Government debt in times of low interest rates: the case of Europe

Clemens Fuest and Daniel Gros

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Abstract: In this paper we discuss to what extent the declining difference between interest rates and growth rates (r-g) pointed out recently by Olivier Blanchard (2019) for the case of the US also characterizes the economic situation in Europe. We show that r-g has been positive on average but declining over the last decades in Europe as well. But r-g differs across considerably across European countries, and a continuation of current fiscal policies even under existing conditions would increase the debt ratios further in some countries. We conclude that the current low levels of r-g should be used to make progress in fiscal consolidation in countries with high debt levels. At the same time it would be desirable to benefit from the currently low interest rates to boost one time investment projects.

1. Introduction: Should the cost of government debt be reassessed?

The growing level of government debt is one of the most important developments in public finances in the last decades. Views about the implications of public debt are divided. While many economists warn that growing debt to GDP ratios undermine the sustainability of public finances and reduce fiscal space in downturns, others emphasize that more government debt is needed to absorb growing savings.

In a recent and influential paper Olivier Blanchard (2019) points out that government debt policies should be re-evaluated in the light of the fact that interest rates have declined in recent years and may remain low for a long time. More specifically, Blanchard (2019) argues that situations where the interest rates on US government debt have been lower than the growth rate have been the norm rather than the exception throughout US economic history. If the interest rate on government debt is lower than the growth rate, the government can run a permanent primary deficit

without causing the debt to GDO ratio to rise. In addition, if the marginal productivity of capital is lower than the growth rate as well, an increase in government debt may increase welfare even if it crowds out private investment.

Blanchard emphasizes that the "purpose in the lecture is not to argue for more public debt, especially in the current political environment," but to stimulate a "richer discussion of the costs of public debt."[1]

It is the purpose of this note to discuss to what extent Blanchard's argument is relevant for Europe. We focus on the relationship between interest rates on government debt and growth rates and the implications of this relationship for the debt to GDP ratio. Financing conditions for governments and growth rates differ significantly across Europe and in particular across Eurozone member states, even though Europe has also experienced a decline in interest rates.

Our key findings are as follows. The interest rate growth rate difference r-g is higher in Europe than in the US. On average, it has been positive on average over the last two decades. This also holds for the US if implicit interest rates are considered, rather than current market rates as in Blanchard (2019). But recently r-g has also declined in Europe. Within Europe r-g differs considerably across countries, as do the primary surpluses required to stabilize the debt to GDP levels. In the years since 2015 r-g has been unusually low in Europe and negative for all countries except Italy. Assuming that these conditions will last would be reckless though. Even if these conditions lasted, we show that current fiscal policies would lead to a further increase in public debt ratios for some countries, in particular Italy and to a lesser extent France.

We conclude that the highly indebted Eurozone member states should use the currently low levels of r-g to reduce their debt levels. At the same time it would be beneficial to use the current conditions to boost one time investment projects, in particular in countries where public investment has been low in recent years. In contrast, it would be dangerous to question the institutional restrictions on public debt in Europe. More room for debt would not necessarily be used for more public investment,

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[1] Blanchard (2019), p.2. Others who have called for more public debt, for reasons related to secular stagnation, include Summers (2001) and Weizsäcker (2014).

and risk premia on government debt would rise, increasing r-g in particular for highly indebted countries.

2. The interest rate–growth rate differential in the wider historical experience

The US experience should not be taken as the only basis for statements about longer term patterns concerning interest rates and growth rates. Jorda et al. (2017) provide a very long time overview spanning many industrialised countries. They look at two key rates: safe assets (typically government bonds) and risky assets (equities, etc.).

They find that historically rates of return on both risky and safe assets were high during the 19th century, then gradually declined in the lead up to World War I, after which they increased sharply. From 1930 onwards, the 'risky rate' stayed high and relatively stable, whereas the 'safe rate' dropped sharply and remained low until the late 1970s, before increasing and falling back again during the past three decades.

A first conclusion is that, unlike safe rates, risky rates show little sign of a secular decline. Somewhat surprisingly, safe rates exhibit higher volatility and, recently, a declining trend. Taking a very long term average, Jorda et al. (2017) find that the return on safe assets has been on average 'below, but close to' the growth rate of GDP, even though this average hides very large swings. This finding would tend to confirm Blanchard's conjecture that the rate of growth might well stay higher than the rate of interest for some time.

However, Jorda et al. also find that, on average, the rate of return on risky assets has tended to exceed the rate of growth of GDP by considerable margin. The rate of return on risky assets should constitute a good measure of the productivity of real investment. The finding that the rate of return on risky assets is higher than the growth rate thus implies that government debt which crowds out private investment might have a considerable cost.

3. The cost of public debt in Europe

The relationship between the cost of public debt and the growth rate is important for fiscal policy. It is crucial for the primary surplus the public sector needs to generate to make sure that the debt to GDP ratio is stable. The primary surplus that stabilizes the debt ratio (for the derivation see the appendix) is given by

$$p_{t+1} = \frac{d_t(r_t - g_t)}{(1 + g_t)}, \tag{1}$$

where p_{t+1} is the ratio of the primary surplus to GDP in period t+1, d_t is the government debt to gdp ratio in period t, r_t is the interest service cost on government debt and g_t is the growth rate of nominal GDP (alternatively it is straightforward to define this relationship in real terms). The formula highlights that the primary surplus and hence the fiscal effort required to stabilise the debt ratio depends on the difference between the interest rate and the growth rate (r-g), the GDP growth rate and on the initial level of debt.

3.1. Which interest rate is relevant?

In any empirical application it is important to distinguish between 'the' interest rate and the cost of servicing public debt. There is no such thing as 'the' interest rate, even on safe assets, since the short term and the long term rates can diverge by a substantial margin. The long term rate is usually much higher than the short term rate. Public debt is usually issued as a mix of many different maturities.

In our empirical calculations we focus on the actual cost of servicing debt as reported by the European Commission.[1] This indicator is defined as the ratio between interest expense and the level of public debt. It is thus an implicit rate.

We then focus on the difference between this indicator of the cost of debt and the rate of growth of (nominal) GDP, i.e. r-g in terms of the equation above. This analysis allows us to derive the primary surpluses that would have been necessary to stabilize the public debt ratio in the past.

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[1] We use the AMECO database of the European Commission.

Blanchard uses a weighted average of long and short term market rates of return. The current average market interest rate describes the cost of new government debt including debt which is rolled over. Whether implicit or current market interest rates are a better indicator for future costs of debt depends on the question to be answered. Market rates describe the cost of newly issued debt whereas implicit rates describe the average cost of the overall stock of debt. Market rates are more volatile than implicit rates. For the calculations in this paper we use implicit interest rates but as a robustness check we also consider the results which emerge if we use market rates of return on government debt.

Another issue is how to take into account that interest income is subject to income taxation. Blanchard adjusts the nominal interest rate for taxation of interest income. If interest on government debt is taxed it is true that the effective cost of debt is equal to the after tax interest rate. But as soon as public debt is held by tax exempt investors or by foreign investors the returns are not taxed. In addition, using the after tax interest rate in formula (1) implies that the primary surplus needs to be adjusted by tax revenue on government debt. Data about this adjusted primary surplus is not easily available. This is why we use the before tax interest rate and the standard primary surplus.

3.2. r-g in the last two decades

How has the relationship between r and g developed over the last two decades? Figure 1 compares the development of r-g for the US and the Euro area since the year 2000 and how it is forecasted to change until 2019. The data shows that r-g in Europe and the US is highly correlated and rather volatile over the business cycle. The recent decline in r-g applies to both Europe and the US. In the US r-g has been negative since 2012 but has been increasing recently, as a result of rising interest rates. For the Eurozone (Euro 12)[1] it is negative since 2015.

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[1] In the following calculations for the Eurozone based on implicit interest rates refer tot he Euro 12 whereas data for current market interest rates is an average for the entire Eurozone provided by datastream.

Figure 1
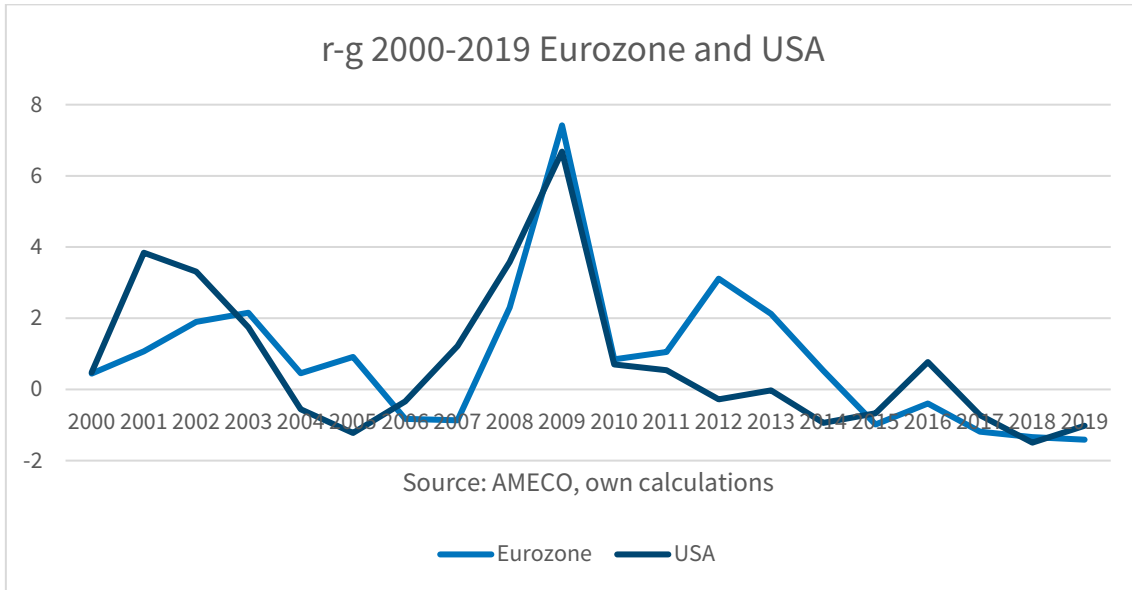
Of course, a key difference between the US and the Eurozone is that the latter is a currency union of fiscally sovereign member states which are characterized by rather different financing costs and growth prospects. Figure 2 illustrates r-g for France and Germany.
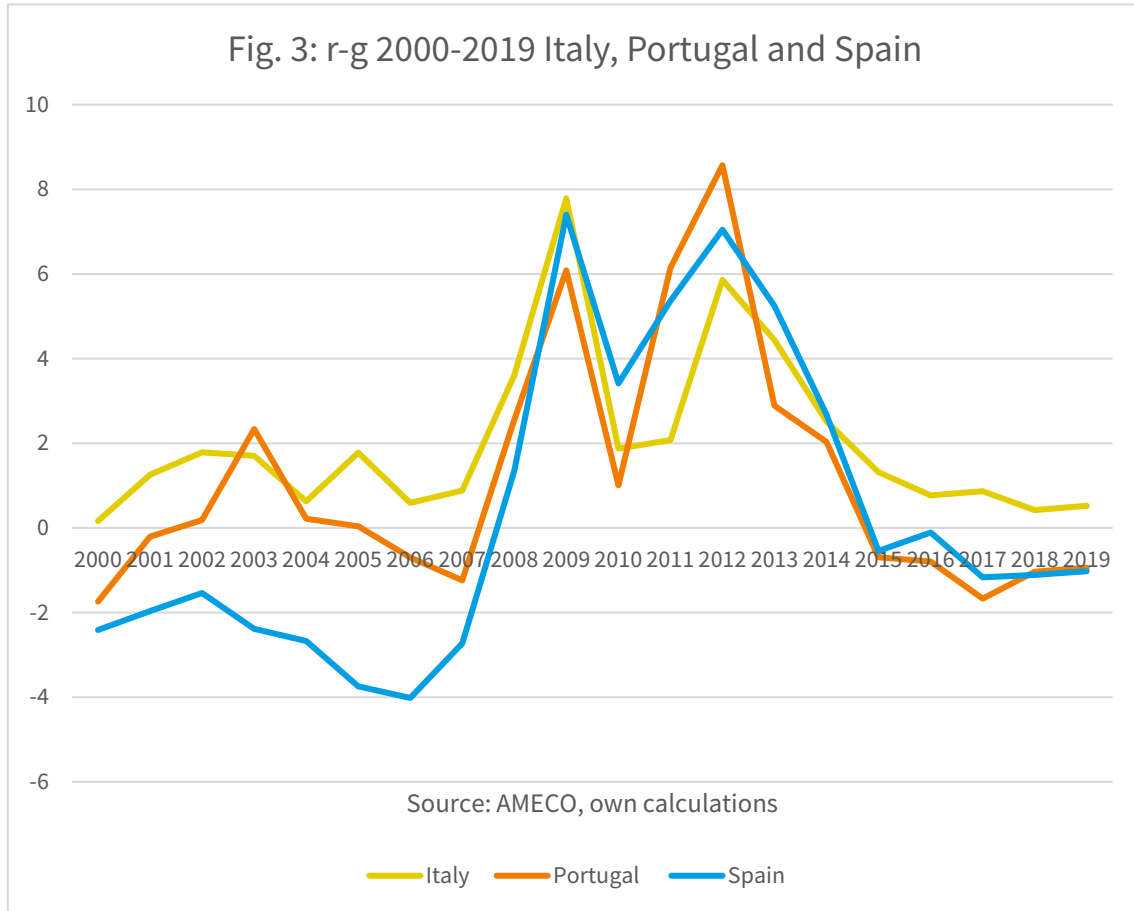
Figure 2
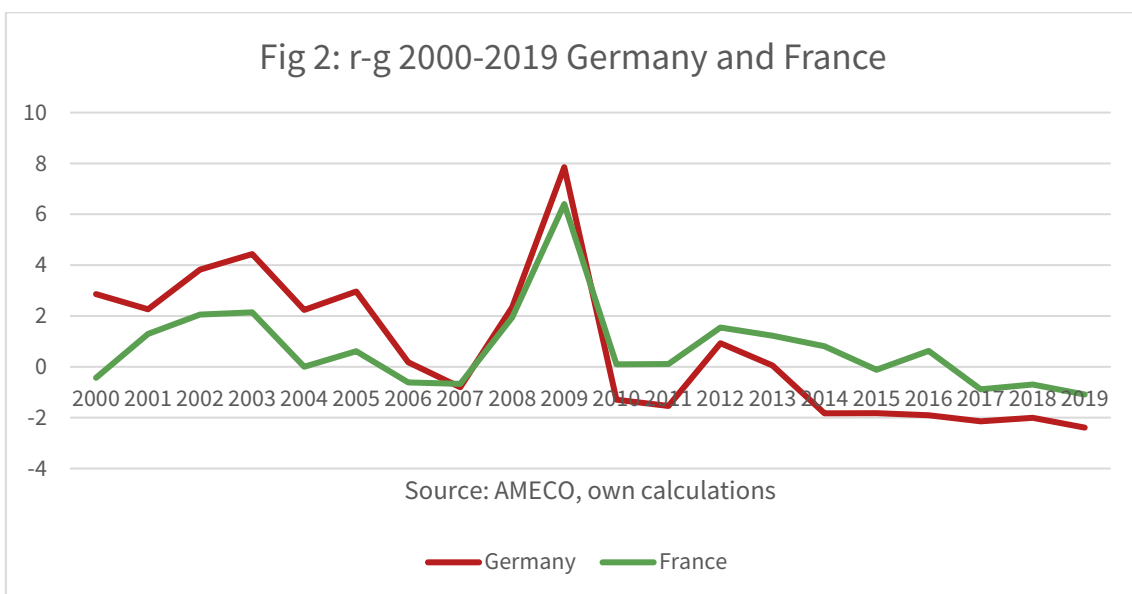
Again, r-g is highly correlated for the two countries, but the decline over time is stronger for Germany, reflecting both the stronger recent growth performance and the fact that Germany is seen slightly more as a safe haven within the Eurozone than France. Given that the German economy recovered more quickly after the financial crisis and given that the debt to gdp ratio for Germany has declined now to about 60 % this is not surprising. At the same time the safe haven status has made it easier for Germany to bring down public debt. As a result r-g in Germany has been negative since 2014. France followed to negative territory in 2017.

Figure 3 compares r-g for Italy, Spain and Portugal; three countries which at times experienced considerable fiscal stress. It is striking that Spain benefited from a long phase of strongly negative r-g before hitting the crisis. During the crisis r-g increased massively, driven both by the collapse of economic growth and rising risk premia on Spanish government debt. But this proved temporary. Since 2015 r-g has returned to negative territory for Spain. For Portugal, the development is similar although less pronounced. Italy is the only large EU country with a consistently positive r-g. Here the key factor is weak economic growth. Recently rising risk premia on Italian government debt have caused r-g in Italy to rise again.

Figure 3

Fig. 3: r-g 2000-2019 Italy, Portugal and Spain

Source: AMECO, own calculations

Italy   Portugal   Spain

The development of r-g in the last two decades shows that, unsurprisingly, this dif-
ference is very volatile over the business cycle. In particular, the very benign combi-
nation of steady economic growth and very low interest rates which characterized
the last five years are very unlikely to last forever. At the same time one should note
that the data we have used so far includes implicit interest rates. In times of falling
rates this overstates the cost of currently issued new debt. Figure 4 shows that aver-
ages of r-g for all countries considered above, and it compares implicit interest rates
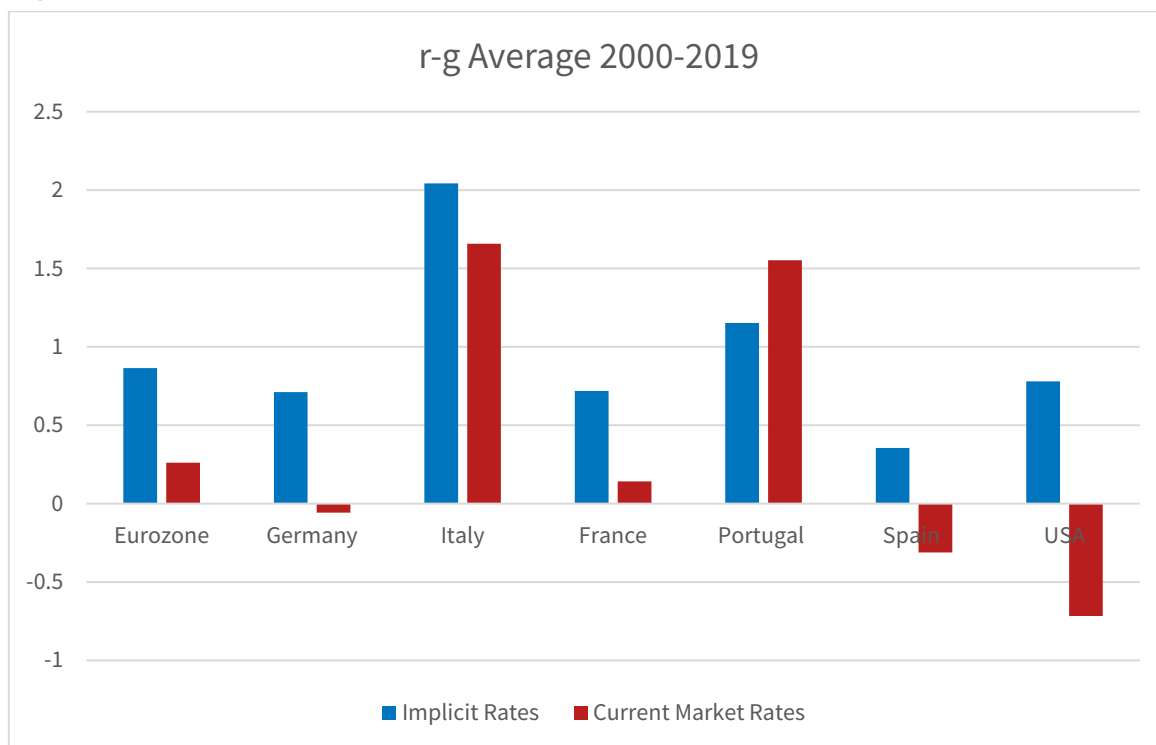and market interest rates.

Figure 4

Figure 4 shows that the type of interest rates used in the analysis matters a lot. Using implicit interest rates leads to the result that r-g was positive on average over the last two decades for all countries including the US. If we use market interest rates r-g is negative for Germany, Spain and the US. In times of declining interest rates current market rates understate the average cost of government debt whereas implicit rates overstate the cost of newly issued debt, and vice versa.

Figure 4 also shows that r-g differs significantly across Eurozone member states. A first conclusion is that in the euro area financing conditions for governments and growth prospects are so different that some governments cannot safely assume that their financing costs will permanently be lower than the growth of GDP. High debt/low growth countries can face considerable risk premia. Accordingly, they need greater fiscal effort, that is higher primary surpluses to control or bring down their debt ratios. This is similar in the US where the individual States also have to limit their debt and most have constitutional balanced budget rules.

4. Implications for fiscal policy

The fact that the cost of public debt tends to rise with the debt level suggests that avoiding ever increasing debt to GDP ratios must be an important policy goal in the euro area. Combining r-g with the debt ratio allows to determine the primary surpluses required for each country to stabilize the debt to GDP ratio. While it is clear that stabilizing the debt ratio is not enough for countries with high debt levels, it is nevertheless an important benchmark.

Of course, calculating this primary surplus for the future requires assumptions about how interest costs, growth rates and debt ratios will evolve. In figure 5 we illustrate the primary surpluses which stabilize the debt ratios using average values of all variables for the entire period 2000-2019, for the cases of implicit rates and current market rates. We also report the primary surplus forecasted for 2019.
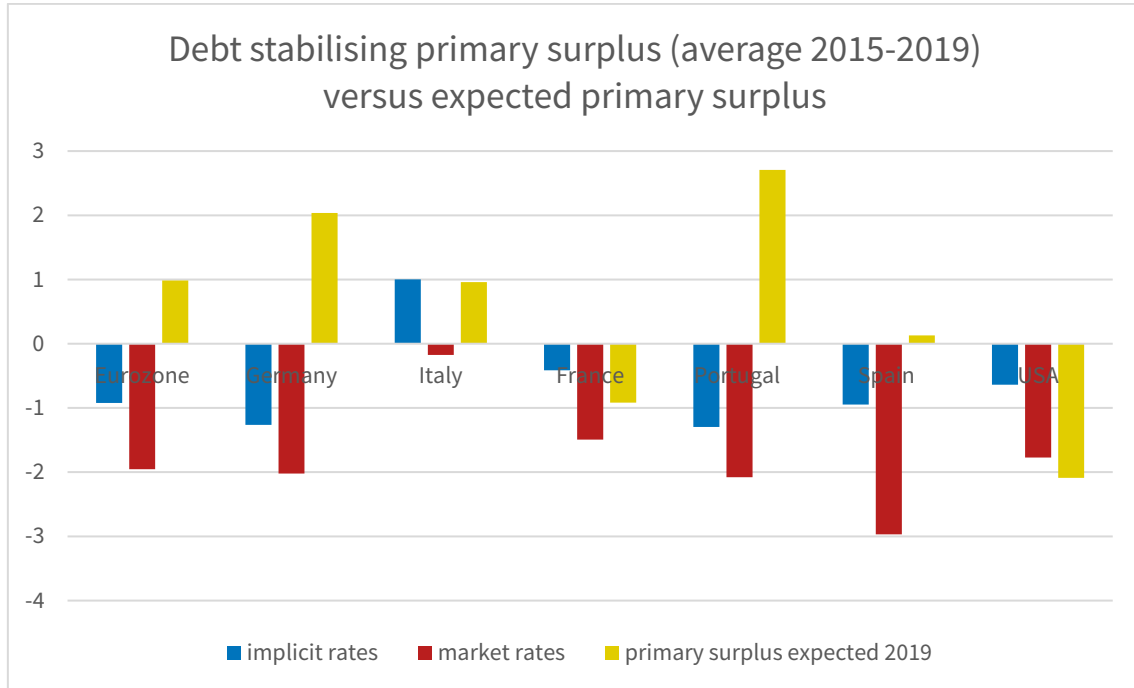
Figure 5
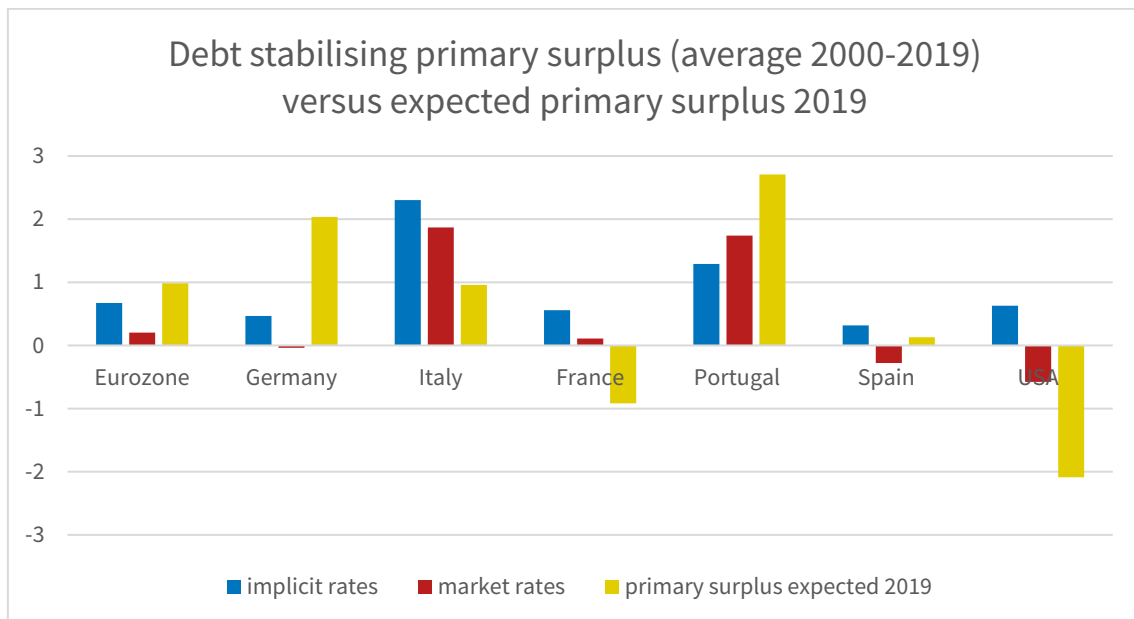
It turns out that only two countries – Germany and Portugal – currently have primary surpluses which allow them to reduce their debt to GDP ratios, assuming that r-g in the near future will be roughly the same as the average over the last two decades. Of course, one could object that future r-g will be lower than what it was in the last two decades, both because the decline in interest rates may be permanent and a decline

in nominal GDP comparable to the one which occurred after the outbreak of the financial crisis in 2008 is unlikely to happen again in the near future. Figure 6 illustrates the results that emerge under the very optimistic assumption that future values of r-g will be as in the period 2015-2019, where r-g was unusually low.

Figure 6

Debt stabilising primary surplus (average 2015-2019) versus expected primary surplus
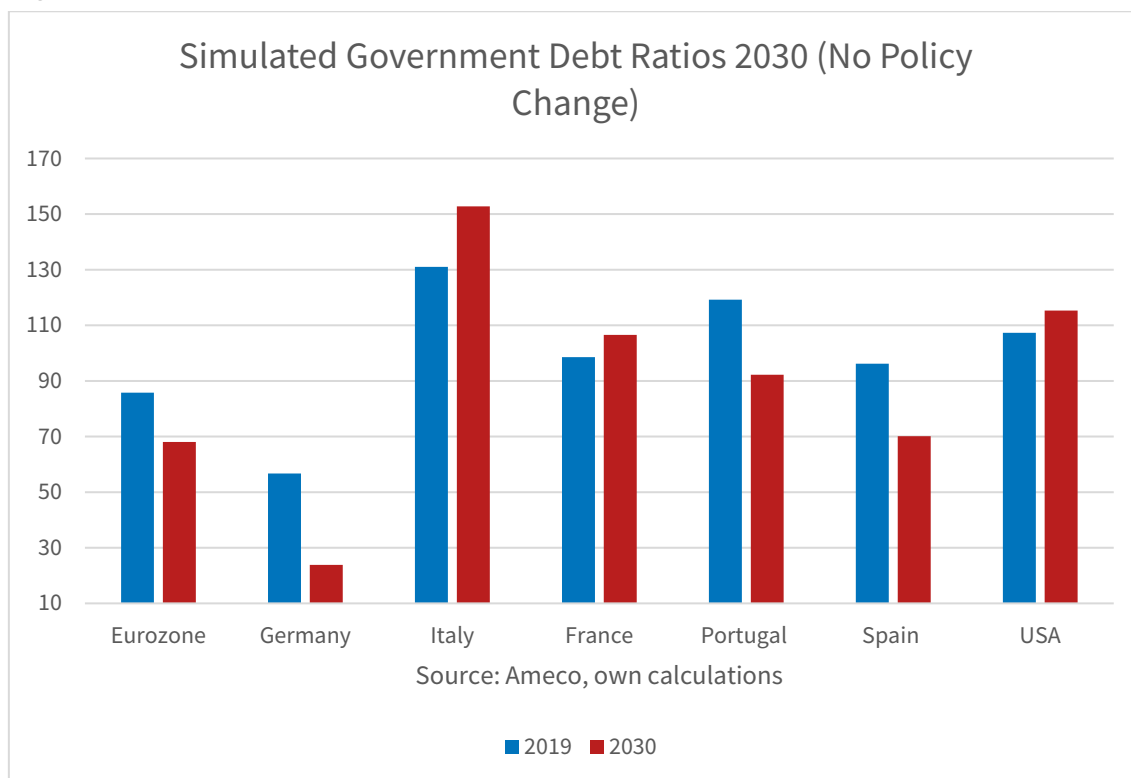
Even under the extremely optimistic assumptions underlying the results in figure 6, the US primary deficit is too high to stabilise the debt ratio. Germany, Spain and in particular Portugal, in contrast, are able to benefit from these benign conditions to reduce their debt ratios rather quickly. Italy and France are struggling to achieve the same.

Another way to see how dangerous the current fiscal stance is in some countries is to simulate the debt ratios for the next decade assuming that the primary surplus remains the same as currently. Of course a key question is how r-g will develop (for a discussion of different approaches to sustainability analysis see Alcidi and Gros (2019)). We make the highly optimistic assumption that (implicit) interest rates and growth rates over the next decade remain the same as the average over the period 2015-2019. We assume that the primary surpluses will also be equal to the average

over this period. The debt ratios emerging under these assumptions are given in figure 7.

Figure 7

Figure 7 — Simulated Government Debt Ratios 2030 (No Policy Change). Source: Ameco, own calculations. Series: 2019, 2030.

The results confirm that further fiscal consolidation is necessary in particular in Italy and France. The Italian debt ratio would increase in this 'best case' scenario to over 150 %. If this were to materialise risk premia would probably increase, rendering it even more difficult for the Italian government to stabilize debt.

5. Conclusions

What do our results imply for future fiscal policy in Europe? Blanchard's observation that low and declining levels of the interest rate – growth differential (r-g), in the US have implications for fiscal policy is clearly relevant for Europe as well.[1] But r-g has

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[1] Moreover, the economies of the euro area are very open, much more so than the US. This implies that the implicitly closed economy analysis of Blanchard should be modified to take into account the fact that the balance of payments provides an 'escape valve' for excessive domestic savings.

fluctuated a lot over the last two decades in Europe and differs strongly across countries. While in particular Germany has benefited from a declining trend in r-g over the last two decades, other countries have had to deal with either low growth rates or high risk premia on their debt, or both. The years since 2015 have been characterized by particularly benign conditions for fiscal consolidation, with growth often exceeding the interest rate. It would be reckless, however, to rely on these conditions to last.

Of course, the future path of interest and growth rates is unknown. Many European countries expect declining growth rates due to population ageing and growing pains to produce primary surpluses due to rising aging related public spending. This suggests that efforts to achieve fiscal consolidation should not be abandoned. Calling into question or even abandoning institutional debt constraints would be counterproductive. One should also take into account that a weakening of fiscal constraints could change risk premia in capital markets, leading to a less favourable r-g.

It is correct that there is scope and need for public investment in some member states but assuming that permanently laxer constraints on deficits would primarily lead to more investment is unrealistic. Additional room for deb would also be used for more consumption and for tax cuts. It would be desirable though to benefit from the currently low interest rates to undertake one time investment projects, in particular in countries where investment has been low in recent years. Here the impact on sustainability depends less on future developments.

Appendix:

The change of government debt D over time is given by
$$D_{t+1} = D_t(1 + r_t) - P_{t+1}$$
where D_t, i_t and P_{t+1} are the level of debt, the interest rate on government debt and the primary surplus in period t. Dividing by nominal gdp in period t+1, Y_{t+1}, yields
$$\frac{D_{t+1}}{Y_{t+1}} = \frac{D_t(1 + r_t)}{Y_{t+1}} - \frac{P_{t+1}}{Y_{t+1}}$$
Using $Y_t(1 + g_t) = Y_{t+1}$ leads to

$$d_{t+1} = \frac{d_t(1 + r_t)}{(1 + g_t)} - p_{t+1}$$

Where small letters d and p denote the debt to gdp and the primary surplus to gdp ratios. This can be written as
$$d_{t+1} - d_t = \frac{d_t(r_t - g_t)}{(1 + g_t)} - p_{t+1}$$

The primary surplus that stabilizes the debt ratio is thus given by
$$p_{t+1} = \frac{d_t(r_t - g_t)}{(1 + g_t)}.$$

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