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Sovereigns – Euro Area

Most sovereigns resilient to rising interest rates, but some are more exposed to country-specific shocks

Following the end of the European Central Bank's (ECB) new bond-buying program in December 2018, we expect a very cautious and gradual tightening in monetary conditions in the euro area (EA) over the coming years. As monetary policy will remain accommodative, a marked tightening in financing conditions would likely arise only in the event of a shock, most likely related to the crystallization of political risks in Europe. This report explores EA sovereigns' exposure to such a shock by analyzing the impact of higher rates on fiscal metrics.

» **Euro area sovereigns have taken advantage of favourable liquidity and financing conditions.** Against the backdrop of unprecedented accommodative monetary policy, which led to lower rates across the yield curve, governments benefitted from declining borrowing costs. The launch of the Asset Purchase Programme (APP) by the ECB in 2015 helped lower interest payments in crisis-hit countries and reduced financial fragmentation within the monetary union.

» **Monetary policy normalization will take time, limiting the impact on sovereigns**. Our baseline scenario projects a very gradual normalization of monetary policy, with the first rate hike to occur only in 2020. Given improved fiscal profiles across the region, we believe that euro area sovereigns are well positioned to withstand this gradual normalization, which would have a negligible impact on funding costs.

» **Most euro area sovereigns would be resilient to an adverse interest rate shock**. As governments across the region have taken advantage of the financial environment to lengthen their debt maturity profiles, an adverse shock (whether moderate or severe) would have only a modest impact in most cases. Italy (Baa3 stable) and Portugal (Baa3 stable) would be most at risk to higher funding costs given their higher debt burdens and weaker credit profiles.

» **A funding shock would likely be asymmetrical, exacerbating financial fragmentation.** Were a shock to happen, we believe that the negative impact would fall disproportionately on those sovereigns that are most vulnerable in terms of debt metrics and growth. Rising risk aversion could (at least initially) increase demand for and lower yields on debt issued by the euro area's strongest and most liquid sovereigns, including Germany (Aaa stable), the Netherlands (Aaa stable), and France (Aa2 positive).

Euro area sovereigns have taken advantage of favourable liquidity and financing conditions

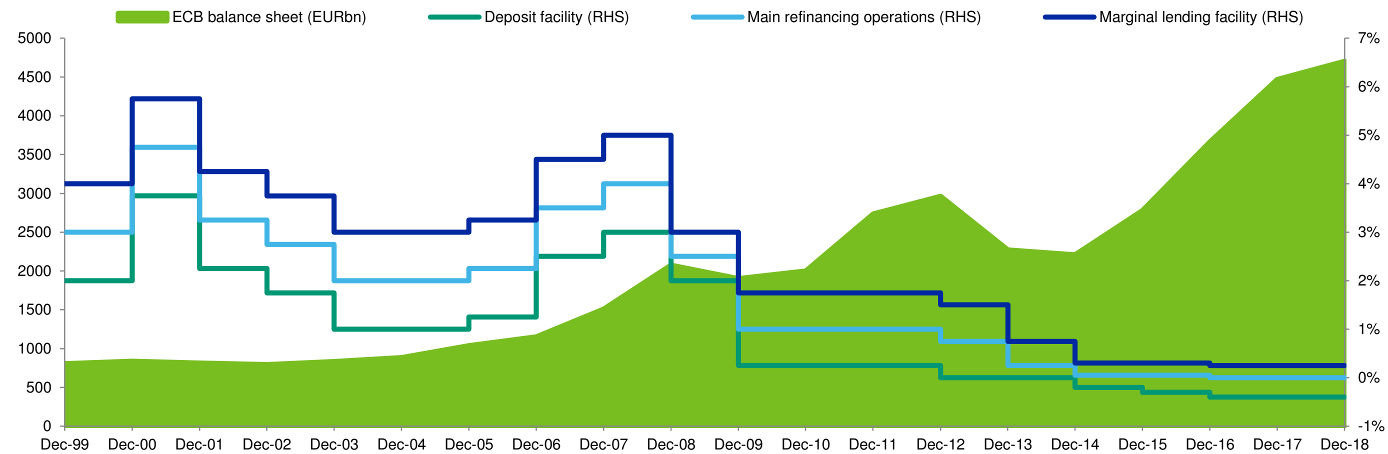
End of quantitative easing still leaves ample liquidity in the euro area

After several years of unprecedented accommodative monetary policy (see Exhibit 1), the ECB ended its net Asset Purchase Programme (APP, "quantitative easing") in December 2018 (see highlight box below for more on the programme). At the same time, the institution stated that it would continue to reinvest the proceeds from previous asset purchases, stabilizing its balance sheet at a record €4.7 trillion (as of December 2018) to keep long-term rates low.

Exhibit 1

Accommodative monetary policy is being gradually phased out

ECB main policy rates (%) and balance sheet size (€ billion)



Sources: ECB, Moody's Investors Service

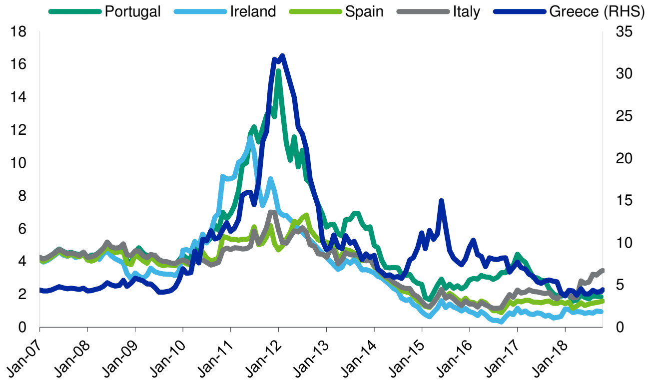
Asset Purchase Programme

The ECB's Expanded Asset Purchase Programme (APP) incorporated different programs launched by the ECB in the aftermath of the euro area sovereign debt crisis to mitigate the risk of deflation and support price stability. The Public Sector Purchase Programme, launched in March 2015, was the leading component of the APP. After peaking at €80 billion between April 2016 and March 2017, the ECB began gradually reducing average monthly purchases. New securities purchases ended in December 2018, although the proceeds from previous purchases will continue to be reinvested "for an extended period of time after the end of the net asset purchases." Liquidity injected under the APP amounted to €2.6 trillion as of December 2018.

Low rates have supported government finances across the euro area

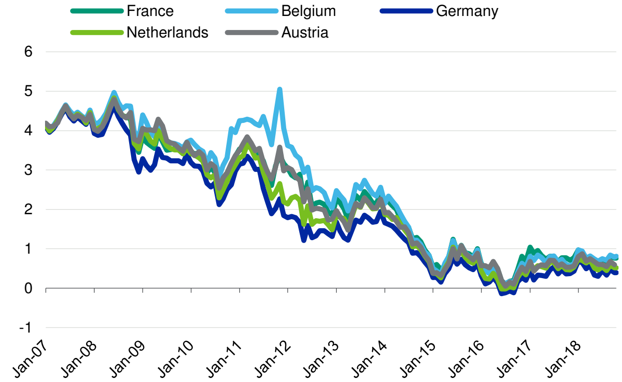
Low interest rates have decreased the cost of borrowing for sovereigns in the euro area. Yields are below their pre-crisis levels in most cases and financial fragmentation (in terms of government bond yields and bank lending rates) within the monetary union has broadly receded (see Exhibit 2), although it remains higher than before the crisis. For Germany, the Netherlands, Luxembourg (Aaa stable), Finland (Aa1 stable), Austria (Aa1 stable), France and Belgium (Aa3 stable), yields have declined almost continuously, resulting in somewhat higher spreads compared with the rest of the euro area (see Exhibit 3). To a large extent, the announcement of the APP in January 2015 and its subsequent implementation from March 2015 onward had been anticipated by the markets.

Exhibit 2
Yields have returned to pre-crisis levels in impacted countries
10-year benchmark yield, %



Sources: FactSet, Moody's Investors Service

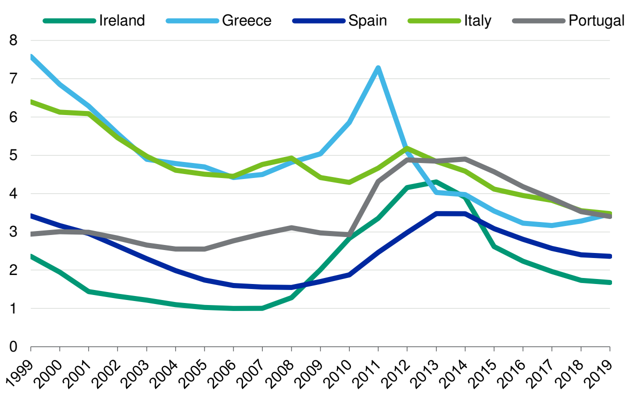
Exhibit 3
Borrowing costs still at multiyear low in rest of euro area
10-year benchmark yield, %



Sources: FactSet, Moody's Investors Service

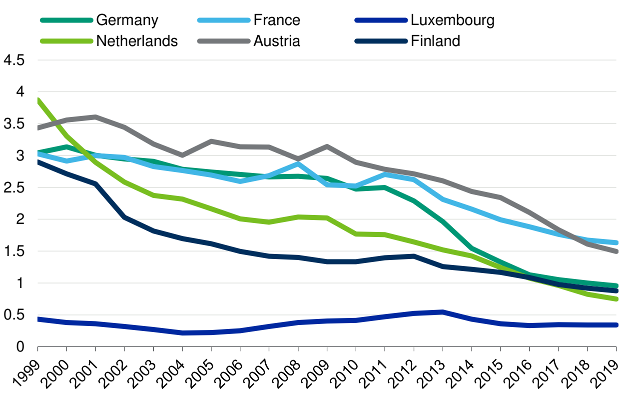
The significant decline in borrowing costs reduced interest payments for all member countries. While the crisis-hit countries[1] first suffered from both negative numerator (rise in yields) and denominator (decline in GDP) effects, leading to an increase in interest payments-to-GDP ratios (except in Italy), stronger countries benefited from a continuous decline in the cost of debt (see Exhibits 4 and 5). The launch of the APP helped lower interest payments in crisis-hit countries.

Exhibit 4
Euro area periphery countries initially saw a jump in interest payments...
Interest payments as a % of GDP



Source: European Commission

Exhibit 5
...while the rest saw a consistent decline in interest payments
Interest payments as a % of GDP



Source: European Commission

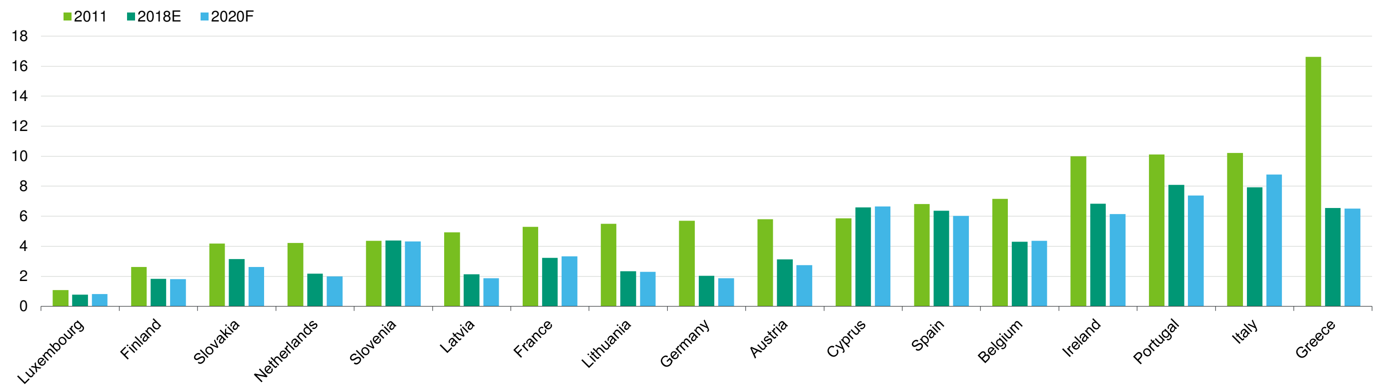
Monetary policy normalization will take time, limiting the impact on EA sovereigns

Our baseline scenario projects a very cautious and therefore gradual normalization of monetary policy conditions in the euro area over the coming years, in line with ECB guidance. The pace of economic expansion in major economies including France and Germany, is slowing faster than previously expected, in addition to already weak growth in Italy. Meanwhile, core inflation is lingering below the ECB's medium-term target. Combined with global risks to growth now tilting to the downside, the ECB is signaling a wait-and-see approach. We expect the ECB to hold deposit facility and refinancing rates at current levels in 2019, with the first rate hike occurring only in 2020, provided that the ongoing recovery in employment and household incomes remains steady.

Given the improved fiscal profiles across the region, we believe that euro area sovereigns are well positioned to withstand this gradual monetary policy normalization. As shown in Exhibit 6, we forecast interest payments as a share of total revenue to remain stable in most EA countries. Only in Italy do we expect interest payments to increase substantially over the next two years, from 7.9% of government revenue in 2018 to 8.8% in 2020. But even there, interest payments will remain well below their pre-crisis levels, which is generally the case in most countries except for Slovenia and Cyprus. The impact on the overall debt burden from higher funding costs will be negligible under our base scenario.

Exhibit 6

Interest payments will remain modest by historical standards, even as monetary policy normalizes
Interest payments, % revenue



Sources: National authorities, Moody's Investors Service

Most euro area sovereigns would be resilient to an adverse interest rate shock

While not our base case, a faster-than-anticipated tightening in financing conditions poses downside risks to our outlook. As such, we examine the impact of two adverse interest rate shocks to determine which euro area sovereigns would be most exposed (see Appendix for a detailed explanation of our simulations). We conclude that because euro area governments have taken advantage of the low interest rate environment up to this point to lengthen their debt maturity profiles, even a severe shock would not derail the bloc's ongoing deleveraging process. The impact on debt affordability would also be modest in most cases.

We assess the impact of two different shocks on debt metrics:

» **Adverse scenario: a moderate shock**, assuming the cost of new debt increases by 250 basis points above our baseline through 2022. This scenario would start with a 50 basis point hike above the baseline in 2019, followed by 100 basis points in 2020, and 50 in both 2021 and 2022. A moderate shock spread across the euro area is unlikely given the ECB's ability to act as a price setter, in turn contributing to policy effectiveness and credibility. However, a deterioration in investor sentiment toward the region's most vulnerable sovereigns driven by adverse policy shifts (from renewed tensions between the European Union (EU, Aaa stable) and Italy over budget plans, for instance) would increase funding costs for individual governments.

» **Highly adverse scenario: a severe shock**, under which the cost of new debt would increase by 350 basis points between 2018 and 2022, by 150 basis points in 2019, 100 in 2020, and 50 in both 2021 and 2022. This scenario would likely involve a very significant negative shift in investor sentiment, which we think is highly unlikely, even in the bloc's most fragile sovereigns, though not – given recent history – implausible.

By comparison, 10-year benchmark yields in Greece (B1 stable), Portugal, Ireland (A2 stable) and Spain (Baa1 stable) increased by 1,680, 570, 280 and 140 basis points respectively between 2008 and 2012.

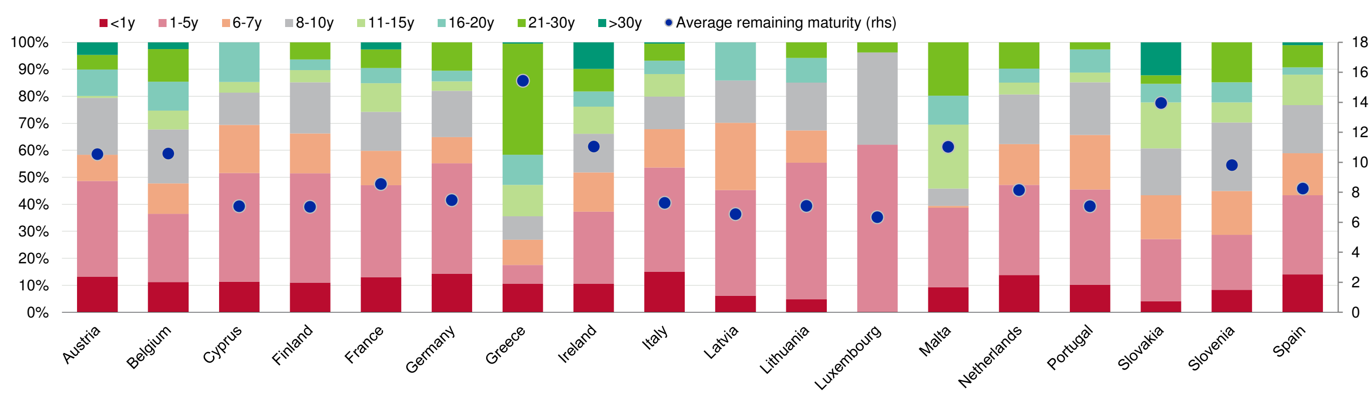
Higher borrowing costs from a shock scenario would affect debt affordability in Italy and Portugal the most

The vast majority of euro area sovereigns are well positioned to absorb higher financing costs. Indeed, governments across the region have taken advantage of the declining cost of debt over the past 10 years to lengthen their debt maturity profiles[2] (see Exhibit 7). That said, debt structures vary significantly across the bloc, with average weighted remaining maturities ranging from 6.3 years in Luxembourg to 14.0 years in Slovakia (A2 positive). Greece's average remaining maturity is the highest at 18.2 years (central government debt), which reflects a voluntary re-profiling of its debt by the European Financial Stability Facility (EFSF, Aa1 positive). Inflation-linked bonds account for less than 8% of total outstanding debt in the euro area, thereby mitigating the risks of higher financing costs through the inflation channel.

Exhibit 7

Debt structures vary across the region

Debt by maturity (%) & average remaining maturity (years)



Sources: FactSet, Moody's Investors Service

Our sensitivity analysis looks at the first-order impact of a rise in the cost of debt on the debt burden and debt affordability, assuming that government revenue, primary balance and nominal GDP remain unchanged from our baseline. As explained in the Appendix, we use the breakdown of debt by maturity to estimate the proportion of debt that is refinanced at a higher cost. This is a *ceteris paribus* approach: in practice, sovereigns would likely react to a change in financing conditions through policy adjustments. Policy options include a reduction in spending or the introduction of additional revenue-raising measures to reduce borrowing requirements. Governments could also issue more short-term debt, which usually carries a lower cost but raises refinancing risk.

A rise in policy rates coupled with shifting investor sentiment (corresponding to our two adverse scenarios, with a varying degree of severity) would have more meaningful consequences for euro area sovereigns than our baseline. However, as shown in Exhibit 8 even under a severe shock, ongoing deleveraging would not be derailed in most cases because of the lengthening of debt maturity profiles. In Italy, the debt burden would rise, but only modestly, to 132.4% of GDP in 2022 from 131.3% in 2018 in a moderate shock, and to 134.1% in a severe shock (in each case compared to 130.6% under our baseline). In Spain, the government's debt burden would stabilize under a severe shock, while it declines under our baseline. In Cyprus (Ba2 stable) and Portugal, either shock would only slow the ongoing deleveraging process.

Similarly, the impact on debt affordability would be modest for most euro area governments, with the exception of crisis-hit countries. The median euro area sovereign would see interest payments relative to revenue rise by 0.6 percentage points under a moderate shock and 1.1 percentage points under a severe shock. However, this masks strong divergences across the bloc. Interest payments account for a much larger share of revenue for sovereigns previously affected by the European debt crisis (around 6.5% in Greece, 6.8% in Ireland and 8.1% in Portugal in 2018). These sovereigns would be disproportionately affected by sudden increases in funding costs, posing a further constraint to government budgets.

Exhibit 8
Manageable funding shock masks regional disparities

	Ave. interest on debt				Debt-to-GDP				Interest-to-revenue			
	2018	2022			2018	2022			2018	2022		
		Base	Moderate shock	Severe shock		Base	Moderate shock	Severe shock		Base	Moderate shock	Severe shock
Austria	2%	2%	3%	3%	75%	63%	64%	65%	3%	3%	4%	4%
Belgium	2%	2%	3%	3%	102%	97%	98%	99%	4%	4%	5%	5%
Cyprus	3%	3%	4%	4%	105%	76%	77%	78%	7%	7%	8%	9%
Finland	2%	2%	2%	3%	60%	54%	55%	56%	2%	2%	3%	3%
France	2%	2%	2%	3%	99%	96%	97%	98%	3%	3%	4%	5%
Germany	2%	2%	2%	3%	60%	50%	51%	51%	2%	2%	3%	3%
Greece	2%	2%	2%	2%	181%	154%	154%	155%	7%	7%	7%	8%
Ireland	3%	3%	3%	3%	65%	54%	54%	55%	7%	6%	7%	8%
Italy	3%	3%	4%	4%	131%	131%	132%	134%	8%	9%	11%	13%
Latvia	2%	2%	2%	3%	38%	35%	35%	36%	2%	2%	2%	3%
Lithuania	2%	2%	3%	4%	35%	32%	33%	33%	2%	2%	3%	3%
Luxembourg	2%	2%	3%	3%	22%	19%	20%	20%	1%	1%	1%	1%
Netherlands	2%	2%	2%	3%	54%	43%	44%	44%	2%	2%	2%	3%
Portugal	3%	3%	3%	4%	122%	110%	112%	113%	8%	7%	9%	10%
Slovakia	3%	2%	2%	2%	49%	40%	40%	40%	3%	2%	3%	3%
Slovenia	3%	3%	4%	4%	70%	59%	60%	60%	4%	4%	5%	6%
Spain	3%	3%	3%	4%	97%	95%	96%	97%	6%	6%	8%	9%

Note: Color coding is based on level changes. Average interest rate: dark green for a decline, medium green for no change, medium red for a 1 pp. increase and dark red for a 2 pp. increase. Debt-to-GDP: dark green for a decline greater than 20pp, medium green for a 8-20pp decline, light green for a 6-7pp decline, light red for a 3-5pp decline, medium red for a 0-2pp decline, dark red for an increase. Interest-to-revenue: dark green for a decline, medium green for no change, medium red for a 1pp increase, dark red for an increase above 2pp. Because of data limitations, we exclude Estonia and Malta.
Source: Moody's Investors Service

Greece's improved debt structure shields it from rising interest rate risks

Despite having the highest debt burden in the euro area, at an estimated 181% of GDP in 2018, Greece's exposure to a sudden spike in financing costs is limited because of its more favorable debt structure following relief packages from euro area creditors in the last two years. Indeed, the weighted average maturity on central government debt is over 18 years, the highest in the euro area, with only 13% of outstanding bonds maturing between 2019 and 2022. In addition, with nearly 80% of central government debt owed to euro area institutions (including the ECB and other euro area central banks, excluding T-bills and repos), the average interest on debt is low compared with Italy, Portugal and Spain, at an estimated 1.8% in 2018. A funding shock would thus have a very limited impact on Greece's debt metrics. Under our severe shock scenario, the debt burden would fall to 155% of GDP in 2022 from 181% in 2018, compared with 154% under our baseline. Interest payments would increase to 3.4% of GDP instead of declining to 2.9% of GDP, although this would still be very low.

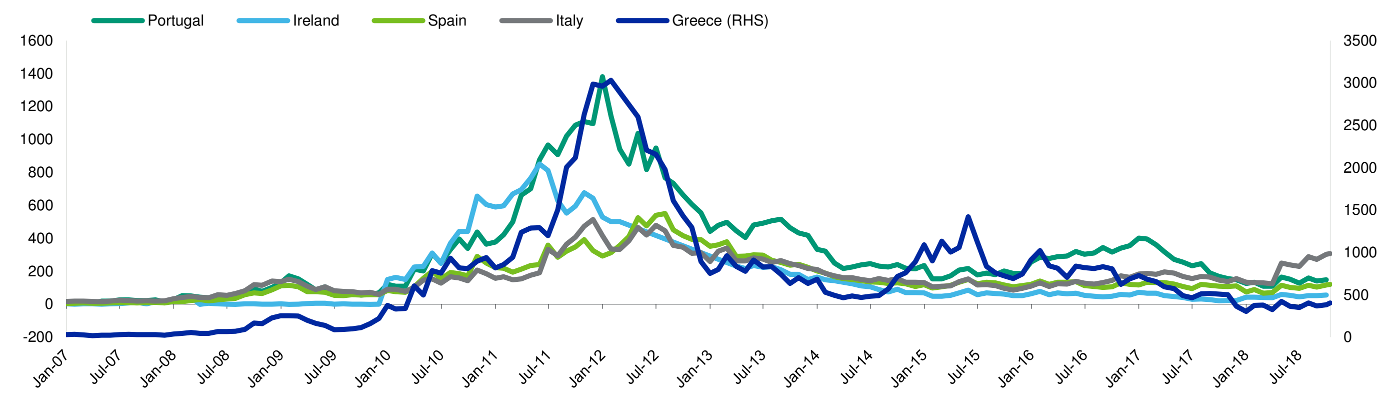
Funding shock would likely be asymmetrical, exacerbating financial fragmentation

The previous sections describe, for the purposes of exposition, a somewhat stylized scenario in which yields rise in parallel across the EA. In reality, a funding shock would likely be asymmetrical, reflecting country-specific developments rather than a systematic jump in interest rates across the bloc. As shown in Exhibit 9, spreads with German bonds significantly declined before the euro area crisis, then widened as risk aversion picked up. Similarly, we believe that a shock to funding conditions would have a more than proportional impact on the region's most vulnerable sovereigns. In such a scenario, rising risk aversion would likely increase demand for debt issued by the euro area's strongest sovereigns, including Germany, the Netherlands and France.

Exhibit 9

Increasing risk differentiation in times of financial turmoil

Spread 10-year benchmark yield vs. German 10-year benchmark yield



Sources: FactSet, Moody's Investors Service

Financial fragmentation would resurface

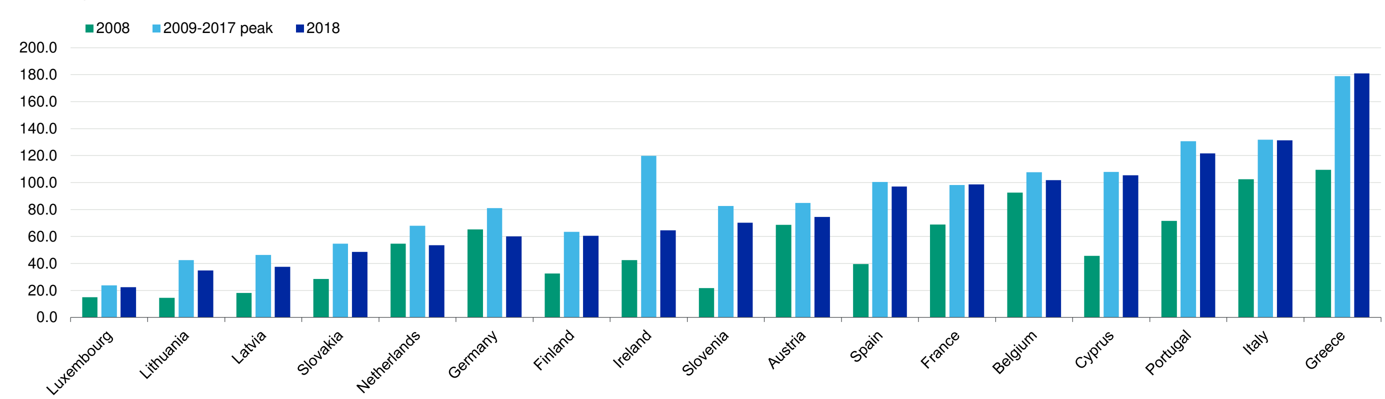
A financing shock targeting the region's most vulnerable sovereigns would exacerbate divergences in funding costs, with safe havens experiencing a decline in average interest on debt while more vulnerable governments would face growing constraints from higher funding costs.

A reversal of deleveraging trends in Italy and Spain would make these sovereigns much more vulnerable to other shocks in the future. As illustrated in Exhibit 10, debt burdens are significantly higher compared to their pre-debt crisis levels. This leaves the euro area's most vulnerable sovereigns exposed to other types of shocks. In particular, a sharp slowdown in growth would make it even more difficult for these governments to contain their debt burdens.

Exhibit 10

Debt burdens significantly higher than pre-crisis period

General government debt as a % of GDP



Source: Moody's Investors Service

Exposure to financing shock varies based on fiscal metrics, market volatility and growth potential

We look at different metrics to assess sovereigns' exposure to a sudden tightening in financing conditions (see Exhibit 11). While some of these metrics are backward-looking, we think it reasonable to assume that the past offers useful insights into the future:

- **Debt metrics:** a high debt burden, especially if combined with rapidly deteriorating debt metrics (illustrated by the change in the debt-to-GDP ratio in the table below) raises the risk of sudden increase in risk premia.
- **Market volatility**: we use the standard deviation of 10-year government bond yields between 2002 and 2018 and the average yield on similar bonds to assess sovereigns' exposure to episodes of financial turbulence and their potential magnitude.
- **Growth**: past growth dynamics, which we measure by average real GDP growth between 2002 and 2018, underpin economic dynamism and resiliency to future shocks.

Exhibit 11

Greece and Portugal look most vulnerable to shift in investor sentiment

	Debt-to-GDP %, 2018	Change in debt-to-GDP pp 2002-2018E	10Y yield volatility 2002-2018	10Y yield avg. 2002-2018	Real GDP growth, % avg. 2002-2018E
Greece	181.1	79.6	5.1	7.5	-0.1
Italy	131.3	30.8	1.2	3.8	0.1
Portugal	121.7	63.0	2.4	4.7	0.5
Cyprus	105.3	41.6	1.3	4.8	2.0
Belgium	101.9	0.8	1.5	3.0	1.5
France	98.8	34.3	1.4	2.8	1.2
Spain	97.1	49.5	1.4	3.6	1.6
Austria	74.5	8.7	1.5	2.8	1.6
Slovenia	70.2	43.5	2.0	4.0	2.3
Ireland	64.6	34.6	2.3	3.9	4.8
Finland	60.5	17.7	1.5	2.7	1.4
Germany	60.0	-3.0	1.6	2.5	1.3
Netherlands	53.6	3.6	1.5	2.7	1.3
Slovakia	48.6	7.0	1.8	3.5	4.1
Latvia	37.6	23.3	3.2	4.5	3.7
Lithuania	34.7	14.3	3.1	4.3	4.0
Luxembourg	22.3	15.4	1.5	2.5	2.7

Note: Debt ratio: red corresponds to a ratio above 100%, orange between 60%-100% and green below 60%. Debt trend: red corresponds to an increase by more than 30 percentage points, orange by between 10-30pps, green below 10pps. Yield volatility: red corresponds to a standard deviation above 3, orange between 2-3 and green below 2. Yield average: red corresponds to average yields above 4%, orange between 3%-4% and green below 3%. Growth: red corresponds to average growth below 2%, orange between 2%-4% and green above 4%.

Sources: National authorities, Moody's Investors Service

Crisis-hit countries look most likely to experience a funding shock

The table above suggests that Greece and Portugal are the EA countries most exposed to a sudden increase in interest rates, although as discussed before, the impact on Greece would be small given its maturity profile. Debt-to-GDP ratios remain above 120%, significantly higher than their pre-crisis levels. Coupled with modest growth prospects and a history of relative financial market volatility, these two countries look most susceptible to experience a sudden increase in financing costs.

Italy and Spain also look relatively exposed to a financing shock, albeit to a smaller extent than Greece and Portugal. While Italy's elevated debt burden and current context of noisy politics has resulted in some volatility in interest rates over the past few months, yields on Italian debt have traditionally been relatively stable, in line with some of the region's most stable markets. However, the country now looks much more vulnerable than in the past, given deteriorating debt metrics. Similarly, Spain also looks relatively vulnerable based on its debt metrics, but interest rate volatility has historically been modest. In the case of Cyprus, higher growth and lower volatility did not prevent the country from experiencing a very large increase in public debt.

Compared with other crisis-hit sovereigns, Ireland now looks to be in a much more favourable position. The deleveraging trend has been successful over the past few years, with the debt-to-GDP ratio at an estimated 64.6% of GDP in 2018. Combined with positive growth dynamics, Ireland now looks less exposed to a sudden increase in risk premium than in the past.

Belgium has traditionally benefitted from favourable borrowing rates, and limited volatility in interest rates. However, an elevated debt burden – above 100% of GDP – and limited scope for significant deleveraging over the coming years raise the risk of an adverse funding shock over the coming years.

Euro area safe havens, including Germany, the Netherlands, France, Finland, Austria and Luxembourg continue to enjoy manageable debt burdens, affordable borrowing costs and limited interest rate volatility, limiting their exposure to a financing shock. Rising risk aversion in the region would likely increase demand for debt issued by these sovereigns.

Appendix: Quantifying sovereigns' exposure to a higher cost of debt

Our simulation method uses the same quantitative estimation as our May 2018 publication on sovereigns' sensitivity to a larger-than-anticipated rise in the cost of debt (see Sovereigns - Global: Weakest MENA and APAC sovereigns would be most sensitive to an interest rate shock). However, instead of using the average maturity of debt as a key input, we focus on the breakdown of debt by maturity.

We keep government revenue, the primary balance and nominal GDP unchanged from our baseline, then derive the first-order impact of a higher cost of debt on fiscal metrics by estimating the effect of higher interest payments on the debt burden and on debt affordability.

Foreign-currency debt accounts for only a small portion of government debt in the euro area, at less than 5% of the total. In Lithuania (A3 stable), Slovakia and Slovenia (Baa1 stable), where foreign-currency-denominated debt accounted for 22.4%, 5.8% and 12.3% of the total, respectively, foreign-currency exposures are fully hedged. As such, we do not make a distinction between local and foreign-currency debt, and focus our analysis on the impact of higher domestic funding costs.

A key input is the breakdown of debt by maturity, which we obtained by compiling all outstanding bonds for each euro area sovereign from FactSet, instead of the average remaining maturity. The dataset includes sovereign bonds, but also securities issued by sub-sovereign entities. We collected the data in November 2018. Given that our analysis focuses on 2019-22, we removed all outstanding bonds that matured in the last months of 2018.

For fiscal metrics, we used our forecasts through 2020 (cut-off date: March 1, 2019), which we combined with trends from the October 2018 IMF World Economic Outlook and Fiscal Monitor to forecast out to 2022.

The rising share of debt being refinanced at a higher, shock-induced rate translates into a shift in fiscal metrics. The calculations below are an example of a sovereign with 25% of its outstanding debt maturing in 2019, and 20% in 2020, with a baseline cost of debt of 2.0% and which experiences an annual 50 basis point increase in its cost of debt. We calculate the effective cost of debt as follows:

$$Interest_{t+1} = 75\% x 2.0\% + 25\% x 2.5\%$$

$$Interest_{t+2} = 55\% x 2.0\% + 25\% x 2.5\% + 20\% x 3.0\%$$

From the effective cost of debt, we derive the government's debt burden and debt affordability.

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Rating Methodology

- » Sovereign Bond Ratings, 27 November 2018

Endnotes

1 Crisis-hit countries include Ireland, Greece, Italy, Spain and Portugal.

2 Sovereigns with high rollover needs over the next few years are more vulnerable to a sudden increase in funding costs because those costs would more rapidly feed into a higher cost of debt and reduce debt affordability.

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