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EU fiscal rules – quo vadis?

Full force ahead for a simplified expenditure rule

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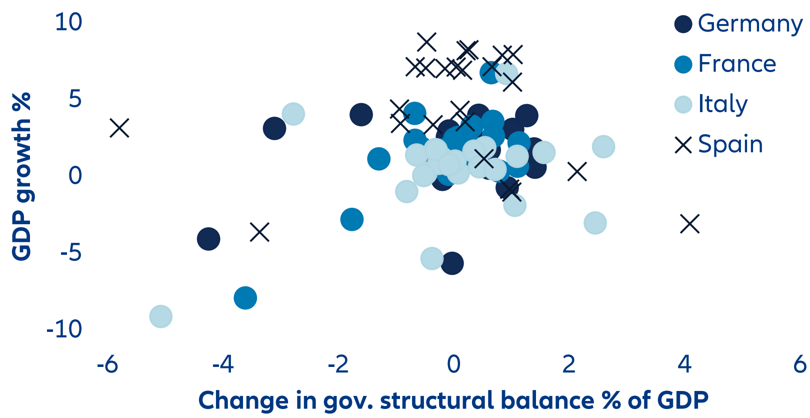
EXECUTIVE SUMMARY

- **In the coming days, the European Commission is expected to propose the most ambitious overhaul of the EU fiscal framework in more than two decades. Given the rapid rise in debt ratios during the pandemic and the current energy crises, the application of the current rules, which are currently suspended, would require unrealistically large – and counterproductive – fiscal adjustments by some high-debt countries.** The key points that need to be addressed include the pro-cyclicality and complexity of the EU fiscal framework, as well as its lack of transparency, its inability to differentiate between growth-enhancing and other public spending and lackluster enforcement. While the general budget and debt rules (3% of deficit-to-GDP and 60% of debt-to-GDP) are expected to remain unchanged – not least to avoid time-consuming and politically charged treaty changes – there seems to be a general preference for country-specific multi-year net expenditure paths with built-in flexibility for countries investing in priority areas (in return for stricter oversight and stronger enforcement). Reducing the number of multiple, potentially conflicting operational targets is also likely to improve transparency and compliance.
- **Our simulation results suggest that a simplified expenditure rule can significantly reduce the pro-cyclicality of current fiscal rules while guiding growth-friendly fiscal policy towards a credible debt path.** A pragmatic expenditure growth rule—if combined with a debt-brake mechanism—can provide more flexibility to country-specific circumstances, including a longer time window for fiscal adjustment. We find that most countries would be able to reduce their debt-to-GDP ratios by at least 10pps over the next 10 years, but only Germany in our sample will be able to meet the critical threshold for a debt-to-GDP ratio of 60%. Large interest rate shocks would slow the pace of debt consolidation, especially for France, and to a lesser extent for Italy and Spain, but less than under a structural deficit target governing the fiscal stance. In addition, an expenditure rule can significantly lift real growth by up to 0.2pp on average in the largest Eurozone economies and up to 0.6pp for Greece and Portugal (compared to alternative rules). In contrast, compliance with a structural balance rule would come with a high degree of uncertainty about debt consolidation over the longer term, especially during times of high interest-rate volatility.
- **Reforming the fiscal rules should ideally be complemented by a permanent centralized fiscal capacity for stabilization and investment.** Given the high debt levels in most Eurozone countries, structural pressures will constrain fiscal space at the national level, especially in the most vulnerable economies. Since current investment plans at the national level still seem to fall short of actual investment needs, setting up a central fiscal capacity could be a viable alternative by (i) providing incentives for compliance with the fiscal rules if access is made contingent on compliance, (ii) boosting public investment in the EU and (iii) enhancing Eurozone resilience.

An urgent need to reform

There is widespread recognition that the EU fiscal framework needs to be reformed. While monetary policy in the Eurozone is fully centralized, fiscal authority rests mostly with national governments. Thus, the EU adopted fiscal rules under the Maastricht Treaty in 1992 to coordinate fiscal policy across member states to ensure sound public finances, and in turn safeguard fiscal sustainability within the currency union. However, surging public debt since 2007 amid significant cross-country heterogeneity suggests that current fiscal rules are no longer fit for the purpose and need to be reformed. The current framework involves an intricate set of constraints, which complicate effective monitoring and public communication, and create risks of inconsistency and overlap between different parts of the system. As a result, many high-debt countries failed to reduce their debt ratios in the years preceding the pandemic, despite relatively robust growth.

Figure 1: Pro-cyclical nature of EU fiscal rules (%)



Sources: Refinitiv, Allianz Research

The main points of critique center on the following aspects:

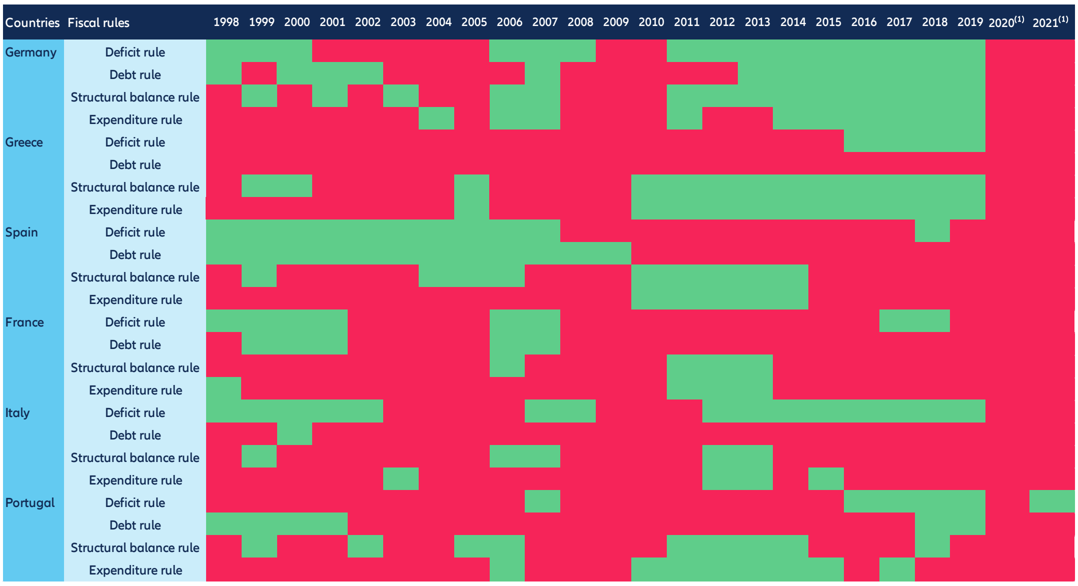
- *Procyclicality*—Fiscal policy of member states has proven too procyclical over the years (Figure 1), with no disciplining impact during good times (i.e. insufficient buffers built up) while forcing fiscal consolidation during bad times.
- *Growth impact*—Current rules fail to differentiate between growth-enhancing and other public spending. As a result, public investment has been a key victim of fiscal consolidation in the aftermath of the Eurozone debt crisis, with negative consequences for growth, and in turn fiscal-sustainability prospects.
- *Transparency*—Subsequent amendments to the fiscal framework over the course of its life (see Box 1 in Annex for a detailed overview) have increased its complexity while reducing transparency, notably when the structural budget balance became a key indicator.[1] The lack of transparency has led to growing skepticism over EU fiscal rules and hurt their credibility.
- *Compliance and enforcement*—The complexity of the fiscal framework has led to spotty compliance and resulted in both unintended violations and the exploitation of loopholes, as well as increasingly discretionary enforcement (Table 1). Over the years, more and more

[1] *The calculation is based on theoretical concepts that are not observable and subject to frequent ex-post revisions.*

countries started breaking the rules without facing sanctions, which in turn reduced peer pressure and hurt credibility (Figures 2-3).

The EU Commission will soon propose a significant overhaul of fiscal rules, which is expected to reflect the common thread of a recent swarm of proposals by institutions and economists. However, political and legal hurdles may only allow for limited amendments. Reforming the framework ahead of the general escape clause's deactivation – expected in 2024 – would be ideal. After all, under current fiscal rules, exploding debt ratios following the double-whammy of the Covid-19 and energy shocks would require unrealistically large – and counterproductive – fiscal adjustments by some high-debt countries. However, even if EU countries swiftly agreed on the main reform features in 2023, the implementation process would take time, especially if legislative changes were required. Thus, the current preference of the EU Commission seems to be for limited amendments.

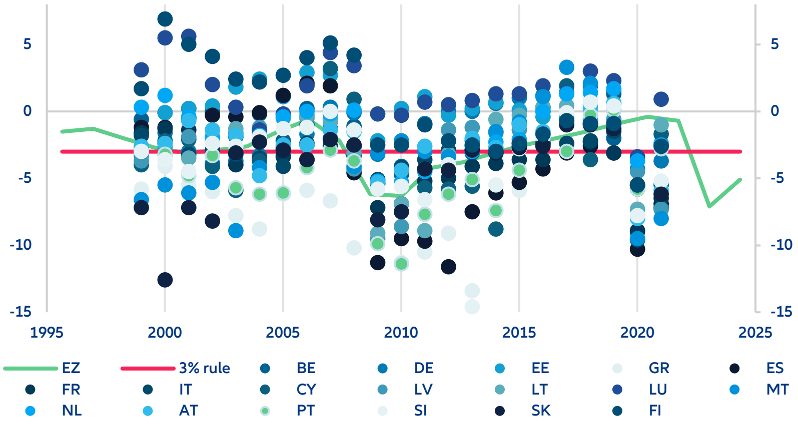
Table 1: EU fiscal rules compliance tracker



Sources: European Commission, European Fiscal Board, Allianz Research. Note: 1/ In 2020 the general escape clause was activated considering the severe economic downturn; it allows for flexibility in defining the required fiscal adjustment required as long as debt remains sustainable over the medium term.

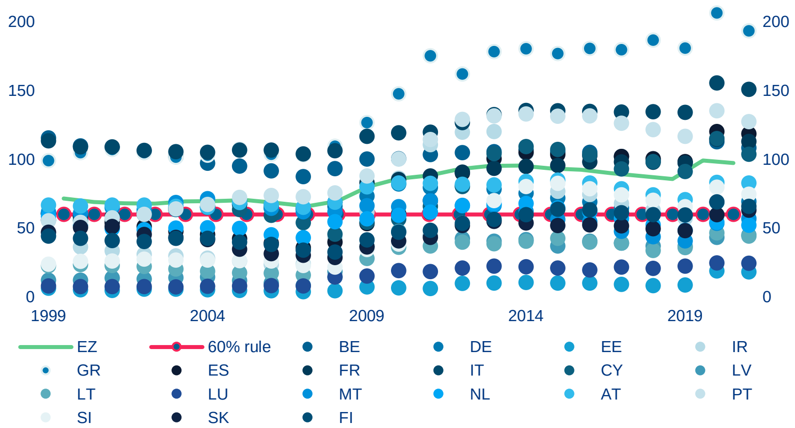
On 9 November, the EU Commission is likely to outline amendments that aim for greater flexibility while retaining the deficit rule of 3% of GDP and the debt-to-GDP ratio of 60% as the long-term debt anchor – not least to avoid time-consuming and politically charged changes to the EU Treaty. With a view on increasing transparency and in line with recent proposals (see Annex), the EU Commission is expected to drop the structural balance rule as a medium-term objective. Instead, together with the EU, member states will agree on multi-year and country-specific plans for getting their debt levels under control, with a net expenditure path that is consistent with prudent debt levels. The EU Commission is also expected to pay more attention to the quality of public spending via a preferential treatment of public investment spending. After all, the energy crisis has highlighted the urgency of energy security and the need to speed up the green transition, which will require massive public investment over the coming years. Rather than opting for an outright "golden rule", flexibility on the consolidation pace/horizon may be granted if member states invest in priority areas such as the green transition. In return, Brussels will likely ask for stricter oversight and stronger enforcement of the rules. The fines could be reduced from 0.2% of GDP currently to more realistic and politically feasible levels.

Figure 2: Fiscal balances of EU member states (% GDP)



Source: Eurostat, Allianz Research

Figure 3: Government debt of EU member states (% GDP)



Source: Eurostat, Allianz Research

Simulating the EU fiscal rules and likely modifications

We simulate the debt paths under different fiscal rules to assess the feasibility of potential changes to the current fiscal framework – consistent with the expected EU Commission proposal. We focus on a simplified expenditure rule (together with endogenized debt correction), which has been at the heart of the current discussion (Annex 1). We also examine the implications of the structural balance target for cross-validation. Even though the two rules are interdependent, we model them separately to assess their individual impacts. We assume that the budget deficit rule of 3% of GDP and the debt rule of 60% of GDP remain unchanged. In our simulation, we project the annual budget balance, debt-to-GDP ratio, real growth and output gap for six Eurozone economies (Germany, France, Italy, Spain, Portugal, and Greece) over a 20-year horizon. The simulation is conditional on our fiscal projections for 2023, with the output gap forced to zero at the start of the simulation, based on historical budget elasticities and uniform fiscal multipliers (Annex 2, Table A2).[2] A big caveat here, of course, is that the exercise does not pick up structural breaks.

We find that even with limited amendments to current fiscal rules, countries can stabilize their debt levels relative to GDP over the medium term, but only if real rates remain broadly unchanged (Annex 2, Figures A2-A19). A simplified expenditure rule helps countries retain some fiscal space without constraining debt-consolidation efforts. We find that most countries can also reduce their debt-to-GDP ratios by at least 10pps until the end of the decade – assuming real effective interest rates remain at current levels. In fact, higher real effective interest rates would significantly slow the pace of debt consolidation. It would take only a relatively small positive shock to real interest rates (of about 0.5pp) to challenge debt stabilization over the next few years. In addition, no country in our sample (aside from Germany) will be able to meet the critical threshold for a debt-to-GDP ratio of 60%.

Table 2: Overview of current EU fiscal rules and potential reforms examined in empirical analysis

<table>
<tr><th>Current EU fiscal rules</th><th>Empirical Analysis</th></tr>
<tr><td colspan="2">Flow-based measures</td></tr>
<tr><td colspan="2">Budget deficit
not higher than 3% of nominal GDP</td></tr>
<tr><td>Expenditure growth
up to 10-year average potential growth</td><td>Expenditure growth
simplified and application of debt brake, which limits expenditure growth to 50%/25% of potential growth (plus inflation) if debt-to-GDP ratio is higher than 60%/100%</td></tr>
<tr><td>Structural deficit
not higher than 0.5% of GDP over a three-year period for countries with debt-to-GDP ratio of <60%, otherwise 1.0%</td><td>Structural deficit
modified to annual target</td></tr>
<tr><td colspan="2">Stock-based measures</td></tr>
<tr><td colspan="2">Debt level
debt-to-GDP not higher than 60%</td></tr>
<tr><td>Debt-correction factor
countries with debt-to-GDP ratio >60% need to reduce excess debt by at least 1/20th each year</td><td>Debt-correction factor
Incorporated in expenditure growth rule by way of the debt brake to reduce excess debt over time (endogenized)</td></tr>
</table>

Sources: European Commission, Allianz Research

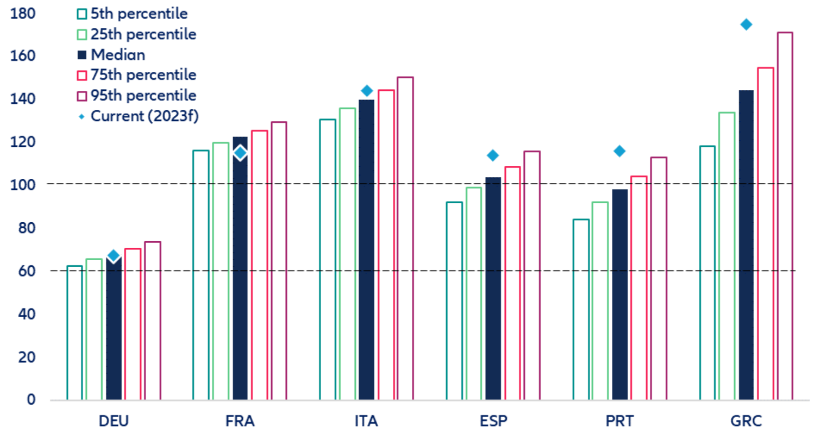
A simplified expenditure rule (with a debt brake) results in a slower but more reliable debt reduction over time than a structural deficit rule. Most countries can reduce their debt levels faster (relative to GDP) by limiting their structural deficits (as medium-term objective) rather than being solely guided by our simplified expenditure rule as a single operational target. However, our simulation results suggest that such an outcome is highly uncertain.[3] In contrast, our simplified expenditure rule with a debt brake facilitates a more counter-cyclical fiscal stance

[2] *We run a Monte Carlo simulation with 1,000 iterations on a vector autoregression (VAR) model (with a simple two-period lag structure) based on quarterly observations of the output gap, real effective interest rate, and real effective exchange rate (since Q1 2000). We also add a "noise" to the simulated variables by assuming that policymakers have imperfect information about the output gap before deciding on the budget each year (which we model based on the historical forecast error of the output gap).*

[3] *For instance, restricting budgets to a structural deficit of no more than -1.0% of GDP would lower the average debt-to-GDP ratio by about 5-10pp on average over the next 10 years.*

and provides more flexibility for debt consolidation over time (since the debt correction under current fiscal rules is endogenized). In fact, the debt path under our simple expenditure rule is quite resilient to tightening financing conditions. For instance, in response to a large positive interest rate shock, a structural balance rule would require a much more restrictive fiscal stance, resulting in a higher debt level (relative to GDP) if only an expenditure rule had been in place (Figure 4).[4] We also find that budget deficits keep improving gradually but consistently over time (which avoids the rapid fiscal consolidation under a structural deficit target).

Figure 4. Projected average debt-to-GDP ratio under the simplified expenditure growth rule with variation in real effective interest rate (%)

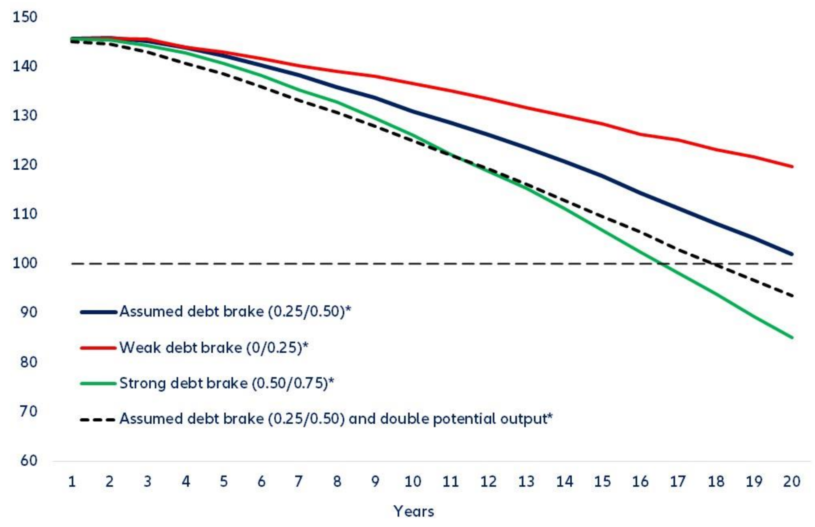


Sources: Refinitiv Datastream, Allianz Research. Note: data show the average values over the next 10 years under a simplified expenditure growth rule with a debt brake, which caps new spending for the next budget cycle at 50% and 25% of potential growth (plus inflation) for countries with a debt-to-GDP ratio of more than 100% and 60% of GDP, respectively.

Debt management also becomes more growth-friendly under the expenditure rule, especially during times of high interest-rate volatility. The real growth benefits of using a simplified expenditure rule (compared to a structural deficit target) are negligible when the real effective interest rate remains broadly stable. However, the counter-cyclical effect becomes larger as the government's funding cost becomes more uncertain. We find that for large interest rate shocks, the expenditure growth rule can lift real growth – without significantly slowing fiscal consolidation – on average by up to 0.2pp in the largest Eurozone economies, and up to 0.6pp for Greece and Portugal (compared to the alternative of a structural balance rule governing the fiscal stance).

[4] In the case of France, our simulations suggest that the debt-to-GDP ratio under an expenditure growth rule is likely to remain above 100% after two decades (as central expectation). This is more than 10pp higher than under a structural deficit rule. However, it would take a mere 25bps-shock to France's real interest-rate burden to nullify the benefit of faster debt consolidation under the latter rule.

Figure 5. Italy: Debt-to-GDP ratio under expenditure growth rule with varying debt brake and potential output (%)



Sources: Refinitiv Datastream, Allianz Research. Note: the debt paths indicate the 10-year average of the median values of the simulation results; we test alternatives to our baseline debt brake in Figure 5 above for Italy by assuming (i) a "weaker debt brake" capping spending at 25% of potential growth (plus inflation) for countries with a debt-to-GDP ratio of at least 100% and (ii) a "stronger debt brake" capping spending at 50% and 75% of potential growth (plus inflation) for countries with a debt-to-GDP ratio of more than 60% and 100% of GDP, respectively.

Raising potential growth could ease the transition to more flexible fiscal rules without jeopardizing debt sustainability (Figure 5). In the case of Italy, which remains the most vulnerable large Eurozone economy, debt sustainability under a simplified expenditure rule could be enhanced by raising potential growth (due to structural reforms and/or efficient public investment in infrastructure). In fact, higher potential growth would offer virtually the same debt-sustainability benefits as making a potential debt brake more stringent. For instance, doubling potential output over the next decade results in a debt path that is similar to the one Italy could achieve by limiting the annual increase in spending to only 25% of potential growth (plus inflation) rather than 50% (which is used in our baseline simulations for countries with debt-to-GDP ratios of 100% or higher). In contrast, we find that adjusting the limits to the structural balance (+/- 0.5pp from the baseline assumption of -0.5% of GDP) seems to have little bearing on the overall debt trajectory (Annex 2, Figure A2).

Full force ahead for a simplified expenditure rule

Overall, shifting towards a simplified expenditure growth rule would not only reduce the complexity of current fiscal rules but also make them less pro-cyclical while guiding fiscal policy towards a credible debt path. Reducing the number of multiple, potentially conflicting operational targets is also likely to improve transparency and compliance. Applying a debt-brake mechanism to such a rule can help endogenize the debt-correction requirement by providing more flexibility to country-specific circumstances. This would help better engrain the European fiscal framework in national budgetary practices in a manner that increases the transparency and honesty of budgetary policy and communication at the national level, and creates support for responsible fiscal policies.[5] In contrast, a structural deficit rule would come with a high degree of uncertainty about debt consolidation, especially during times of high interest-rate volatility. In addition, compliance with a structural balance target has been challenging in the past, not at least because of the difficulties in determining the output gap. Significant distortions in labor and product markets in the context of the current pandemic and energy crises make these concerns even more compelling.

While an expenditure rule with a debt anchor suggests a slower fiscal adjustment for almost all countries, it would also help boost real growth. More simplification (similar to what we simulated) would facilitate implementation and improve compliance with and enforcement of the rules going forward. For countries with debt ratios below the debt anchor level, expenditure (net of discretionary revenue measures) could be targeted to grow at a rate consistent with long-run nominal GDP growth. For countries with debt ratios above the debt anchor level, the allowed annual expenditure growth would be lower, thus reducing debt ratios over time towards the anchor level. It would also implicitly take account of the differing conditions of EU countries by allowing high-debt countries a longer period to achieve the common debt objective than those starting with more modest levels of indebtedness, and by linking expenditure growth to a country's nominal growth rates.

Reforming the fiscal rules would ideally be complemented by a permanent centralized fiscal capacity for stabilization and investment. Given the high debt levels in most Eurozone countries, structural pressures at the country level will constrain fiscal space, especially in the most vulnerable economies. Some commentators on the EU fiscal rules reform have argued in favor of carving out additional public spending aimed at supporting Europe's green and more digitalized transition; however, this "golden rule" is unlikely to be supported by all member states (Annex 1). Current investment plans at the national level still seem to fall short of actual investment needs in climate-friendly infrastructure.[6] Thus, setting up a central fiscal capacity for macroeconomic stabilization and investment could be a viable alternative by (i) providing incentives for compliance with the fiscal rules if access is made contingent on compliance, (ii) boosting public investment in the EU, and (iii) enhancing Eurozone resilience. For instance, a permanent fiscal-stabilization capacity hosted by the European Stability Mechanism (Misch and Rey, 2022; Andritzky, 2018) could complement the ESM's current lending toolkit to provide funding when countries face an external shock but do not require a backstop against coordination failures in financial markets that comes with a high degree of ex ante conditionality. Similarly, a scaled-up and revolving investment fund managed by the European Investment Bank (EIB) would help speed up progress toward the EU's common climate goals, given that investment returns may be higher in countries with less fiscal space.

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[5] *See the-reform-of-the-eu-fiscal-framework-and-the-transition-for-its-re-implementation-k.-regling-t.-saarenheimo_summary_lisbon-virtual-seminar_april-2021.pdf (eurofi.net).*

[6] *Especially in electricity and networks (in Europe ranging from the 1.6% and 1.3% of GDP per year in Spain and France, respectively, to 0.6% and 0.4% in Italy and Germany), where investment needs are the largest.*

BOX 1 EU fiscal rules: the state of play

The European fiscal framework has undergone several revisions over the past 30 years (Table A1). The current framework was established with the Maastricht Treaty in 1992, which introduced the reference values of 3% for the deficit-to-GDP ratio and 60% for the debt-to-GDP ratio. In 1997, the Stability and Growth Pact (SGP) added the 'preventive arm' (revamped in 2005) as a requirement for which countries should be close-to-balance or in surplus over the medium term to avoid pro-cyclical fiscal policies. In an effort to better capture the underlying fiscal trends, member states were then required to achieve a medium-term objective (MTO) based on the estimated structural budget balance (net of one-off and cyclical components), which obfuscated the fiscal governance of the EU. Around the time of the Eurozone debt crisis, the 'Six-Pack' (2011) and 'Two-Pack' (2013) reforms were introduced as additional constraints. For countries with debt-to-GDP ratios above 60%, the 'convergence pace' was operationalized through a debt correction factor (Table 1), requiring excess debt to be reduced by 1/20th per year on average over a three-year period. Thereafter, the expenditure rule was added to the preventive arm of the SGP, which requires the growth rate of expenditures (net of interests, cyclical component and one-off measures) to not exceed that of potential GDP. In parallel, the assessment and corrective measures were strengthened, and the 'European Semester' was institutionalized (the obligation to submit national draft budgetary plans to the EU Commission in autumn, before obtaining parliamentary approval).[7]

Table A1: Evolution of EU fiscal framework

EU fiscal framework		
1992	Maastricht Treaty	*The treaty limits government deficits to 3% of GDP and public debt levels to 60% of GDP, or sufficiently diminishing towards and approaching that level at a satisfactory pace*
1997	Stability and Growth Pact	*EU Member States agree to strengthen the monitoring and coordination of national fiscal and economic policies to enforce the deficit and debt limits*
2005	Reform	*To better consider individual national circumstances (MTOs introduced) and to add more economic rationale to the rules*
2011	Six Pack	*To make rules more comprehensive and predictable. Expenditure benchmark in the preventive arm added and 1/20 debt reduction rule made operational in the corrective arm*
2013	Two Pack	*To reinforce economic coordination and introduce new monitoring tools*
	Fiscal Compact	*National provisions to target the budgetary objectives set by the SGP*
2015	Flexibility	*To strengthen the link between structural reforms, investment and fiscal responsibility in support of jobs and growth*
2020	Review	*EC launches a public consultation on ways to improve the framework for EU macroeconomic surveillance*
	Suspension	*Activation of the General Escape Clause (suspend the enforcement of the rules in exceptional times - Covid-19 + war in Ukraine)*
2022-H1 2023	Reform	*EC to table a proposal (simplification, stronger national ownership and better enforcement as key elements)*
2024	Reintroduction	*Enforcement of the SGP to resume*

Sources: European Commission, Allianz Research. Note: SGP=Stability and Growth Pact.

[7] *The surveillance and enforcement of the rules works through the Excessive Deficit Procedure led by the European Commission.*

ANNEX 1 Overview of current reform proposals for the EU fiscal framework

		Current	EU Commission (expected)	ESM (2021)	European Fiscal Board (2020)	IMF (2022)	Bruegel – Darvas (2020)	Giavazzi et al (2021)	Blanchard et al (2021)	Philippe Martin et al (2021)
Flow	**Deficit/GDP**	3%	3%	3%	-	3%	-	-	-	-
	Structural deficit	Country-specific MTO (-1% (for debt ratio < 60%) - -0.5%)	-	-	-	-	-	-	-	-
	Expenditure rule benchmark	10yr average GDP potential growth	Net expenditure paths over several years consistent with debt path to prudent levels	Expenditure ceilings that track trend growth	GDP potential growth plus ECB inflation target (2%)	multiyear binding expenditure ceiling (4-5 years)-	GDP potential growth plus ECB inflation objective (2%)	No, spending consistent with the 10yr debt reduction target	-	GDP potential growth plus inflation expectations
	Golden rule	No but flexible investment clause allows MTO deviation for investment that lifts debt sustainability	Extended horizon to put debt on downward trajectory justified by investment in priority areas	No but flexibility for countries with investment gap (EU certified)	Exclusion of some growth-enhancing expenditure prioritized at EU level	No	asymmetric golden rule (excludes net public inv. only in bad times) with cost spread over the entire life	Investments with positive effect on potential growth and/or spending on EU public goods	no	no
Stock	**Debt/GDP**	60%	60%	100%	60%	60%	Country-specific	60%	Country-specific based on stochastic DSA	Country-specific based on stochastic DSA
	Debt adjustment rule	For MS>60% 1/20th of excess debt reduced per year on a three-year average	No	Only for MS> 100%, 1/20th of excess debt	No explicit debt reduction rule, but country-specific 3-yr ahead adjustment speed	No, but medium-term overall fiscal balance anchor, more ambitious for countries with higher fiscal risks	country-specific	Double rate (1/20; 1/50)	Country-specific based on DSA balancing output cost with risks of delay	5-year ahead country specific debt target
Enforce-ment	**Time horizon**	Up to 3 years	4/5 year plan or 6/8yrs given investment needs	3yrs expenditure path, revised every year	3yrs	-	5/7yrs	10yrs (revised every 3yrs)	-	5 years
	General escape clause	Severe economic downturn & exceptional events	Probably	Serious economic circumstances & an investment gap justify deviations	severe econ. downturn, unusual events outside gov control & pension reforms.	Yes,	Yes, applied to each MS separately, based on EU Com recommendation	Yes, in case of excessive adjustment plus general escape clause	Yes, large adverse shocks	EZ-wide recession If MP not sufficient
	Sanctions/ Incentives	EDP with financial sanctions	Stronger enforcement, lower fines	Disbursements of EU funds under specific conditions incentivize fiscal discipline	Access to central fiscal capacity /suspension of EU funds/financial fines	-	Access to funds of a central fiscal capacity or cheap ESM loans	n.a.	power to block/delay parliamentary budget approval	yes
Other	Treaty change	-	Likely not	no	no	no	no	n.a.	yes	yes
	EU fiscal capacity	-	?	EU fiscal stabilization instrument	financed by own resources, spending on EU investments	EU fiscal capacity to improve macro stabilization & finance EU priorities	Central fiscal capacity	A common fund to acquire pandemic and crisis-related debt	Yes, under certain conditions	EU fiscal capacity to improve macro stabilization & finance EU priorities

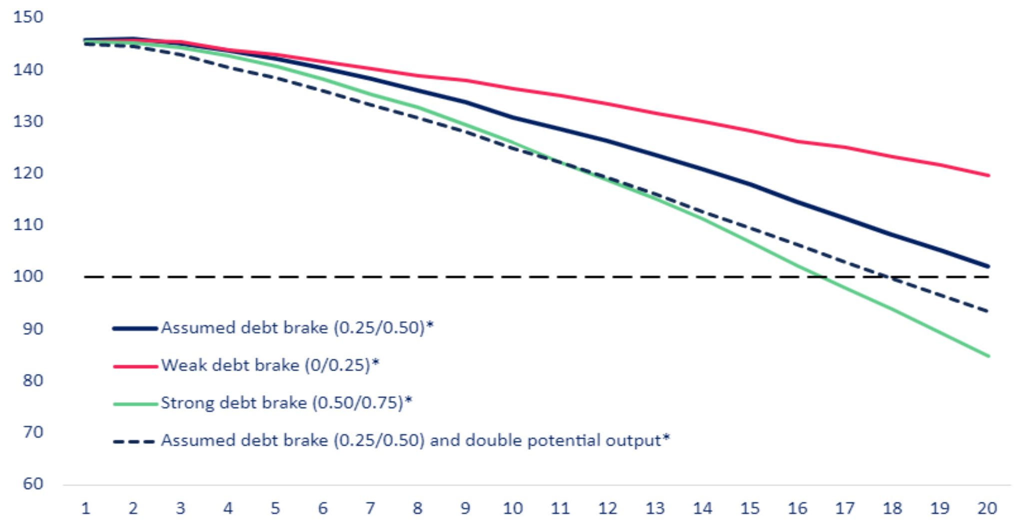
ANNEX 2 Assumptions and Country Results

Table A2: Macroeconomic assumptions for 2023 used in the simulation

	Variable	Units	DEU	FRA	ITA	ESP	PRT	GRC
Macro variables								
	Potential real GDP growth	%	0.75	0.9	0.6	1.3	1.6	1.5
	Initial real GDP level	EUR bn	2951	2260	1622	1157	195	199
	Inflation rate	%	6.2	4.3	5.2	5.7	4.3	6.7
Initial fiscal variables								
	Initial revenue ratio	% GDP	47.8	52.8	48.3	43.7	43.2	49.4
	Initial expenditure ratio	% GDP	51.5	59.2	55.5	49	45	56.9
	Initial debt ratio	% GDP	68	115	144	114	116	175
	Initial interest payment ratio	% GDP	0.8	1.9	4	2.6	2.6	2.7
	Public investment	% GDP	2.6	3.7	2.9	2.7	2.5	3

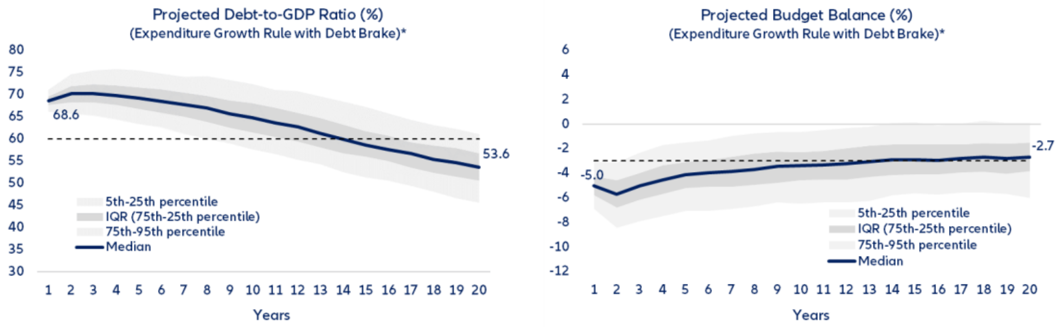
Sources: Allianz Research

Figure A1: Italy: Debt-to-GDP ratio under the structural balance rule with varying targets (%)



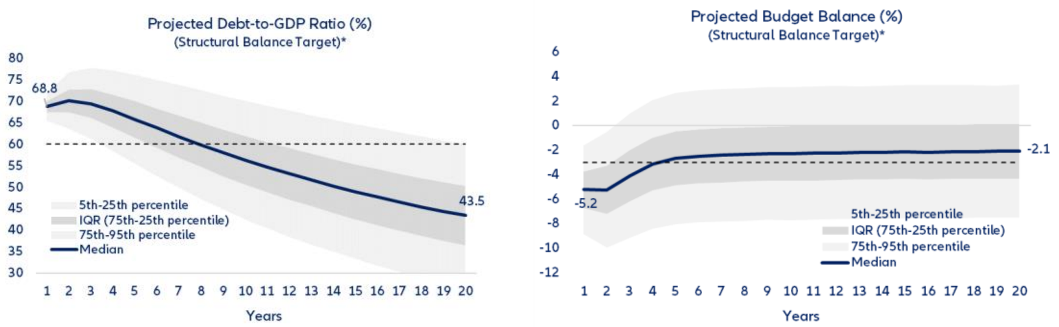
Sources: Refinitiv Datastream, Allianz Research. Note: the debt paths indicate the 10-year average of the median values of the simulation results; we test alternatives to our baseline assumption of a structural balance target of -0.5% of GDP by allowing for a deviation +/- 0.5pp.

Figure A2: Germany: Expenditure growth rule with debt brake– projected debt-to-GDP ratio and budget balance (%)



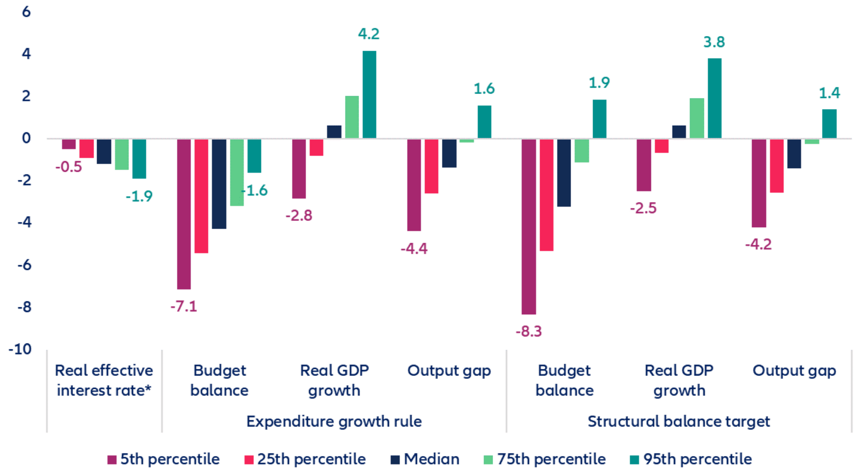
Sources: Refinitiv Datastream, Allianz Research

Figure A3: Germany: Structural balance target – projected debt-to-GDP ratio and budget balance (%)



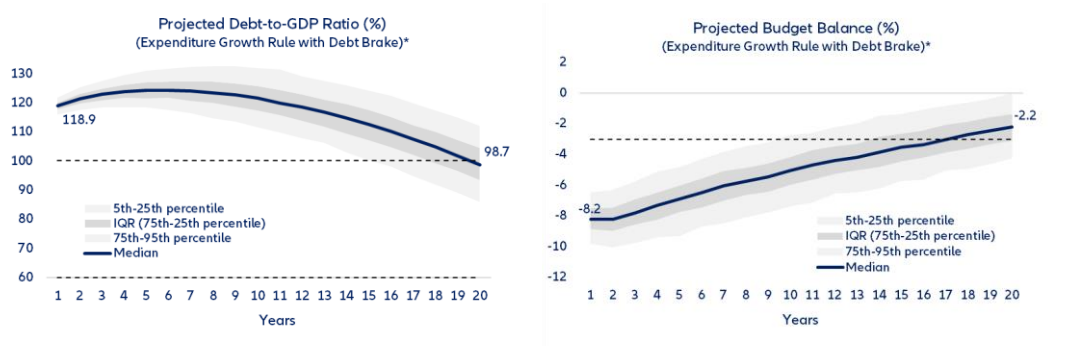
Sources: Refinitiv Datastream, Allianz Research

Figure A4: Germany: Projected real effective interest rate and key macro-fiscal indicators (average over the next 10 years, %)



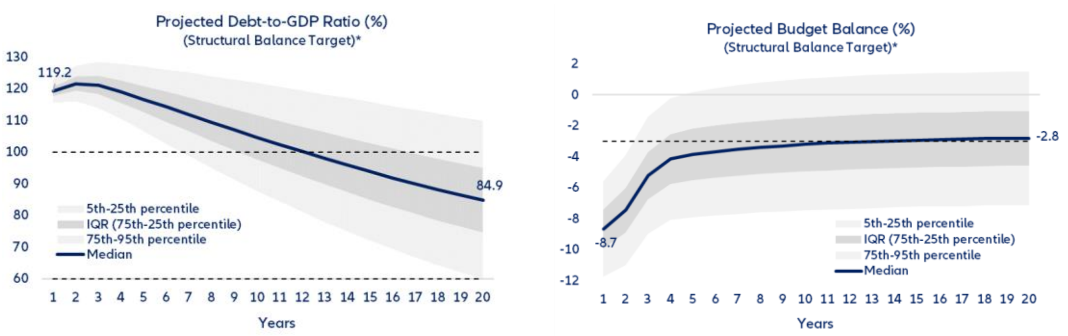
Sources: Refinitiv Datastream, Allianz Research

Figure A5: France: Expenditure growth rule with debt brake– projected debt-to-GDP ratio and budget balance (%)



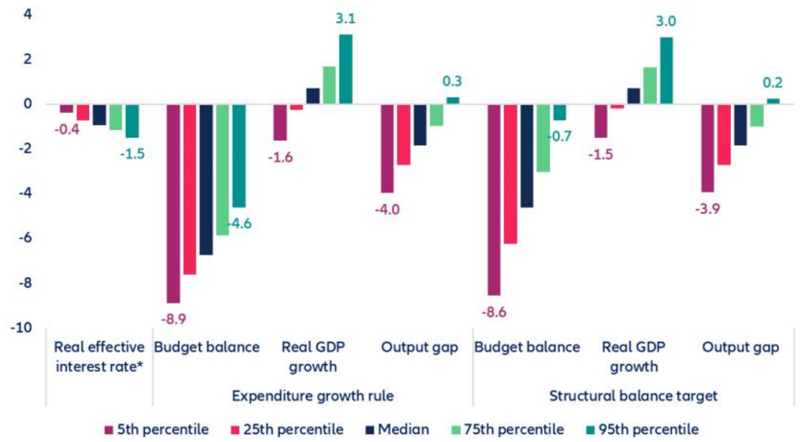
Sources: Refinitiv Datastream, Allianz Research

Figure A6: France: Structural balance target – projected debt-to-GDP ratio and budget balance (%)



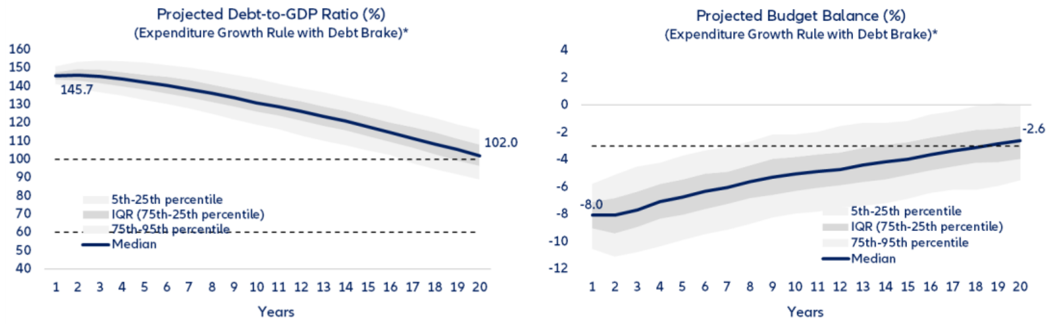
Sources: Refinitiv Datastream, Allianz Research

Figure A7: France: Projected real effective interest rate and key macro-fiscal indicators (average over the next 10 years, %)



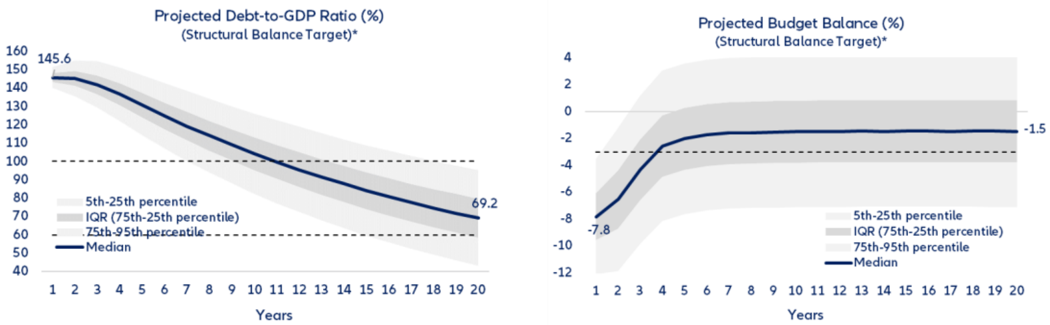
Sources: Refinitiv Datastream, Allianz Research

Figure A8: Italy: Expenditure growth rule with debt brake– projected debt-to-GDP ratio and budget balance (%)



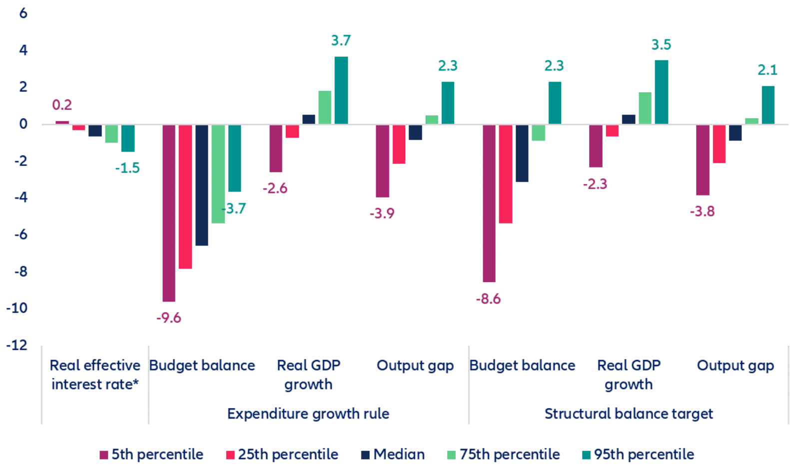
Sources: Refinitiv Datastream, Allianz Research

Figure A9: Italy: Structural balance target–projected debt-to-GDP ratio and budget balance (%)



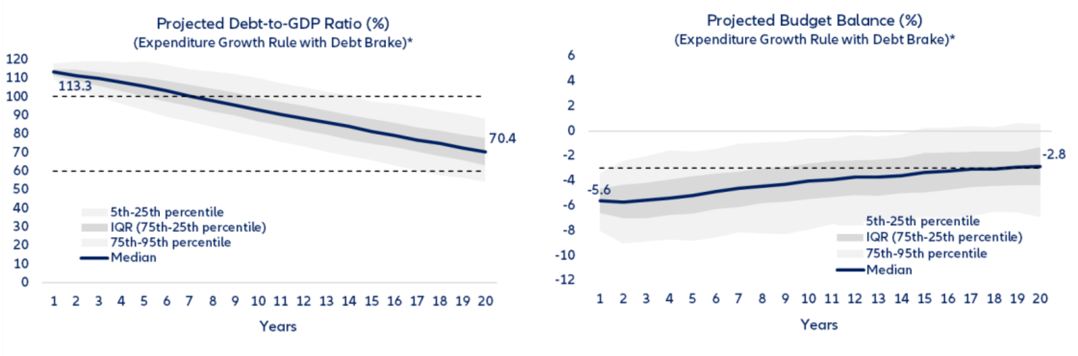
Sources: Refinitiv Datastream, Allianz Research

Figure A10: Italy: Projected real effective interest rate and key macro-fiscal indicators (average over the next 10 years, %)



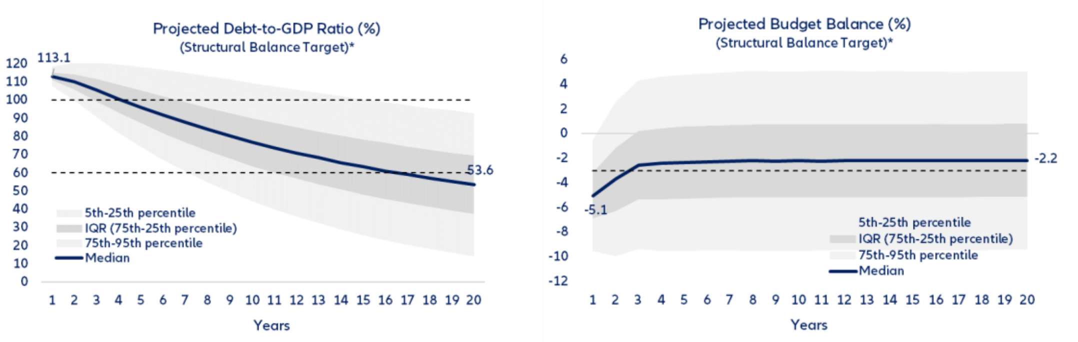
Sources: Refinitiv Datastream, Allianz Research

Figure A11: Spain: Expenditure growth rule with debt brake– projected debt-to-GDP ratio and budget balance (%)



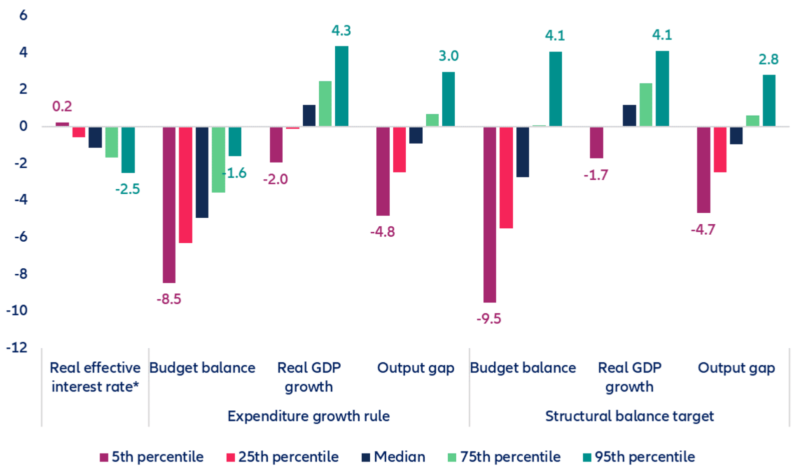
Sources: Refinitiv Datastream, Allianz Research

Figure A11: Spain: Structural balance target–projected debt-to-GDP ratio and budget balance (%)



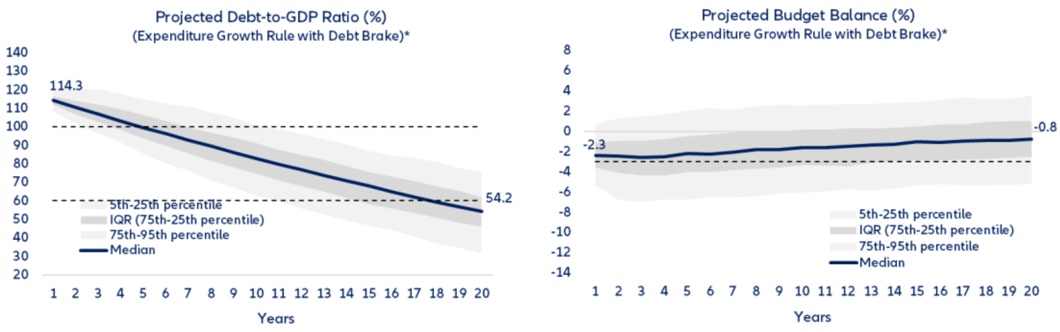
Sources: Refinitiv Datastream, Allianz Research

Figure A13: Spain: Projected real effective interest rate and key macro-fiscal indicators (average over the next 10 years, %)



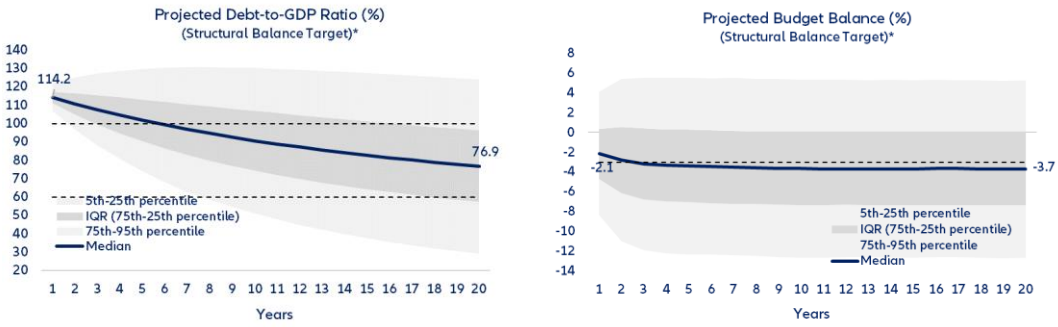
Sources: Refinitiv Datastream, Allianz Research

Figure A14: Portugal: Expenditure growth rule with debt brake– projected debt-to-GDP ratio and budget balance (%)



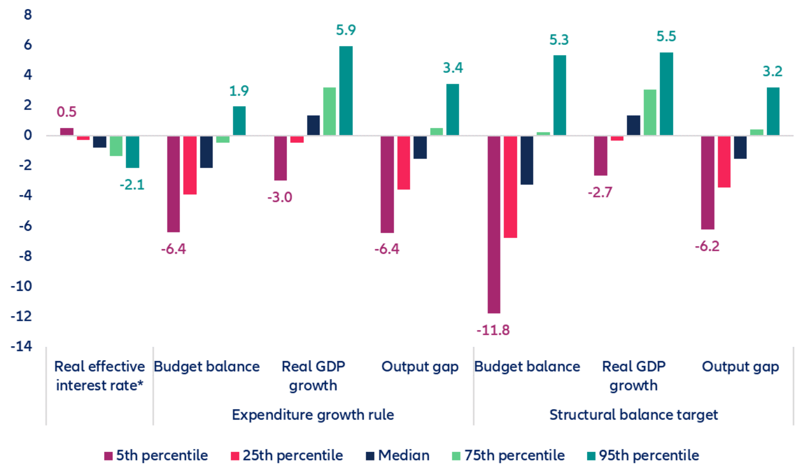
Sources: Refinitiv Datastream, Allianz Research

Figure A15: Portugal: Structural balance target–projected debt-to-GDP ratio and budget balance (%)



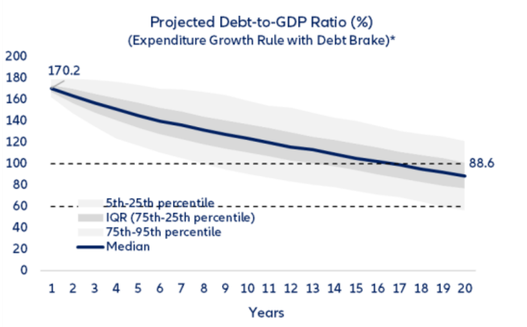
Sources: Refinitiv Datastream, Allianz Research

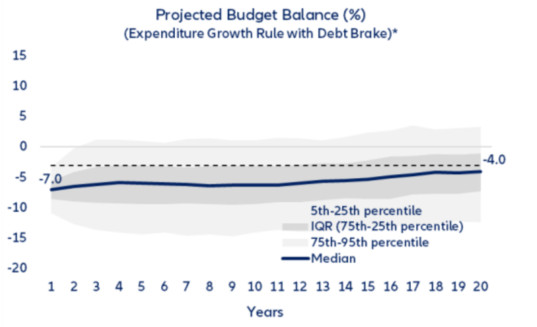
Figure A16: Portugal: Projected real effective interest rate and key macro-fiscal indicators (average over the next 10 years, %)



Sources: Refinitiv Datastream, Allianz Research

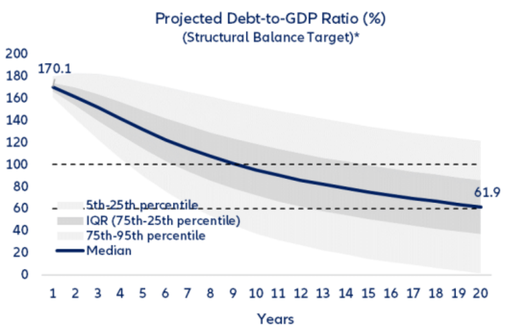
Figure A17: Greece: Expenditure growth rule with debt brake–projected debt-to-GDP ratio and budget balance (%)

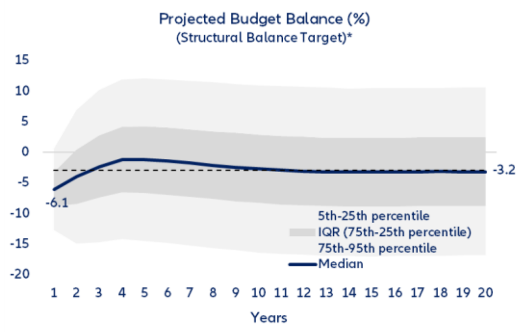




Sources: Refinitiv Datastream, Allianz Research

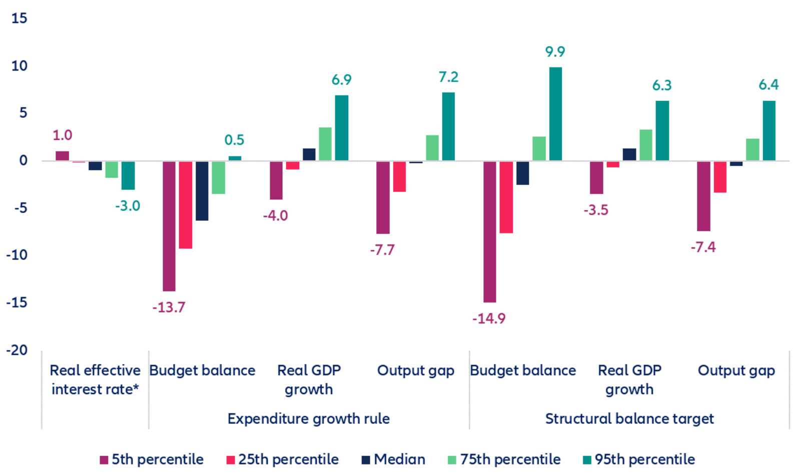
Figure A18: Greece: Structural balance target–projected debt-to-GDP ratio and budget balance (%)





Sources: Refinitiv Datastream, Allianz Research

Figure A19: Greece: Projected real effective interest rate and key macro-fiscal indicators (average over the next 10 years, %)



Sources: Refinitiv Datastream, Allianz Research

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