

Achieving prudent debt targets using fiscal rules



Debt targets can serve as a fiscal policy anchor to ensure the sustainability of fiscal policy and that there is sufficient policy room to cope with adverse shocks. Prudent debt targets provide the commitment tool that re-assures markets and thereby diminishes risk premia and the cost of active fiscal policy.

Main findings

An assessment of the effect of debt on economic activity suggests that beyond a debt threshold, government debt can undermine economic activity and the ability to stabilise the economy:

- At very high debt levels, countries can lose market confidence and see their borrowing rates increase steeply. Debt default limits are currently not binding in most countries, but countries should endeavour to steer clear of their default limit.
- Government debt also provides a safe and very liquid asset, thus easing liquidity constraints. Therefore, low levels of debt are welfare enhancing.
- Taking into account different criteria, such as the impact of debt on growth, the effectiveness of fiscal policy in pursuing a counter-cyclical policy and the link between debt and the provision of public infrastructure, it seems that gross debt above about 80% of GDP has detrimental consequences.

More specifically, the empirical cross-country evidence suggests different debt thresholds, defined as the turning point at which negative effects of debt on the economy kick in, for three groups of countries:

- For higher-income countries, a debt threshold range of 70 to 90% of GDP.

- For euro area countries, the debt threshold is lower, as they do not control monetary policy. Given the no-bail-out clause, the absence of debt pooling, a higher dependency on foreign financing and difficulties in adjusting to shocks, the debt threshold is 50-70%.
- For the emerging economies the threshold is even lower at 30 to 50% debt of GDP as they are exposed to capital flow reversals.

Prudent debt targets should be set to avoid an overshooting of the debt thresholds in the case of adverse shocks. Prudent debt targets take into account uncertainties surrounding macroeconomic variables and are thus country-specific. Prudent debt targets are on average 15 percentage points lower than debt thresholds.

The prudent debt target should serve as the reference point to define numerical fiscal rules. The fiscal rules should have two objectives: promote fiscal discipline and permitting stabilisation policies.

A combination of a budget balance rule and an expenditure rule seems to suit most countries well. A budget balance target encourages hitting the debt target. And, well-designed expenditure rules appear decisive to ensure the effectiveness of a budget balance rule and can foster long-term growth.

The sharp rise in debt in most OECD countries raises questions about the prudent debt level countries should target

Government debt has risen sharply during the recent crisis in most OECD countries.¹ The OECD-wide gross debt-to-GDP ratio increased from 73% of GDP in 2007 to 111% in 2013. It is the highest ratio since the aftermath of the Second World War. Such high debt levels raise questions about their sustainability, and some euro area countries have entered into adjustment programmes in order to control their spiralling debt. Though the current priority is to promote growth that will foster job creation and underpin fiscal consolidation in most OECD countries, this policy note provides guidance for setting fiscal policy objectives over the medium to long term. This Policy Note addresses three questions:

1. How should a government debt target be set?
2. What should be the prudent debt level countries should target over the medium term?
3. How should fiscal frameworks, and in particular fiscal rules be designed, that ensure reaching the prudent debt target and that accommodate cyclical fluctuations along the path towards the prudent debt target?

Limits to debt sustainability tend to be high, but countries should avoid approaching them

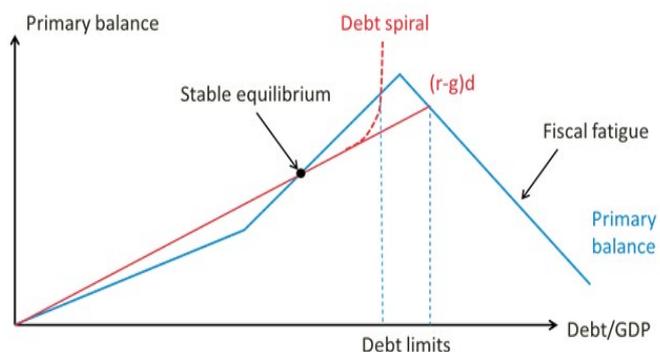
The public debt limit is defined as the maximum level of debt beyond which the government cannot roll debt over. It depends on the growth and interest rate, and the previously observed capacity of governments to react to rising debt. Debt stabilises when the interest payment is exactly offset by the primary balance, as illustrated in Figure 1. There is a stable equilibrium at which the government generates a higher surplus if a shock increases the debt ratio. By contrast, when the debt level approaches the debt limit, the government is facing an interest rate spiral (dashed red curve in Figure 1), and at the debt limit, the interest rate goes towards infinity, which means that the government loses market access.

The empirical work suggests that debt limits are close to twice GDP in many OECD countries (Figure 2). Debt default limits are currently not binding in most countries thanks to very low interest rates. But such limits are state dependent. Moreover, a debt crisis is possible well below the debt limit because losing market confidence can become self-fulfilling

¹ Government gross debt serves to monitor contractual liabilities and should include explicit future liabilities such as civil servant pension liabilities. Gross debt should be tracked separately from government assets, as sharp swings in asset prices can mask underlying debt developments. Net debt, the difference between government gross debt and assets, is relevant for solvency analysis, in particular when governments hold a sizeable amount of liquid assets. Implicit and other off-balance sheet liabilities should also be estimated and monitored to assess fiscal risks.

as borrowing rates can increase steeply. Countries should thus endeavour to steer clear of the default limit. The currently high default limits cannot be an anchor for setting the prudent debt target as harmful effects of debt on economic activity are likely to kick in well before.

Figure 1. Determination of the debt limit



Note: The blue line shows the primary balance. g is the growth rate, r the interest rate and d is the debt-to-GDP ratio. The second dashed blue line shows the debt limit if the interest rate does not take into account the rising debt level and the first dashed blue line shows the debt limit when the interest rate rises as debt gets close to unsustainable levels.

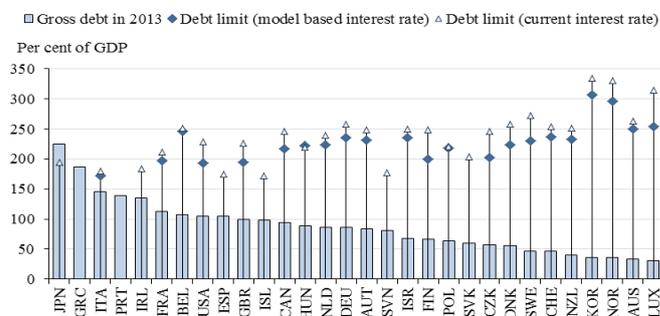
Source: Fournier, J.-M. and F. Fall (2015), «Limits to Government Debt Sustainability», OECD Economics Department Working Papers, No. 1229, OECD Publishing.

The empirical work also suggests that for some countries, given past fiscal behaviour, the debt dynamics is not sustainable (Fournier and Fall, 2015). These countries need to improve the primary balance in the future to bring their debt dynamics onto a sustainable path. It also suggests high market volatility to any news affecting these countries.

In 2013, Japan's debt was close, or even beyond, the debt limit. Different factors explain why the debt limit has not become binding: the central bank has kept the interest rate close to zero for a long period, a strong home bias exists (debt is held by Japanese investors, especially public pension reserve funds, and not foreigners) and the net financial asset position of the country is large.

Figure 2. Debt limits

Government financial liabilities, per cent of GDP



Note: Debt limits depend on past fiscal behaviour, economic growth and interest rates. The model-based interest rate increases with the debt level and sharply so, before the debt limit is reached. If past fiscal behaviour prevails, there is no finite interest rate solution to calculate the model based debt limit for Greece, Ireland, Iceland, Japan, Portugal, Slovenia and Spain, and there is no stable debt level at current interest rates for Greece and Portugal.

Source: Fournier, J.-M. and F. Fall (2015), «Limits to Government Debt Sustainability», OECD Economics Department Working Papers, No. 1229, OECD Publishing.

The effects of debt on the economy

Debt targets can serve as a fiscal policy anchor to ensure fiscal sustainability and that there is sufficient policy room to cope with adverse shocks. Prudent debt targets provide the commitment tool that re-assures markets and thereby diminishes risk premia not only for government debt, but also lowers the cost of capital for the whole economy. To define a prudent debt target, it is necessary to first establish a threshold beyond which debt has adverse effects on economic activity.

1. The debt level that maximises growth

OECD analysis (Fall et al., 2015) suggests that when a specific role for government debt in financing public infrastructure is taken into account, estimations find a positive but limited “optimal” government debt ratio of 50-80% of GDP. Though the results should be interpreted with caution, they suggest that there is a limit beyond which public investment has decreasing returns.

2. Government debt and the effectiveness of fiscal policy in stabilising the economy

The impact of debt on the economy has been mostly analysed through the effects of changes in fiscal policies on output, gauged by fiscal multipliers. The empirical evidence on the size of the multipliers is not conclusive, as they depend on fiscal instruments, economic conditions and the timing of policies. However, the level of debt matters for fiscal policy effectiveness. At a level of around 75% of GDP, debt impedes the effectiveness of fiscal stimulus through higher private savings.

3. Is high debt detrimental to growth?

Work by the OECD indicates that a universal non-linear relationship between debt and growth is not robust. For general government debt, the threshold beyond which negative growth effects kick in is at about 50% and there is a large amount of cross-country heterogeneity. Overall, there is good reason to believe that causation between higher debt and lower growth runs both ways and the empirical literature has not come to a strong conclusion on causality.

Establishing debt thresholds

From the review of the cross-country evidence of the links between government debt and economic activity, debt thresholds can be determined for groups of countries sharing similar features:

1. **Advanced economies:** The empirical estimates suggest a gross debt threshold range, where negative effects of debt start to dominate, of 70 to 90% of GDP for higher-income countries. Specific risk exposures to factors

such as foreign debt, bank fragilities, etc., should also be taken into account.

2. **Euro area countries:** Recent events suggest that debt thresholds for euro area countries are lower than for the other advanced OECD economies, because they are constrained by the absence of a country-level monetary policy. Global capital flows circulate freely in the euro area, leading to contagion risks, while labour and goods markets are less well integrated, making adjustment to shocks tougher and more long-lasting than in mature federations. These considerations would suggest that the debt threshold for euro area countries is in a range of 50 to 70% of GDP, though the «right» threshold is difficult to establish.

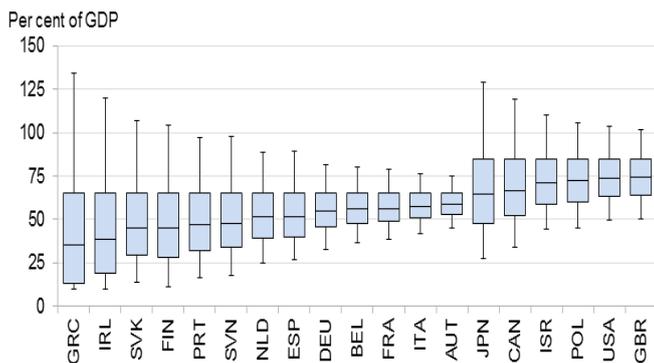
3. **Emerging economies:** Emerging countries tended to default at a relatively low debt-to-GDP ratio, with more than half of all defaults occurring at levels below 60%. Moreover, the financial sector and the exchange rate of most of these countries appear to be highly sensitive to monetary policy changes in advanced countries. The volatility of capital flows remains high indicating that despite their better performance, there are still vulnerabilities. Emerging economies remain exposed to the debt intolerance phenomenon. Taking into account various risk factors and especially external debt, the size of foreign reserves and the maturing of health and pension schemes, emerging economies debt threshold is probably in a range of 30 to 50% of GDP.

The prudent debt target takes into account macroeconomic uncertainties

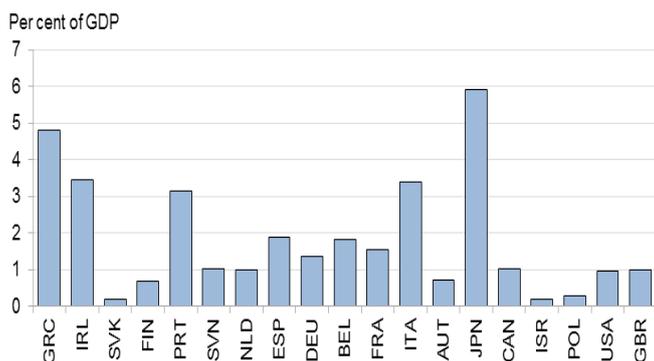
To reduce the risk of going beyond a debt threshold a prudent target needs to be set. A stochastic debt analysis is developed to quantify the uncertainties surrounding the development of the main macroeconomic variables and therefore debt dynamics (Fall and Fournier, 2015). The stochastic simulations are used to assess the risk of overshooting a debt threshold and calculate the cushion that is needed to stay below it in the case of adverse shocks. In practice, this can be achieved by keeping the probability that debt goes above this threshold level sufficiently low. In the present framework, the probability of debt to go above 85% for non-euro area OECD countries and 65% for euro area countries is calculated. The prudent debt target is the median debt by 2040 so that there is less than a 25% risk to go beyond the debt threshold (85% or 65% debt ratio) and the corresponding fiscal deficit trajectory is calculated. Larger uncertainties in a country are associated with a lower prudent target. As illustrated in Figure 3 (Panel A), the prudent debt level ranges from about 35% in Greece and Ireland to about 75% in the United Kingdom and the United States. Differences reflect the different exposure of countries to shocks and their capacity at absorbing them as estimated on the basis of their history of adjusting the primary balance.

Figure 3. Public debt ranges under a prudent scenario

Panel A. Prudent debt levels



Panel B. Average annual primary balance between 2014 and 2040



Note: The thick horizontal lines show the median debt level, boxes show the interquartile range, and extreme values are the 5th and the 95th percentiles. Only those countries that need to generate a primary surplus are shown.

Source: Fall, F. and J-M. Fournier (2015), «Macroeconomic Uncertainties, Prudent Debt Targets and Fiscal Rules», OECD Economics Department Working Papers, No. 1230, OECD Publishing.

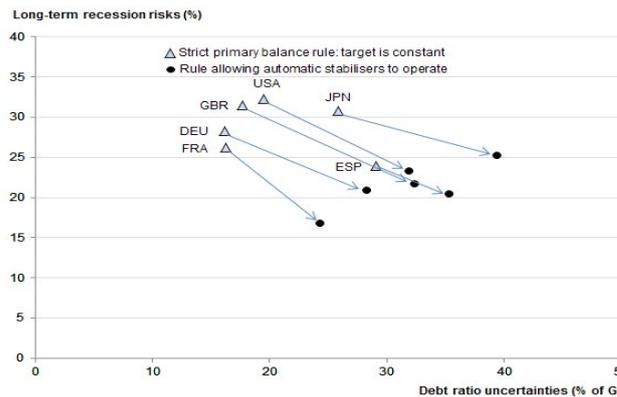
Designing fiscal rules consistent with achieving debt targets and output stabilisation

The debt target needs to be complemented by fiscal rules that allow for counter-cyclical policies and escape clauses in the case of large shocks. New estimations suggest that fiscal rules have an impact on fiscal performance. A budget balance rule has a positive and significant effect on the primary balance and a negative and significant effect on spending (Fall et al., 2015). And spending rules do indeed restrain government spending. However, the results may also reflect that disciplined countries are likely to adopt fiscal rules.

Fiscal rules should have two objectives: (1) anchor fiscal policy expectations by targeting a prudent debt level and (2) allow for macroeconomic stabilisation that enhances economic growth. Fiscal stimulus to mitigate recessions increases uncertainties surrounding the debt path: there is a trade-off between these two objectives, though the trade-off is not the same across countries (Figure 4). Real time stimulus reduces the effects of adverse shocks on economic activity, but also affects debt dynamics.

Fiscal rules differ in their ability to fulfil the objectives of reaching a prudent debt target and of stabilisation. The structural budget balance rule (the balance is adjusted for the economic cycle) combines, in principle, the capacity of satisfying the two objectives, but it has important drawbacks in terms of observability and real time assessment. Structural balance measures, despite some progress on measurement, are highly dependent on volatile and often biased estimates of the output gap and subject to frequent revisions (Fall et al. 2015).

Figure 4. The trade-off between counter-cyclicality and hitting the debt target



Note: The long-term recession risk is the probability of GDP per capita growth to become negative. The uncertainty surrounding the debt trajectory is assessed by the interquartile range of the debt level in 2040. The “Constant primary balance” simulation is a stylised scenario in which the actual primary balance is kept constant such that the prudent debt target is reached, with no automatic stabilisers. In the scenario labelled “Automatic stabilisers”, a one percentage point negative surprise in the output gap is associated with a 0.4% of GDP stimulus.

Source: Fall, F. and J-M. Fournier (2015), «Macroeconomic Uncertainties, Prudent Debt Targets and Fiscal Rules», OECD Economics Department Working Papers, No. 1230, OECD Publishing.

Therefore, the adoption of a budget balance rule complemented by an expenditure rule seems to suit most countries well. As shown in Table 1, the combination of the two rules responds to the two objectives. A budget balance rule ensures hitting the debt target. And, well-designed expenditure rules appear decisive in ensuring the effectiveness of a budget balance rule by limiting pro-cyclicality and over-spending. The marginal benefit of adding a revenue rule is likely outweighed by its costs in terms of complexity and reduction in fiscal flexibility.

Clear escape clauses should be set allowing the temporary suspension of fiscal rules. A temporary suspension should be conditional on exceptional events such as natural catastrophes or a sharp output contraction. However, the definition of these escape clauses must be clear to make sure they cannot be used in normal times. To cope with tail events, a “rainy day” fund can underpin the respect of the rule over the cycle and would allow greater room for fiscal stabilisation. Unexpected surpluses would be saved and used later to finance unexpected deficits and/or short-term stabilisation policies.

Table 1. Synthesis of the effects of rules with respect to fiscal discipline and stabilisation

	Budget balance	Structural balance	Expenditure rule	Revenue rule
Fiscal stabilisation	-	+	+	-
Fiscal discipline	++	+	+	-+
Side-effects and risks	-	--	-	-

Source: Fall et al. (2015), "Prudent Debt Targets and Fiscal Frameworks", OECD Economic Policy Papers, No. 15, OECD Publishing, Paris.

Simulations confirm the good performance of a budget balance rule combined with a spending rule in curbing debt developments and stabilising activity. In Figure 5, the path of the debt ratio is lower under the combined budget balance rule and spending rule compared with the primary balance following past behaviour (Panel C). The budget balance and spending rules lead to a higher primary balance surplus (Panel B) and, thus, to a lower public debt path.

Country-specific macroeconomic properties and fiscal rules

The macroeconomic properties of countries differ in terms of the business cycle, trade openness and exposure to financial developments that can affect the suitability of fiscal rules. Two criteria are used to benchmark the performance of the different rules: the long-term recession risk, measured by the probability of GDP per capita growth to become negative and the uncertainty surrounding the debt trajectory. Six rules are simulated:

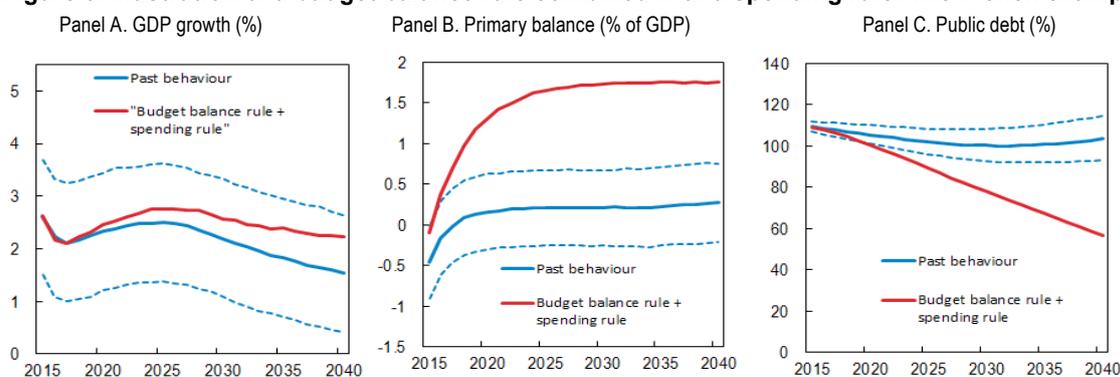
- In the baseline simulation, the annual budget plan is set so that the primary balance is equal to the target, if the output gap is in line with expectations. During the year, the government lets the automatic stabilisers play around this plan. The primary balance target is set to zero for countries that do not need to generate a surplus to reach a prudent debt level by 2040. For the other countries, the primary balance target is adjusted so that the prudent debt level is reached in 2040.

- Two simulations are considered to investigate the counter-cyclical role of fiscal policy. In the first one, there are no automatic stabilisers, that is, the primary balance is kept constant such that the prudent debt target is reached.
- In the second one, the government is assumed to take discretionary measures on top of the automatic stabilisers to react to the output gap.
- The effect of a spending rule is investigated in a simulation in which the growth rate of structural spending is lower than GDP growth so that the structural spending-to-GDP ratio decreases by 0.5 GDP point each year, for countries for which the structural spending level is above the pre-crisis OECD average (37% of GDP). In this simulation, the primary balance follows the same path as in the baseline.
- The impact of frontloading is investigated. If lagged debt is higher than the debt threshold, then the government generates an additional surplus equal to one 20th of the difference between lagged debt and this debt threshold. This comes on top of the effort made otherwise, which is set with the aim to reach a prudent debt level by 2040.
- The government's target is set in terms of the actual balance including interest payments, instead of the primary balance.

The simulations suggest the following:

1. The capacity of fiscal policy to mitigate shocks and its adverse consequence for debt trajectory uncertainty varies substantially across countries. Rules which allow for fiscal stimulus compared with a rule with a constant primary balance reveal that highly indebted countries have less potential to counteract large adverse shocks, due to the binding budget balance component and the higher debt and GDP growth uncertainties.

Figure 5. Illustration of a budget balance rule combined with a spending rule: The French example



Note: the dashed lines show the 25% and 75% quartiles.

Source: Fall, F. and J-M. Fournier (2015), «Macroeconomic Uncertainties, Prudent Debt Targets and Fiscal Rules», OECD Economics Department Working Papers, No. 1230, OECD Publishing.

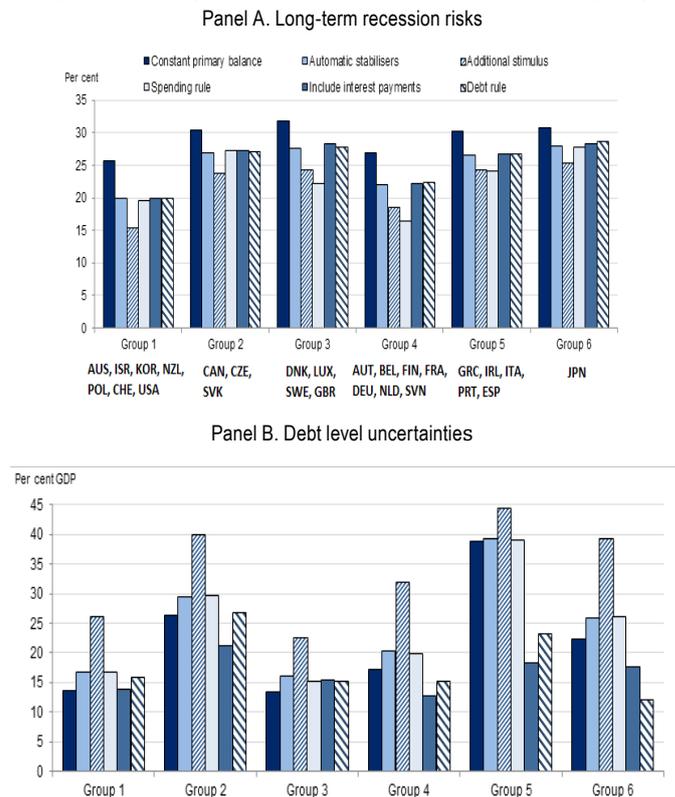
2. Spending rules entail no trade-off between minimising recession risks and minimising debt uncertainties. They can boost potential growth and hence reduce the recession risk without any adverse effect on debt. Indeed, estimations show that public spending restraint is associated with higher growth (Fall and Fournier, 2015).

3. For all countries, sticking to initial annual budget plans and restoring the primary balance in the following years reduces debt uncertainty without a substantial increase of recession risks. In terms of cyclical corrections, the budget balance rule compares well with the structural balance rule because when setting a plan each year, the automatic stabilisers are allowed to work fully. That is, the correction of the budget balance target due to the cycle can be achieved ex-post.

4. Rules based on a measure of the balance that includes interest payments are useful to reduce debt trajectory uncertainty in countries in transition towards a prudent debt level.

The fiscal rules have a different performance with regard to the two criteria (long-term recession risks and debt uncertainties) for six groups of countries (Figure 6). In almost all groups of countries a budget balance rule and a spending rule is appropriate. In particular, for countries in group 3 (Denmark, Luxembourg, Sweden and the United Kingdom), group 4 (Austria, Belgium, Finland, France, Germany, the Netherlands and Slovenia) and group 5 (Greece, Ireland, Italy, Portugal and Spain) that have a relatively high level of government spending and, also, in countries with a lower level of government spending (group 2: Canada, Czech and Slovak Republic), but in which a spending rule is helpful to ensure that they keep on meeting the debt target. The countries in group 1 (Australia, Israel, Korea, New Zealand, Poland, Switzerland and the United States) have low government spending so that adding a spending rule to the budget balance rule is unnecessary. Finally, Japan, the most indebted country is in a class of its own (group 6). Japan needs to reduce debt, but this process should be protracted as there is no strong adverse effect of the debt level on interest rates. Setting a prudent debt target by 2040 implies an unrealistic and unnecessarily large fiscal tightening in the short run. Counter-cyclical fiscal policy should not be used intensively in this country as it leads to large debt trajectory uncertainty for quite a small reduction of recession risks.

Figure 6. Comparison of fiscal rules by country group



Note: The bars correspond to the six rules presented above in the main text.
Source: Fall, F. and J.-M. Fournier (2015), «Macroeconomic Uncertainties, Prudent Debt Targets and Fiscal Rules», OECD Economics Department Working Papers, No. 1230, OECD Publishing.



SUGGESTED FURTHER READING

Fall, F., D. Bloch, J.-M. Fournier and P. Hoeller (2015), «Prudent Debt Targets and Fiscal Frameworks», OECD Economic Policy Papers, No. 15, OECD Publishing, Paris.

Bloch, D. and F. Fall (2015), «Government Debt Indicators: Understanding the Data», OECD Economics Department Working Papers, No. 1228, OECD Publishing.

Fournier, J.-M. and F. Fall (2015), «Limits to Government Debt Sustainability», OECD Economics Department Working Papers, No. 1229, OECD Publishing.

Fall, F. and J.-M. Fournier (2015), «Macroeconomic Uncertainties, Prudent Debt Targets and Fiscal Rules», OECD Economics Department Working Papers, No. 1230, OECD Publishing.

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