

## 17-27 Will Rising Interest Rates Lead to Fiscal Crises?

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For several quarters now, the economic news has been mostly positive. A balanced, broad-based recovery seems under way. For the first time since 2010, it encompasses all major regions of the world. To be sure, managing the recovery poses challenges in the short run: How soon will the recovery slow down on its own? How and when should policy stimulus be withdrawn, particularly monetary policy stimulus? But these challenges appear relatively benign.

Looking forward, however, one can see a set of new risks. They arise from the interaction of the recovery with crisis legacies and from the uncertainty about where the long-term “new normal” is likely to be. Consider four dimensions:

- Partly because of the crisis and partly because of subsequent low growth, public debt has reached postwar historical highs in many advanced countries, including in five G-7 countries.<sup>1</sup> Only in Germany has public debt come down since its postcrisis peak (figure 1).

1. The exceptions are Canada and the United Kingdom, where public debt was higher immediately after the Second World War and in the case of Canada in the mid-1990s (IMF, Public Finances in Modern History Database).

- Productivity growth, and with it potential growth, has declined. Whether it remains low or picks up in the future is uncertain.
- Interest rates are expected to increase from their current low levels. By how much and at what pace is—again—uncertain.
- Many advanced countries have strong populist movements (or even populist leaders) espousing risky macroeconomic policies.

These four dimensions make for a potentially dangerous cocktail. Suppose interest rates increased substantially. Combined with low growth, high debt, and populist pressure, it would be a recipe for fiscal crises.

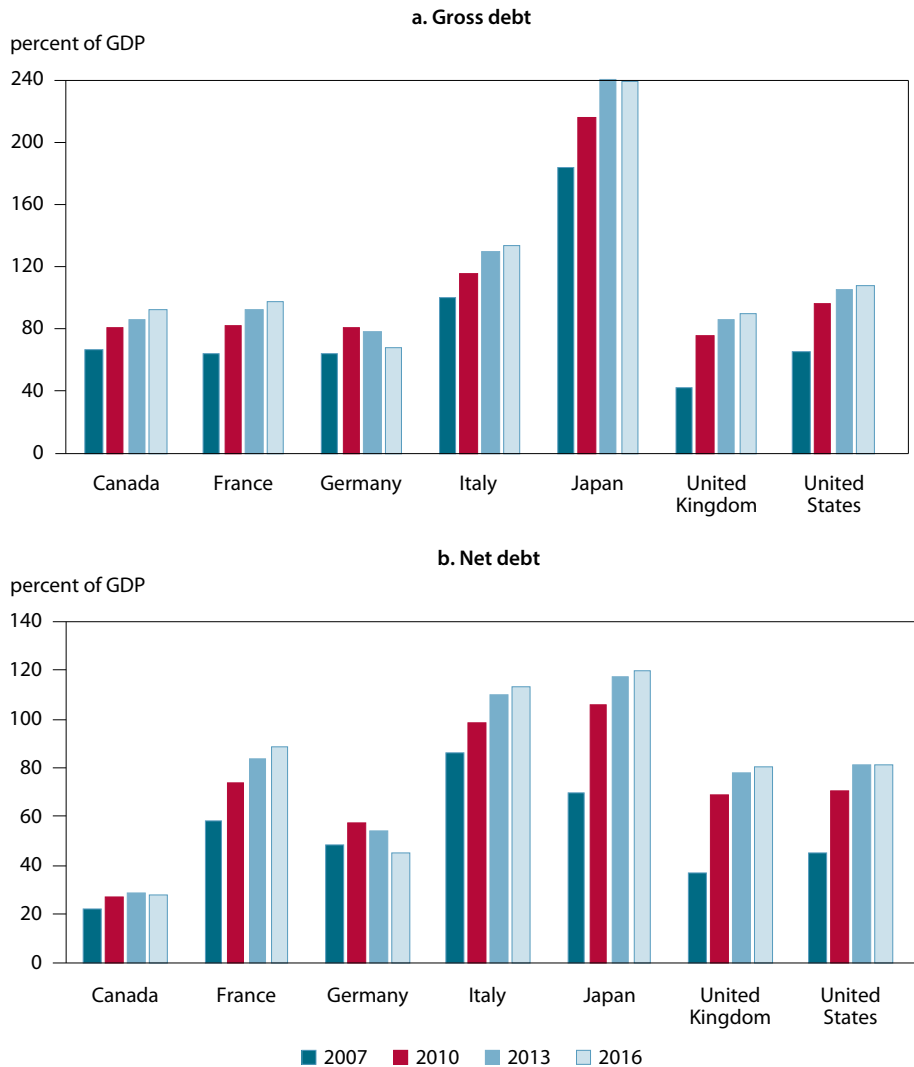
Is this general sense of discomfort warranted once one thinks through how and where such fiscal crises may unfold? There are two reasons not to be overly worried. The first is based on empirics, the second on economic principles.

First, most governments will have time to adjust to rising interest rates, partly because the rise in rates is expected to be slow, but more importantly because of the maturity structure of public debt in advanced countries. This determines how quickly an increase in interest rates translates into an increase in interest payments by the government. Many countries have used the low long rates to lengthen the maturity structure of their public debt, so the maturity of the debt is fairly long today.

To be more concrete, consider Japan and Italy. Even for Japan, which has the highest gross debt as a share of GDP of any country, less than 30 percent of GDP comes due in 2017 and less than 50 percent by the end of 2018 (figure 2).<sup>2</sup> This implies that the direct effect of higher interest rates on the

2. Figure 2 is based on maturing gross general government debt. To gauge the sensitivity of public debt servicing obligations to rising interest rates one would ideally want to make two adjustments. First, adjust for the maturity structure of the government debt held within the government itself, which is sizeable in the case of Japan (it explains most of the difference between gross and net debt). Second, take account of the fact that the counterpart of government debt held by central banks are large excess reserves, which are remunerated at the overnight rate. These effects work in opposite directions. For Japan, where central bank holdings of government debt are so large, the second effect is likely to dominate, implying a shorter maturity than the maturity on gross debt.

**Figure 1 General government debt in G-7 countries**



Note: Net debt equals gross debt minus government holdings of currency, international reserves, gold, debt securities, and other debt-like instruments. Hence, government debt held by general government entities is part of gross debt but not net debt. The central bank is not considered part of the general government; hence central bank purchases of national government bonds have no impact on either gross or net debt.

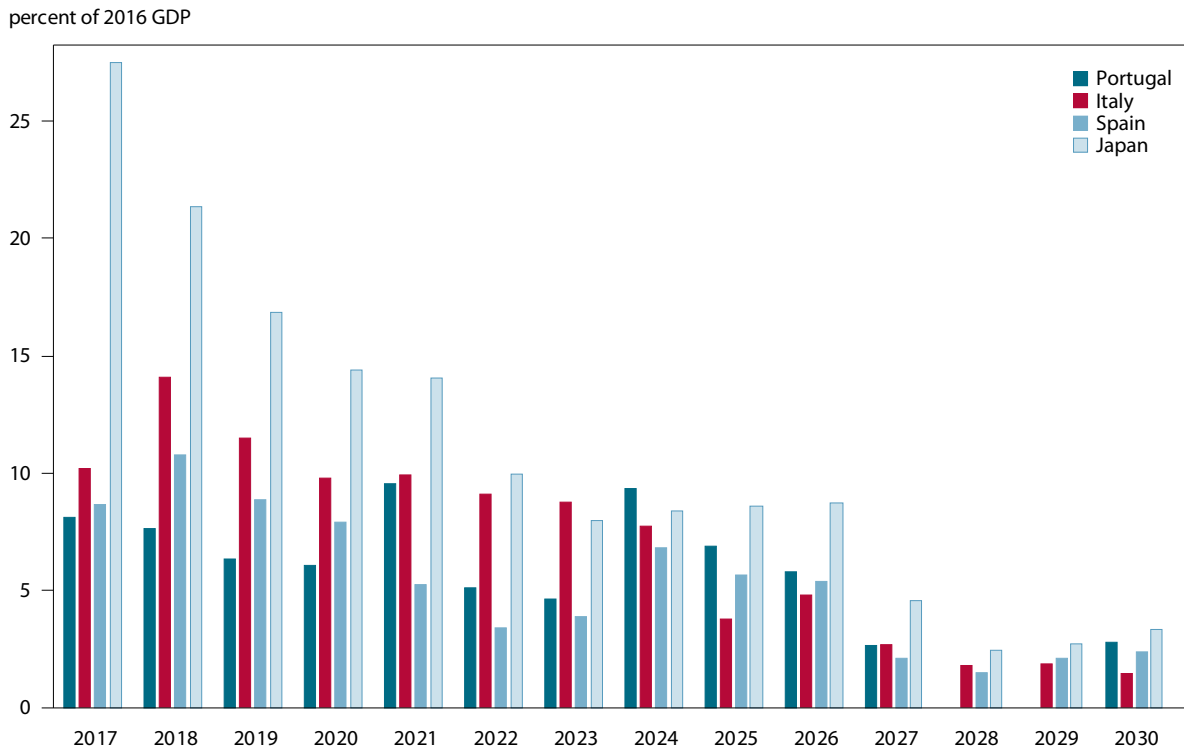
Source: IMF, *World Economic Outlook*, April 2017.

budget is initially limited. For example, with 30 percent of GDP being rolled over in the first year, an increase in interest rates of 200 basis points leads to an increase in interest payments of 0.6 percent of GDP within a year, and 1 percent within two years. For Italy, the numbers look even better, with only 10 percent of GDP due in 2017 and 24 percent by the end of 2018. In the end, fiscal consolidation needs to happen, but the maturity structure gives the Japanese and Italian governments time to design consolidation plans.

Second, and more generally, one of the main reasons why interest rates may increase is that growth itself increases. It is then difficult to imagine that an economic recovery could,

by itself, translate into a debt crisis—even if interest rates rise quickly. Rising interest rates would merely be the counterpart of rising nominal output, which will tend to reduce the debt ratio. And long-run debt sustainability should not be adversely affected: A cyclical recovery of growth may not help raise expected long-run potential growth; neither should it affect long-run expected real interest rates.

Thus, to the extent that a global recovery gives rise to fiscal crises in high-debt countries, they would have to come from a sustained increase in government borrowing rates that is *not* offset by a sustained increase in growth. If this is the case, the arguments above would not offer much

**Figure 2 Maturity profile in percent of 2016 GDP, 2017–30**

Source: Bloomberg, June 2017.

comfort. If debt sustainability has in fact worsened, investors might lose confidence. Risk premiums could rise sharply. In the extreme, the country might lose market access and/or suffer a currency crisis.

Are there concrete scenarios with these features? Yes. Are they likely at this point? No. To explain, we focus again on Japan and Italy, because of their large debts and rollover needs as a share of GDP and because they represent the second and third largest government bond markets in the world (after that of the United States).

## JAPAN

It is well known that Japanese debt is—in the words of the most recent International Monetary Fund (IMF) Country Report—“unsustainable on current policies” (IMF 2016). This has been the case for some time. The primary deficit is close to 4 percent of GDP and gross debt exceeds 200 percent of GDP. Even net debt, which excludes debt securities held by government entities, such as the Ministry of Finance’s Fiscal Investment and Loan Program (FILP), and subtracts government deposits and reserve holdings, is still 120 percent of GDP (figure 1). The unemployment rate is low, and forecast potential growth is low, so the scope for sustained higher growth is small.

Still, interest rates on Japanese government bonds (JGBs) are among the lowest in the world. The proximate reason (again, well known) is that a steady flow of Japanese savings and a strong domestic portfolio bias have created a stable domestic demand for these bonds. Almost 90 percent of JGBs are held by residents: commercial banks, pension funds, and of late the Bank of Japan (BoJ). At the same time, projections show that—unless there is significant fiscal adjustment—the supply of JGBs will outstrip domestic demand for them by the mid-2020s (Hoshi and Ito 2014). The gap will increasingly have to be absorbed by foreigners, who are likely to require higher risk premiums. But the Japanese yield curve does not reflect this expectation. The Japanese 10-year bond yield is almost zero. Even the 20-year bond yield is just 0.5 percent. Why? Presumably because investors believe that the Japanese government will somehow find a way to gradually eliminate its primary fiscal deficit.<sup>3</sup>

3. Because the BoJ by now holds over 70 percent of GDP worth of government debt, it is tempting to think that a “bond burning” operation by the BoJ (or more discretely, a restructuring of the bonds into zero interest perpetuities) could help resolve the Japanese fiscal problem. However, this is not the case, because the government of Japan owns the BoJ, so when the BoJ services its debts to the government, the government is just taking money out of one

Suppose, however, that investors start doubting and suddenly require a higher spread. For example, it becomes clear that the government is not truly committed to debt stabilization, or that, in fact, there is no way it can achieve the required fiscal consolidation, because the increase in taxes (or the decrease in spending) is just too large to be politically feasible.<sup>4</sup> This triggers a move out of JGBs and puts pressure on spreads.

One scenario is then as follows: Worried about the effect of higher interest rates on the government budget, the BoJ may decide to intervene and limit the rise. It does so by buying more JGBs, which leads to increasing deposits at banks and in turn higher reserves that banks deposit with the BoJ. To the extent that foreign investors are selling, the yen depreciates, leading to higher inflation. As inflation, or expectations of inflation, increases, banks increase their demand for foreign assets, leading to more depreciation and more inflation.<sup>5</sup>

This scenario is not necessarily bad. Higher inflation reduces the real value of the debt, and to the extent that government expenditures do not increase one for one with prices, the primary deficit falls. Both contribute to making debt sustainable. Indeed, one of us has argued that higher (but controlled) inflation may be the best way to decrease the real value of the debt and achieve debt stabilization and that it would be better to do it before a fiscal crisis forces the adjustment (see Blanchard and Posen 2015).

If triggered by a fiscal crisis, however, the process may be hard to control, come with high inflation, a large depreciation, and large social, economic, and political costs. This scenario is the most worrisome.

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pocket and putting it into another. Put differently, BoJ “bond burning” would not change the total debt service costs of the consolidated public sector, which consists of the interest on government bonds held outside the public sector and the interest that the BoJ pays for remunerated reserve deposits.

4. The IMF (2016) states that “A steady fiscal consolidation by 0.5 percent of GDP per year through 2030 would be sufficient to put the public debt-to-GDP ratio on a downward path.” This represents a change in the primary fiscal balance of 7.5 percent of GDP, a very large adjustment indeed.

5. Inflation may also increase when investors realize that the purchases of JGBs by the central bank do not change the overall debt (central government plus central bank) and are nothing but a change in the composition of debt, from long-term bonds to money. To the extent that the solvency problem has therefore not been solved, and that an increasing proportion of the debt takes the form of money, holders may rationally anticipate that, instead of defaulting on bonds, government solvency will be restored via a decrease in the real value of money—that is, an increase in inflation. See Reis (2017) for a model in which a fiscal crisis is resolved in that way.

## ITALY

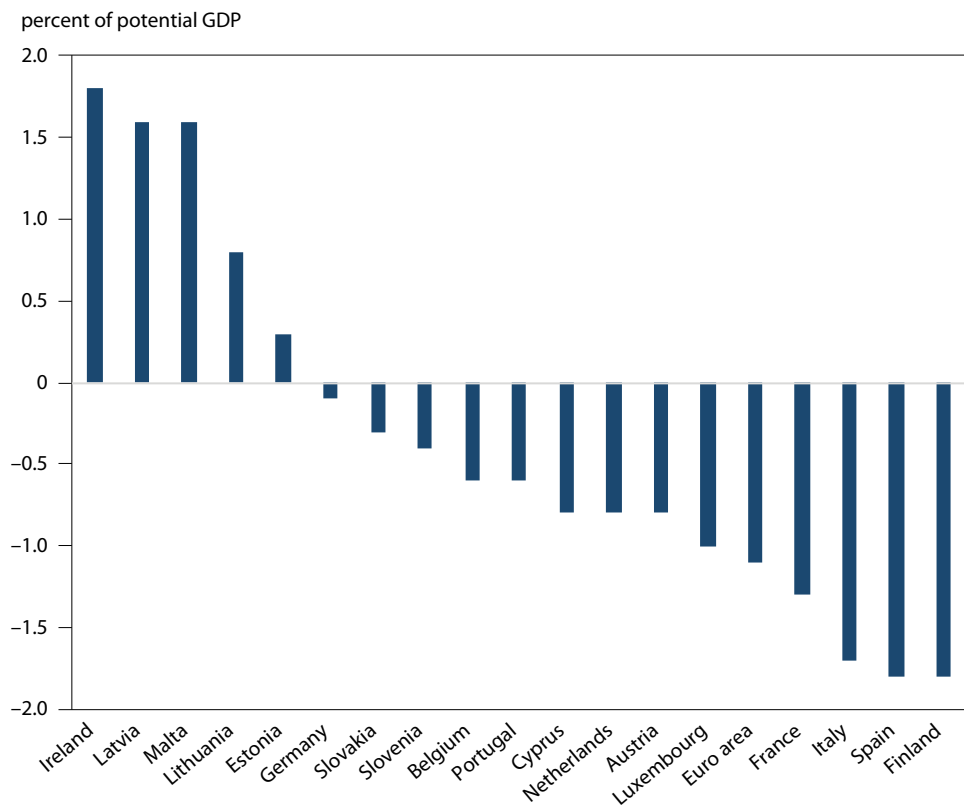
For Italy, imagining a scenario that might trigger a debt crisis is simpler. For a long time now, Italy has suffered from very low growth. The impact of low growth on public debt, however, has remained muted because euro area growth and inflation were so low, on average, as to justify an ultra-easy monetary policy. Rising euro area growth, however, will inevitably lead to higher euro area interest rates. If Italian growth continues to lag, this may open a gap between interest rates and growth in Italy, possibly on a sustained basis. Realizing that Italian debt may not be sustainable, spreads could sharply widen. And unlike Japan, Italy cannot depreciate, raising the specter of sovereign default.

How worrisome is this scenario? On purely economic grounds, less worrisome than it appears at first, for two reasons.

First, a case can be made that Italian growth will catch up with the euro area average. In part, this has to do with its cyclical position (like France and Spain, Italy still has a sizeable output gap, while Germany does not; see figure 3). More importantly, with recent progress in cleaning up its banking system—arguably a major impediment to growth over the past decade—Italy’s growth outlook has become more benign. And indeed, Italian growth has recently surprised on the upside.

Second, suppose that investors did in fact lose confidence. To cut to the worst possible case, suppose Italy were to lose market access. In principle, the euro area is now prepared to deal with such a case. The European Stability Mechanism (ESM), in conjunction with the European Commission and possibly the IMF, would descend on Italy to negotiate an adjustment program. That program, in turn, would clear the way for Outright Monetary Transactions, the big bazooka with which the European Central Bank (ECB) would intervene directly, in unlimited amounts, in the Italian bond market.

The critical question, both for foreign investors and for Italian savers and banks heavily invested in government bonds, is whether such a program would require a restructuring (if only a soft one, in the form of a maturity extension) of Italian sovereign debt. The answer will depend on the fiscal risks that such a program poses to the public purse (that is, the ESM and the ECB). Memories of the Greek 2010 crisis, in which extreme fiscal adjustment led to *both* a deep recession and eventually a deep debt restructuring, are still fresh. This mistake will not be repeated in Italy. If there are any doubts about the ability of Italy to maintain (or restore) its debt sustainability in the context of a standard three-year program, official creditors are likely to require,

**Figure 3 Output gaps in selected euro area countries**

Note: Output gaps measure the estimated distance from actual GDP to full employment GDP.

Source: Annual macroeconomic database (AMECO) of the European Commission's Directorate General for Economic and Financial Affairs.

at a minimum, a “reprofiling” of Italian debts. As it turns out, however, the fiscal adjustment needed to make Italy’s debt sustainable today is an order of magnitude smaller than what Greece needed in 2010. It is also much smaller than what Japan needs.

Figure 4 compares the change in the primary fiscal balance (i.e., excluding interest expenditures) that would stabilize Italy’s debt ratio at today’s level, given its current primary fiscal balance and potential output growth, with both the fiscal adjustment that would have stabilized Greek debt in 2010 and the fiscal adjustment that would stabilize Japanese debt today.<sup>6</sup> In each case, the required fiscal adjustment is shown for three different assumptions about long-run real government borrowing rates: 1, 2, and 3 percent (equivalent to long-run nominal yields of close to 3, 4, or 5 percent).

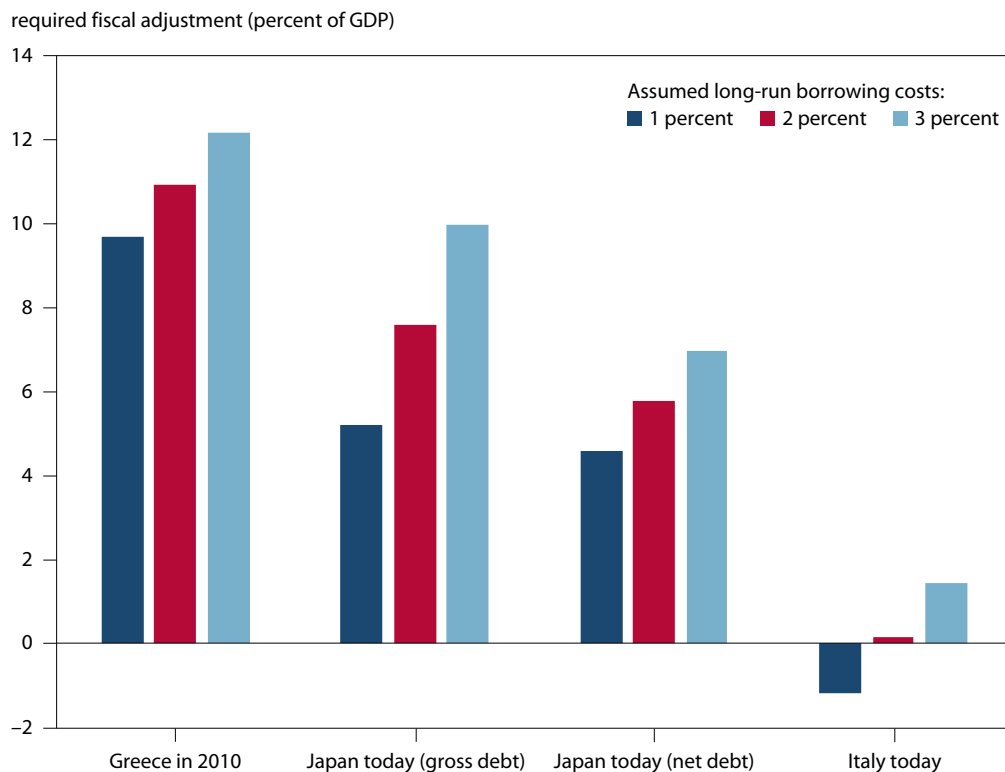
The main result is that, assuming a long-run real borrowing cost of 2 percent and a potential growth rate of 0.85 percent (the IMF’s medium-term assumption), Italy

would need to adjust by almost nothing to stabilize its debt ratio (if it wants to reduce the debt ratio, it will of course have to go farther). Even if a real borrowing cost of 3 percent is assumed—which would put nominal yields at close to 5 percent, not far from the “crisis yields” that Italy experienced during 2011–12<sup>7</sup>—the fiscal adjustment needed to stabilize the debt-to-GDP ratio would be a manageable 1.5 percent of GDP. The reason for this is that in 2016 Italy already achieved a primary surplus of about 1.4 percent. In contrast, Japan had a 2016 primary deficit of about 4 percent of GDP, while Greece had a primary deficit of 10 percent of GDP in 2009 (the relevant reference year). This vastly better starting position of Italy results in a much lower adjustment need.<sup>8</sup> Italy will still need to adjust but

7. At the height of the crisis, between July 2011 and August 2012, 10-year government benchmark yields in Italy averaged close to 6 percent per annum.

8. These calculations ignore the fiscal costs of population aging. However, factoring in these costs does not change the picture for Italy, where the additional fiscal costs of aging are zero (a consequence of the 2012 Fornero pension reform). As a result, the adjustment that Italy needs to undertake to

6. For Japan, two sets of numbers are shown: one based on gross debt and the other on net debt.

**Figure 4 Required fiscal adjustment to stabilize the debt-to-GDP ratio**

Note: The figure shows the difference between the debt-stabilizing primary surplus  $p^*$  and the primary surplus of the preceding year (2016 for “Japan today” and “Italy today” and 2009 for “Greece in 2010”), for three different assumptions about long-run borrowing costs.  $p^*$  is computed using the formula  $p^* = D[(r - g)/(1 + g)]$ , where  $D$  is the debt-to-GDP ratio,  $r$  is the assumed long-run borrowing cost, and  $g$  is the assumed potential output growth. The following values were used for  $D$ : “Greece in 2010”: 127%, “Japan today” (gross debt): 239%, “Japan today (net debt)”: 120%, “Italy today”: 132%. For  $g$ , the following values were used: Greece: 1.25%, Japan: 0.5%, Italy: 0.85%.

Source: IMF, *World Economic Outlook*, April 2017, and authors’ calculations.

mostly because it may wish (and has committed, under the European Union’s Stability and Growth Pact) to *reduce* its debt-to-GDP ratio—not because its current debt-to-GDP ratio is in any danger of exploding.

The implication is that an adjustment program for Italy would not have to be particularly austere and could instead concentrate on growth-enhancing measures such as product market reform and an accelerated cleanup of the banking sector. As a result, it would be far less risky—economically and ultimately politically—than the Greek 2010 program was. In light of this, lenders would not need to insist on an accompanying debt restructuring—even of a soft kind.

So, can one be completely relaxed? No. The analysis above assumes a cooperative Italian government, willing to continue, and indeed accelerate, the structural reform and

fiscal adjustment process of previous years. Given upcoming Italian elections, one cannot be sure that this will be the case.

Indeed, even a positive likelihood that a populist coalition may win in a coming election may lead to higher spreads today, making the task of the current Italian government more difficult. However, as shown in figure 2, the maturity structure of the debt implies that the effect on the budget between now and the elections is likely to be limited, and the current government can probably absorb the shock. Put another way, the long maturity of the debt may eliminate the scope for multiple equilibria. But obviously, if the populist party actually gets to power, all bets are off.

Which brings us back to the beginning of the argument. The combination of high debt, rising interest rates, and continued low growth might create a problem for Italy or other countries but not an unmanageable one. Only when populism is added to the cocktail can it really become explosive.

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stabilize its long-term debt-to-GDP ratio inclusive of aging costs is in fact the smallest of any of the large euro area countries (European Commission 2017).

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