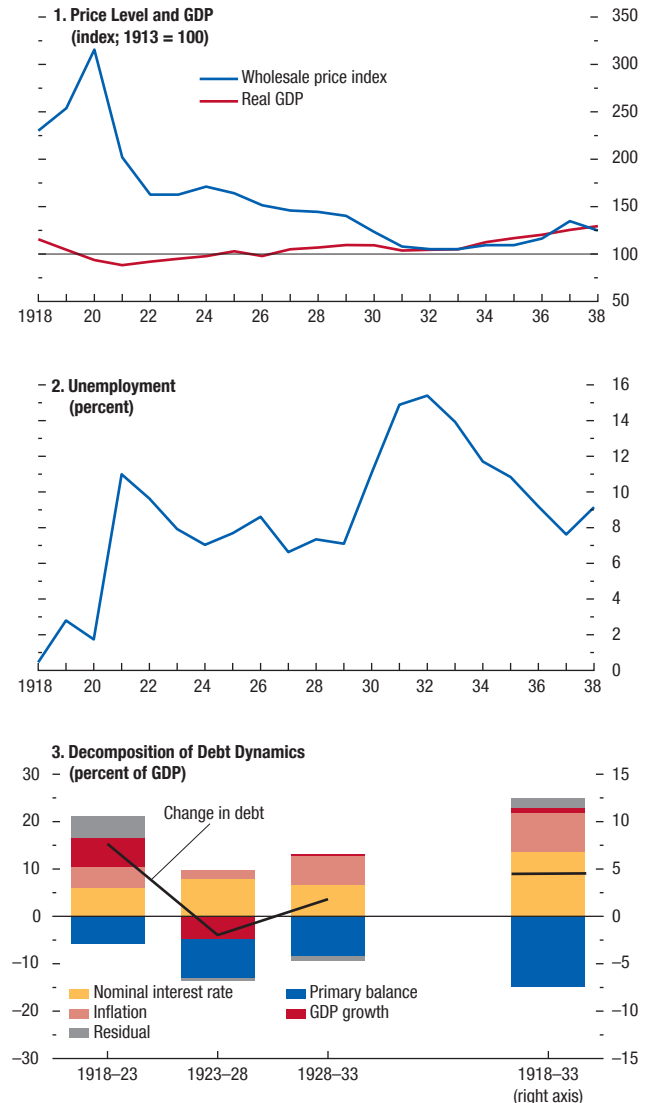
If the policies pursued had successfully reduced debt and restored British growth and prosperity, the short-term costs perhaps would have been acceptable. Unfortunately, they did not. In fact, the policies had the opposite effect: British prosperity was hampered by the dual pursuit of prewar parity and fiscal austerity. Most European countries were enhancing their competitiveness through exchange rate devaluation, and British export industries suffered accordingly. Furthermore, managing the exchange rate forced the Bank of England to maintain high interest rates, which increased the burden of the national debt and generally constrained economic activity—further undermining tax receipts.

The policy of fiscal austerity, pursued to pay down the debt, further limited growth. Debt continued to rise and was about 170 percent of GDP in 1930 and more than 190 percent of GDP in 1933. It was not until 1990 that debt approached its pre–World War I level. Lloyd George (1928) observed about Britain that “her present activity and profit-earning power have been sacrificed in large measure to the maintenance of integrity and good faith to all her creditors at home and abroad.”

The effects of deflation, economic growth, interest rates, and fiscal austerity on the public debt can be seen in Figure 3.7, panel 3. This figure calculates the average annual contribution to the change in the debt-to-GDP ratio over five-year periods from 1919 to 1933 and for the period as a whole. The calculation is based on the formula for debt dynamics given in equation (3.1). Primary surpluses contributed on average about 7 percentage points a year, but they were easily overwhelmed by deflation and high interest rates, which added 12 percentage points a year to the stock of debt. Furthermore, there was little to no positive contribution from economic growth. Only during 1924–28, when the United Kingdom experienced modest growth, did the debt level actually decline.

Figure 3.7. United Kingdom: Deflation in the Aftermath of World War I

After World War I, the United Kingdom experienced strong deflation, anemic growth, and high unemployment. Despite large primary surpluses, the debt ratio continued to increase due to high nominal interest rates and deflation.



Sources: Abbas and others (2010); Feinstein (1972); Mitchell (1998); and IMF staff calculations.

Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

The U.K. interwar episode is an important reminder of the challenges of pursuing a tight fiscal and monetary policy mix, especially when the external sector is constrained by a high exchange rate.

The United States in 1946: Financial Repression and Surprise Inflation

By the end of World War II the U.S. stock of debt had swelled to 10 times higher than it was before the war, about 120 percent of GDP. The U.S. economy was also confronting a rapid rise in inflation associated with the removal of wartime price controls and the release of pent-up demand. In this respect, at least, the U.S. situation was similar to that of the United Kingdom after World War I. Many feared a similar outcome.¹⁹ The success of the Keynesian revolution in economic thinking and the fear of repeating the mistakes of the interwar period, however, led to a very different policy approach and to better economic results.

Between 1946 and 1948, U.S. public finances swung quickly from deficit to surplus, as is common in postwar periods. The primary balance went from a deficit of 5 percent of GDP in 1946 to a surplus of 6½ percent of GDP in 1948 before stabilizing near 2 percent through most of the 1950s. In this respect, U.S. performance was qualitatively, if not quantitatively, similar to that of both the United States and the United Kingdom after World War I.

The monetary policy situation was, however, very different. In fact, unlike after World War I, various extraordinary measures used to support wartime deficits were removed only partially or slowly. In particular, the bond-support program, which placed a floor under the price of government bonds during the war, was continued, and this prevented the Federal Reserve from raising interest rates to

control inflation.²⁰ Despite proposals to remove this restriction on the operation of monetary policy, fear of repeating the mistakes of the past and causing a repeat of the boom-bust cycle after World War I persuaded policymakers to stay the course.²¹

The removal of price controls in mid-1946 led to a burst of inflation in late 1946 and 1947, which was ended by the 1949 recession and the concomitant mild deflation. Notwithstanding the burst of inflation, between 1946 and 1948 there was a widespread belief that prices were destined to fall quickly, which—coupled with a high government surplus and the fear of a major recession—meant that the Federal Reserve did not actually have to intervene to support government bond prices.²² Serious inflation pressure was building nonetheless, and it emerged at the outset of the Korean War in 1950. To mitigate the rise in inflation without disrupting the bond market, consumer credit limits were reintroduced and there was a call for voluntary restraints on bank credit.²³ Nonetheless, between 1950 and 1951 inflation increased substantially again. This second burst of inflation coupled with that during 1946–47 contributed substantially to lower U.S. public debt, which by 1951 was down to 75 percent of GDP.

The Korean War finally demonstrated that the policies being pursued by the government made inflation rather than deflation the real danger. This

²⁰Under the program, the Federal Reserve was responsible for intervening in the market to buy bonds if the price fell below par. The practical effect was to cap nominal interest rates at various maturities, with the Treasury bill rate at 0.375 percent and the long-term bond rate at 2½ percent.

²¹“The financial world should rest easy that the investment market will not be subject to the demoralization which swept over it in 1920 when the unsupported market for Government bonds fell about 20 percent below par” (Truman, 1947, p. 202).

²²Friedman and Schwartz (1963) and Meltzer (2003) provide various arguments in support of the thesis that there was a “willingness on the part of the public to hold relatively large amounts of money and government securities at fairly low rates of interest” as reflected by the relatively small rise in the money stock over that period. In their view the “expectation of subsequent contraction and price decline [...] induced [the public] to hold larger real money balances than it otherwise would have been willing to. In this way it made the postwar rise more moderate.” (Friedman and Schwartz, 1963)

²³The Defense Production Act, enacted September 8, 1950, in response to the start of the Korean War, sought, among other things, to restrain inflation through control of consumer and real estate credit.

¹⁹“As the year 1947 opens America has never been so strong or so prosperous. Nor have our prospects ever been brighter. Yet in the minds of a great many of us there is a fear of another depression, the loss of our jobs, our farms, our businesses...The job at hand today is to see to it that America is not ravaged by recurring depressions and long periods of unemployment, but that instead we build an economy so fruitful, so dynamic, so progressive that each citizen can count upon opportunity and security for himself and his family.” (Truman, 1947)

realization enabled the Federal Reserve to regain some independence in setting interest rates.²⁴ The Federal Reserve was formally freed from the obligation to support the government bond market in 1951, although this was only the first step in dismantling the bond-support program.²⁵ Still, the idea of capping nominal interest rates while limiting the quantity of credit (credit controls) permeated U.S. economic policy at the time and persisted at least until the 1980s.

Figure 3.8 shows the contributions of the various forces to changes in the U.S. public debt level and the two distinct phases of the debt reduction. In the early years, high rates of surprise inflation combined with low nominal interest rates to reduce the debt by almost 35 percentage points. The rest of the debt reduction is attributable to solid growth, which contributed 2 percentage points each year; primary surpluses contributed an additional 2 percentage points.²⁶

In summary, financial repression evolved logically and gradually from the reality of high public debt and the fear of what would happen if interest rates were raised to fend off postwar inflation. But, because direct control of quantities replaced the price mechanism, controls had to be in place across a wide range of activities. Credit controls and higher reserve requirements were imposed on banks. Bank competition was limited by various rules such as

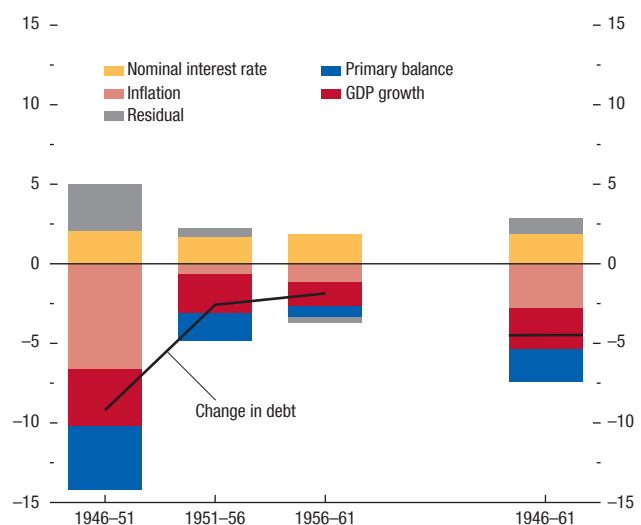
²⁴As noted by Friedman and Schwartz, “World War II was widely expected to be followed by severe unemployment. The Reserve System girded itself for the possibility and welcomed the bond-support program, because the System thought it would be consistent with the easy-money policies which would be required after the war. In the event, inflation rather than deflation loomed as a greater danger and, under the added impetus to inflation given by the Korean War, the Federal Reserve was finally led to divest itself of the self-imposed chains of the bond-supporting program.” (Friedman and Schwartz, 1963, p. 700)

²⁵In March 1951 an agreement was reached by President Truman, the Treasury, and the Federal Reserve (the 1951 Accord) that relieved the Federal Reserve of the responsibility of supporting the government securities market. Support for government securities, however, continued under the principle of “bills only” or “bills preferably,” which facilitated large-scale Treasury refunding operations during times of stringent money market conditions. See Young and Yager (1960).

²⁶Although strong, the U.S. growth rate after World War II was below the advanced economy average (see Figure 3.8). This was largely because of the high growth rates in Europe, which resulted from the reconstruction efforts.

Figure 3.8. United States: Debt Dynamics after World War II
(Percent of GDP)

The United States sharply reduced its debt-to-GDP ratio in the five years following World War II thanks to a combination of high negative real interest rates, fiscal surpluses, and strong growth.



Sources: Abbas and others (2010); Haver Analytics; Reinhart and Rogoff (2010); and IMF staff calculations.

Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

Regulation Q and limits on branching.²⁷ Some of these restrictions (for example, interest ceilings on deposits) were eventually circumvented by financial innovation (for example, money market funds) and thus led to additional intervention in later years (for example, the extension of credit controls by the Consumer Credit Protection Act of 1969). More generally, these restrictions only partially succeeded in stabilizing inflation. In fact, even though the U.S. exchange rate policy fixing the gold value at \$35 an ounce did not destabilize prices,²⁸ inflation remained very volatile throughout the episode and beyond.²⁹

Japan 1997: Deflation Redux

Gross Japanese public debt rose above 100 percent of GDP in 1997, during the middle of Japan's "lost decade"—an extended period of mild deflation and output growth near zero, a growth level considerably below that of other advanced economies and Japan's own historical levels (see Figure 3.5, panel 1).³⁰ The primary cause of the rising debt was a bursting of the stock market and real estate bubbles in 1989–90 and the subsequent weakness in the financial and real sectors of the economy. The initial policy response involved fiscal stimulus, with a sharp deterioration of the fiscal

balance, and interest rate cuts (Figure 3.9). The sharp reduction of inflation expectations, however, was larger than the reduction in interest rates, leading to a real exchange rate appreciation.³¹ Moreover, this policy response did not directly address the structural weaknesses in Japan's financial sector. There was a moderate recovery that ended in 1997 when a confluence of events weakened the economy. Though there was a tightening of fiscal policy through a rise in consumption and payroll taxes that had been induced by the growing public debt and rising social security expenditures, the main causes of the economic downturn were as follows. First, the Asian financial crisis occurred and the exchange rate appreciated substantially. Moreover, structural weakness in the banking sector was exacerbated by the poor economic performance, resulting in the onset of a serious banking crisis. The end result was a severe recession that forced the government to abandon its fiscal consolidation plan and led to continued increases in public debt levels.

Monetary policy in this period had limited effect in stimulating economic activity. Although interest rates were close to zero, no credit or quantitative easing policies were implemented. Furthermore, and more seriously, structural problems in the banking sector remained, and this compromised the transmission of monetary policy to lending conditions. Finally, a premature increase in interest rates in 2000 and repercussions from the bursting of the dot-com bubble in the United States exacerbated the situation. The economy again fell into recession in 2001.

There was a second and more effective phase of policy action beginning in 2001. The government turned its attention to fixing the underlying structural problems in the economy. The authorities took significantly more resolute steps to resolve problems in the financial sector, forcing the write-down of bad loans and the recapitalization of banks with private and public funds. The Bank of Japan also began a program of quantitative easing and in

²⁷From 1933 to 1986 Regulation Q imposed maximum interest rates on various types of bank deposits, such as demand deposits, savings accounts, and time deposits, which limited competition among banks for funding. Interstate branching was not allowed until 1994.

²⁸Given widespread concern about competitive devaluations, the overriding objective of postwar U.S. exchange rate policy was the maintenance of a fixed par value of the dollar as established by the Bretton Woods agreement. Moreover, given that there were relatively few revaluations or devaluations of foreign currencies against gold, the overall system ensured fairly stable exchange rates during this high-debt episode.

²⁹Inflation volatility during the episode was more than four times higher than U.S. inflation volatility from 1997 to 2012.

³⁰In the case of Japan, the difference between gross and net debt is significant. Due to large gross lending and borrowing positions within the public sector, the net debt-to-GDP ratio in 1997 was only 34 percent. However, both gross debt and net debt have followed a similar trend, with net debt currently exceeding 130 percent of GDP.

³¹The yen's real trade-weighted exchange rate appreciated by about 60 percent in early 1990s, peaking in 1995; after that, it depreciated temporarily during the economic recovery, only to rise again during the Asian crisis.

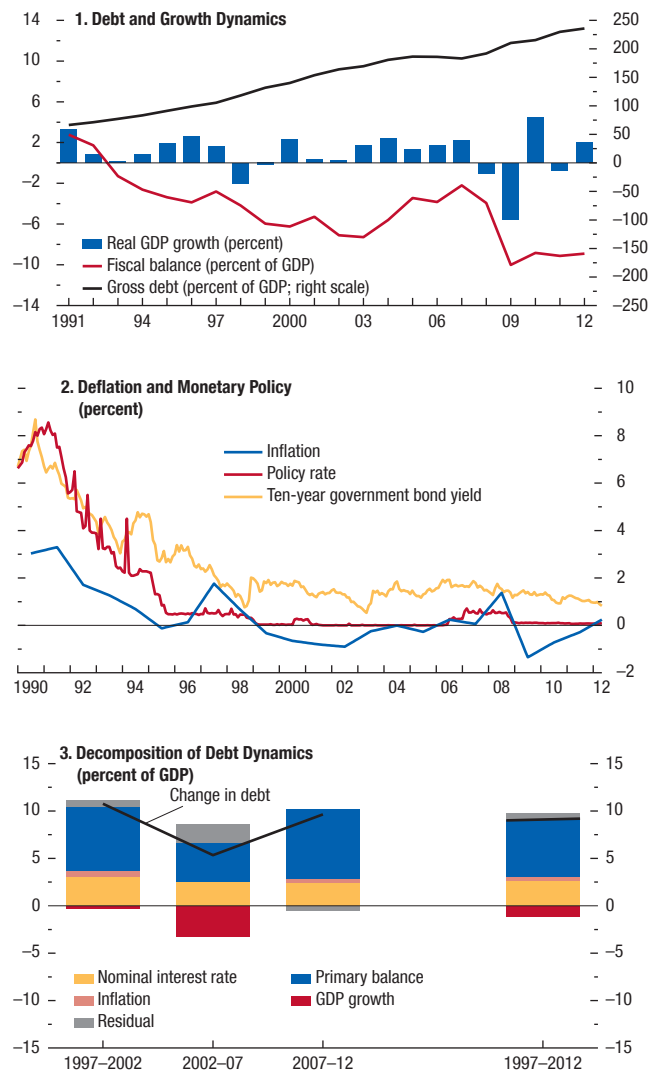
2002 publicly committed to keeping interest rates low until stable positive inflation returned. The structural reforms to the financial sector and the more accommodative monetary policy environment reversed the downward trend in inflation and led to a relatively strong recovery phase that finally allowed for a mild correction of the fiscal imbalance. A weakening exchange rate and very favorable external environment also contributed to the positive outcomes.³² During this period, the debt-to-GDP ratio stabilized at about 185 percent. Since then, the Great Recession pushed Japan back into recession, leading to yet another large deterioration in the fiscal balance.

The various phases of this episode are summarized in Figure 3.9, panel 3, which shows the decomposition of Japan's debt dynamics. Growth and inflation made virtually no direct contribution to debt dynamics during this period as a whole—although the increase in debt slowed between 2002 and 2007, when the policy response emphasized monetary measures and growth was stronger. The largest contribution to debt dynamics, however, comes from the primary deficit.

This episode highlights the need to deal with banking sector weakness and ensure a supportive monetary environment before fiscal consolidation can succeed. It also highlights the difficulties that can be created by adverse external developments when domestic conditions are already stretched. When structural weakness in the financial system prevents the normal transmission of monetary stimulus and when policy rates are constrained by the zero lower bound, the risk of anemic and fragile growth is high regardless of the fiscal setting. Such a macroeconomic environment clearly precluded successful fiscal consolidation: whenever such measures were taken the economy dipped into recession.

Figure 3.9. Japan: Lost Decade

After stock market and real estate bubbles burst, Japan's weak growth and large fiscal deficits caused a strong increase in the debt-to-GDP ratio. The gradual reduction in policy rates to the zero bound was not sufficient to prevent deflation.



Sources: Abbas and others (2010); Thomson Reuters Datastream; Haver Analytics; and IMF staff calculations.

Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

³²The real exchange rate devalued by about 20 percent between 2004 and 2007, thanks, in part, to the more accommodative monetary policy stance.

Italy in 1992: European Monetary Union

Italy's ratio of public debt to GDP rose 70 percentage points in the quarter-century after World War II, a period marked by relatively high inflation and the subordination of monetary policy to the government's desire for low financing costs. In 1992, the debt-to-GDP ratio rose swiftly past 100 percent, peaking at about 120 percent between 1994 and 1996. It subsequently declined moderately, reaching a trough of 104 percent in 2004, as a result of Italy's strong political desire to be a founding member of the euro area.

The criteria of the 1992 Maastricht Treaty, which set out the conditions for membership in the euro area, however, were a serious challenge to Italian ambitions because they required a very strong monetary and fiscal effort from Italian policymakers. Unfortunately, the European exchange rate mechanism (ERM) crisis in September 1992 and the disintegration of long-standing Italian political parties following widespread corruption scandals appeared to further complicate Italian hopes of participating in the euro area. In practice, however, the political instability reinforced a pro-Europe sentiment at various levels of society and opened the door to three technocratic governments that were able to implement a substantial fiscal adjustment and initiate unpopular structural reforms.³³

On the fiscal front, the consolidation effort included structural reforms that affected pension payments, health services, local authority finance, wage setting, and public employment. An important step was breaking the wage-price spiral, which was accomplished with the suspension and subsequent removal of wage indexation (*scala mobile*) in December 1991 and July 1993.³⁴ This smoothed the way for the transition to a low-inflation monetary policy regime in line with the Maastricht criteria. In 1993 the government was granted special power to

cut primary spending, thus breaking with the past practice of using one-time measures as the main vehicle for deficit reduction, and action was taken to curb the Parliament's power to implement new spending initiatives. Pension reform was particularly important given the rapidly aging population and a generous pension provision that gave Italy one of the highest ratios of pension spending to GDP in the world—14 percent in 1994. The reform was a step in the right direction, but there were two drawbacks: first, it was not enough given the demographic trends, and second, the transition phase was particularly long.³⁵ Thus, although necessary, the benefits of the reform took a long time to directly affect public finances. Despite these promising developments, and reflecting the delay in bottom-line results from some of them, almost half the consolidation was achieved through tax increases.³⁶

On the monetary front, 1992 was a year of market turbulence, with Italy's exit from the ERM and the subsequent devaluation of the lira. The currency crisis had two distinct implications for public finances. On one hand, it delivered gains in competitiveness much needed by Italian export industries, thus supporting economic growth. On the other hand, the sharp devaluation stoked inflation and, especially, inflation expectations, which led the Bank of Italy to raise interest rates significantly. The burden of interest payments rose to more than 11 percent of GDP between 1993 and 1995, and this prevented a significant reduction in the overall deficit, which remained stuck above 7 percent.

³³The 1995 Dini reform of the public pension system was intended to ensure the long-term viability of pension funds by instituting sustainable contribution rates (the system shifted from linking old-age pensions to earnings, *sistema retributivo*, to linking benefits to lifetime contributions, *sistema contributivo*); linking benefits to residual life expectancy at the time of retirement; reviewing pensions for the disabled and survivors; and reviewing guaranteed minimum pensions. The 1995 Dini reform would have eliminated the possibility of retiring after 35 years of service regardless of age (*pensioni di anzianità*), which constituted one of the more generous provisions of the old system, by 2013; starting in 2008, seniority pensions would have required 40 years of service. A few years later, the Prodi Agreement tried to shorten the very long transition phase.

³⁶The fiscal consolidation amounted to 13.6 percent of GDP from 1992 to 1995, of which just over 40 percent was from tax increases—the primary balance went from –4 percent in 1987 to 2.9 percent in 1995 (see Devries and others, 2011).

³³The technocratic governments were led by Giuliano Amato (June 1992–April 1993), Carlo Azeglio Ciampi (April 1993–May 1994), and Lamberto Dini (January 1995–May 1996) after a brief interlude under Silvio Berlusconi.

³⁴The new labor agreement in July 1993 sought greater employer and trade union support for policy targets by explicitly mentioning the policy goals of reducing inflation, cutting the budget deficit, and stabilizing the exchange rate (OECD, 1994).

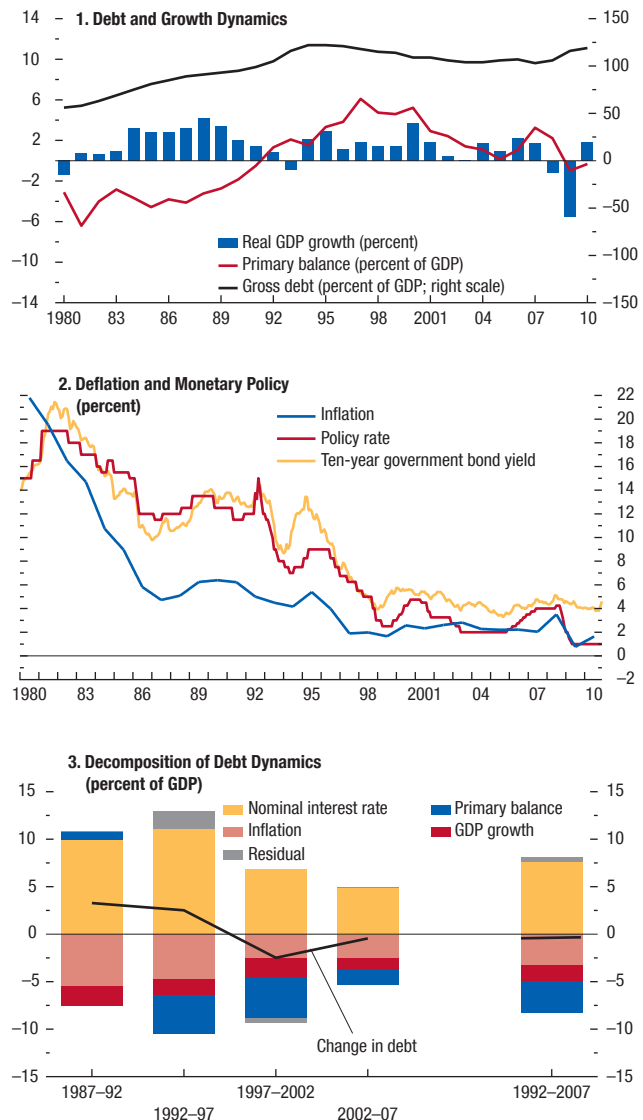
In 1996, immediately after taking office, the government led by Romano Prodi declared as its primary objective Italy's admission to the euro area as a founding member. Prodi's goal was to break the vicious cycle of high expected inflation, high interest rates, high deficits, and again to high expected inflation that would have prevented admission. He gained support from unions and the public to embark on further substantial fiscal consolidation, and this led to implementation of additional measures that eventually reduced the overall deficit to 2.7 percent in 1997, reaching a record primary surplus of 6.1 percent of GDP in 1997.³⁷ This consolidation topped a 10-year period during which Italy improved its primary balance by slightly more than 10 percentage points—an exceptional performance by historical standards.

Furthermore, the credibility of Italy's commitment to European integration and the feasibility of meeting the Maastricht criteria as perceived by the markets led to a dramatic drop in interest rates in early 1996. This effectively broke the previous vicious cycle and replaced it with a virtuous one. Given the tight timetable, however, some of the deficit reduction inevitably consisted of one-time measures. This is exemplified by the 0.6 percent of GDP “tax for Europe” and by the fact that part of the debt reduction was achieved with substantial proceeds from privatization.³⁸

Joining the euro area lowered borrowing costs for the Italian Treasury and made it possible to extend the average maturity of its debt (Figure 3.10), which helped reduce the public debt over the following seven years. After 1998, however, the zeal gradually faded and no substantial additional discretionary consolida-

Figure 3.10. Italy: Fading Zeal

In order to meet the Maastricht criteria, Italy achieved large primary surpluses at the end of the 1990s. The debt ratio also started to decline thanks to the reduction in real interest rates. Fiscal consolidation efforts, however, waned during the 2000s.



³⁷The convergence was assessed in 1998 on figures for 1997.

³⁸From 1990 to 2000, Italy's privatization proceeds were estimated at about \$108 billion—the highest relative to GDP among Organization for Economic Cooperation and Development (OECD) countries in both absolute and relative terms (OECD, 2003b). Over the entire episode, privatization receipts accounted for about 10 percentage points of GDP. This means that more than half of the peak-to-trough debt reduction can be attributed to privatization receipts. It is also worth noting that, according to the Maastricht Treaty, privatization proceeds are treated as financing, and therefore they matter for debt reduction but not for the deficit target. In our analysis, however, privatization receipts are included in the primary deficit.

Sources: Abbas and others (2010); Bank of Italy; Thomson Reuters Datastream; Haver Analytics; and IMF staff calculations.
Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

tion efforts were undertaken.³⁹ Moreover, because some of the fiscal measures were temporary, the primary surplus started to decline after peaking in 1997. As a result the speed of debt reduction was modest and reflected momentum more than ongoing effort.

These developments can be seen in the debt decomposition summary in Figure 3.10, panel 3. A move into primary surplus during 1993–97 was offset by tight monetary policy, but with the easing of monetary conditions during 1998–02, debt dropped more significantly—at least until the primary surpluses faded away during 2003–07. Also notable is that GDP growth made a very modest contribution to debt reduction throughout this period. Indeed, the economy’s growth rate remained weak, considerably below the advanced economy average (see Figure 3.5, panel 1).

Belgium in 1983: Ten Years of Consolidation before Currency Union

A comparison of the Italian experience with that of Belgium is quite instructive, because Belgium experienced, eventually, a more successful outcome under very similar circumstances. The Belgian story starts approximately 10 years earlier with the debt-to-GDP ratio crossing the 100 percent threshold in 1983. As in Italy, Belgium’s large primary deficits, slow growth, and the central bank’s relatively tight anti-inflation stance combined to put the debt-to-GDP ratio on an unsustainable path.

From 1982 to 1987 Belgium embarked on a serious fiscal consolidation effort that culminated with the 1987 “Sint-Anna” or “Val Duchesse” deficit reduction plan. This plan consisted mainly of structural reforms that delivered permanent spending cuts of 2.8 percent of GDP. The plan, coupled with previous fiscal consolidation efforts (again, mainly structural and spending based), led to substantial primary surpluses and even a temporary reduction in the debt-to-GDP ratio. Over the 10-year period from 1981 to 1991, Belgium improved its primary

balance by 11 percentage points—the largest consolidation over any 10-year period among advanced economies since World War II.⁴⁰

The policies pursued focused on trimming the share of public employment, reducing an excessively generous system of welfare payments, cutting family allowances and unemployment insurance benefits, and increasing the retirement age. In the business sector, there was little scope for privatization compared with other countries such as Italy, but corporate tax expenditures and subsidies—among the highest in the OECD—were reduced substantially.⁴¹ These priorities were a reaction to policies pursued between the mid-1970s and early 1980s that markedly increased subsidies to business, public sector employment, and transfer payments to households. Finally, in the early 1990s, under the “global plan,” pension expenditures and health care costs were curbed further.⁴² However, during the past 30 years there was no relevant structural reform to improve the flexibility and efficiency of the labor market, which has left Belgium plagued with low labor participation and high short- and long-term unemployment for most of the high-debt episode and beyond. The main achievement with respect to the labor market was the wage moderation process, which since the mid-1980s has linked wage increases to those in Belgium’s major trading partners (Germany, France, Netherlands).⁴³

⁴⁰For a list of the largest primary balance improvements in advanced economies and emerging markets, see Abbas and others (2010).

⁴¹It was estimated that “total aid to business—subsidies, capital transfers, loans and government equity investment has averaged 5.5 percent of GNP (gross national product) a year since the early 1970s, attaining 8.9 per cent in 1982” (OECD, 1986, p. 25). For comparison, in Italy business subsidies were equal to only about 3 percent of business sector value added during 1980–87 (OECD, 1994, p. 54).

⁴²On November 17, 1993, a comprehensive plan for employment, competitiveness, and the social security system was approved by the Belgian government. OECD (2003a) reports that “a new method of calculating pensions will be introduced (the base period for calculating pensions will be longer, and pensions for men and women will be harmonized)”; other constraints and cost-cutting measures are mentioned for health care costs. The age limit for early retirement was raised from 55 to 58.

⁴³Also, like Italy, Belgium was listed among OECD countries as having the most market-unfriendly product market regulation, mainly because of barriers to entrepreneurship (see OECD, 2003a).

³⁹During the period 2003–05 the European Union Stability and Growth Pact was watered down, in part because of core European countries’ poor growth performance. In any case, Italy undertook some additional consolidation from 2004 to 2007, after the 2003 recession.

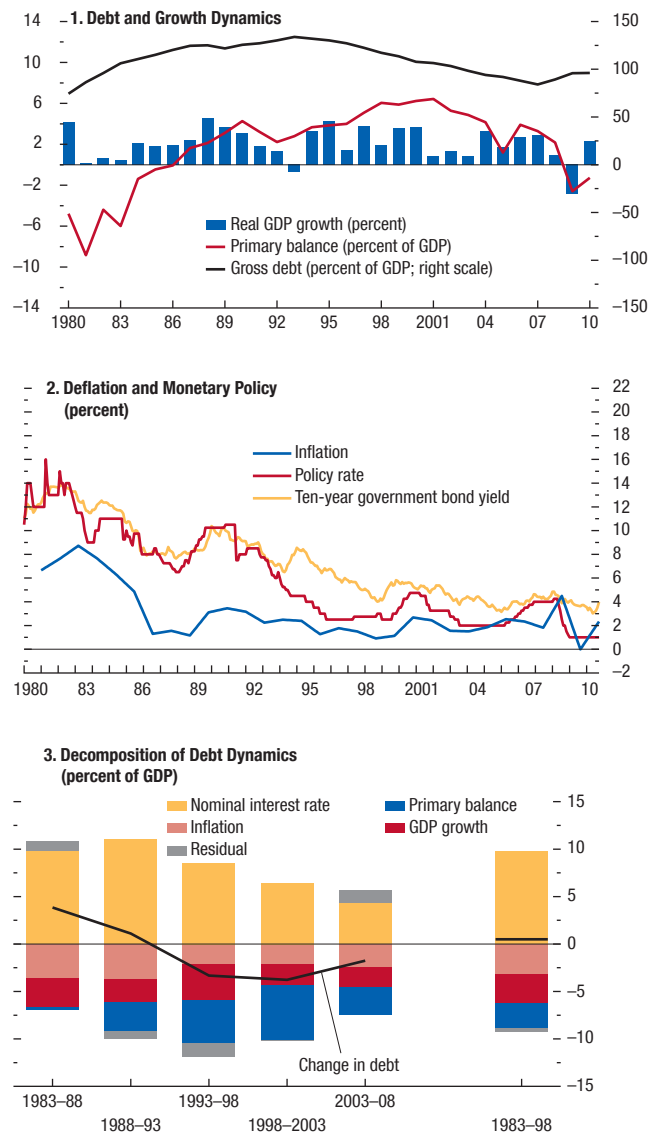
Belgium's fiscal effort was hampered by monetary conditions at the time and by a slowdown in global activity in the early 1990s.⁴⁴ Although the wage moderation process helped break the wage-price spiral, which contributed to endemic inflation, it still took some time and a period of high interest rates (aimed at maintaining the peg to the European Currency Unit) for monetary policy to succeed in delivering low and stable inflation. Hence, the debt-to-GDP ratio started to rise again in 1990 and peaked at 134 percent in 1993, a recession year. Even during the recession, however, the Belgian government was able to run a primary surplus—highlighting how beneficial the structural measures taken in the 1980s were for public finances.

A second multiyear convergence plan was enacted in the early 1990s to meet the Maastricht criteria by reducing the budget deficit to less than 3 percent by 1997.⁴⁵ This plan included a mix of additional spending cuts and tax increases—but it was fundamentally built on the foundation established by the successful 1980s consolidation. Moreover, the fiscal framework was strengthened: first, in 1989 the High Council of Finance was vested with a renewed advisory role for budgetary policy; second, in 1994, the National Accounting Institute was established to provide macroeconomic forecasts for use in budget preparation. Both actions were fundamental to increasing government accountability for budgetary policy.⁴⁶

On the monetary front, the successful fiscal consolidation of the 1980s gave markets confidence that the convergence plan would likewise be successful. As a result, in 1993 short-term bond rates were on a steep downward path, and long-term bond rates soon followed.⁴⁷ Inflation, which had been reduced in the

Figure 3.11. Belgium: A Marathon Not a Sprint

Belgium achieved large primary surpluses in the late 1980s and maintained them for about 15 years. The debt ratio also fell considerably in the 1990s thanks to a reduction in real interest rates and fairly strong growth.



⁴⁴The real growth rate deteriorated from more than 3 percent in 1990 to -0.7 percent in 1993, in line with other advanced economies.

⁴⁵The fiscal consolidation of the 1990s included privatization and sales of assets (such as the central bank gold reserve). The impact of these temporary measures, however, was minor in Belgium compared with Italy.

⁴⁶See European Commission (2012).

⁴⁷The decomposition in Figure 3.11, panel 3, shows that the more benign monetary conditions, evidenced by falling interest rates during the episode, contributed significantly to the reduction in debt levels.

Sources: Abbas and others (2010); Thomson Reuters Datastream; Haver Analytics; and IMF staff calculations.

Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

late 1980s, oscillated around 2 percent.⁴⁸ One consequence was that, in contrast to the first effort, this convergence plan led to a sustained drop in debt.

In sum, Belgium's public finances were already on a sounder footing than Italy's by the end of the 1980s. The permanent structural measures taken in the 1980s projected beneficial effects into the future. As a result Belgium required a milder fiscal adjustment to meet the Maastricht criteria than Italy, and the changes in the fiscal framework adopted in the 1990s helped prevent slippages and the onset of fiscal consolidation fatigue. At the same time, given the credibility attached to the 1992 convergence plan, Belgium benefited from a much needed reduction in real interest payments earlier than Italy. It is hard to say whether this is what contributed to its relatively better growth performance, but between 1993 and 2007 Belgium reduced its debt-to-GDP ratio by 50 percentage points—substantially more than Italy.

Canada in 1995: Success from Failure

As in Belgium, there were two phases to Canada's fiscal consolidation: an initial unsuccessful phase in the second half of the 1980s and a later successful consolidation starting in 1995. We discuss them both here because the earlier consolidation effort provides a valuable comparison with the ultimately successful consolidation in the mid-1990s.

In the early 1980s, a combination of high primary deficits and tight monetary policy put the Canadian general government debt on an unstable path—from 1981 to 1986 the debt increased by about 25 percentage points (Figure 3.12, panel 1). This prospect induced the newly elected government of Brian Mulroney to embark on a multiyear fiscal consolidation plan that, beginning in 1985, aimed at stabilizing the debt-to-GDP ratio at 65 percent by 1990–91.

The actual implementation of the 1985 plan implied a fiscal consolidation that was split roughly evenly between tax hikes and spending cuts (see Guajardo, Leigh, and Pescatori, 2011) and was able to achieve a temporary balanced primary budget in

1989. The overall debt performance was less successful. In fact, given the high real and nominal interest payments followed by the sharp 1990–91 recession, the debt-to-GDP ratio kept rising and peaked at 102 percent in 1995. The recession left a large scar on fiscal revenue,⁴⁹ while government spending kept increasing in real terms until 1993, mainly as a result of automatic stabilizers.

Various reasons have been advanced for the failure of the 1985 consolidation.⁵⁰ One explanation is that the adjustment in expenditures relied mainly on poorly specified across-the-board cuts and efficiency gains that did not impose fundamental changes in the way government expenses were determined and so did not persist. Moreover, some of the measures were also temporary. For example, the plan imposed a temporary surtax on higher-income individuals and large corporations and garnered some savings from privatization. Thus, while the primary balance did improve during the 10 years from 1985 to 1995, the improvement amounted to just under 6 percentage points of GDP because it was interrupted by the recession of the early 1990s. The consolidation effort did, however, introduce a number of permanent measures that helped future Canadian governments, including a change from full to partial indexation of tax brackets. Another factor, which becomes clearer on examination of the 1995 consolidation, is that both the monetary and external environments were hostile to debt reduction. Monetary policy was particularly tight because the Bank of Canada was attempting to reduce inflation with high real interest rates during this time (Figure 3.12, panel 2), and the recession, which coincided with a global slowdown, undermined growth and government finances (more below).

In 1995, after having crossed the 100 percent debt-to-GDP threshold and with substantial public support, the Canadian government launched another ambitious fiscal consolidation plan.⁵¹ Given the

⁴⁹Revenue recovered slowly, possibly due to the performance of the housing market: housing prices dropped by 7 percent from their peak in 1990 and did not recover quickly, while stock prices started to increase only in 1995.

⁵⁰See, for example, Sancak, Liu, and Nakata (2011) for a more detailed discussion of the Canadian experience.

⁵¹Convincing the public of the importance of reducing public debt was an important element in the government's approach to

⁴⁸As for various other European countries, 1994, the year after the ERM collapse, was an exception.

already high level of taxation and disappointment with the earlier consolidation, this plan was mainly spending based and tackled some fundamental structural issues behind the fiscal imbalances. In particular, the plan implemented structural reforms to the unemployment insurance system, the system of transfers to provinces, and the pension system.⁵² The reduction in transfers to the provinces imposed additional fiscal discipline at the subnational level, with the effect of improving provincial finances as well. Moreover, the consolidation was supported by the fact that in the mid-1990s, most Canadian provinces legislated some form of fiscal regulation that explicitly imposed specific limits on fiscal indicators such as budgetary balances, spending, and taxation.⁵³ This helped boost the persistence of the fiscal effort. As a result, the primary balance moved to a consistent strong surplus, and debt fell by 35 percentage points over the subsequent 10 years.

The success of the fiscal consolidation effort of the 1990s was clearly amplified by the benign external and domestic environment. Domestically, after the Bank of Canada adopted an inflation-targeting framework in 1991, the country was enjoying the benefits of relatively low interest rates in an environment of low and stable inflation, while the exchange rate depreciated slowly but steadily over the period.⁵⁴ As a consequence, real rates dropped substantially along with the premium associated with the risk of resurgent inflation. The debt-service burden fell from almost 10 percent of GDP in 1995 to about 7 percent in 2000. Moreover, the United States, Canada's foremost trading partner, experienced an extraordinary boom in the late 1990s. This, coupled with a strong decrease in the real effective exchange rate, helped spur the Canadian export sector: the contribution of exports to GDP growth averaged more than 3 percentage points between 1993 and 2000. Despite the propitious monetary and exter-

the issue. Furthermore, unfavorable comparisons of Canada with Mexico by the *Wall Street Journal* in the wake of the peso crisis and Moody's credit watch on Canada prior to the 1995 budget underscored the importance for the public of dealing with debt.

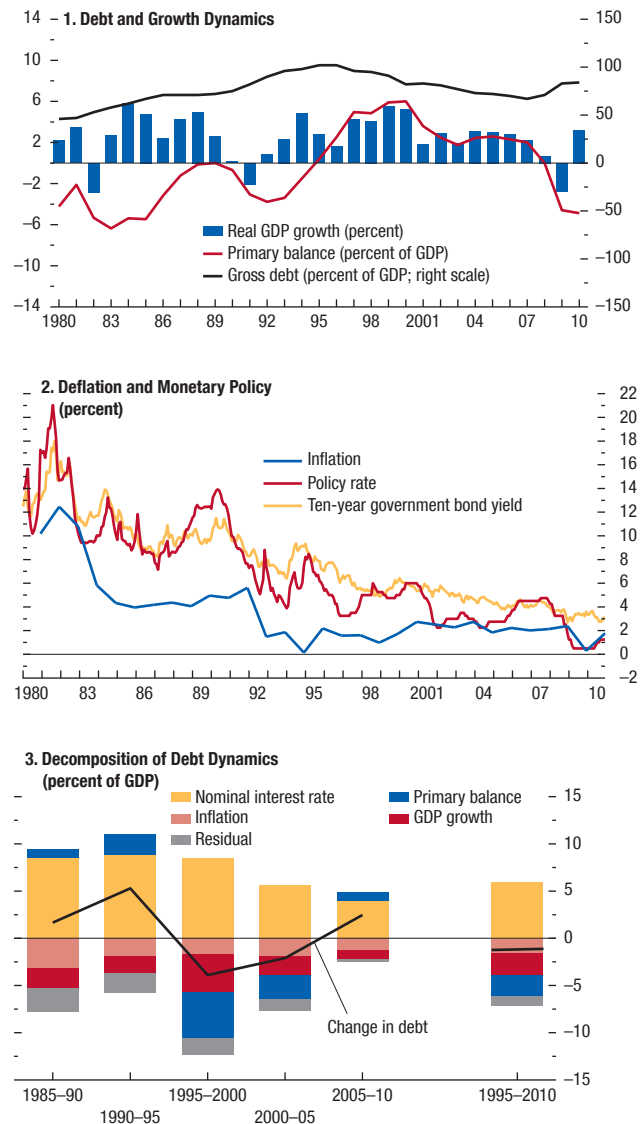
⁵²See Sancak, Liu, and Nakata (2011) for further details.

⁵³See Millar (1997).

⁵⁴The depreciation of the Canadian dollar was supported by the relatively stronger performance of the U.S. economy at the time and by declines in commodity prices during the 1990s.

Figure 3.12. Canada: Fiscal Consolidation after 1985

Canada went through two distinct consolidation phases in the 1980s and 1990s, the latter leading to larger primary surpluses and declining debt. The 1990s debt reduction was also supported by strong growth.

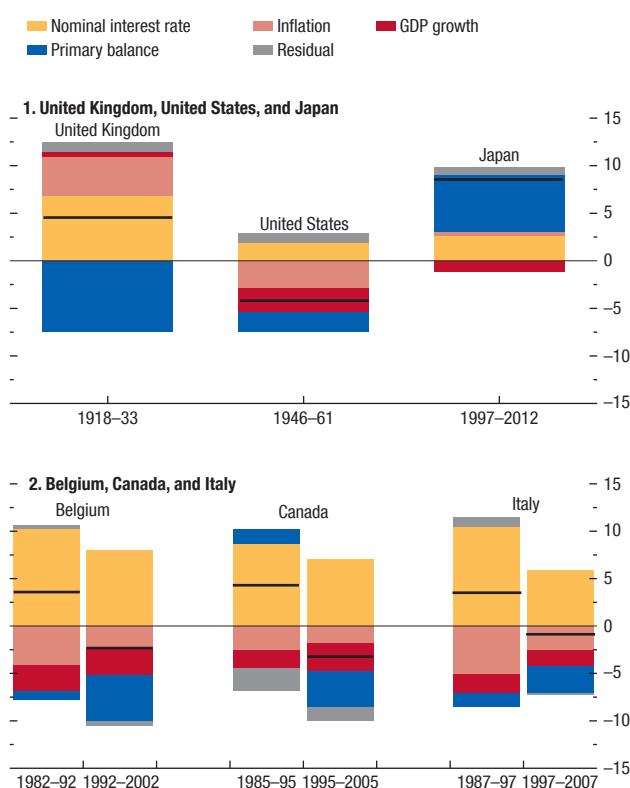


Sources: Abbas and others (2010); Thomson Reuters Datastream; Haver Analytics; and IMF staff calculations.

Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

Figure 3.13. Decomposition of Debt Dynamics in Case Study Countries
(Percent of GDP)

Despite large fiscal surpluses, the United Kingdom experienced sharply higher debt due to very high real interest rates caused by deflation. The United States successfully reduced debt through a combination of negative real interest rates and growth. Japan's increase in debt resulted mostly from its large fiscal deficits. The second phase of debt reduction for Belgium, Canada, and Italy was supported by larger fiscal surpluses and lower real interest rates.



Sources: Abbas and others (2010); Bank of Italy; Haver Analytics; Mitchell (1998); Reinhart and Rogoff (2010); and IMF staff calculations.
Note: The decomposition of debt dynamics is based on a linearized version of equation (3.1).

nal environment, GDP growth remained below the advanced economy average (see Figure 3.5, panel 1).

Figure 3.12, panel 3, shows the decomposition of the debt dynamics over these years. Given the relevance of the 1985 consolidation, two bars are added to cover this period, although the average is still for the 15 years following 1995. Strong growth, a large primary surplus, and falling real interest rates contribute strongly to debt reduction after 1995. Finally, the effect of the Great Recession is visible in the last bar—weak growth and countercyclical fiscal stimulus added to the debt during this period.

Overall, this episode highlights how fiscal, monetary, and external factors all contribute to the outcome. The shift in the composition of fiscal efforts toward structural reforms and a rule-based fiscal framework at the subnational level contributed to the success of consolidation in 1995. But the influence of both monetary and external conditions is also evident. In the 1985 plan, both monetary and external conditions hampered contraction, whereas in 1995 these influences were supportive. Furthermore, even in a sound monetary and fiscal setting, the effects of the Great Recession show that external events can still compromise domestic debt reduction.

Analysis

This section draws together the experiences of the countries covered in the case studies by comparing the policy objectives pursued, the instruments used (such as policy rates, exchange rates, primary surpluses, and institutional frameworks), and the outcomes achieved. To facilitate this comparison, Figure 3.13 shows debt decompositions for the six cases. This comparison yields a number of lessons on how to best deal with high levels of public debt.

The first key lesson is that a supportive monetary environment is a necessary condition for successful fiscal consolidation. This is evident from the cases of the United Kingdom, the United States, and Japan (Figure 3.13, panel 1). In the United Kingdom, despite substantial fiscal efforts that achieved and sustained large primary surpluses, public debt ratios were not reduced. The reason is the simultaneous pursuit of a return to the gold standard at the prewar parity, which required a tight monetary policy stance

and exceptionally high real interest rates, which offset the contribution of fiscal surpluses to debt reduction. At the same time, domestic prices did not fall enough to produce a real exchange rate depreciation due to the concomitant appreciation of the pound to prewar parity. Furthermore, this combination of tight fiscal and monetary policies delivered negative growth, exacerbating the debt problem.

Given that both fiscal and monetary policies were tight in the United Kingdom, it is conceivable that either or both were to blame for the poor outcomes. However, the cases of Japan, which had tight monetary conditions and loose fiscal conditions, and the United States, which had loose monetary and tight fiscal conditions, allow us to attribute the outcomes more clearly to the monetary stance, as explained below.

In Japan, monetary policy was constrained by the zero lower bound after the bursting of the stock market and real estate bubbles in the early 1990s. In addition, the monetary transmission mechanism was impaired by financial sector problems. With low growth and deflation, the Japanese authorities were in a difficult position with respect to fiscal consolidation. Attempts to tighten fiscal policies were either quickly abandoned after economic conditions deteriorated or not seriously pursued. If Japan had persisted with tight fiscal policy, it seems likely that it would have experienced even stronger deflation and lower growth, just as in the United Kingdom. Still, despite an expansionary fiscal policy stance, growth remained anemic and public debt ratios kept increasing.

In the United States after World War II, vivid memories of the Great Depression led people to fear deflation more than inflation. The high level of war debt and the associated potentially high interest burden were also a source of concern. The authorities adopted a policy mix that resulted in an exceptionally supportive monetary environment combined with tight fiscal policy. Specifically, they adopted various policy measures (often referred to as “financial repression”) that aimed at keeping the nominal rates on government bonds low, while controlling inflation with a tight fiscal stance and credit controls. This policy mix resulted in two substantial bursts of inflation, which led to large negative real rates and a sharp reduction in the debt-to-GDP

ratio. The supportive monetary stance was also instrumental in lowering private borrowing rates, thus providing stimulus to the economy. Based on growth and fiscal performance, this policy mix was undoubtedly successful—although inflation volatility remained relatively high. Thus, we conclude that a supportive monetary policy stance is a key ingredient in successful debt reduction.

What is less clear, however, is whether this approach could be applied in today’s economic and financial environment. The set of controls and regulations needed for financial repression to be effective would lead to a much less internationally integrated financial system than we have today. Furthermore, an unexpected burst of inflation—which accounted for much of the debt reduction in the United States episode—could jeopardize the institutional framework built by central banks over the past 30 years for controlling inflation.⁵⁵

Leaving aside the possibility of large inflation surprises and financial repression, the most realistic policy options for today appear to be those followed by Belgium, Canada, and Italy. All three countries implemented large fiscal adjustment in an environment where the goal of reaching or maintaining low inflation was considered necessary for economic stability. Their degrees of success in reducing public debt, however, varied.⁵⁶ This variation leads us to three additional conclusions and reinforces our first conclusion about the importance of monetary policy in successful debt reduction.

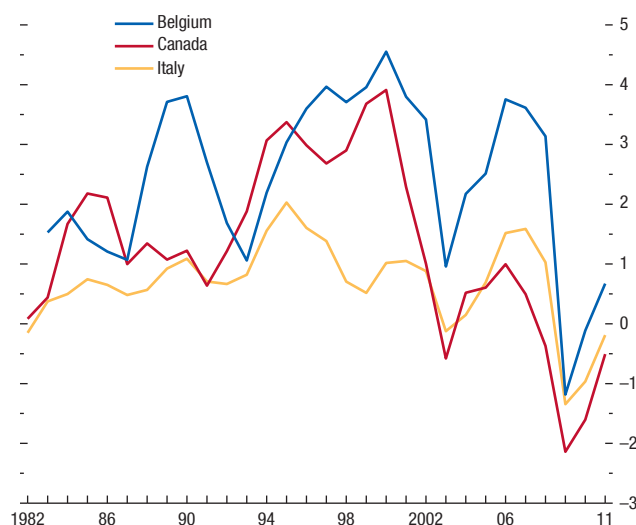
First, even in an environment where inflation is low, a supportive monetary environment with low real rates is important to facilitate a reduction in public debt. The monetary environment was tight in the 1980s (and in Italy until the mid-1990s) because of disinflationary efforts by central banks. As a result, debt continued to increase in all three countries. Figure 3.13, panel 2, shows that high real

⁵⁵It is also worth noting that the period of financial repression ended with the collapse of the Bretton Woods international monetary system because of the loss of U.S. competitiveness vis-à-vis its trading partners, which opened the doors to the great inflation of the 1970s.

⁵⁶This can be seen from Figure 3.13, panel 2, where we present the debt decompositions for each country across the two main phases (that is, a tight or supportive monetary policy stance) that we have identified in the previous case studies.

Figure 3.14. Contribution to GDP from Exports
(Percent of GDP)

The debt reductions in the 1990s for Belgium and Canada were achieved in the context of strong export performance.



Source: IMF staff calculations.

interest rates contributed to the rise in debt levels in the initial years of each episode, despite tight fiscal policies. It was only when real rates fell—after disinflation was achieved and credible monetary policy frameworks were established—that all countries were able to reduce their debt.

Second, debt reduction is larger when fiscal measures are permanent or structural and buttressed by a fiscal framework that supports the measures implemented. Italian fiscal adjustment efforts led to a considerable improvement in the fiscal balance. However, especially before 1992, they were biased toward temporary measures that failed to put public debt on a steadily decreasing path—in part because of the lack of a fiscal framework to lock in the fiscal gains achieved.⁵⁷ In fact, faced with very high levels of taxation, fiscal efforts waned after Italy entered the EMU. Similarly, Canada in the 1980s complemented tax hikes with spending cuts, but the reduction in spending was achieved with across-the-board cuts that proved to be short lived. In contrast, in the 1990s, Canada's fiscal plans were much more successful in persistently reducing public debt. This is because they were based on well-targeted and structural measures, including pension and entitlement reforms in a context of tight fiscal rules at the subnational level. Similarly, Belgium's ability to achieve large and persistent primary surpluses can largely be explained by structural spending cuts, which involved reductions in public employment and reforms to the excessively generous welfare system in the context of a fiscal framework that enhanced accountability.

Third, the relatively successful experiences of Belgium and Canada in the 1990s were facilitated by a boost from strong external demand (Figure 3.14).⁵⁸ While external demand is influenced by various factors, currency depreciation helped in both cases (Canada in the first half of the 1990s, Belgium in the second half of the 1990s). The Italian economy benefited from the sharp devaluation after the 1992 ERM crisis, but, in part because of its relatively more closed economy, the

⁵⁷As a matter of fact, Italy passed important entitlement reforms in the mid-1990s, but their major benefits accumulated only very gradually over time.

⁵⁸The average ratio of exports to GDP between 1992 and 2007 in Belgium, Canada, and Italy was 0.65, 0.34, and 0.23, respectively.

export contribution to output growth was smaller and relatively short lived. Hence, although precise attribution is difficult here, a supportive external environment clearly contributes to the relatively better growth performance and relatively better debt reduction in Canada and Belgium compared with Italy.

Fourth, it takes time to turn around primary deficits. Emblematic is the case of Belgium, which, despite achieving the largest peacetime improvement in the primary balance since World War II between 1981 and 1991, still took 10 years to move from a deficit of about 7 percent to a surplus of 4 percent. The effect of this transition on the level of debt is visible in Figure 3.13, panel 2: the average contribution of the primary balance to debt reduction between 1982 and 1992 was actually very small. The observation that it takes time to turn around primary balances is confirmed by looking at the full sample of countries. Among advanced economies since 1980, improvements of greater than 10 percentage points over a 10-year period are exceedingly rare. Canada's best improvement was 6.7 percentage points between 1990 and 2000, and Italy achieved a 10.2 percentage point improvement between 1987 and 1997—both among the best since 1980 among advanced economies. In short, sustained improvements of more than 1 percentage point a year are rare, and this means that, when starting from a primary deficit, debt reduction takes a particularly long time.

Summing up, historical experience suggests that countries dealing with high debt burdens are unlikely to experience strong improvements in their debt ratios while real rates are high and monetary conditions remain tight. Assuming that sufficiently supportive monetary conditions can be achieved, fiscal policy focused on permanent or structural reforms appears to provide larger and more enduring debt reductions than do policies based on more temporary measures.

Conclusion

For countries currently struggling with high public debt burdens, the historical record offers both instructive lessons and cautionary tales. The first lesson is that fiscal consolidation efforts need to be complemented by measures that support growth: structural

issues need to be addressed and monetary conditions need to be as supportive as possible. In Japan, for example, weaknesses in the banking system and corporate sector limited monetary policy efficacy and led to weak growth, which prevented fiscal consolidation. As a result, debt continued climbing until these issues were addressed. In Italy, Belgium, and Canada, debt did not fall until monetary conditions were supportive. Here, reforms to wage-setting mechanisms that broke the wage-price spiral were an important contributor to the establishment of the supportive monetary environment. Furthermore, monetary easing also fostered exchange rate depreciation, which supported external demand and growth.

The case of the United Kingdom reinforces this message but also offers a cautionary lesson for countries attempting internal devaluation. The combination of tight monetary and tight fiscal policy, aimed at significantly reducing the price level and returning to the prewar parity, had disastrous outcomes. Unemployment was high, growth was low, and—most relevant—debt continued to grow. Although the price level reduction the United Kingdom was attempting to achieve is larger than anything likely to happen as a result of internal devaluation today, similar dynamics are evident. A reduction in the price level, a necessary part of internal devaluation, comes at a high cost, and determining whether the cost outweighs the benefit to competitiveness from internal devaluation requires further work.

The case of the United States, although supporting the general finding about the contribution of monetary policy, points to more outside-the-box possibilities. U.S. monetary policy was very supportive in the immediate postwar years as a result of limits on nominal interest rates and bursts of inflation. This particular combination quickly reduced the debt ratio while growth remained robust. Whether financial repression could assist in reducing debt burdens in today's environment, however, is much harder to gauge. Given that the major problem for the United States in those years was controlling excess demand and inflation—which is not a problem faced by the countries struggling with public debt today—it seems likely that financial repression as practiced by the United States after World War II would not be effective today for countries already

benefiting from historically low sovereign interest rates. Moreover, the inflationary consequences of financial repression could endanger the institutional frameworks established over the past 30 years to control inflation. Whether policies inspired by this experience could help remains an open question.

The implications vary for countries dealing with high debt levels today. For some, such as the United States, where financial sector weakness has largely been addressed and monetary policy is as supportive as possible, it would seem that conditions are in place for fiscal consolidation. In others, such as the European periphery, where financial sectors remain weak and fundamental issues relating to monetary union remain to be addressed, progress may be limited until these issues are resolved.

A second lesson is that consolidation plans should emphasize persistent, structural reforms over temporary or short-lived measures. Belgium and Canada were ultimately much more successful than Italy in reducing debt, and a key difference between these cases is the relative weight placed on structural improvements versus temporary efforts. Moreover, both Belgium and Canada put in place fiscal frameworks in the 1990s that preserved the improvement in the fiscal balance and mitigated consolidation fatigue.

A third lesson is that fiscal repair and debt reduction take time—with the exception of postwar episodes, primary deficits have not been quickly reversed. A corollary is that this increases the vulnerability to significant setbacks when shocks hit. The sharp increases in public debt since the Great Recession—including in the relatively successful cases of Belgium and Canada—exemplify such vulnerability. Furthermore, the external environment has been an important contributor to outcomes in the past. The implications for today are sobering—widespread fiscal consolidation efforts, deleveraging pressures from the private sector, adverse demographic trends, and the aftermath of the financial crisis are unlikely to provide the supportive external environment that played an important role in a number of previous episodes of debt reduction. Expectations about what can be achieved need to be set realistically.

Based on these lessons, we suggest a road map for successful resolution of the current public debt over-

hangs. First, support for growth is essential to cope with the contractionary effects of fiscal consolidation. Policies must emphasize the resolution of underlying structural problems within the economy, and monetary policy must be as supportive as possible. Such policy support is particularly important at this point because all major economies must address public debt overhangs, which means they cannot rely on favorable external conditions. Second, because debt reduction takes time, fiscal consolidation should focus on enduring structural change. In this respect, fiscal institutions can help. Third, while realism is needed when it comes to expectations about future debt trajectories and setting debt targets in a relatively weaker global growth environment, the case of Italy in the 1990s suggests that debt reduction is still possible even without strong growth.

References

- Abbas, S.M. Ali, Olivier Basdevant, Stephanie Eble, Greetje Everaert, Jan Gottschalk, Fuad Hasanov, Junhyung Park, Cemile Sancak, Ricardo Velloso, and Mauricio Villafuerte, 2010, "Strategies for Fiscal Consolidation in the Post-Crisis World," Fiscal Affairs Department Paper No. 10/04 (Washington: International Monetary Fund).
- Abbas, S. Ali, Nazim Belhocine, Asmaa ElGanainy, and Mark Horton, 2010, "A Historical Public Debt Database," IMF Working Paper No. 10/245 (Washington: International Monetary Fund).
- , 2011, "Historical Patterns and Dynamics of Public Debt—Evidence From A New Database," *IMF Economic Review*, Vol. 59, No. 4, pp. 717–42.
- Cecchetti, Stephen G., M.S. Mohanty, and Fabrizio Zampolli, 2011, "The Real Effects of Debt," BIS Working Paper No. 352 (Basel: Bank for International Settlements).
- Devries, Pete, Jaime Guajardo, Daniel Leigh, and Andrea Pescatori, 2011, "An Action-Based Analysis of Fiscal Consolidation in OECD Countries," IMF Working Paper No. 11/128 (Washington: International Monetary Fund).
- Dippelsman, Robert, Claudia Dziobek, and Carlos A. Gutiérrez Mangas, 2012, "What Lies Beneath: The Statistical Definition of Public Sector Debt," IMF Staff Discussion Note No. 12/09 (Washington: International Monetary Fund).
- Eichengreen, Barry, Ricardo Hausmann, and Ugo Panizza, 2005, "The Pain of Original Sin," in *Other People's Money: Debt Denomination and Financial Instability in Emerging Market Economies*, ed. by Barry Eichengreen and Ricardo Hausmann (Chicago: University of Chicago Press), pp. 13–47.

- Escolano, Julio, Anna Shabunina, and Jaecoon Woo, 2011, "The Puzzle of Persistently Negative Interest Rate–Growth Differentials: Financial Repression or Income Catch-Up?" IMF Working Paper No. 11/260 (Washington: International Monetary Fund).
- European Commission, 2012, "Fiscal Frameworks across Member States: Commission Services Country Fiches from the 2011 EPC Peer Review," European Commission Occasional Paper No. 91 (Brussels).
- Feinstein, Charles H., 1972, *National Income, Expenditure and Output of the United Kingdom, 1855–1965* (Cambridge, United Kingdom: Cambridge University Press).
- Friedman, Milton, and Anna Jacobson Schwartz, 1963, *A Monetary History of the United States: 1867–1960* (Princeton, New Jersey: Princeton University Press).
- Guajardo, Jaime, Daniel Leigh, and Andrea Pescatori, 2011, "Expansionary Austerity: New International Evidence," IMF Working Paper No. 11/158 (Washington: International Monetary Fund).
- Honohan, Patrick, and Brendan Walsh, 2002, "Catching Up with the Leaders: The Irish Hare," *Brookings Papers on Economic Activity*, No. 1 (Washington: Brookings Institution).
- Keynes, Maynard, 1928, "The Stabilization of the Franc," *New Republic*, Vol. 55, No. 711, p. 218.
- Krugman, Paul, 2012, *End this Depression Now!* (New York: W.W. Norton & Company).
- Kumar, Manmohan S., and Jaecoon Woo, 2010, "Public Debt and Growth," IMF Working Paper No. 10/174 (Washington: International Monetary Fund).
- Lloyd George, David, 1928, "Franc Stabilization Is Crowning Triumph," *Pittsburgh Post-Gazette*, July 8, p. 10.
- Maddison, Angus, 2003, *The World Economy: Historical Statistics* (Paris: Organization for Economic Cooperation and Development).
- Mauro, Paulo, ed., 2011, *Chipping Away at Public Debt: Sources of Failure and Keys to Success in Fiscal Adjustment* (Washington: International Monetary Fund).
- Meltzer, Allan, 2003, *A History of the Federal Reserve: Volume 1: 1913–1951* (Chicago: University of Chicago Press).
- Millar, Jonathan, 1997, "The Effects of Budget Rules on Fiscal Performance and Macroeconomic Stabilization," Bank of Canada Working Paper No. 97-15 (Ottawa: Bank of Canada).
- Mitchell, B. R., 1998, *International Historical Statistics: Europe 1750–1993* (London: Macmillan Reference).
- Organization for Economic Cooperation and Development (OECD), 1986, *Economic Survey of Italy* (Paris).
- , 1994, *Economic Survey of Italy* (Paris).
- , 2003a, *Economic Survey of Belgium* (Paris).
- , 2003b, *Economic Survey of Italy* (Paris).
- Ostry, Jonathan, Atish Ghosh, Jun Kim, and Mahvash Qureshi, 2010, "Fiscal Space," IMF Staff Position Note No. 10/11 (Washington: International Monetary Fund).
- Panizza, Ugo, and Andrea F. Presbitero, 2012, "Public Debt and Economic Growth: Is There a Causal Effect?" MoFiR Working Paper No. 65 (Ancona, Italy: Money and Finance Research Group).
- Perotti, Roberto, 2012, "The 'Austerity Myth': Gain Without Pain?" in *Fiscal Policy after the Financial Crisis*, ed. by Alberto Alesina and Francesco Giavazzi (Chicago: University of Chicago Press).
- Pollard, Sidney, 1992, *The Development of the British Economy 1914–1990* (London: Edward Arnold).
- Reinhart, Carmen M., Jacob F. Kirkegaard, and M. Belén Sbrancia, 2011, "Financial Repression Redux," *Finance & Development*, Vol. 48, No. 2, pp. 22–26.
- Reinhart, Carmen M., Vincent Reinhart, and Kenneth S. Rogoff, 2012, "Public Debt Overhangs: Advanced Economy Episodes Since 1800," *Journal of Economic Perspectives*, Vol. 26, No. 3, pp. 69–86.
- Reinhart, Carmen M., and Kenneth S. Rogoff, 2010, "Growth in a Time of Debt," *American Economic Review: Papers and Proceedings*, Vol. 100, No. 2, pp. 573–78.
- Reinhart, Carmen M., and M. Belén Sbrancia, 2011, "The Liquidation of Government Debt," NBER Working Paper No. 16893 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Sancak, Cemile, Lucy Qian Liu, and Taisuke Nakata 2001, "Canada: A Success Story," in *Chipping Away at Public Debt: Sources of Failure and Keys to Success in Fiscal Adjustment*, ed. by Paolo Mauro (Hoboken, New Jersey: John Wiley & Sons).
- Truman, Harry S., 1947, *Economic Report of the President*, January 9.
- Young, Ralph A., and Charles A. Yager, 1960, "The Economics of 'Bills Preferably,'" *The Quarterly Journal of Economics*, Vol. 74, No. 3, pp. 341–73.

