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WELLS FARGO SECURITIES

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Special Commentary

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Is the Greek Debt Problem "Solved"?

Executive Summary

In the first of two special reports on the European sovereign debt crisis, we analyze the second bailout package for Greece that leaders of the European Union (EU) recently announced. Our calculations show that the package should stabilize the government's debt-to-GDP ratio at approximately 160 percent over the next few years. However, the calculations are sensitive to assumptions about nominal GDP growth and the government's primary budget surplus. If the Greek economy should stagnate at fairly slow rates of nominal GDP growth or if the government is unable to incur large primary surpluses for an extended period of time, the debt-to-GDP ratio will rise further. In our view, it would be premature to state that Greece is "out of the woods." In a soon-to-be-released second report, we will analyze debt sustainability in some other highly indebted European countries.

Our analysis shows that under some favorable conditions the latest bailout package should stabilize the Greek debt-to-GDP ratio—under certain conditions.

Greece Receives Its Second Bailout Package in Two Years

Leaders of the EU recently agreed to extend a second bailout package to Greece. Between the EU and the International Monetary Fund (IMF), official institutions will loan the Hellenic Republic an additional €109 billion to help it meet its financing needs over the next few years. Greece received its first bailout package, which was worth €110 billion, from the EU and the IMF in May 2010 under the assumption that it would be able to return to private capital markets by 2013. However, it became painfully obvious over the past few months that the private sector would remain closed to Greece for the foreseeable future, which precipitated the need for a second package.

Greece's main problem is the amount of its outstanding debt. To help alleviate its crushing debt burden, the EU will reduce the interest rate that the Hellenic Republic pays on its bailout funds from about 5 percent at present to 3.5 percent, at least initially. In addition, the EU will push out the repayment period from the current 7 years to a minimum of 15 years. As a condition for the second package, some European governments demanded that the private sector provide debt relief to Greece as well. Thus, the private sector has also offered to create voluntary debt exchanges that the Institute of International Finance (IIF), which spearheaded the private-sector participation effort, estimates will provide €54 billion of relief by mid-2014 and €135 billion by the end of 2020. The IIF estimates are based on an assumption of 90 percent participation.

Some of the exchanges allow investors to swap their current holdings of Greek government securities for new bonds that the Hellenic Republic will issue. Investors also have the option of holding current Greek bonds until maturity and then rolling into new bonds. Although the new bonds that Greece will issue will pay lower coupons than current securities, which helps to provide debt relief, the new Greek bonds will be collateralized by zero coupon AAA-rated bonds that give investors some recourse in the event that the Greek government fails to make payment.

A buyback facility for Greek government debt will also be established. Presumably, the Greek government will receive funding from the European Financial Stability Facility (EFSF), which is the €440 billion war chest that was set up by the EU last year to help highly indebted European countries. The Greek government would then buy back its debt in the secondary market, which will help it reduce its outstanding private-sector debt. The exact size of this buyback facility has not yet been announced.

Is Greece Out of the Woods?

As we described in a previous report, there are four variables that determine a country's government debt-to-GDP ratio.[1] First, the ratio tomorrow depends on its value today. Second, the ratio will tend to rise over time if the government incurs a primary fiscal deficit, which is defined as a situation in which government spending (net of interest payments on past debt) exceeds government revenue. That is, debt will tend to rise if the government spends beyond its means. However, the government may still be able to incur a primary deficit without provoking an unsustainable situation as long as nominal GDP growth, which is the denominator in the debt-to-GDP ratio, exceeds the rate of interest the government needs to pay on its debt. Therefore, interest paid on the debt and the nominal growth rate of the economy are the third and fourth factors determining sustainability, respectively.

Economists generally define debt sustainability as a situation in which a country's debt-to-GDP ratio is stable. As the figures below show, Greece's debt-to-GDP ratio was essentially stable around 100 percent between the mid-1990s until 2008. The deep recession caused Greece's fiscal deficit to widen dramatically, which led to the jump in the debt-to-GDP ratio. In 2010, the ratio exceeded 140 percent.

Our base case for stabilization calls for 3.5 percent nominal GDP growth with a 3 percent primary surplus through 2030.

To determine if the new EU plan will stabilize Greece's debt-to-GDP ratio, we developed a base-case scenario with two primary assumptions. First, we assumed that nominal GDP in Greece will grow in accordance with the IMF forecast between 2011 and 2015. From 2016 until 2030, which is the end of our projection period, we assumed that nominal GDP would grow 3.5 percent per annum.[2] From 1999 to 2007, nominal GDP in the "core" Eurozone countries grew at an average annual rate of approximately 3.5 percent.[3] During the same period, Greece averaged a nominal GDP growth rate of 7.5 percent per annum, but we expect that this exceptionally high rate of growth will be difficult for Greece to achieve, at least for the foreseeable future. Therefore, we use 3.5 percent, the average growth rate in the "core" Eurozone during "normal" times, as our long-run growth rate for Greece.

Second, we assumed that the Greek government would incur an annual primary surplus of 3.0 percent of GDP over the projection period, which is the primary surplus that is implied in the EU stabilization program. As discussed below, we perform some sensitivity analysis around the primary budget surplus. Achieving a 3.0 percent of GDP budget surplus in Greece is not impossible, but it will be challenging because it would require a 5 percentage point swing from the current rate. Greece recorded primary budget surpluses equivalent to 3 percent of GDP in the late 1990s, but it has subsequently been in chronic deficit. Since 1993, 30 OECD countries have achieved 3 percent of GDP primary surpluses only 20 percent of the time.

We also needed an interest rate assumption. When investors exchange their current holdings of Greek debt for new securities there are three different coupon rates that depend on the type of exchange that is made. We used a weighted average of these rates as the interest rate in our projections. Under these assumptions, we found that the recently announced bailout package will stabilize the Greek debt-to-GDP ratio at approximately 160 percent (Figure 1). Although the debt-

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[1] See "Is Greece the Tip of the Iceberg?" (February 22, 2010), which is available from the authors upon request.

[2] The IMF projects that nominal GDP in Greece will contract 1.5 percent in 2011 and then grow at the following rates: 1.5 percent in 2012, 2.9 percent in 2013 and 3.3 percent in both 2014 and 2015.

[3] We included the following countries in our definition of the "core" Eurozone: Austria, Belgium, Finland, France, Germany, Italy, Luxembourg and the Netherlands.

to-GDP ratio stabilizes, it does so at a ratio that historically has not been conducive to robust economic growth.[4]

Next, we decided to change the growth rate to check the stabilization program's sensitivity to different rates of nominal GDP growth. (We kept our primary surplus and interest rate assumptions unchanged.) Under our optimistic scenario, Greece returns to its prerecession growth rates near 7.5 percent after 2015. Under this assumption, Greece's debt-to-GDP ratio will stabilize in the near term and then begin to decline after 2015 as strong nominal GDP growth kicks in. We also calculated a pessimistic scenario in which the Greek economy stagnates over the next 20 years with a nominal GDP growth rate of just 1.5 percent per annum. Under this scenario, the country's debt-to-GDP ratio continues to rise indefinitely. This analysis shows the importance of strong economic growth. In that regard, it will be important for Greece to enact structural reforms that are aimed at raising the country's long-run economic growth rate. If the Hellenic Republic does not follow through on these reforms, it will be more difficult to stabilize the debt-to-GDP ratio, everything else equal.

Although the country's growth rate is only indirectly under the control of the government, it has more power to determine the primary surplus. Therefore, we conducted some sensitivity analysis in which we maintained nominal GDP growth at 3.5 percent in the long run but varied the primary surplus. Under the optimistic scenario in which the Greek government incurs a primary surplus of 5.0 percent of GDP for the next 20 years, the debt-to-GDP ratio will gradually decline (Figure 2). This scenario is incredibly optimistic, however. Running primary surpluses of more than 5 percent of GDP on a sustained basis is very rare.[5] Sooner or later voters grow weary of austerity. Under the assumption that the Greek government falls short and incurs primary surpluses of only 1 percent of GDP per annum, then the debt-to-GDP ratio will continue its upward trajectory.

Figure 1

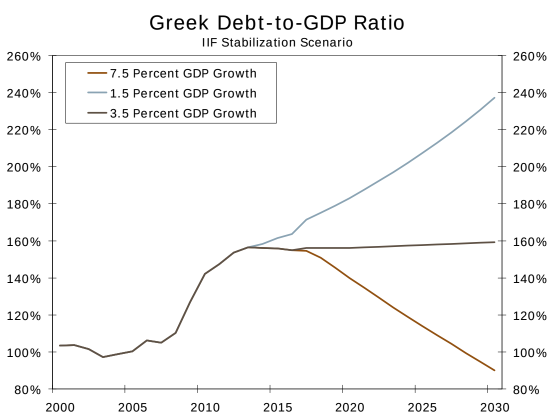
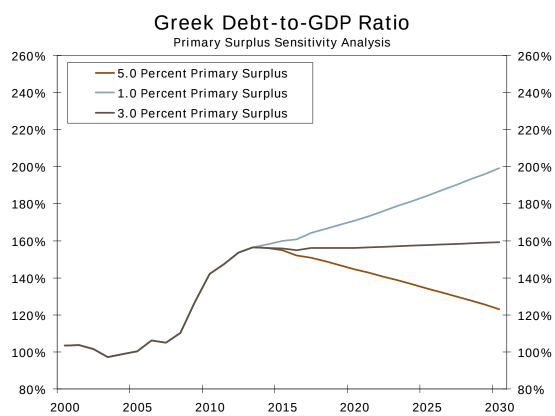


Figure 2



Source: European Union, Institute of International Finance and Wells Fargo Securities, LLC

Conclusion

Greek debt markets have reacted favorably since the second bailout package was announced last week. The yield on the 10-year government bond has dropped about 300 bps since the announcement, and the yield on the 2-year note has come down more than 1000 bps over that

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[4] **Researchers have found that countries with debt-to-GDP ratios exceeding 90 percent have median growth rates 1 percentage point lower than countries with lower ratios. See Carmen Reinhart and Kenneth Rogoff, "Growth in a Time of Debt," *American Economic Review* 100 (May 2010), p. 573-578**

[5] **Norway has consistently racked up double-digit primary surpluses since 2000, but oil revenues help to swell the government's coffers. Belgium ran primary surpluses in excess of 5 percent of GDP between 1997 and 2002. However, no other OECD country has incurred primary budget surpluses in excess of 5 percent of GDP for more than a year or two. Expecting a government to maintain primary surpluses of 5 percent of GDP for twenty years is, in our view, a very heroic assumption.**

period. However, at yields of 28 percent for the 2-year note and 15 percent for the 10-year bond at present, investors do not seem to be convinced yet that Greece is "out of the woods."

Although near-term stabilization seems likely, the Greek sovereign debt crisis is far from resolved.

Indeed, our analysis suggests that it would not be credible to consider the Greek debt crisis "solved" just yet. Under our base-case scenario of 3.5 percent long-run nominal GDP growth and a 3 percent of GDP primary surplus, the debt-to-GDP ratio of the Greek government will stabilize around 160 percent of GDP. However, a debt-to-GDP ratio of 160 percent of GDP is hardly stellar. Among 30 OECD countries, only Japan would have a higher ratio. Moreover, what happens if there is another negative shock? If nominal GDP in the Hellenic Republic grows slower than 3.5 percent per annum in the long run, the debt-to-GDP ratio will rise further. Incurring primary surpluses of 3 percent of GDP indefinitely is not impossible, but it will be very challenging. In a best-case scenario, the debt-to-GDP ratio of the Greek government will recede over time. If these favorable conditions do not materialize, however, the Greek debt problem will raise its ugly head again.

Greece is not the only European country with questionable debt dynamics. In a soon-to-be-released follow-up report, we will analyze debt dynamics in Ireland, Portugal, Spain, Italy and Belgium.

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