

Revisiting the EU fiscal framework in an era of low interest rates

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Abstract

Low interest rates have important implications for national fiscal policy. They change the trade-off between output stabilization and debt, and between public investment and debt. They have further implications for EU-level fiscal rules, whose existence is justified by externalities. Low interest rates reduce the importance of debt externalities and increase the importance of demand externalities. Both the need to accommodate desirable changes in national policies and the change in the nature of externalities require changes in EU-level rules.

We examine existing rules and find them lacking. This leads us to develop three reform proposals. The first and main one is a shift from fiscal rules to fiscal standards. The second is the introduction of capital budgeting. The third is the creation of a fiscal mechanism to respond to low demand when monetary policy is constrained.

JEL-codes: E62, F42, H60, H61, H62, H63.

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I. INTRODUCTION

Interest rates in advanced economies in general, and in EU countries in particular, are very low and expected to remain so for a long time. This has major implications for both national fiscal policy and EU-level fiscal rules, the topic of this paper.

Start with implications for national fiscal policy. As several recent papers have argued, low interest rates imply lower costs and lower risks associated with public debt.² Low interest rates and constraints on monetary policy also imply larger benefits from the use of fiscal policy. Lower costs and larger benefits imply a more favorable trade-off between output stabilization and debt in the design of fiscal policy.

Turning to EU-level fiscal rules, low interest rates have further implications. The rationale for EU-level fiscal rules, in addition to national fiscal rules, is the presence of externalities. Absent externalities, EU-level rules have no clear justification and may stand in the way of national policy.

The existing EU-level framework has focused on debt externalities, i.e., costs to other countries arising from debt default in a member country. At any given debt level, low rates make debt default less likely and, by implication, debt externalities less important.

At the same time, low rates, to the extent that they constrain monetary policy, give rise to a second class of externalities, which we refer to as demand externalities. Fiscal consolidation in one country leads to lower demand and lower output in the other countries. When monetary policy can be used, the adverse effect on EU output can be offset by a more expansionary monetary policy. This is not the case if monetary policy is constrained.

The change in the trade-off between output and debt stabilization implies changes in desirable national fiscal policies. It also implies changes in EU-level rules. First and foremost, EU rules should not stand in the way of such changes in national policies. And when they restrict national policies, they should reflect the decreased importance of debt externalities and increased relevance of demand externalities.

Existing EU rules must therefore be modified. Pressure to move on from the initial rules has already led to many changes since the Maastricht Treaty, but these changes have led to extreme complexity and still do not reflect the right trade-offs. The EU-level framework is insufficiently protective of public investment and excessively constrains the use of fiscal policy for output stabilization, particularly in an era of low interest rates. This leads us to offer three reform proposals.

The first and main one is to shift from fiscal rules to *enforceable fiscal standards*. Stating fiscal norms in the EU in quantitative terms was always a doubtful exercise. Low interest rates, the complexity arising from constraints on monetary policy, and, more generally, higher Knightian uncertainty all reinforce the case against numerically defined fiscal rules. Allowing for more and more contingencies is likely to be a fool's errand. Instead, we argue for a shift from rules to standards, i.e., qualitative assessments of the proper fiscal stance, with an ex-post adjudication mechanism. We discuss how it could be done.

The second proposal is to adopt a form of capital budgeting in all EU countries. It would consist of a distinction between capital and current spending, undertaken in a consistent manner, under the

² See Blanchard (2019a,b), Blanchard and Ubide (2019), Furman and Summers (2019), and Ubide (2016). For caveats, see Wyplosz (2019b), Mauro and Zhou (2019) and Moreno Badia et al. (2020).

auspices of an EU body (the Commission or Eurostat). It would enforce a common definition of capital spending and ensure that capital depreciation is correctly accounted for (as a form of current spending). The rationale for this change is to correct a bias against public investment that, as we document, has become increasingly apparent over the last decade. A common definition of what constitutes public investment worth protecting would serve as the basis for defining fiscal standards that are more generous toward capital spending than toward current spending.

The third is to develop a fiscal mechanism that addresses chronic shortfalls of demand at the EU level, as can arise when monetary policy is constrained. Such a mechanism could consist of either a central fiscal capacity that can borrow at the EU level or a change in the EU treaty that would require member states with fiscal space to run more expansionary policies than they otherwise would. We argue for the former. If this proves politically unfeasible, there could be an ad hoc mechanism in which willing members commit to fiscal stimulus in the event of a large shortfall in demand.

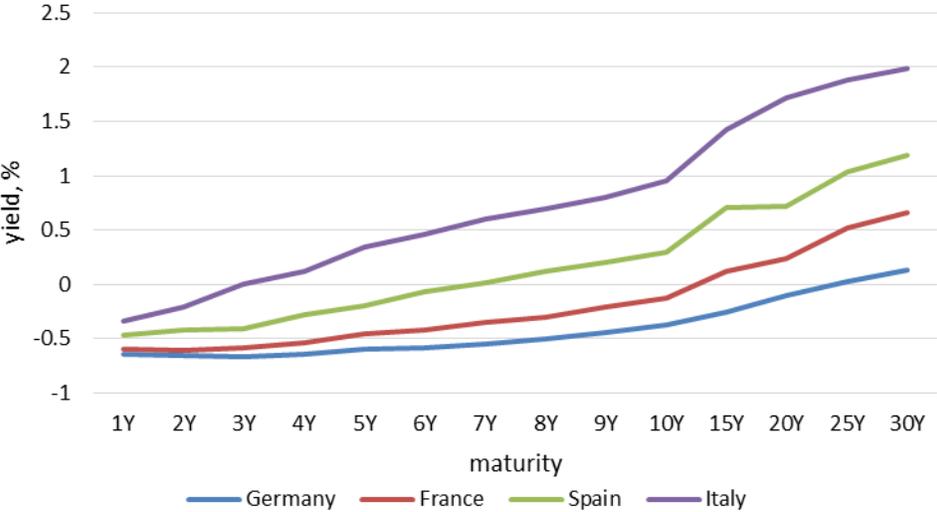
The paper is organized as follows. Section 2 looks at the implications of low interest rates for fiscal policy in general. Section 3 looks at specific implications for the EU-level fiscal framework. Sections 4 to 6 develop each of our three propositions. Section 7 concludes.

II. IMPLICATIONS OF VERY LOW INTEREST RATES FOR FISCAL POLICY

Current and expected future rates on government bonds are exceptionally low

Figures 1 and 2 and table 1 show current interest rates in the euro area, the relation between interest rates and growth rates since the mid-1980s, and market-implied probabilities that interest rates will remain low. They illustrate three main facts.

Figure 1: Central government yield curves in selected euro area countries

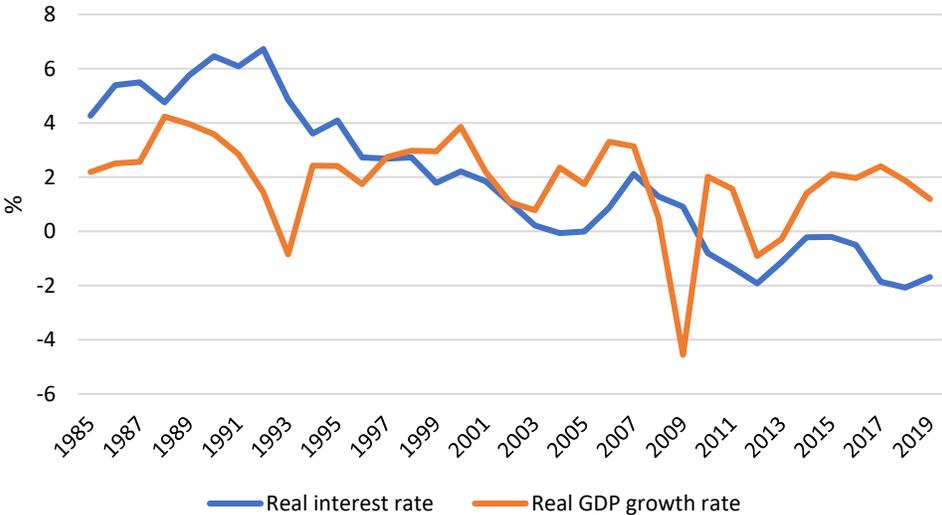


Source: Bloomberg (retrieved on January 30, 2020).

First, except for Italy, nominal yields on government bonds are currently negative over large portions of the yield curve for the major euro member countries (figure 1). As of January 2020, German yields were negative for maturities up to 20 years, French yields for maturities up to 10 years, and Spanish yields for maturities up to 6 years. Even Italian yields, which include a spread due to the perceived risk of euro exit, are below 1 percent for maturities up to 10 years and converge to less than 2 percent at 30 years. For France, Germany, and Spain, nominal yields are much below even pessimistic forecasts of nominal growth over the medium run. Even in the case of Italy, the inequality plausibly goes the same way.

Second, the decrease in interest rates is not a new phenomenon. Figure 2, in which the short-term nominal euro interest rate was extended back synthetically for the pre-euro period and deflated using consumer price inflation, shows that the decrease in interest rates started in the mid-1990s and continued throughout the financial crisis and its aftermath. Most forecasters expected rates to recover as the effects of the crisis faded away. In the euro area, this has not happened. The decrease in interest rates clearly reflects a decrease in the equilibrium (“neutral”) interest rate, with monetary policy accommodating the decrease in the rate rather than causing it. The figure also shows that, since 2010, the real interest rate has remained lower than the real growth rate (the same is obviously true if nominal interest rates are compared to nominal growth rates).

Figure 2: Real interest rate and real GDP growth rate in the eurozone, 1985–2019



Note: From 1994 on, the series for the euro area interest rate is the EONIA rate. Before this, we use a weighted average of interbank rates in France, Germany, Italy, and Spain, weighted by their GDP (with Germany proxied by West Germany before 1991). The real GDP growth rates before 1994 and inflation before 1997 are also a weighted average of the growth and inflation rates of France, Germany, Italy, and Spain.
Sources: OECD, European Commission, Eurostat.

Third, investors believe that, with high probability, interest rates will remain low for at least 10 years. In addition to the yield curves shown in figure 1, which reflect average investor beliefs, this inference can be drawn from option prices, which carry information about the distribution of beliefs. Table 1 (updated from Blanchard and Ubide 2019) shows the implied probabilities that the euro 3-month Libor rate (the

rate for which options exist) exceeds various thresholds in 5 or 10 years. As of January 2020, the market-implied probability that the 3-month Libor interest rate will exceed 2 percent was 5 percent 5 years out, and 20 percent 10 years out. The probability that the 3-month rate will exceed 3 percent (roughly the nominal growth forecast for the euro area over the medium run) 5 years out is 1 percent, and 9 percent 10 years out.

Table 1. Probability that the euro 3-month Libor rate exceeds various thresholds in 5, 10 years

Horizon	Threshold				
	0%	1%	2%	3%	4%
5 years	50%	16%	5%	1%	1%
10 years	66%	40%	20%	9%	4%

Note: Probabilities are calculated by estimating a stochastic volatility SABR model (Hagan et al. 2002) using Bloomberg data on interest rate caps and floors (option contracts where the premium depends on interest rates staying below or above a predefined level, respectively).

Source: Bloomberg, authors' calculations.

Confidence that interest rates will indeed remain low for long would be stronger if we had a good sense of what factors have caused the decline (which is common to all advanced economies, with Europe and Japan being more affected than the United States), and how they are likely to evolve in the future. It is fair to say however that, despite a large amount of research, there are many suspects but few proven culprits.

Researchers have focused on two sets of explanations. The first concerns negative shifts in investment and positive shifts in saving, both leading to lower equilibrium rates of return on capital and, by implication, lower rates on all assets (Summers 2014a,b; Rachel and Summers 2019). The second has emphasized an increased demand for safe assets, leading to a decline in safe rates relative to returns on risky assets (Caballero, Farhi, and Gourinchas 2016; Gourinchas and Rey 2016, 2019). Candidate causes for shifts in saving and investment include aging populations, a decrease in the relative price of investment goods, lower productivity growth, and higher inequality. Candidate causes of the greater scarcity for safe assets include slow post-crisis deleveraging, financial (re)regulation, and higher demand for reserves by emerging market countries.

Whatever the relevant combination, most of these underlying factors appear unlikely to turn around soon.³ The factor perhaps most likely to lead to an increase in rates would be an increase in productivity growth, and by implication an increase in output growth. However, this would not have much of an impact on the difference between the interest rate and the growth rate (because it would be expected

³ Based on the financial cycle in the largest industrial countries, Gourinchas and Rey (2019) estimate that real interest rates will remain low for at least 10 years. Börsch-Supan (2019) argues that euro area aging leads to a lower rate and is a lasting phenomenon, with the ratio of pensioners to working-age population increasing for at least 15–20 years and not reversing even in the most optimistic forecasts.

to affect both roughly equally) and therefore on the evolution of the debt-to-GDP ratio (as will be discussed below).⁴

For these reasons, the risk of sharp rises in the cost of borrowing relative to growth seems low for the foreseeable future. Furthermore, governments can reduce the interest rate risk by issuing long maturity bonds. Given the existing yield curves, in nearly all countries governments can issue 10-year bonds at nominal rates very close to zero, almost surely less than nominal growth rates over the same horizon. At this stage, the average maturity of public debt in major European countries is between 6 and 8 years, so this would not represent a major change in average maturity. In other words, governments should be able to issue long maturity debt and lock in rates without facing a sharp decrease in the price of long bonds at the time of issuance.⁵

Implications of low interest rates for pure public finance

In discussing the implications of low rates for fiscal policy, it is useful to distinguish between the design of “pure public finance”—fiscal principles that ignore the short-run effects of fiscal policy on demand and output—and what Abba Lerner (1943) called “functional finance,” the use of fiscal policy for macroeconomic stabilization.

From a pure public finance point of view, low interest rates have four main policy implications: lower fiscal costs of debt, higher sustainable debt ratios, lower welfare costs of debt, and higher optimal public investment.

Lower fiscal costs of debt

Lower interest rates imply lower fiscal costs of debt. This is reflected in the fact that, despite a substantial increase in debt-to-GDP ratios, debt service (measured as the ratio of real interest payments on public debt to GDP) has remained roughly constant (figure 3).⁶

The arithmetic becomes even more striking when government interest rates fall below growth rates—the current situation. Assume that the interest rate remains below the growth rate forever—admittedly too strong an assumption, but one that shows the logic of the argument. The inequality implies that there is *no* fiscal cost to higher debt in the following sense: higher debt does not require higher taxes in the future. To see why, suppose the government undertakes a large, debt-financed, public investment project. The debt level will initially jump (by the size of the spending on the project) and, if taxes are not raised, continue to increase at the rate of interest. At the same time, output will increase at the rate of

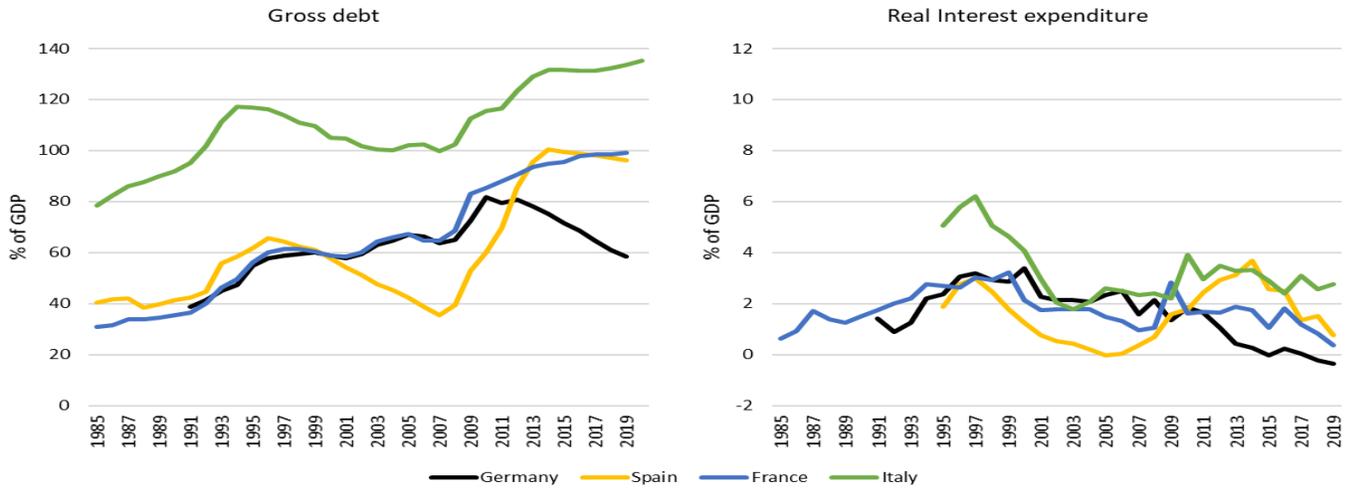
⁴ That said, the increase in interest rates would give more room for monetary policy to help if needed.

⁵ There is a relevant interaction with “unconventional” monetary policy here. To the extent that quantitative easing consists of buying long bonds and issuing zero-maturity interest-paying reserves, this decreases the effective maturity of government bonds in the hands of the public and increases price risk for the government and the central bank taken together. This may be desirable from the point of view of monetary policy, but not from the point of view of fiscal risk.

⁶ The ratio of *nominal* interest payments on public debt to GDP has decreased even more, in large part reflecting the decrease in inflation in the 1980s and early 1990s. But this is not the right ratio to look at. The fiscal cost of debt is not the nominal rate but the real rate, i.e., the nominal rate minus the inflation rate.

growth, which is higher by assumption. Following the initial jump, the debt-to-GDP ratio will decrease over time, with no change in taxes.

Figure 3. Gross debt and real interest expenditure, as % of GDP, selected EU countries, 1985–2019



Note: Real interest expenditures computed as nominal interest payments minus debt times CPI inflation.
 Source: European Commission.

What about the effects on the debt-to-GDP ratio of a permanent increase, rather than a one-time increase, in the primary deficit? When government borrowing rates are below the growth rate, a primary deficit today may not require primary surpluses in the future. The government can run a given primary deficit forever and the debt-to-GDP ratio will not explode but rather converge to a constant level.⁷ The higher the primary deficit, the higher the ultimate level to which the debt-to-GDP ratio eventually converges (see appendix 1 for the underlying arithmetic and a graphical illustration).

At current euro area interest rates and growth rates, what is the size of the primary deficit that could be sustained without a rise in the debt ratio from its current level? Assume that the difference between the interest rate and the growth rate is between -2 and -3 percent and the debt-to-GDP ratio is 100 percent. Then the government can run a primary deficit of 2–3 percent of GDP and the debt ratio will remain constant.

Table 2 gives a more careful assessment of the primary deficit ratio consistent with a stable debt-to-GDP ratio for each of the 19 euro countries, together with their actual primary deficit ratios, based on 2018 numbers. The relevant interest rate is computed in two ways: first, as the current average debt cost (the ratio of government interest payments to debt); second, as the current government borrowing rate corresponding to the average maturity of the debt. The first reflects the legacy of past higher rates; the second, which is lower given the decrease in rates over time, indicates what the cost of debt will eventually be if debt is rolled over and maturity and rates remain the same in the future. Using the

⁷ This is true for any constant level of the ratio of the primary deficit to GDP. If the primary deficit increases continuously without converging to a specific level—for example, because of higher age-related spending—then the debt-to-GDP ratio will eventually explode, even with interest rates lower than growth rates.

current average cost of debt, all countries except Italy can run a primary deficit and keep their debt ratio constant. Using the current borrowing rate, all countries—even Italy—can run primary deficits. The average sustainable primary balance across euro members is –2.8 percent. By contrast, as shown in the second column, nearly all euro area members currently run a primary surplus.

Table 2: Debt-stabilizing primary balances

	Potential growth rate (nominal, %)	Primary balance 2018 (% of GDP)	Interest rate (%)		Debt-stabilizing primary balance (% of GDP) assuming either marginal or average rate	
			Average rate	Marginal rate	Average rate	Marginal rate
Austria	3.6	1.8	2.2	–0.2	–1.0	–2.7
Belgium	3.0	1.6	2.2	–0.2	–0.8	–3.1
Cyprus	4.9	–2.3	2.5	0.0	–2.4	–4.8
Estonia	5.5	–0.5	0.9		–0.4	
Finland	3.4	0.2	1.1	–0.4	–1.3	–2.2
France	3.1	–0.8	1.7	–0.4	–1.4	–3.3
Germany	3.3	2.6	1.5	–0.6	–1.1	–2.3
Greece	2.7	4.4		0.7		–3.5
Ireland	4.8	1.7	2.5	–0.1	–1.4	–3.0
Italy	2.2	1.6	2.8	0.6	0.8	–2.0
Latvia	5.2	–0.3	2.0	0.0	–1.1	–1.7
Lithuania	4.5	1.5	3.1	0.1	–0.5	–1.4
Luxembourg	4.5	2.7	1.5		–0.6	
Malta	5.3	3.6	3.3		–0.9	
Netherlands	3.6	2.4	2.0	–0.5	–0.8	–2.1
Portugal	3.2	3.0	2.8	0.0	–0.5	–3.8
Slovakia	4.5	0.6	2.7	–0.1	–0.8	–2.1
Slovenia	4.4	2.7	2.9	0.1	–1.0	–2.9
Spain	3.4	0.0	2.5	0.0	–0.9	–3.2

Note: The average interest rate is defined as the average cost of debt in 2018. The marginal rate is defined as the yield on sovereign debt securities with remaining maturity close to the average remaining maturity of the country's debt stock in 2018 (yields were retrieved on January 30, 2020). Potential growth rate is defined as the nominal GDP annual growth rate in 2024 as forecast by the IMF.

Sources: Bloomberg, European Commission, Eurostat, IMF.

Higher sustainable debt ratios

Issues of sustainability arise when the primary surplus required to service the debt and prevent a debt explosion becomes politically difficult to achieve. Because lower interest rates imply that stable debt ratios are consistent with lower primary surpluses or even with some primary deficits, they imply higher sustainable debt ratios. Indeed, as argued in the previous section and shown in appendix 1, when the interest rate is lower than the growth rate, any given ratio of the primary deficit to GDP is consistent with convergence of the debt ratio to a given level. Hence, unless the primary deficit keeps rising, there just cannot be a debt explosion.

This conclusion, however, is unlikely to convince those who worry about sustainability, and for good reason: As public debt increases and capital accumulation decreases, the rate of return on all assets, and by implication the rate on government bonds, will increase. At some point, the interest rate may exceed

the growth rate. This limits the extent to which the debt ratio can rise without requiring fiscal adjustment.

Detecting the size of the effect of public debt on the interest rate in the data is very difficult because of many confounding factors: Think, for example, of the last 20 years, which have seen a large increase in debt ratios together with a large decrease in the interest rates on debt. Based on theory, data, and the empirical evidence reviewed by Łukasz Rachel and Lawrence Summers (2019), the plausible effect ranges from 2 to 4 basis points for a 1 percent increase in the debt ratio. Thus, starting from current debt ratios, an increase in the debt ratio of, say, 75 percent of GDP would lead, other things equal, to an increase in the interest rate of 1.5–3 percentage points, potentially enough to change the sign of the difference between the interest rate and the growth rate (for more on the arithmetic of sustainability, see appendix 1). From then on, primary surpluses would be needed to avoid a debt explosion. This simple computation can be read both ways: One is that there is a substantial margin by which debt can increase from current levels while remaining sustainable; the other is that this margin is not infinite.

Debt sustainability depends on many factors, from the stochastic behavior of interest rates and growth rates to the nature of the political system and the ability and commitment of both current and future governments to control deficits. Deciding when the debt ratio becomes so high that it ceases to be sustainable with high probability is difficult at best, impossible at worst. However, today's lower interest rates clearly imply that the relevant range is higher than it was in the past—say, when the initial EU fiscal rules were written.

Lower welfare costs of debt

Lower interest rates reflect lower economic or (as economists would put it) lower welfare costs of public debt. It is important to consider such costs because the fact that an action is feasible does not imply that it is desirable: Even if governments can issue debt and in effect never repay it, this does not imply that they should issue more debt.

The main welfare cost of debt is the potential displacement of capital by debt: As savers hold debt rather than capital in their portfolios, capital accumulation, and by implication future output, is lower. Just how costly this displacement is depends both on how much crowding out of capital takes place and on the return to capital. An old literature on dynamic inefficiency (starting with Phelps 1961 and Diamond 1965) has shown that the answer depends on the difference between the interest rate and the growth rate. In models ignoring uncertainty, that literature showed that, if the interest rate is higher than the growth rate, higher debt decreases capital accumulation as well as future consumption and welfare. If the interest rate is lower than the growth rate, however, a configuration known as *dynamic inefficiency*, higher debt still decreases capital accumulation but *increases* both future consumption and welfare. The intuition is that, in the latter case, the capital stock (and consequently the depreciation that needs to be offset to maintain the ratio of capital to output) is so high, and the marginal product of capital so low, that the increase in investment needed to maintain the higher capital ratio exceeds the increase in output from higher capital and thus leads to a decrease in consumption.

In the real world, however, there is uncertainty, and there are many interest rates and rates of return. The issue then becomes what interest rate one should look at. If one looks at the safe rate, say the interest rate on public debt, then, as we have seen (table 2), the interest rate is currently substantially lower than the growth rate. If one looks instead at the average profit rate, it is substantially higher than

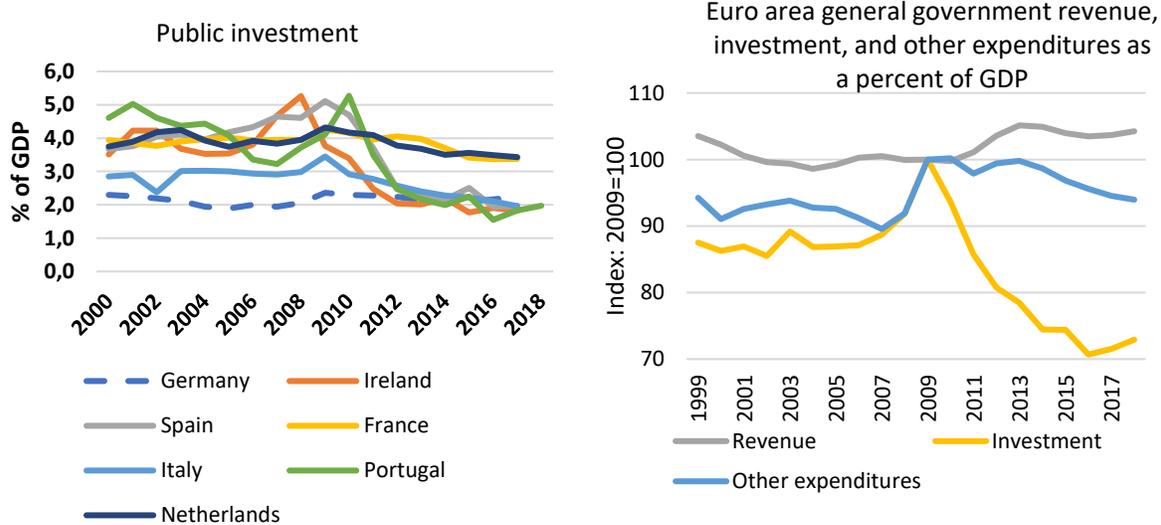
the growth rate (although, as Gutiérrez and Philippon 2019 have recently shown, the average pretax profit rate appears to be substantially lower in the European Union than in the United States).

Based on the average profit rate, one may be tempted to conclude that, even if debt has low fiscal costs, it has substantial welfare costs as the return to capital is still high. But this would be wrong: What matters for welfare is the risk-adjusted rate of return on capital. If risk-averse individuals arbitrage between holding risky capital and safe public debt, then the safe rate is the risk-adjusted rate of return to capital and thus the rate to be compared to the growth rate. This would appear to lead to a striking conclusion: that, as the safe rate is now less than the growth rate, higher public debt not only has no fiscal cost but also no welfare cost. As one of us has shown, however (Blanchard 2019a), the right answer is more complex and lies somewhere in between the two previous answers: What matters is a combination of the average rate on risk-free debt and the average rate of return on capital. Simulations in that paper suggest that, given current rates, the welfare cost of debt may still be positive but is likely to be low.

Higher optimal public investment

Lower interest rates imply that, if the risk-adjusted social rate of return on public investment projects has not decreased in parallel with the government borrowing rate, then more public investment projects are worth undertaking. Furthermore, one can reasonably argue that the set of public projects with high social returns has, if anything, expanded, with projects to combat global warming at the top of the list.

Figure 4: Public investment in the euro area



Note: "Other expenditures" refers to total expenditures excluding investment. In the right-hand figure, all three variables are expressed in percent of GDP and shown as indices normalized to 100 in the year 2009. Although the investment index shows the largest fall, it represents a fall from 3.6 percent of GDP in 2009 to 2.7 percent of GDP in 2018, while "other expenditures" fell from 47.1 percent to 44.3 percent of GDP.

Source: Eurostat.

Unfortunately, as shown in figure 4, the fiscal consolidation that has characterized European economies since the crisis has come largely at the expense of public investment. From 2010 to 2017, in the euro area as a whole, annual public investment declined by 0.8 percent of GDP. In Ireland, Spain, and Portugal, it declined by 1.6 percent, 2.7 percent, and 3.4 percent of GDP, respectively. The decline of public investment in these countries partly reflects the unwinding of a boom in public investment in the 2000s. But public investment has fallen even in countries that did not experience such a boom. A further worrying sign is that the economic recovery experienced by most euro area countries since 2015 has not led to a significant recovery in public investment. Today, public investment remains lower as a percent of GDP than it was in 2000 in almost every euro area country, notwithstanding much lower interest rates. Looked at another way, the right-hand chart shows that the percentage drop in the share of public investment in GDP since 2009 has been much larger than the percentage drop in noninvestment public expenditures as a share of GDP.

In summary, lower government borrowing rates imply lower fiscal and welfare costs as well as lower risks of public debt and a stronger case for public investment. These arguments do not imply that debt should be increased or decreased. It might still be the case that the optimal level of (net) public debt, based on intergenerational equity, is substantially lower than the current levels—maybe even negative. But they imply that, whatever the optimal level was when the EU rules were written and interest rates were higher, it should now allow for more debt and more public investment.

Implications of low interest rates for functional finance

Should fiscal policy be used to manage aggregate demand? From a theoretical viewpoint, the case is not open and shut. If the main source of inefficient output fluctuations is the presence of sticky nominal wages and prices, then the right policy tool is monetary policy. Used correctly, and when unconstrained by a lower bound on interest rates, monetary policy can in principle implement the interest rate consistent with output remaining at potential, the so-called “neutral rate.” In this case, there is a clean division of labor between fiscal and monetary policy: Fiscal policy should be guided by pure public finance considerations and ignore macro stabilization. Monetary policy should then make sure that, whatever the stance of fiscal policy, output remains at potential.

There are, however, limitations on what monetary policy can achieve, and this has implications for fiscal policy. In a common currency area such as the euro area, there are two such limitations (see Blanchard 2019b for more discussion):

The first is that monetary policy cannot be country specific (or, at most, it can be to a very limited degree⁸) and so cannot adjust demand to keep output at potential in each country. Ideally, fiscal policy could still pursue pure public finance goals, and adjustment should happen through relative price adjustments across countries. If, as is the case, relative price adjustments are slow at best, then other policies must be used. Structural reforms can help, particularly by increasing future growth prospects, which in turn may increase demand now. But structural reforms are difficult to implement quickly, and evidence of their short-term effects is ambiguous at best. This leaves fiscal policy as the only available tool to increase demand.

⁸ To the extent that the ECB can buy bonds from different member countries, it can have some effect on relative yields. However, the effect is limited by the ECB’s policy of following the capital key.

The second is directly related to low interest rates and the resulting constraint on monetary policy, which usually operates by setting short-term interest rates. If nominal interest rates are zero or even negative, lowering them further might be impossible. This is referred to as the effective lower bound (ELB) on policy rates. While the experience of the past decade has shown that monetary policy can extend beyond the setting of the short rate and that the policy rate can be slightly negative, the room for monetary policy to increase demand is limited. In this case, additional policies are needed to maintain price and output stability, even at the euro level. This again leaves fiscal policy as the practical choice for macro stabilization.

The trade-off between output and debt effects of fiscal policy

With monetary policy potentially constrained by the effective lower bound, and the real interest rate lower than the growth rate, fiscal contractions and expansions have larger effects on output and smaller effects on debt. Box 1 gives the arithmetic of fiscal expansions/contractions in this case, but the intuition behind the results is straightforward.

Take fiscal contractions. In “normal times”, when monetary policy can be used to maintain output at potential, fiscal contractions need not have an adverse effect on output, so they lead unambiguously to a decrease in the ratio of debt to output (relative to the status quo). And because the interest rate exceeds the growth rate, the decrease in debt becomes larger and larger over time (again, relative to the status quo). There is no loss of output, and a steady decrease in debt (compared to what it otherwise would have been).⁹

In the current environment, the first mechanism is impaired, and the second applies with less force. First, because monetary policy cannot offset the fiscal contraction, the fiscal contraction leads to a decrease in output, and the ratio of debt to output may actually increase (relative to the status quo). Second, while, over time the debt ratio starts decreasing, the fact that the interest rate is less than the growth rate implies that the decrease in the debt ratio (again, relative to the status quo) becomes smaller and smaller over time. In short, a long period of output below potential delivers a limited decrease in debt over time. For both reasons, the trade-off between debt and output stabilization is much worse than in “normal times”. Put another way, the output cost of debt stabilization is higher than in normal times.

A symmetric argument applies to fiscal expansions. If output is below potential and monetary policy cannot be used, a fiscal expansion can increase it, and the increase in output may be such the ratio of debt to GDP initially decreases. Thereafter, if the fiscal expansion is maintained, output remains higher, but debt starts increasing. As the interest rate is less than the growth rate, the eventual increase in debt may however be quite limited. Put another way, the debt cost of output stabilization is lower than in normal times.

⁹ If the debt was initially on an explosive path and the fiscal contraction is insufficient to raise the primary balance to the debt-stabilizing level, the new debt path will remain explosive, but less so.

Box 1. Effects of a fiscal expansion on the debt-to-GDP ratio

Consider a permanent fiscal expansion (e.g., increase in expenditures) equal to x . The increase in GDP due to the effect on demand of the fiscal expansion is given by $\Delta Y = mx$, where m is the multiplier. The effect on the primary balance is given by $\Delta S = -(1 - n)x$, where n is the offsetting effect due to automatic stabilizers (by raising GDP, the fiscal expansion will raise revenues, so that the primary deficit increases by less than one for one).

Denote the initial debt-to-GDP ratio by $d \equiv D/Y$. The change in d in the first period (the period of the fiscal expansion), relative to the status quo, is given by:

$$\Delta d_1 = \frac{D - \Delta S}{Y + \Delta Y} - \frac{D}{Y} = \frac{D + (1 - n)x}{Y + mx} - \frac{D}{Y} = \frac{(1 - n)xY - Dmx}{Y(Y + mx)} = \frac{x}{Y + \Delta Y} \{(1 - n) - md\}$$

The term in curly brackets can be either positive or negative, depending on the relative strength of the first term, which describes the increase in the primary deficit per unit of fiscal stimulus, and the second term, which is equal to the fiscal multiplier times the initial debt ratio. For example, assume that $m = 1$, $n = 0.3$, and $\frac{x}{Y + \Delta Y}$ (the fiscal expansion expressed as a percentage of the new GDP) is 1 percent. Then, the first period change, relative to the status quo is given by:

$$\Delta d_1 = 1\% \{0.7 - d\}$$

Thus, if d is less than 70 percent, the fiscal expansion leads initially to an increase in the debt-to-GDP ratio. If it is greater than 70 percent, it leads initially to a decrease in the the ratio.

Over time, if the fiscal expansion is permanent, and x is constant, the dynamics of the debt ratio are given by:

$$\Delta d_n = (r - g)\Delta d_{n-1} + 0.7$$

Where Δd_n is the deviation of the debt ratio from status quo in period n . The debt dynamics thus depend crucially on the sign of $r - g$. If it is positive, the debt will explode over time (relative to the status quo). But if it is negative, as is currently the case, the debt ratio will increase but converge to a new higher steady state value. For example, a primary deficit of 0.7%, together with a value of $r - g$ of -2% will lead to an increase in the debt ratio, relative to the status quo, of $0.7/2 = 35\%$.

Back-of-the-envelope computations go only so far. Appendix 2 (based on Elekdag and Muir 2014), gives the results from a multi-region macroeconomic model that includes the euro area. The conclusions are similar. The simulation suggests that a coordinated euro area fiscal expansion would lead to a substantial increase in output (not only in the short run but also in the long run if it operates through public investment), and an initial drop in the debt-to-GDP ratio, followed later by a small increase.¹⁰

To summarize, low interest rates decrease the fiscal and economic costs of debt. And to the extent that they limit the scope of monetary policy, they increase the benefits of using fiscal policy for stabilization purposes. This more favorable trade-off between output and debt stabilization should be reflected in a larger weight on output stabilization relative to debt in national fiscal policies.

¹⁰ For another set of simulations with similar conclusions, see In't Veld (2019). See also Boone and Buti (2019).

III. IMPLICATIONS OF LOW INTEREST RATES FOR THE EU-LEVEL FISCAL RULES

The previous section discussed implications of low interest rates for national fiscal policies. As we argued, these should reflect the changed trade-offs between output stabilization and debt and between public investment and debt. We now turn to implications of low interest rates for EU-level rules.

The case for EU-level rules

Why is there a need for EU-level fiscal rules? We can think of two potential reasons.

The first is that EU-level rules can serve as commitment devices for national governments. A large literature has argued that fiscal policy suffers from a deficit bias, that policymakers have short horizons, that they care more about the welfare of current generations than that of future generations and are thus likely to run deficits that are too large. If this is the case, it may be desirable to put in place rules that bind them in some way.¹¹ One such way is to design EU rules that put limits on deficits and debt (and then blame Brussels for these constraints). It is not the only way, though. National fiscal rules and/or independent institutions such as fiscal councils can achieve the same purpose (and then be blamed by governments in the same way). Because commitment devices that correct the deficit bias can be—and usually are—created at the national level, we leave aside this first set of reasons.

The second and more robust reason is externalities, the fact that fiscal policy in one EU country affects other EU countries in many ways. In the euro area, this can happen through various channels. A fiscal expansion increases output and imports in the country where it takes place, and thus increases exports from other member countries. To the extent that it leads to higher inflation in the country of origin, it leads to a real appreciation and thus to a real depreciation in other member countries. To the extent that it leads to an increase in EU output, it may lead to tighter euro monetary policy and an exchange rate appreciation vis-à-vis the rest of the world. *Excessive* fiscal expansions, and the resulting risk of a debt crisis in a given country, have further implications: They are likely to affect other countries through financial and trade channels. Member countries might have domestic tools to offset some of these externalities, but in many cases they do not, or can do it only at a cost.

Absent either the need for EU-level commitment devices or the existence of externalities, there is no need for EU-level rules. This is an important point: Some EU countries may not like the fiscal policies followed by some other EU countries, but, in the absence of externalities, they have no grounds to want to affect them. Indeed, in this case, EU-level rules are likely to be counterproductive, since they may constrain appropriate national policies. If, for example, lower interest rates lead to a different trade-off between output stabilization and debt at the national level, unchanged EU-level rules are likely to stand in the way. EU-level rules must therefore balance the objective of giving members freedom to set national fiscal policies with the objective of correcting externalities.

The existing framework has focused nearly exclusively on (adverse) debt externalities.

One argument, which played a role particularly at the time when the rules were created (Bini Smaghi, Padoa-Schioppa, and Papadia 1994; James 2012), is that high debt in some euro area countries could

¹¹ See Kydland and Prescott (1977). The case for and design of fiscal rules are elaborated in Kopits and Symansky (1998), IMF (2018), Eyraud et al. (2018), and Gaspar and Amaglobeli (2019).

result in pressures on the European Central Bank (ECB) to monetize public debt (presumably particularly the debt of the countries in trouble), endangering price stability for the entire euro area. As the ECB has repeatedly demonstrated its institutional independence in the meantime, this argument seems less relevant today than it may have been in the early 1990s.

Another argument focuses on the potential spillovers from sovereign debt distress, as illustrated by the euro debt crisis. Debt externalities are likely to be larger between euro area members than with third countries for two reasons. First, given the common currency as well as common institutions, eurozone countries are more integrated through trade and financial channels. Second, a catastrophic debt crisis could endanger euro membership—as was the case for Greece in the summer of 2015. Euro exit of one member is likely to create spillovers for other members, including through debt runs on countries whose membership may be tested by the markets. As a result, the common currency could put pressure on its members to provide bailouts to fiscally lax countries in the event of extreme fiscal distress.

Low interest rates, and the implied lower fiscal risks, make these worries less relevant. To be sure, debt crises can occur even when the interest rate is lower than the growth rate (Mauro and Zhou 2019, Moreno Badia et al. 2020). Other things equal, however, maintaining a given level of debt requires a smaller primary surplus, and thus the probability of a debt crisis is smaller. Therefore, in times of low interest rates, not only should EU-level rules allow national fiscal policies to adjust to the changed trade-off between output stabilization and debt, they should also put less weight on debt externalities.

While debt externalities have become less relevant, other externalities have become more relevant. We refer to these externalities as demand externalities. One has become particularly salient, namely the possibility that national fiscal policies, while optimal from each country's point of view, lead to insufficient fiscal expansion overall and the persistence of a negative EU-level output gap.¹²

Suppose that each country chooses fiscal policy based on the trade-off it perceives between output stabilization and debt. A country that faces a negative output gap may be reluctant to use fiscal policy to fully close its output gap, for two reasons. First, it may believe that the fiscal expansion implies an unacceptable increase in debt. Second, it may worry about spillovers—it may conclude that, given how integrated EU countries are, a fiscal expansion will mostly benefit other countries, leading to only a limited increase in domestic output.

The resulting fiscal policies may lead to both negative output gaps in individual countries and an overall EU-level output gap. If monetary policy is unconstrained, however, it can decrease the interest rate until the EU-level output gap is eliminated (with some countries having a positive gap and others a negative gap, a tension that common monetary policy cannot resolve). If, however, monetary policy is constrained by the effective lower bound, then the EU-level negative output gap will remain.

Can EU fiscal rules potentially help in this case? It depends on the reason why countries are reluctant to have larger fiscal expansions. If it is because of a worry about debt, then rules per se cannot help. What could help, but goes beyond rules, are common fiscal institutions and/or some form of fiscal risk sharing.

¹² In a strict sense, this argument applies to the euro area rather than the European Union. However, most non-euro area member states face a similar issue, either because their central banks are operating at or close to the ELB or because they are de facto pegged to the euro.

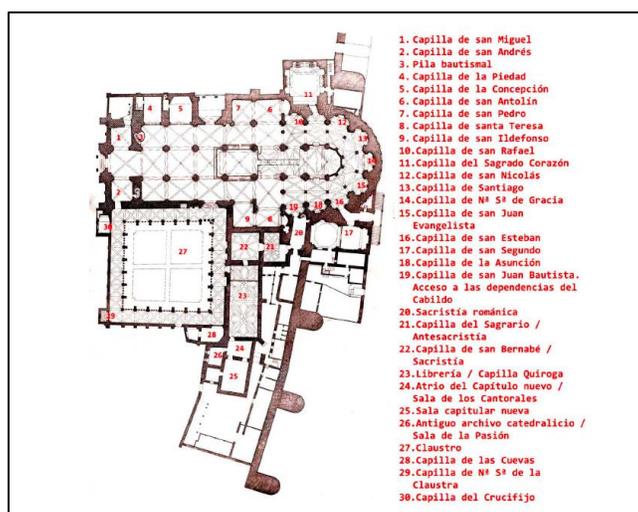
If, however, the reason is worries about spillovers, then EU rules that lead all countries to have a larger fiscal expansion can help.¹³ We discuss how this could be implemented in our section on reform proposals, but the general point is important: If monetary policy is constrained, deficit aversion might become a bigger issue than deficit bias. Dealing with this problem requires some sort of mechanism—rules based or not—that induces more expansionary fiscal policy.

In light of this discussion, we now discuss existing EU fiscal rules and their shortcomings.

EU-level fiscal rules: a brief overview

EU fiscal rules, also known as the Stability and Growth Pact (SGP), resemble a sprawling historical building whose structure has been extended over time (figure 5). The original structure is still recognizable, but the many additions make it difficult to make out the consistency of the whole. According to Servaas Deroose and colleagues (2019), this reflects “sedimentation over time. The present Pact is a legacy of successive reforms which have added new features incrementally.”

Figure 5. The Cathedral of Seville



Source: <https://www.lacatedraldesevilla.org/en/cathedral-parts.html>

The “Vade Mecum on the Stability and Growth Pact” of the European Commission (2019) contains the details of the present fiscal rules (Bini Smaghi, Padoa-Schioppa, and Papadia 1994 describe their historical origins). Box 2 attempts to summarize the main features of today’s EU fiscal rules. For the purpose of this paper, four characteristics are worth highlighting.

¹³ Put more formally, because of the externality, the Nash equilibrium is not efficient and can be improved upon.

Box 2. Main features of EU-level fiscal rules today

The main features of the Stability and Growth Pact (SGP), the set of rules that constitutes the EU's fiscal framework, are as follows:

- The budget deficit must not exceed 3 percent of GDP.
- Gross public debt should be below 60 percent of GDP. If it is higher, the ratio must decline by at least one twentieth of the gap to the 60 percent target every year.

If a country violates either the 60 percent debt or the 3 percent deficit rule, it may be subject to an excessive deficit procedure (EDP), the “corrective arm” of the SGP. Once in the corrective arm, a country must generally achieve a minimum annual improvement in its structural balance of at least 0.5 percent of GDP per year.

Countries that fulfill the two conditions are in the “preventive arm” of the SGP and must follow an additional rule: the structural balance must be higher than a medium-term objective (MTO), which must be equal to or higher than -0.5 percent of GDP. If the structural balance is below the MTO, it must increase by 0.5 percentage points of GDP every year, until the MTO is reached. Countries with debt-to-GDP ratios lower than 60 percent may set their MTO as low as -1 percent of GDP.

Given the uncertainty around measures of the structural balance, the assessment of compliance with the preventive arm of the SGP is complemented by an expenditure benchmark rule, which stipulates that an expenditure aggregate excluding interest expenditure, expenditure on EU programs, and cyclical elements of unemployment benefit expenditure may not grow faster than medium-term potential growth. The expenditure rule becomes binding if a country's structural balance is below its MTO.

Countries may face financial sanctions if they do not comply with the requirements of either the preventive arm or the corrective arm. In addition, the 2012 Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG) requires that the above rules be transposed into each country's national law. Furthermore, most signatories of the TSCG have national fiscal rules that go beyond this requirement. Some of these rules, such as Germany's “debt brake,” which limits the structural federal deficit to a maximum of 0.35 percent of GDP, are incorporated in national constitutions.

There are also several flexibility clauses and exceptions that apply to the SGP rules. Deviations from certain rules are allowed in the case of an unusual event outside the control of the country, a severe downturn in the country, a severe downturn in the euro area or the EU as a whole, an unexpected adverse economic event, or when structural reforms are implemented or planned, when the country contributes to EU-funded investments, when the government implements pension reforms, or when other “relevant factors” emerge. The 3 percent deficit rule can be disregarded when the deviation is small and temporary, and deviation from the debt rule can also be disregarded if the country otherwise complies with the requirements of the preventive arm.

First, notwithstanding significant evolution—including attempts to give countries more flexibility to pursue stabilization policy (see below)—EU fiscal rules continue to be focused on their original purpose, namely, to mitigate debt externalities. Other externalities are ignored. This may have made sense at least until recently, because the ECB had room to act. But as was argued at the end of the previous section, this is no longer true in an environment of low interest rates and constrained monetary policy.

Second, the various deficit and debt targets are mostly independent of the level of interest rates. Both the debt and the structural adjustment rules imply the same adjustment whether rates are high or low. The medium-term objective (MTO) for the structural balance also does not change, nor does the expenditure benchmark, which excludes interest expenditures.

Third, countries with negative output gaps are given very limited flexibility. To the extent that rules are defined in terms of the structural balance, they let automatic stabilizers operate. They also allow for a slower improvement in the structural balance if growth is sufficiently low, or if the output gap is sufficiently negative (see table 3). Importantly, however, the maximum flexibility allowed when a country falls short of its MTO is a suspension of the fiscal adjustment. Fiscal expansion beyond automatic stabilizers is allowed only if the European Union as a whole is in a severe downturn.

Table 3. Required fiscal adjustment when the fiscal balance falls short of the medium-term objective

	Condition	Required annual fiscal adjustment	
		Debt < 60% and no sustainability risk	Debt > 60% or sustainability risk
Exceptionally bad times	Real growth < 0 or output gap < -4	No adjustment needed	
Very bad times	-4 < output gap < -3	0	0.25
Bad times	-3 < output gap < -1.5	0 if growth below potential, 0.25 if growth above potential	0.25 if growth below potential, 0.5 if growth above potential
Normal times	-1.5 < output gap < 1.5	0.5	> 0.5
Good times	output gap > 1.5	> 0.5 if growth below potential, > 0.75 if growth above potential	> 0.75 if growth below potential, > 1 if growth above potential

Source: “A commonly agreed position on flexibility within the Stability and Growth Pact,” <http://data.consilium.europa.eu/doc/document/st-14345-2015-init/en/pdf> (accessed on July 25, 2019).

Fourth, the rules mostly treat current and capital spending the same way, despite their different implications for the future. The main exception in the rules is striking in its limitations. Public investment spending can justify a temporary deviation of up to 0.5 percent of GDP from the prescribed adjustment toward the MTO only if it occurs on projects that are to a large extent cofunded by the European Union *and* forecast growth is negative or the output gap exceeds -1.5 percent of GDP *and* the country is not in the corrective arm of the SGP *and* the investment has economic returns equivalent to those of a major structural reform.

IV. REFORM PROPOSALS

These issues lead us to offer three proposals for reform:

First, rather than introduce further refinements and complexity in existing rules, EU *fiscal rules* should be replaced by enforceable *fiscal standards* that consider changes in economic conditions.

Second, EU member states should be required to adopt capital budgeting, based on a common, centrally enforced definition of capital spending. This would allow the design of fiscal standards that protect public investment.

Third, a fiscal mechanism should be put in place to deal with chronic aggregate demand shortfalls when monetary policy is constrained.

From fiscal rules to fiscal standards

The EU fiscal framework needs to be reformed to both give more room to national stabilization policy and reflect the changed tradeoff between debt and demand externalities. Proposals that seek to replace the existing fiscal rules with a simpler set of rules cannot achieve this.¹⁴ On the contrary: fiscal rules would need to become even more complex and state-contingent, written as a function of not just debt and deficit levels and national output gaps (the ingredients of current fiscal rules) but also EU-level output gaps, constraints on monetary policy, growth expectations, current and expected interest costs, and institutional and political capacity for future fiscal adjustment.

Beside obvious communication and measurement issues, the fundamental problem with this approach is that it is impossible to predict the empirical trade-offs well enough to be confident that such a rule will work—in the sense of constraining debt when necessary (i.e., when debt sustainability is the primary problem) while not constraining it when the situation calls for flexibility. Not only would we need to reconcile competing objectives; we would not know how to weigh these objectives. In the face of such Knightian uncertainty, any attempt to write down a specific functional form *ex ante*—that is, a mapping from data to adjustment requirements—is likely to result in a rule that is either too tight or too lax *ex post*.¹⁵

At the same time, it may be relatively straightforward to resolve these trade-offs once the circumstances of a specific case are known, guided by considerations of the type discussed so far. Euro area countries should avoid dangerous debt levels. Subject to maintaining a low risk of sovereign stress, they should also be given room to run deficits to stabilize their own output levels and to reduce an aggregate demand shortfall in the euro area. Fiscal deficits should be reduced when national output gaps have closed, the ECB has room to lower interest rates, and debt is perceived as too high. Countries should also tighten, possibly with official financial support, when debt sustainability is in doubt and/or they are in danger of losing market access. They should expand when ECB monetary policy is constrained, output gaps are negative, and debt sustainability is not in doubt. Finally, to offset incentives leading to underinvestment, countries should generally seek to tighten by reducing their fiscal current account deficit rather than public investment.

In the legal literature, principles of this type, which leave room to accommodate “the particulars of individual circumstances” are referred to as *standards*, in contrast with “clear, abstract rules laid down

¹⁴ See Andrieu et al. (2015), Claeyss, Darvas, and Leandro (2016), Beetsma et al. (2018), Bénassy-Quéré et al. (2018), Darvas, Martin, and Ragot (2018), Feld et al. (2018), European Fiscal Board (2019), and Gaspar (2020). These proposals (including some in which we were involved) seek to address some of the problems of the present rules, including their complexity and procyclicality. At the same time, they retain numerical limits to debt, deficit, or expenditure growth. The process of thinking about such adjustments to existing rules has led us to come to more radical conclusions and make our more ambitious, but admittedly politically less realistic, reform proposal.

¹⁵ See Wyplosz (2005) and Odendahl (2015) for a similar line of argument.

in advance of actual applications.”¹⁶ The difference between standards and rules is in the degree to which legal content is defined ex post, at the point of application, rather than ex ante. The limit case of a rule is a legal norm in which all legal content is defined ex ante, such as “do not drive faster than 55 miles an hour.” The limit case for a standard is a norm in which all legal content is defined ex post, such as “do not drive at excessive speed.” In the present EU fiscal framework, paragraph 1 of Article 126 of the Treaty on the Functioning of the European Union (TFEU), “Member States shall avoid excessive government deficits” constitutes a pure standard, while the requirement that countries with a structural balance below –0.5 percent of GDP must increase it by at least 0.5 percentage points of GDP every year (box 2) constitutes a pure rule.

Most legal norms lie between these extreme cases. Standards may list criteria that adjudicators must consider when deciding whether the standard was met, making them more rule-like. Rules may include exceptions or state contingencies, as in Table 3, moving them closer to standards.

Both standards and rules are commonplace in national and EU law. Competition law, for example, is based on standards.¹⁷ In contrast, most legal frameworks that seek to constrain fiscal policy are based on rules. An important exception is New Zealand’s fiscal framework, initially laid out in its Fiscal Responsibility Act of 1994, which is written entirely in terms of standards, referred to as “principles of responsible fiscal management” (New Zealand Treasury 2019). These standards describe both pure and functional public finance objectives, including: “Achieve and maintain prudent public debt levels”; “ensure that, on average, Crown operating expenses do not exceed Crown operating revenues”; “Achieve and maintain levels of Crown net worth to provide a buffer against shocks”; “Manage fiscal risks facing the Crown prudently; “Consider the likely impact of fiscal strategy on present and future generations”; and (importantly for our purposes) “Have regard to the interaction between fiscal policy and monetary policy” (New Zealand Treasury 2015, p.5). According to New Zealand Treasury (2015, 3), the adoption of fiscal rules was periodically considered but rejected, among other reasons, because “a legislated fiscal rule will not necessarily reflect the government of the day’s assessment of what constitutes good fiscal policy and, accordingly, is more likely to be breached when it does not align with the government of the day’s fiscal priorities”. Furthermore, “a transparency-based framework will usually be more flexible than a legislated fiscal rule. For example, a limit on Crown borrowing could require a government to cut spending even if the evidence suggests that doing so would have negative consequences for economic growth or living standards more generally.”

Depending on the circumstances, rules may be preferable to standards and vice versa. Rules have the advantage of providing greater clarity ex ante. But a case-by-case approach guided by standards may be preferable when “public authorities cannot design general rules, because they lack relevant

¹⁶ The quotes are from Sunstein (1995, pp. 956–57). See also Kaplow (1992), Schlag (1985), Ehrlich and Posner (1974), Hart (1961, 2013), and Pound (1922). We thank Yair Listokin, Anna Gelpern, and Leland Smith for introducing us to this literature and providing us with references.

¹⁷ The EU’s *Guidelines on the Assessment of Horizontal Mergers*, for example, lay out how the Commission performs an overall competitive appraisal of mergers and which factors it will take into account when assessing whether these mergers are harmful to the European consumer. Considerations include the degree of possible efficiency gains from mergers versus their potential harm to consumers, their verifiability, and whether they are expected to occur in a timely manner and ultimately benefit the consumer.

information...or rules [would] be poorly suited to new circumstances turned up by unanticipated developments.”¹⁸ For the reasons explained above, we believe that this applies to EU fiscal rules today.

Importantly, we are not arguing for replacing EU fiscal rules by a *pure* standard—as would be the case, for example, if the fiscal framework were reduced to Article 126, paragraph 1. Rather, we are arguing against fiscal rules that seek to define good behavior using mainly numerical ceilings and thresholds. These should be replaced by some general fiscal standards, as well as more detailed criteria and guidelines that flesh out the standards, defined at several levels of EU legislation. Box 3 provides some examples.

Box 3. What EU fiscal standards might look like: examples

- I. General fiscal standards—embedded in EU primary legislation (e.g., Article 126 TFEU)
 1. “Member states shall avoid excessive government deficits” (unchanged)
 2. “When a member state’s deficit is excessive, the member shall reduce it at a speed that avoids harm to its prosperity and that of other member states.”
- II. Criteria explaining how to meet standards—EU primary or secondary legislation
 1. “A member state’s deficit is not excessive when a rigorous debt sustainability analysis indicates that its debt is sustainable with high probability.”
 2. “In determining the speed of adjustments, member states shall take into account the probability with which debt is unsustainable, the state of their economic cycle, market conditions, and whether the ECB is constrained by the effective lower bound on interest rates.”
- III. Secondary legislation or commonly agreed positions of the EFC explaining how to determine whether criteria are satisfied.
 - Methods, metrics, and examples; e.g., for debt sustainability analysis, assessing market conditions, deciding on the state of the economic cycle, and deciding whether the ECB is constrained by the effective lower bound.

Enforcing fiscal standards

New Zealand’s fiscal standards are enforced primarily through parliamentary and public scrutiny. The law requires the government to publish periodic statements and reports on fiscal policy, including an annual Fiscal Strategy Report which lays out its fiscal plans in the following year and the next four years. In these reports, the government must explain why and how its plans are consistent with the fiscal standards laid out in the law, backed by short and long-term fiscal projections produced by the Treasury, “which enjoys a great degree of independence from the government, in effect acting as a fiscal council” (Wyplosz 2019a, 24). If these explanations are unconvincing, the government risks parliamentary and public backlash. Hence, New Zealand’s fiscal framework is “founded on two key planks: transparency and accountability” (New Zealand Treasury 2019).

While this approach appears to have worked well in New Zealand—in a recent comparison, Wyplosz (2019a) concludes that New Zealand’s fiscal framework has been “highly successful”—public

¹⁸ Sunstein (1995), p. 957. See also Hart (1961, pp. 126–35), Schlag (1985), and Kaplow (1992).

transparency and accountability to national parliaments is unlikely to be sufficient to enforce the EU fiscal framework, since the latter is mainly a response to policy externalities across member countries. Almost by definition, cross-country externalities are something which national parliaments and public opinion will be insufficiently concerned about. Hence, fiscal standards at the EU level would require an additional enforcement channel.

One possible candidate is market discipline. In principle, financial markets might be able to deter governments from overborrowing, through higher interest rates and the prospect of loss of market access, before debt reaches dangerous levels. In practice, market discipline is very unlikely to be sufficient. First, it goes in only one direction: markets may punish governments for excessive borrowing, but they generally do not discipline sovereigns for running fiscal policies that are too contractionary. Second, the history of the euro (and financial history more generally) suggests that financial markets tend to first underreact and then suddenly overreact. Both problems can arguably be reduced by providing relevant information to the markets (for example, in the form of stochastic debt sustainability assessments by the Commission), by making sovereign debt restructuring in the euro area a more credible option, and through institutions such as the ESM and the OMT. However, some of the required reforms might be of a tall order. Agnès Bénassy-Quéré and colleagues (2018) argue that these reforms should include changes to the legal framework for sovereign debt restructurings, but also better financial and fiscal safety nets, including fiscal risk sharing and European deposit insurance, regulation that discourages sovereign exposures of banks, and a euro area safe asset. The political will to undertake such reforms may be lacking for some time to come.

Consequently, even if one shares the view that markets could be a more prominent source of fiscal discipline in the euro area, they cannot be the only source. Enforcing fiscal discipline will continue to require a formal process, including the designation of an adjudicator. For the purposes of the fiscal framework, there are two main options: the European Council or an independent agency such as the European Court of Justice.

The current fiscal framework chooses the former: paragraphs 3–9 of Article 126 TFEU lay out an elaborate procedure that gives the European Commission a central role in fiscal surveillance but assigns adjudication to the European Council. This is unusual, as legal enforcement in the European Union usually involves the European Commission in the role of both watchdog and “prosecutor” but gives adjudication rights to the European Court of Justice. This enforcement procedure is explicitly ruled out for fiscal policy in paragraph 10 of Article 126 (see box 4 and Repasi 2016).

Box 4. Articles 126, 258, and 259 of the Treaty on the Functioning of the European Union

Article 126 (extract, paragraphs 1–10)

1. Member States shall avoid excessive government deficits.
2. The Commission shall monitor the development of the budgetary situation and of the stock of government debt in the Member States with a view to identifying gross errors. In particular it shall examine compliance with budgetary discipline on the basis of the following two criteria:
 - (a) whether the ratio of the planned or actual government deficit to gross domestic product exceeds a reference value, unless:
 - either the ratio has declined substantially and continuously and reached a level that comes close to the reference value,
 - or, alternatively, the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value;
 - (b) whether the ratio of government debt to gross domestic product exceeds a reference value, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace.The reference values are specified in the Protocol on the excessive deficit procedure annexed to the Treaties.
3. If a Member State does not fulfil the requirements under one or both of these criteria, the Commission shall prepare a report. The report of the Commission shall also take into account whether the government deficit exceeds government investment expenditure and take into account all other relevant factors, including the medium-term economic and budgetary position of the Member State.

The Commission may also prepare a report if, notwithstanding the fulfilment of the requirements under the criteria, it is of the opinion that there is a risk of an excessive deficit in a Member State.
4. The Economic and Financial Committee shall formulate an opinion on the report of the Commission.
5. If the Commission considers that an excessive deficit in a Member State exists or may occur, it shall address an opinion to the Member State concerned and shall inform the Council accordingly.
6. The Council shall, on a proposal from the Commission, and having considered any observations which the Member State concerned may wish to make, decide after an overall assessment whether an excessive deficit exists.
7. Where the Council decides, in accordance with paragraph 6, that an excessive deficit exists, it shall adopt, without undue delay, on a recommendation from the Commission, recommendations addressed to the Member State concerned with a view to bringing that situation to an end within a given period. Subject to the provisions of paragraph 8, these recommendations shall not be made public.
8. Where it establishes that there has been no effective action in response to its recommendations within the period laid down, the Council may make its recommendations public.
9. If a Member State persists in failing to put into practice the recommendations of the Council, the Council may decide to give notice to the Member State to take, within a specified time limit, measures for the deficit reduction which is judged necessary by the Council in order to remedy the situation.

In such a case, the Council may request the Member State concerned to submit reports in accordance with a specific timetable in order to examine the adjustment efforts of that Member State.
10. The rights to bring actions provided for in Articles 258 and 259 may not be exercised within the framework of paragraphs 1 to 9 of this Article.

Article 258

If the Commission considers that a Member State has failed to fulfil an obligation under the Treaties, it shall deliver a reasoned opinion on the matter after giving the State concerned the opportunity to submit its observations.

If the State concerned does not comply with the opinion within the period laid down by the Commission, the latter may bring the matter before the Court of Justice of the European Union.

Article 259

A Member State which considers that another Member State has failed to fulfil an obligation under the Treaties may bring the matter before the Court of Justice of the European Union.

Before a Member State brings an action against another Member State for an alleged infringement of an obligation under the Treaties, it shall bring the matter before the Commission.

The Commission shall deliver a reasoned opinion after each of the States concerned has been given the opportunity to submit its own case and its observations on the other party's case both orally and in writing. If the Commission has not delivered an opinion within three months of the date on which the matter was brought before it, the absence of such opinion shall not prevent the matter from being brought before the Court.

Why was the standard legal route ruled out for the purposes of enforcing the fiscal framework? History suggests that this was the political and economic quid pro quo for the decision to adopt ex ante debt and deficit thresholds. In February 1991, the Alternates of the Monetary Committee of the European Community (representing finance ministries and central banks) proposed the adoption of reference values for government debt and deficits as a share of GDP but also “recognized that the assessment of government deficits could not consist merely in the mechanical application of these criteria but...would require judgment by the political authorities. The procedure to be followed in the evaluation of excessive deficits was therefore considered to be as important as were the reference values” (Bini Smaghi, Padoa-Schioppa, and Papadia 1994, pp. 28-29). In other words, a “soft” enforcement process involving political judgment was meant to balance, and to some extent offset, the use of “hard” numerical criteria.

Replacing fiscal rules by standards, as proposed in this paper, would eliminate the need for “softening” via the enforcement process. Indeed, the combination of standards that are amenable to interpretation with a “soft” enforcement approach may well result in a system that does not meaningfully constrain national policies. Therefore, replacing rules by standards would require an accompanying reform of the approach to enforcement. We can imagine two options. In either case, the essential difference with respect to the status quo would be that the enforcement process could, *in extremis*, prevent a nationally approved budget that violates EU standards from becoming law, rather than merely lead to the imposition of sanctions. This would require changes not only in EU law but also in national law – possibly at the level of some national constitutions.

The first enforcement option would be a tougher version of the status quo. As is presently the case, the European Commission would conduct fiscal surveillance in the context of the European Semester. Draft budgetary plans of the member states would be subject to review by the Commission. The Commission could request changes within the constraints of the fiscal standards and guidelines laid out in EU law (i.e., with respect to the size of the deficit and possibly the level of capital spending; not with respect to tax policy, administration, or individual spending items). Unlike the status quo, however—in which the Commission's main instrument is to make recommendations to the Council that may or may not lead to sanctions—the Commission would be able to delay the adoption of a budget if the member did not comply with the requested changes. Members could appeal to the Council, which could overrule the Commission with a qualified majority. A fallback option (for example, a budget based on the previous

year's budget) would need to be defined if the Council does not overrule the Commission, but the member still refuses to implement the changes sought by the Commission.

This approach might work in the sense of giving standards (and European Commission fiscal surveillance based on these standards) adequate “teeth.” But it would lack an essential feature of standards according to the legal literature, namely, an adjudication body that systematically “gives the law content *ex post*” (Kaplow 1992, p. 559). The Council is not well placed to play this role, because it may decide politically rather than with a view to creating a fiscal standards jurisprudence.

This argues for an independent adjudicator, such as the European Court of Justice (ECJ), or a new, designated body (for example, an upgraded version of the European Fiscal Board). Putting the ECJ in charge would require removing paragraphs 3–10 from Article 126 and bringing back the normal treaty infringement procedure in the context of the article (box 4). Putting a new body in charge may require deeper treaty change.¹⁹

Enforcement via a judicial or quasi-judicial body would need to address three main objections.

First, treaty infringement procedures can take a long time. Even if the law defines a fallback while the case is being argued—such as a repeat execution of the preceding year's budget in inflation-adjusted terms—this is clearly not satisfactory. To deal with this objection, the independent adjudicator would need to have the capacity to decide within months. In the case of ECJ adjudication, this may require creating a specialized chamber. The latter would also address the problem that the present members of the ECJ may lack the economic expertise required to adjudicate a fiscal standard.

Second, there is a concern that judges would dictate decisions that ought to be the prerogative of legislatures. This is true, but the scope of these decisions would be defined by EU law, which in turn is approved by legislatures. Furthermore, it would not go beyond the restrictions that fiscal rules currently impose on national autonomy, namely, requiring a different fiscal balance from that which member countries might prefer. Finally, the fact that independent bodies decide on matters that are intensely political is not new and is widely accepted in the European Union. For example, the ECJ decides whether national regulation violates single market rules or whether state aid violates competition rules.

Third, whether or not the adjudication role is assigned to an independent body, the European Commission would remain in its current role of “prosecutor” of fiscal misbehavior. Given its political nature, this may lead to underenforcement. However, there is no obvious lack of Commission enthusiasm for enforcing the treaty in other areas. In the single market area alone, the Commission brought 202 new cases in 2018.²⁰ Complaints about “political” behavior on the part of the Commission tend to focus on its role in enforcing the fiscal rules, as opposed to, for example, competition or single market rules. This suggests that the problem may lie less with the political nature of the Commission but rather with Article 126 (paragraphs 3–10), which explicitly stipulates a political process for enforcing fiscal rules—an approach unique to the fiscal area.

¹⁹ For example, the need to amend Article 13 of the Treaty on European Union to create a new EU institution.

²⁰ See

https://ec.europa.eu/internal_market/scoreboard/performance_by_governance_tool/infringements/index_en.htm (accessed on March 3, 2020)

Restoring the normal judicial enforcement channel in the context of Article 126 would not only give the Commission the right to open a case against a member (Article 258 TFEU) but also allow members to take legal action against other members if the Commission failed to do so (Article 259 TFEU; see box 4). This limits the extent to which the Commission could remain inactive.

We conclude that there is a reasonable case for combining a move from fiscal rules to standards with a return to normal judicial enforcement. That said, fiscal standards could also be enforced by a variant of the current procedure, which relies on the Council as the adjudicator—so long as this is reformed in a way that allows the Commission to block the adoption of a budget, subject to final adjudication by the Council, rather than just making recommendations to the Council.

Introducing explicit capital budgeting

Given the dismal record on public investment in EU countries over the last ten years, we believe that, to protect public investment, some form of capital budgeting should be adopted.²¹ The main advantage of capital budgeting is that it would allow *different* constraints on current and capital spending—in particular, fiscal standards that are friendlier to capital spending. This aspect would counteract existing incentives to underinvest in public capital. Because public investment benefits mainly future taxpayers, it is less attractive to today’s taxpayers than current spending (such as social transfers). As a result, any fiscal standard that applies equally to current spending and capital investment may disproportionately hurt the latter. As we have seen, there is empirical evidence for such an effect, particularly during fiscal consolidations and economic downturns.²² To protect public investment, governments may try to hide its fiscal costs by issuing debt off-budget or investing through public-private partnerships (PPPs). This obfuscates the level of future fiscal liabilities and has created a bias in favor of PPPs even in instances when it would be more efficient for the state to undertake the investment project directly.²³

In principle, the separation between current and capital spending could be done within the government budget, but—for conceptual, transparency, and governance reasons—it is better to think of it by

²¹ Relevant papers on capital budgeting—associated fiscal rules—in particular the so-called “golden rule,” which stipulates that borrowing is justified only to the extent that it finances public investment—include Poterba (1995), Blanchard and Giavazzi (2003), German Council of Economic Experts (2007), IFS (2008, 2009), Truger (2014), and Burret and Feld (2018). Note that, while we advocate for capital budgeting, we do not advocate for the golden rule of financing. We believe that public investment, if it has low financial returns, does not necessarily justify debt finance, and we believe that there are circumstances, namely persistently negative output gaps together with monetary policy constraints, when the fiscal current account can be partly financed by debt.

²² Poterba (1995) finds that US states with separate capital budgets spend more on public capital projects than comparable states with unified budgets. Burret and Feld (2018) compare fiscal rules (“debt brakes”) across Swiss cantons and find that they have no significant effect on public investment if the investment budget is legally constrained but *raise* public investment if the investment budget is unconstrained. Oxley and Martin (1991) and de Haan, Sturm, and Sikken (1996) show that investment is reduced more than other spending items during fiscal consolidations. Talvi and Végh (2000) and Lane (2003), using data from developing and industrial countries, respectively, show that public investment is more procyclical than other spending items. See also Servén (2007).

²³ On the dos and don’ts of PPPs, see Engel, Fischer, and Galetovic (2014).

separating tasks between a central government in charge of current spending and a separate agency in charge of capital spending.

To dispel a few misconceptions and to address some valid criticisms,²⁴ it is useful to briefly describe how it could work in more detail (see appendix 3 for the underlying algebra).

The agency's expenditures would be equal to gross investment and interest payments on the debt owed by the agency. Its revenues would be twofold. Some of the revenues would come from public capital directly. But many public investment projects, even when they have a high risk-adjusted social rate of return, may yield low or even zero financial returns; examples include roads or bridges that do not collect user fees, or investments that mitigate climate change or reduce its negative impact. To operate, the agency must receive transfers from the central government; these transfers should be equal to the depreciation of public capital plus the difference between financial returns—which may be low—and market returns.

Central government spending would then exclude gross investment but include transfers to the agency to cover both depreciation and the difference in returns. The latter is important: projects with lower financial returns imply higher future transfers on the current account, to cover both depreciation and the shortfall in returns. To the extent that capital investment leads to higher future output and taxes or lower future spending needs, it may end up paying for itself, but this is not guaranteed. If the agency goes on an investment binge and the financial and fiscal returns of that investment are low, it may become impossible to balance the current account, even if the social returns of investment are high (those high social returns are not reflected proportionately in fiscal revenues) (Buiter 2001). As a result, ensuring debt sustainability may require placing restrictions not only on the current account but also on the capital account and/or overall debt issuance.

To implement capital budgeting, clear rules must be established spelling out what spending items qualify as public investment. In principle, the answer is straightforward: an expenditure should be classified as a public investment if it leads to sufficiently high social returns in the future. In practice, the answer is more complicated.

The distortion that justifies capital budgeting—that governments face political incentives to consume too much and invest too little—also implies that governments cannot be trusted to determine what investment is. For example, “white elephant” projects have low social returns (by definition) but may still be attractive to the authorities. Governments also have strong incentives to reclassify consumption expenditures as investment. For example, there might be pressure to classify education expenditures such as teacher salaries as investment, on the grounds that education is, in large part, an investment in human capital. This is indeed true. However, because primary and secondary education also largely involves replacing the knowledge and skills of the previous generation, depreciation relative to gross investment is much higher in the case of primary and secondary education than in many instances of physical capital investment (German Council of Economic Advisors 2007). If this depreciation is recorded

²⁴ Pros and cons of capital budgeting for the United States were carefully considered by a government commission appointed by President Clinton in 1999 (US Commission 1999). It concluded that capital budgeting would be too difficult to implement. We believe that some of the difficulties it pointed out can be dealt with, and capital budgeting is better than the current alternative.

correctly, classifying some education spending as capital spending would still imply larger current account expenditures in the future and would therefore not give a free pass to finance it by debt.

To ensure that these expenses are correctly classified and the right depreciation rates are used, capital budgeting probably needs to be overseen by an independent supranational institution, such as an EU-level committee or fiscal council. Its role would be to draw up spending categories that in principle qualify as public investment, estimate depreciation rates in these categories, and set methodological standards for estimating social rates of return. There is a case for the criteria to be set conservatively and for the initial list of qualifying projects to be relatively limited, before experience is built and the list can be extended.²⁵ Subsequently, that institution—or the European Commission, or some combination of both—will need to monitor that the criteria for classifying spending as net investment are properly followed at the national level.

Dealing with deficient demand

As we discussed earlier, very low interest rates can make it difficult for the ECB to close the euro area output gap and/or raise inflation to the desired level. In principle, fiscal policy could come to the rescue. But, as we have discussed, with fiscal policies under the control of national authorities, this may not happen. Some countries may feel that the required deficit threatens debt sustainability. And some may conclude that fiscal spillovers will lead the deficit to have only a limited impact on domestic output.

Suppose that the problem is entirely due to fiscal spillovers—that is, demand externalities. In that case, an EU-level demand shortfall could be addressed in two ways.

A provision in the Treaty could be introduced, asking members with fiscal space to undertake expansionary fiscal policy when the ECB is unable to raise inflation to its target level. For example, Article 126 TFEU, whose first paragraph currently states that “Member States shall avoid excessive government deficits,” could be amended to include an additional paragraph along the following lines: “Subject to the requirement of paragraph 1 of this article, Member States shall conduct their fiscal policy in a way that supports the ECB in attaining its stability objective.” Secondary legislation would then be more specific about what this means, and fiscal standards would reflect how each country should take it into account. Member countries whose debt is sustainable with high probability—as determined by the European Commission, the European Fiscal Board, or both—could be asked to lower their fiscal balance (reduce taxes or increase spending) when ECB interest rates are zero or negative and inflation or inflation expectations continue to undershoot the ECB’s stability objective (see below). National fiscal rules that constrain member states from doing so would have to be modified.

An alternative would be to create a central fiscal capacity (CFC) to help achieve potential output when output is too low and monetary policy is constrained by the effective lower bound on interest rates. A fiscal capacity of this type has been advocated for some time, in some cases based on arguments similar to those made in this paper.²⁶ Unlike a “rainy day fund” whose main purpose would be fiscal risk sharing across euro area member countries (see, for example, Bénassy-Quéré et al. 2018), the proposed CFC

²⁵ This parallels the discussion on pros and cons of “dynamic scoring,” the notion that, in assessing effects on the budget, future growth effects of various measures should be taken into account.

²⁶ See Allard et al. 2013; Pisani-Ferry, Vihriälä, and Wolf 2013; Ubide 2015; Zettelmeyer 2017; Arnold et al. 2018; Stráský and Claveres 2018; and Berger et al. 2019, among others.

would need to have the capacity to borrow: while a rainy day fund can provide limited stimulus, this would run out when the fund runs out. A CFC with a euro area stabilization objective would thus require creating debt at the euro area level. This makes it politically controversial.

The advantage of the first approach—extending Article 126 to address insufficient demand—is that it requires neither new institutions nor common debt issuance. The disadvantage is that it offers a solution if and only if the demand insufficiency is caused by demand externalities. Only in this case—leading to a pure coordination failure—could coercing countries to raise their deficits lead to a Pareto improvement.

In contrast, the second approach, i.e. a well-designed CFC, could help if the underlying problem consists not only in demand externalities but also excessive debt in some countries. So long as euro area debt remains sustainable, a CFC would not be constrained by the fiscal space of individual euro area members and could be used to boost demand throughout the euro area, including in those countries that could not do so themselves without violating Article 126 (1). Furthermore, a CFC would not require (net) fiscal expansions in countries where output is already at potential. Even if the CFC was constrained to operate symmetrically (for example, to deal with the concern that it would otherwise lead to systematic redistribution), governments whose economies do not require stimulus could offset part or all of the effect of the CFC's actions by running more contractionary fiscal policies.

In this way, the CFC could lead to a Pareto improvement under a broader range of assumptions compared to an extension of Article 126. The reason for this is that a well-designed CFC would help not just as a coordination device but because it would have more credibility as a borrower (that is, a greater ability to commit to repaying) than the euro members whose debt sustainability is in doubt. Depending on its design, it could also give rise to fiscal risk sharing (e.g., via the cyclicalities of revenues, without necessarily leading to systematic transfers), but this feature is not essential for the purpose of raising demand at the level of the euro area.²⁷

What if a CFC is not politically feasible? A second-best solution might be an agreement in which euro area members would commit to undertake a coordinated fiscal expansion, of a minimum magnitude, following a well-defined trigger. For reasons discussed earlier—namely, the difficulty of resolving complicated trade-offs using simple rules—the trigger for the expansion would likely be procedural. For example, it could occur following a recommendation of the European Commission, seconded by both the European Central Bank and the European Fiscal Board and accepted by three quarters of the member countries. Participation could be waived for countries for which the fiscal expansion might threaten debt sustainability (based on a Commission proposal and an endorsement by a supermajority). Even if a mechanism of this type could not be agreed to by all euro area members, a subset of countries may be able to agree. So long as this subset includes most of the largest euro area countries, this approach would be enough to overcome the most serious manifestations of the demand externality problem.

²⁷ One channel for risk sharing that could (and probably would) lead to systematic transfers would be a mutual guarantee of the CFC's debt by euro area members ("Eurobond"). Perhaps for this reason, it is disallowed by Article 125 of the TFEU. Importantly, however, mutually guaranteed debt is not required for the credibility of the CFC as a borrower, so long as it has a dedicated revenue stream as well as internal rules and procedures that keep its debt sustainable with high probability.

V. CONCLUSION

EU fiscal rules have been criticized for being overly complex, error-prone, procyclical, and hard to enforce. While we are sympathetic to some of these criticisms, this paper has a different focus. Despite offering some flexibility, EU fiscal rules entail a suboptimal compromise between the objectives of maintaining debt sustainability and allowing fiscal stabilization policy. By treating investment and current spending in similar ways, they also exacerbate (or at least fail to correct) incentives to compress public investment spending.

These problems arise even in times when government borrowing rates exceed growth rates and monetary policy is powerful enough to eliminate the euro area output gap. They are exacerbated in low-interest times, when the fiscal costs and sustainability risks associated with public debt are lower, the set of public investment projects that is worth financing is larger, and fiscal policy is more important as a stabilization tool. As we document, these are conditions in which the euro area is likely to find itself for quite some time. As a result, the fiscal framework requires reform.

In line with our broader focus, our reform proposals are more radical than previous proposals. They include three main elements.

First, EU fiscal rules should be replaced by a set of enforceable fiscal standards, that is, fiscal norms that distinguish good from bad behavior in qualitative rather than numerical terms. Compared to rules set *ex ante*, standards give a greater role to judgment on whether a particular policy can be justified in a specific case. In a setting in which the tradeoffs associated with fiscal policy are highly context-specific, this is a better approach than trying to define numerical constraints on policy *ex ante*. To be successful, however, standards require an effective enforcement process, ideally in the form of adjudication of disputes between the European Commission and member states by an independent body, such as the ECJ or a specialized EU-level court. Alternatively, the existing enforcement mechanism, in which the Council is in the role of the adjudicator, could be strengthened, including by allowing the Commission to block budgets that do not comply with the fiscal standards.

Second, members should be required to follow capital budgeting accounting practices—that is, to distinguish between current and capital expenditures, based on a consistent, EU-wide set of criteria. An EU-level body would need to ensure that only “qualifying” capital expenditures are accounted as such. Based on this distinction, different fiscal standards could be defined for the fiscal current and capital account, with the aim of protecting public investment, particularly in downturns.

Third, the framework should be able to address euro area demand shortfalls, as may arise when fiscal policy is collectively too contractionary (given constraints on monetary policy). One way would be to amend Article 126 of the Treaty to include an obligation of members to conduct fiscal policy in a way that supports the stabilization efforts of the ECB when necessary. This could be used to require members with fiscal space to run a more expansionary fiscal policy than they otherwise would. Another way would be to create a central fiscal capacity that can conduct stabilization policy at the euro area level. The CFC approach is the better one, because it is not constrained by fiscal space at the member state level and because it would not require members with closed output gaps to overheat their economies.

The proposals of this paper would mark a large departure from the current rules. They would require Treaty change. But in an environment in which ECB monetary policy is likely to remain constrained for years and maybe decades, creating much more subtle trade-offs in deciding what fiscal policy is right than at the time of the Maastricht treaty, these proposals seem worth exploring.

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Appendix 1. The arithmetic of debt accumulation and some implications

Government debt accumulation can be described by the following equation:

$$D_t - D_{t-1} = rD_{t-1} - S_t$$

where D_t refers to the debt stock at the end of year t expressed in euros or dollars, r to the interest rate, and S to the primary balance, i.e., the differences between taxes and noninterest spending. We initially assume that r remains constant over time. The equation states that the change in debt from one year to the next equals the interest bill of the government minus the primary surplus.

Dividing both sides of this equation by output Y_t , defining the growth rate of output as $1 + g = Y_t/Y_{t-1}$, and using the approximation $\frac{1+r}{1+g} - 1 \cong r - g$ to simplify notation, this can be rewritten as:

$$d_t - d_{t-1} = (r - g)d_{t-1} - s_t \quad (1)$$

where lowercase letters now denote ratios to GDP. r and g can both be defined either in nominal terms or in real terms (using the same GDP deflator).

The primary balance that maintains a constant debt-to-GDP ratio ($d_t = d_{t-1} = d$) is therefore given by:

$$s = (r - g)d \quad (2)$$

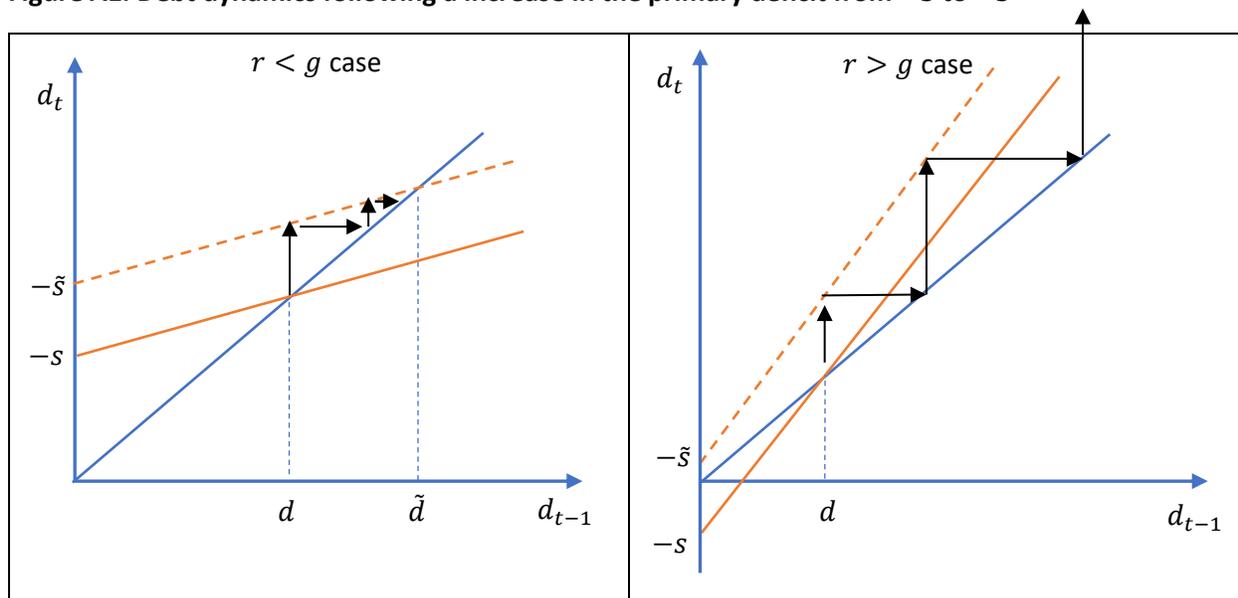
If $r - g > 0$, the traditional configuration, s must be positive and is an increasing function of the debt ratio. The government must run a primary surplus. If it runs a lower primary balance than implied by the equation, debt will explode.

If, however, $r - g < 0$ (the current and forecast configuration), s is negative and the primary balance that the government can run is a decreasing function of the debt ratio. Thus, the government can run a primary deficit equal to $(r - g)d$ forever and the debt-to-GDP ratio will nevertheless remain constant.

Indeed, if $r - g < 0$, the government can run a primary deficit of *any* magnitude. Increasing the primary deficit beyond s will make the debt ratio increase, but it will not explode. Rather, it will converge to a new level $\tilde{d} = \tilde{s}/(r - g)$, where \tilde{s} denotes the lower primary balance. For example, if the government runs a primary deficit of 2 percent, the initial debt ratio is 100 percent, and $r - g = -2$ percent, the debt ratio will remain constant at 100 percent. If the new primary deficit is 3 percent, the debt ratio will converge to 150 percent.

To understand why $r - g$ makes such a big difference to the debt dynamics, it is instructive to plot the debt accumulation equation (1), rewritten as $d_t = (1 + r - g)d_{t-1} - s$. In figure A1, the x-axis shows d_{t-1} , while the y-axis shows d_t . $r - g < 0$ implies $1 + r - g < 1$; that is, the debt accumulation equation is flatter than the 45-degree line. Suppose that starting from a constant debt level d , the primary deficit increases permanently, from $-s$ to $-\tilde{s}$. Assume that this has no effect on GDP (this assumption will be relaxed below). On impact, the increase in the primary deficit leads to a jump in the debt-to-GDP ratio by the difference between $-\tilde{s}$ and $-s$. Hence, next year's interest bill will rise, leading to a further increase in the debt and the debt ratio. But in the left chart, because output growth is higher than the interest rate, output gradually catches up, leading to a new equilibrium at a higher debt-to-GDP ratio. In contrast, in the right chart, the interest rate is higher than the growth rate, which implies that the debt continues to grow at faster rates than output, and eventually explodes.

Figure A1. Debt dynamics following a increase in the primary deficit from $-s$ to $-\tilde{s}$



Note: The figure shows the consequences of a shift in the debt accumulation equation $d_t = (1 + r - g)d_{t-1} - s$ as a result of a permanent increase in the primary deficit $-s$ in two settings: $r < g$ (left) and $r > g$ (right).

So, assuming that $r < g$, why worry about debt sustainability? Because the assumption that r and g remain the same as the debt ratio rises may not be realistic. In particular, our example ignores the potential effect of debt on the interest rate, as well as the role of uncertainty. To get a sense of the more relevant dynamics, consider the following two extensions. First, as discussed in the text below, assume that a higher debt ratio increases the interest rate. Second, assume that higher debt leads, through a political reaction function, to an improvement in the primary balance, so the dynamics of the debt-to-GDP ratio are now given by:

$$d_t - d_{t-1} = (r_t - g)d_{t-1} - s_t; r_t = r_0 + \alpha d_{t-1}; s_t = s_0 + \beta d_{t-1}$$

so that:

$$d_t - d_{t-1} = (r_0 + \alpha d_{t-1} - g - \beta)d_{t-1} - s_0$$

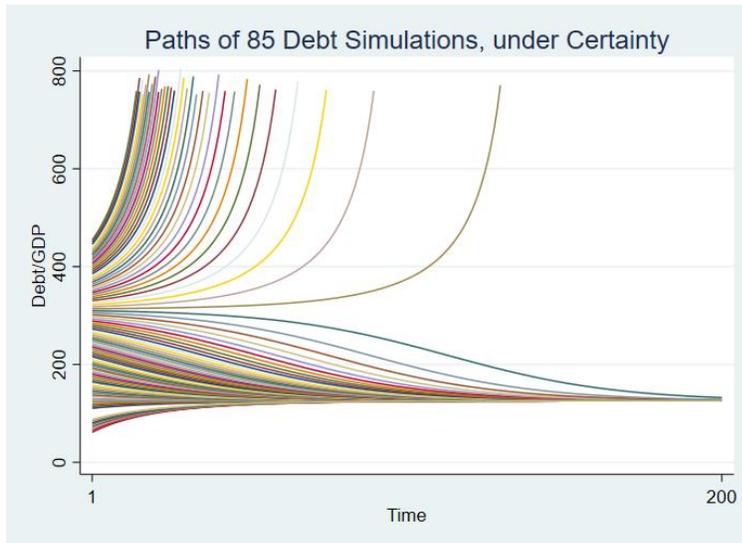
where α reflects the effect of debt on the interest rate and β the response of the primary balance to debt. (These extensions still ignore uncertainty about interest rates, growth rates, and the primary balance, but exploring that would take us too far afield.)

This equation now has either zero or two steady state solutions.

- If the primary deficit is large enough, the response of the primary balance to debt small enough, and the effect of debt on the interest rate large enough, there may be no solution. Debt will explode, as primary deficits will lead to an increase in debt that will reverse the inequality between the interest rate and the growth rate.
- Otherwise, there are two solutions, a low and a high debt ratio. The low debt ratio is stable: debt ratios starting between zero and the high debt ratio will converge to the low steady state, from either below or above. The high debt one is unstable. Figure A2, based on a rough but not implausible choice of parameters, gives an example of debt dynamics starting from different

debt ratios. Unless debt is very high (i.e., above the higher equilibrium), it will converge to the lower equilibrium. In rough calibrations, the higher-equilibrium debt ratio is substantially above current debt ratios. In other words, much higher levels of debt than we observe today appear to be sustainable.

Figure A2. Paths of 85 debt simulations, under certainty



Source: Authors' calculations

Appendix 2. Effects of a debt-financed increase in public investment when interest rates do not adjust

This appendix reports simulations based on a 2014 paper by Selim Elekdag and Dirk Muir, using the IMF multicountry model known as the Global Integrated Monetary and Fiscal model (GIMF; for more on GIMF, see Anderson et al. 2013 and Laxton et al. 2010).

Temporary 2-Year 1% of GDP Increase in Government Spending in the Euro Area Outcomes in Euro Area SOLID is Government Investment DASHED is Government Consumption

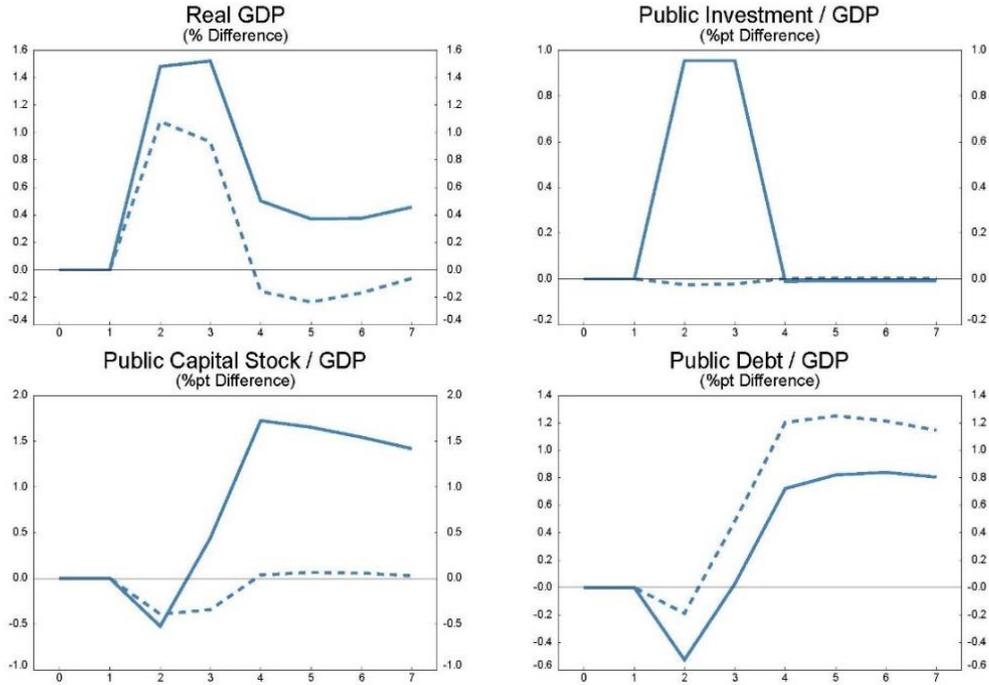


Figure B1 shows the simulated effects of a euro area fiscal expansion of 1 percent of GDP for two years, under the assumption that the nominal interest rate set by the ECB remains constant during those two years. It considers an increase in both government consumption and government spending. (The calibration assumes that the interest rate exceeds the growth rate, thus making a more pessimistic assumption than we think is warranted today. A simulation based on lower values of $r-g$ would lead to more favorable debt dynamics than reported in the figure.)

The simulation yields the following conclusions: Under the assumption that the fiscal expansion takes the form of increased public investment, output goes up by more than 1 percent during the fiscal expansion, reflecting the increase in spending and the demand multipliers, and remains higher in the longer run (the figure shows the first 7 years), reflecting the increase in the public capital stock. The ratio of public capital stock to GDP increases by close to 2 percent. The debt-to-GDP ratio goes down initially, reflecting the larger relative increase in output than the relative increase in debt, but then increases over time to stabilize around 1 percent. Under the hypothesis that $r-g$ is negative, the ratio would not stabilize but slowly decline over time.

Appendix 3. The arithmetic of capital budgeting

The best way to present the accounting associated with capital budgeting is to think of a separation between a central government in charge of current spending and an agency in charge of capital spending (for more detail and discussion, see Blanchard and Giavazzi 2004).

Consider the expenditures and revenues of the agency first.

Let I_t denote gross investment in period t , r the real interest rate on debt, g real GDP growth, and δ the depreciation rate on public capital. D_t^A denotes the debt stock owed by the agency at the end of period t , K_t the public capital stock, and θ the risk-adjusted real financial rate of return on public investment. For some projects, θ might be equal or greater to r ; for others $\theta < r$, even taking into account the potential effects of the public investment project on growth and future revenues (and even when the social rate of return exceeds r).

The expenditures of the agency are equal to gross investment plus interest payments on the agency debt. Its revenues are the financial revenues from public capital and transfers from the central government to cover the difference between financial revenues and interest payments for debt issued to finance public investment, plus depreciation.

The capital and agency debt accumulation equations are thus as follows (all stocks and flows expressed in real terms):

$$K_t = K_{t-1} + I_t - \delta K_{t-1}$$

$$D_t^A = (1 + r)D_{t-1}^A + I_t - \theta K_{t-1} - (r + \delta - \theta)K_{t-1} = (1 + r)D_{t-1}^A + I_t - (r + \delta)K_{t-1}$$

Replacing I_t from the first equation in the second equation and rearranging gives:

$$D_t^A = K_t + (1 + r)(D_{t-1}^A - K_{t-1})$$

This implies that, if the agency starts with zero debt and zero public capital, agency debt is equal to public capital (and the debt-to-GDP ratio always equals the ratio of capital to GDP).

Now turn to the central government. Its expenditures are equal to current spending plus interest payments on central government debt plus transfers to the agency. Its revenues are taxes. Let X_t denote current spending, T_t taxes, and D_t^C debt issued by the central government to GDP (all in real terms). The equation of motion for central government debt is thus given by:

$$D_t^B = (1 + r)D_{t-1}^B + X_t - T_t + (r + \delta - \theta)K_{t-1}$$

Assume now that the debt rule is that the current account has to be balanced and the capital account can be financed by the issuance of debt.

Current account balance implies

$$X_t + rD_{t-1}^B - T_t + (r + \delta - \theta)K_{t-1} = 0$$

So that

$$D_t^B = D_{t-1}^B$$

Dividing both sides by Y_{t-1} and using $(1 + g) \equiv Y_t/Y_{t-1}$ leads to an equivalent expression in terms of shares of GDP:

$$d_t^B = \frac{1}{1+g} d_{t-1}^B$$

Assuming $g > 0$, we have $0 < \frac{1}{1+g} < 1$ and the ratio of central government debt-to-GDP goes to zero. (If the government is allowed to run a current account balance of $s < 0$, then the debt ratio will go instead to $-s/g$; see appendix 1.)

Whether or not *overall* debt is sustainable will depend on the rate of growth of the public capital stock: If it grows faster than output, the debt ratio will explode; if it grows slower, the investment agency has no initial debt, and the current account is balanced, debt ratio will converge to zero. If the investment agency has no initial debt, the current account is balanced, and capital grows at the same rate as output, the overall debt ratio converges to the ratio of public capital to GDP.