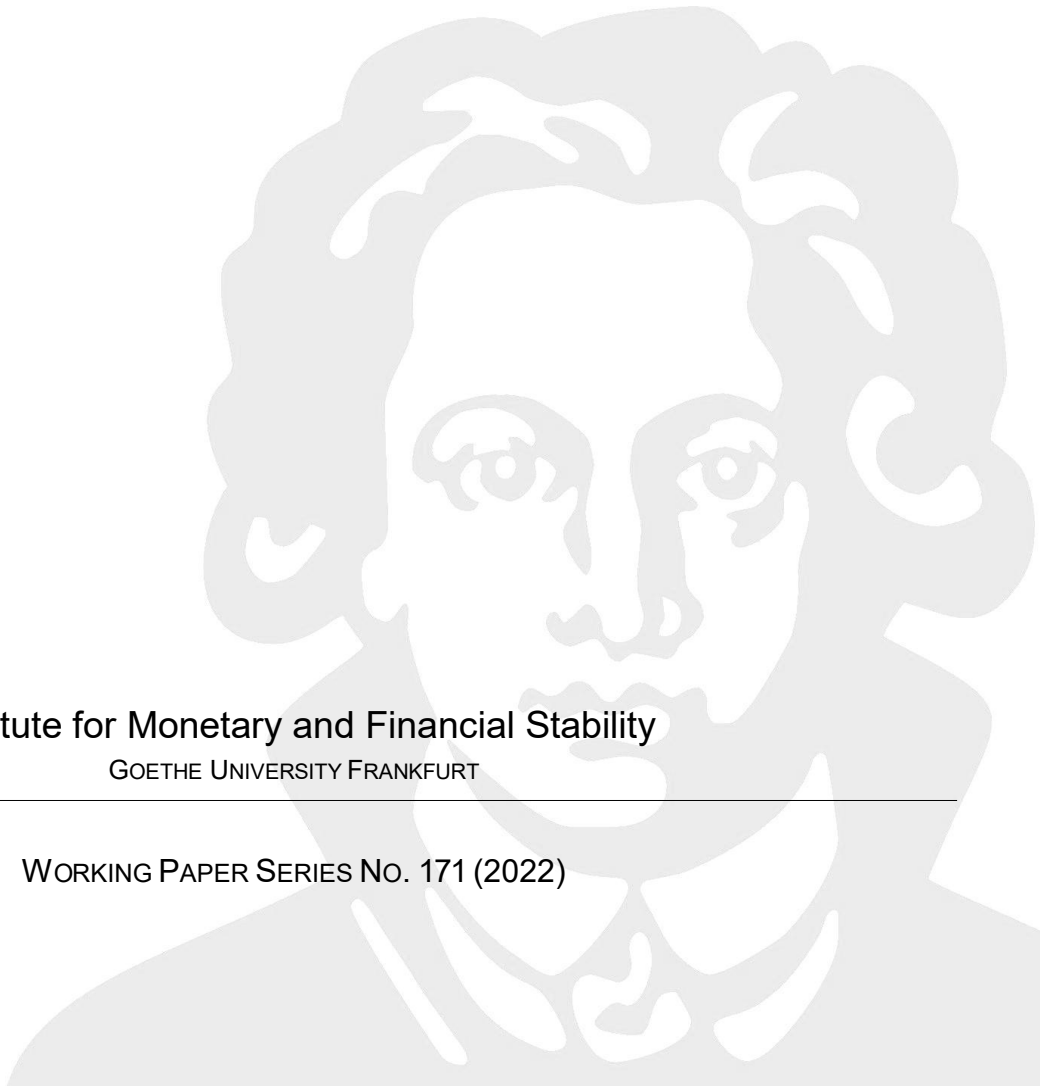
VERONIKA GRIMM, LUKAS NÖH, VOLKER WIELAND

Government bond rates and interest expenditure of large euro area member states: A scenario analysis



Institute for Monetary and Financial Stability
GOETHE UNIVERSITY FRANKFURT

WORKING PAPER SERIES NO. 171 (2022)

Institute for Monetary and Financial Stability
Goethe University Frankfurt
House of Finance
Theodor-W.-Adorno-Platz 3
D-60629 Frankfurt am Main
www.imfs-frankfurt.de | info@imfs-frankfurt.de

Government bond rates and interest expenditure of large euro area member states: A scenario analysis

Veronika Grimm, Lukas Nöh und Volker Wieland[1]

July 8, 2022

Abstract

This paper assesses the possible development of government interest expenditures as a share of GDP for Germany, France, Italy and Spain. Until 2021, these and other member states could anticipate a further reduction of interest expenditure in the future. This outlook has changed considerably with the recent surge in inflation and government bond rates. Nevertheless, under reasonable assumptions current yield curves still imply that interest expenditure relative to GDP can be stabilized at the current level. We also review the implications of a further upward shift in the yield curves of 1 or 2 percentage points. They suggest significant medium-term risks for highly indebted member states with interest expenditure approaching or exceeding levels last observed on the eve of the euro area debt crisis. In light of these risks, governments of euro area member states should take substantive action to achieve a sustained decline in debt-to-GDP ratios towards safer levels. They bear the responsibility for making sure that government finances can weather the higher interest rates which are required to achieve price stability in the euro area.

[1] Veronika Grimm: Erlangen-Nürnberg, School of Business & Economics, Lange Gasse 20, 90403 Nürnberg, veronika.grimm@fau.de and German Council of Economic Experts (GCEE), Lukas Nöh: GCEE, Gustav-Stresemann-Ring 11 65189 Wiesbaden, lukas.noeh@svr-wirtschaft.de. Volker Wieland: IMFS, Goethe University of Frankfurt, Theodor-W.-Adorno-Platz 3 60323 Frankfurt am Main, wieland@imfs-frankfurt.de.

1. Introduction

With the rise of inflation and inflation expectations over the course of 2021 and 2022 medium- and long-term interest rates in the euro area have also increased substantially. Investors want to be compensated for expected inflation. Current bond rates also incorporate the anticipation of an increase in policy rates. This makes sense. The ECB needs to adjust policy to fight inflation. If it delays it will ultimately need to raise rates further to contain inflation expectations. Higher bond rates have apparently triggered new concerns about the ability of highly indebted member states to service their debt. In fact, spreads relative to bonds of AAA-rated member states have also increased somewhat. As a consequence, the ECB has called an emergency meeting of the Governing Council on June 14 to discuss a new selective bond purchase program that aims to control government bond spreads.

The purpose of this paper is to assess the possible development of government interest expenditures as a share of GDP for large member states. In particular, we consider Germany, France, Italy and Spain. In 2021, the latter two states recorded debt-to-GDP ratios of 151 and 118%, respectively. In France the debt-to-GDP ratio stood at 113%, in Germany at 70%. In recent years all four member states were able to reduce interest expenditure relative to GDP and relative to total government expenditure. Until a few months ago, they could anticipate a further reduction of interest expenditure in the future. Government bond rates in the euro area have been very low for the last 8 years. Thus, member states rolling over debt issued during or before the euro debt crisis of 2011 and 2012 could expect a substantial further decline in interest expenditure. This outlook has changed considerably. We investigate the further development taking the yield curve of June 2, 2022 as a benchmark. In doing so, we assume that governments will keep the debt-to-GDP ratio constant from 2021 onwards Additionally, we report on several different scenarios: a scenario with a 1 percentage point upward shift of the June 2 yield curve, and a scenario with a 2 percentage points upward shift, as well as the yield curve as of August 2021.

If the extremely low yield curve from August 2021 (and previous years) had persisted, governments could have anticipated a rapid further decline in the interest burden of public debt. Yet, for now, this benign outlook is history. Even so, if the June 2 yield curve persisted and if governments kept the debt-to-GDP ratio stable, then the ratio of interest expenditure to GDP would stabilize in all four member states considered. This remains a fairly benign outlook. However, there is a risk of further upward shifts in bond rates. After all, a long-term rate of 1.5% for Germany may not be consistent with a long-run equilibrium. The calculations show that in case of a two percent upward shift the interest burden would rise substantially and reach levels similar to those during the euro area debt crisis as soon as 2030 even if debt-to-GDP ratios were kept constant. These scenarios signal high medium-term risks to fiscal sustainability calling for governments to act to set debt-to-GDP ratios on a downward trajectory. In particular, this calls for continued efforts towards market-oriented structural reforms that can raise potential growth.

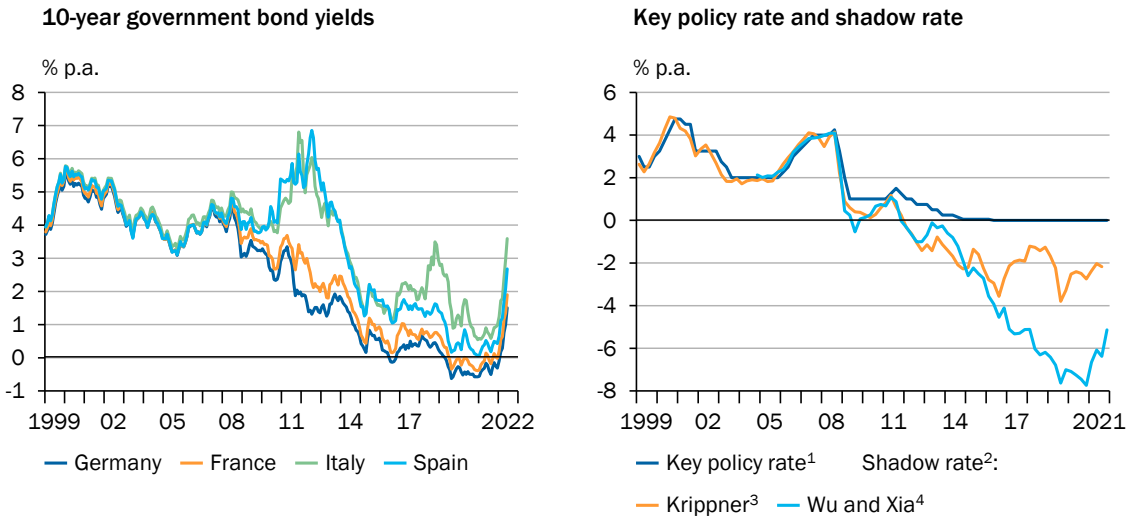
The paper proceeds as follows. Section 2 reviews the past period of low inflation and low interest rates that set government interest expenditures on a steady decline even though the debt-to-GDP ratios increased substantially as a result of the global financial crisis and the coronavirus crisis. Section 3 discusses how this situation changed rapidly with the rise of inflation in 2021 and 2022. Section 4 discusses factors that cushion or exacerbate the immediate impact of rising bond rates on interest expenditure. Section 5 presents the scenario results in detail, while section 6 concludes and discusses policy implications.

2. Where we come from: Declining bond yields, rising debt-ratios and falling interest expenditure

Following the global financial crisis and the euro area debt crisis, the euro area experienced a protracted period of low inflation and low interest rates. The European Central Bank reduced its main refinancing rate to 0% and the rate on the deposit facility to -0.5%. From 2015 onwards it embarked on large-scale quantitative easing by means of asset purchases – primarily government bond purchases. Consumer price inflation as measured by the HICP averaged 1.2% between summer 2008 and end of 2019. The rate of inflation with regard to domestic goods and services as measured by the GDP deflator slowly rose from 1.3% in 2013 to 1.7% in 2019. Yet, import prices fell, on average, and kept consumer price inflation low. In this environment of low inflation, low policy rates and government bond purchases, government bond rates steadily declined towards historically low levels (Chart1, left panel). One way of summarizing the effect of asset purchases is to estimate a short-run shadow rate as in Krippner (2013, 2015) or Wu and Xia (2017, 2020) (Chart 1, right panel).

CHART 1

Historical interest rate developments in the euro area



1 – Interest rate for main refinancing operations in the second month of each quarter. 2 – Quarterly data for the shadow rate is calculated as the average of monthly data. 3 – Updated estimates based on Krippner (2013, 2015). 4 – Updated estimates based on Wu and Xia (2017, 2020).

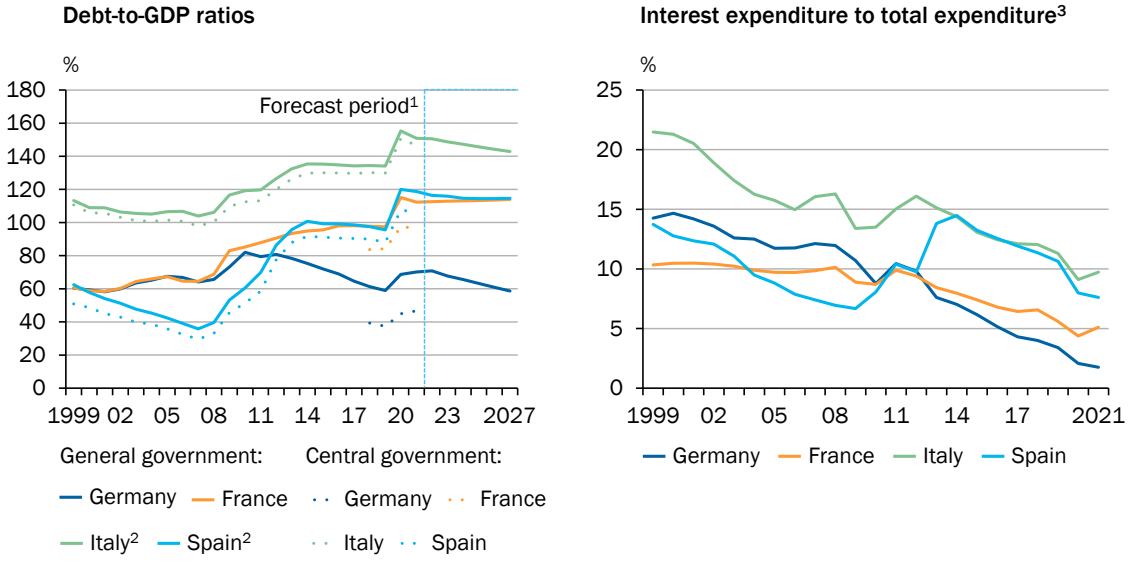
Sources: ECB, Krippner (2013, 2015), OECD, Wu and Xia (2017, 2020)

In France, Italy and Spain, government debt has increased significantly relative to economic activity over the past twenty years: Of course, the global financial crisis and again the coronavirus crisis caused substantial upward shifts in the debt-to-GDP ratio. In France, the debt-to-GDP ratio increased from 65% in 2007 to 112% in 2021, in Spain from 36% to 119% and in Italy from 104% to 151%. By contrast, Germany was able to reduce its debt ratio after the financial crisis (Chart 2, left panel). As of 2021, it stands at 70%. Immediately following the coronavirus crisis, the strong recovery of economic activity reduced the debt ratio again relative to 2020. Forecasts by the International Monetary Fund from April 2021 anticipate a further decline in debt-to-GDP ratios for 2022 to 2027 in Germany, Italy and Spain and a stabilization in France.

Despite the increase in debt ratios, interest expenditure fell significantly in relation to total government expenditure over the same period (Chart 2, right panel). In this regard, the decline in government bond rates more than offset the increase in debt. Some commentators raised concerns that with interest rates likely to remain persistently below growth rates, member states of the euro area would have to run greater primary deficits so as to stabilize debt-to-GDP ratios (Blanchard et al 2020).

CHART 2

Debt-to-GDP ratios and interest-expenditure ratios



1 – April 2022 forecast by the IMF. 2 – Forecast starts in 2021. 3 – Central Government.

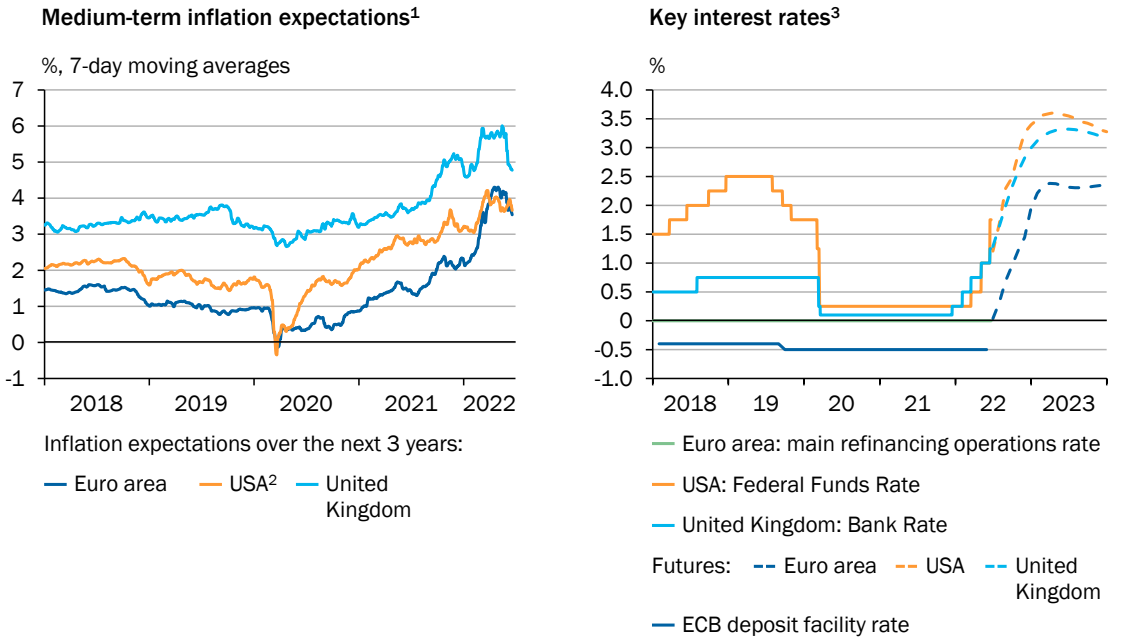
Sources: Eurostat, IMF, own calculations

3. What happened post-Covid: The rise of inflation and interest rates

Following the coronavirus recession of spring 2020, economies around the world recovered relatively quickly. While inflation had declined during the recession, it increased along with the recovery. A number of factors contributed to a further acceleration of inflation throughout 2021 including raw material shortages, higher shipping costs, rising energy prices, production capacity constraints and labor shortages, but also large-scale fiscal transfers and easy monetary policies. In 2022 the Russian war on Ukraine added further fuel to inflation but also hurt the growth outlook. Inflation expectations rose substantially and in a sustained manner across major currency areas. Chart 3 (left panel) shows market-based expectations for the United States, the United Kingdom and the euro area. While euro area inflation expectations initially rose more slowly, they have caught up with inflation expectations for the United States in the course of 2022. As of June 2022, they stand at around 4% inflation for the next three years. Markets anticipate that central banks will have to raise short-term policy rates substantially. As of June, expectations had moved to over 3.5 percent for the United States and 2.5 percent for the euro area (Chart 3, right panel).

CHART 3

Development of key interest rates and inflation expectations in selected economies



1 – Inflation expectations of market participants over the next 3 years approximated by 3-year inflation swaps. 2 – For the USA, 8 data points in 2019, 3 data points in 2020, 1 data point in 2021, and 2 data points in 2022 are treated as outliers like missing observations. 3 – Market participants' expectations regarding central bank interest rates derived from the 30-day Federal Funds Futures for the USA, the 3-month EURIBOR futures for the euro area and the overnight index swap forwards for the United Kingdom. Retrieved on 23 Juni 2022.

Sources: BoE, CME, Deutsche Bundesbank, ECB, Fed, ICAP, ICE, Refinitiv Datastream, own calculations

Bond investors want to be compensated for higher expected inflation and they take into account expectations for future short-term rates. As a consequence, the bond yield curve has shifted up over the course of 2021 and more rapidly in 2022. Chart 4 reports yield curves at four different dates throughout this period for Germany (top left), France (top right), Italy (bottom left) and Spain (bottom right). AAA rated German government debt represents a nominally very safe asset and enjoys the lowest financing cost. As of August 16, 2021, rates on German government bonds still remained in negative territory up to maturities of 30 years. Up to a maturity of 9 years, rates were even below the ECB's deposit rate of -50 basis points. French, Spanish and Italian government bonds paid a risk premium over German bonds. Even so, France, Spain and Italy also enjoyed negative yields up to maturities of 12, 9 and 6 years. At the time, the observed increase in inflation was still considered by many including the ECB a short-lived phenomenon that would dissipate towards the latter part of the year.

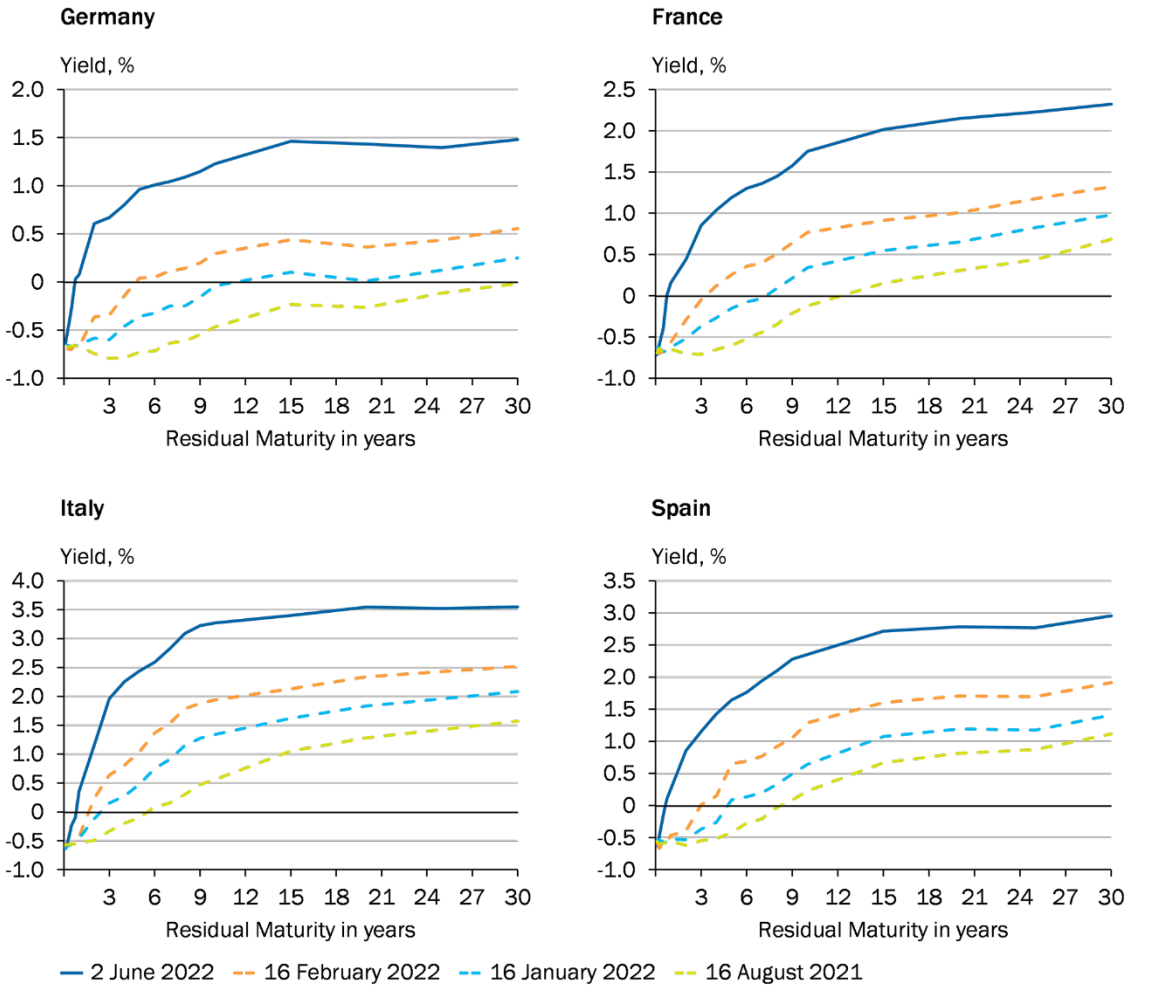
By January 2021 the yield curves had shifted quite a bit. For Spain, bond yields for maturities between 15 and 30 years stood between 1.0 and 1.5%, for Italy between 1.5 and 2%. By February 16, that is a week prior to the Russian attack on Ukraine, yields had gained roughly another 50 basis points for medium and longer-term Spanish and Italian bonds. Yields for German and French bonds shifted up in the same fashion but to slightly smaller extent. Since then, a substantial further upward move and steepening took place in the wake of the Russia-Ukraine war and rising inflation expectations. As of June 2, 2022, the German yield curve is largely in positive territory. At a maturity of 6 years the yield is 1%, from 15 years onwards it is about 1.5%. Interestingly, 1.5% has been noted by some ECB Governing Council Members as their preferred estimate of the long-run equilibrium (safe) nominal

interest rate.[2] Thus, it would be consistent with a normalization of monetary policy. For France bond rates are between 1.2 and 2.0 percent for maturities of 6 years and 15 years, respectively, for Spain, 1.6 and 2.7 percent, and for Italy roughly 2.5 and 3.5 percent.

This substantial increase in bond rates changes the outlook for interest rate expenditure and debt sustainability, in particular as bond rates come closer to or exceed potential growth rates. The yield curve for August 16, 2021 formed the basis for a quantitative assessment of the likely path of government interest expenditures in the Annual Report of the German Council of Economic Experts that was published in November 2021. In the following, we update this assessment and evaluate further scenarios with potentially higher sovereign yield curves.

CHART 4

Government bond yield curves



Source: worldgovernmentbonds.com
© Sachverständigenrat | 22-074-03

[2] See, for example, https://www.wiwo.de/ezb-ratsmitglied-holzmann-fuer-zwei-zinserhoehungen-2022-erste-schon-im-sommer-/28095430.html, Wirtschaftswoche, February 23, 2021. Accessed, July 8, 2022.

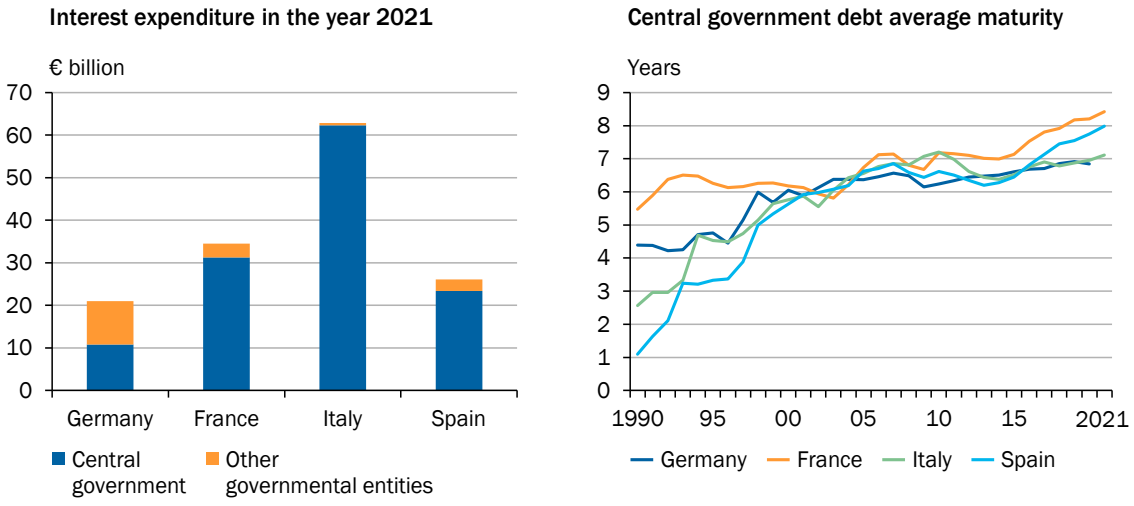
4. Factors cushioning or exacerbating the immediate impact of bond rates on governments' interest expenditure

4.1 Maturity structure

There are some factors that help cushion or exacerbate the impact of higher bond rates on the average cost of government financing. For example, by choosing the maturities of bonds, debt management can influence the interest to be paid as well as its sensitivity to changes in bond rates. Bonds with shorter maturity come with lower interest rates but they bring greater exposure to interest rate changes with them. In recent years, governments have taken advantage of historically low interest rates to issue longer-dated bonds. As a result, the average maturity of government bonds has increased significantly (Nöh, 2019) (Chart 5, right panel). In Germany and Italy, it is about 7 years, in Spain and France close to 8 years and above, respectively. The increase in average maturity implies that interest expenditure has become less susceptible to short-term changes in interest rates. Furthermore, there are still a good number of older bonds that were issued during the euro area debt crisis and before rates declined substantially. As these bonds expire, the debt can still be rolled over at substantially lower rates. Furthermore, in recent years many 30-year and, in the case of France, Italy and Spain, sometimes up to 50-year bonds were issued and have locked in the very low interest rates over this period. Over time, as more bonds with low rates mature and new bonds with higher rates need to be issued, the average financing cost of governments may rise.

CHART 5

Interest expenditure by government level and maturity structure[1]



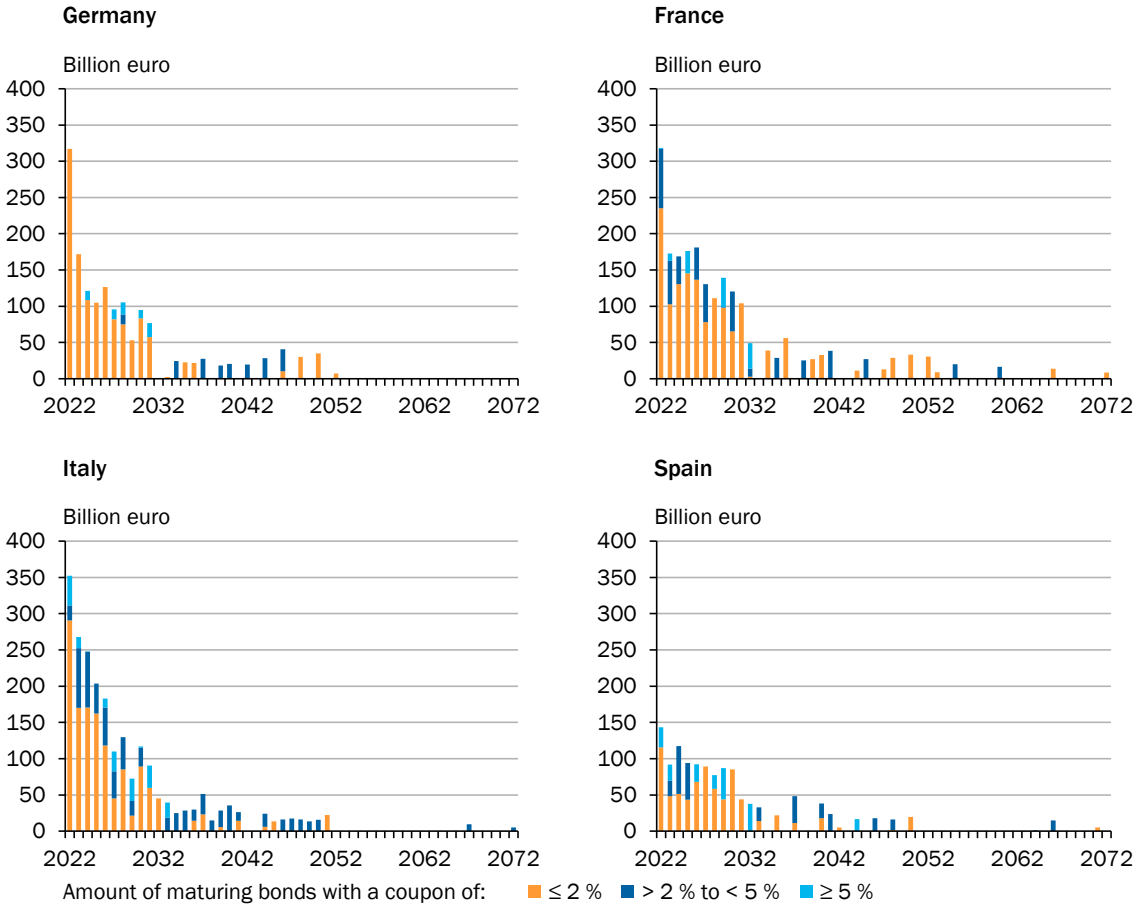
1 – Expenditure-oriented interest expenditures. In contrast to origination-oriented interest expenses, premiums and discounts, for example, are spread over the term of the bond.

Sources: Eurostat, National Debt Management Offices, own calculations

Chart 6 shows the volumes that each government will have to repay or replace with new bonds in the coming years. In addition, the chart shows the coupons (i.e. the interest rate) for the expiring bonds. This roll-over has been key in driving interest payments down in recent years, despite little or no reduction in debt ratios.

CHART 6

Redemption payments of central government debt at the end of 2021



Sources: Agence France Trésor, Deutsche Finanzagentur, Ministry of Economy and Finance Italy, Ministry of the Finance and Public Administrations Spain, own calculations

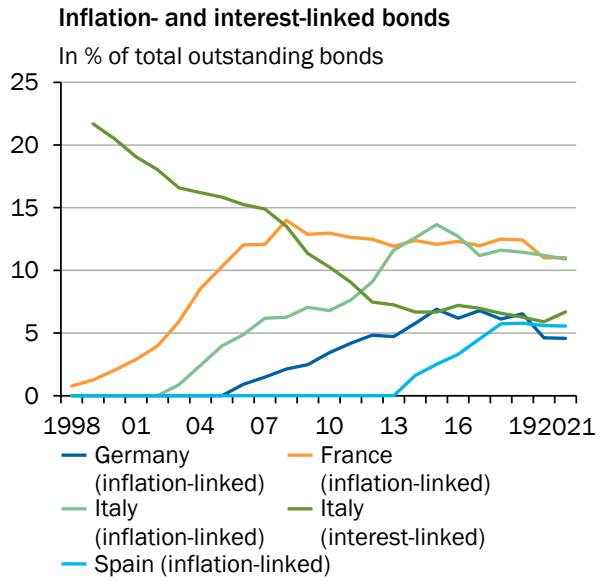
4.2 Indexed debt

A factor that makes government interest expenditure more sensitive to a rise in interest rates is the use of index-linked bonds, in particular inflation- and interest-indexed bonds. Over the past 20 years, more and more inflation-indexed bonds have been issued. They offer a guarantee of inflation protection to investors. In periods of sustained low inflation, this may be a cheaper source of financing but costs rise with inflation. In Italy and France, they account for over 10% of government debt, in Spain and Germany for about 5%. Interest-indexed bonds were mainly used by Italy, but account for an increasingly smaller share (Chart 7).

The cost of inflation-indexed bonds is the likely driver for the increase in interest expenditure in 2021 in Italy and France (Chart 2, right panel). According to the French statistical office Insee, in 2021 the reduction in interest rate costs due to issuance at low rates was more than offset by higher spending on inflation-indexed bonds (Insee, 2022a). The additional expenditure compared to the previous year due to inflation-indexed bonds amounts to 8.8 billion Euro in 2021 (Insee, 2022b). For Italy, there is

no transparent information on the composition of interest expenditure, but a significant part of the rise in interest rate expenditure is also likely to be due to inflation-indexed bonds. In 2022, these expenditures are expected to increase further due to higher inflation. The four German inflation-indexed bonds currently outstanding also feature inflation-indexed interest rates. However, a large part of the indexation concerns the final payment, which is higher when inflation rises. In order to prevent the final payment from leading to a cluster risk, corresponding reserves are formed in a special fund.

CHART 7



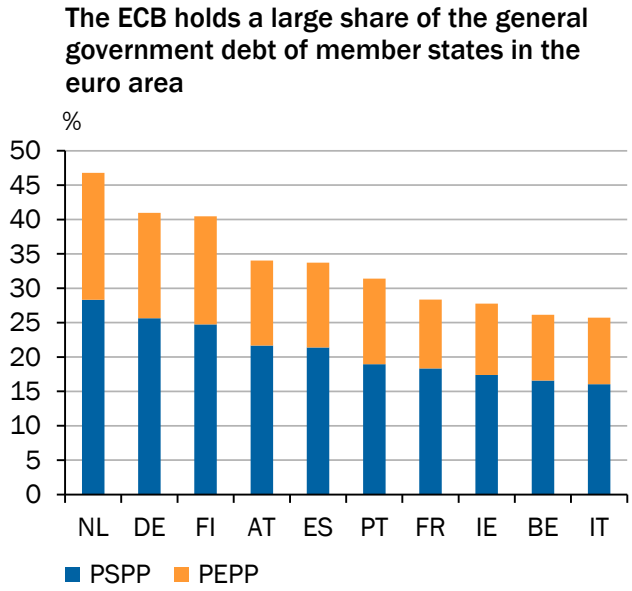
Source: National Debt Management Agencies
© Sachverständigenrat | 22-141-01

A high proportion of inflation-indexed bonds renders governments' interest expenditure vulnerable to high inflation. It also means that a monetary policy that brings inflation back to target reduces those costs. While a policy tightening raises interest expenditure on new bonds issued at higher rates, it also helps to lower future interest expenditure on inflation-indexed bonds to the extent it succeeds in curbing inflation.

4.3 Government bonds purchased by the Eurosystem

An important feature of the current fiscal situation in the euro area is the large share of public debt of member states on the balance sheet of the European Central Bank. This is the consequence of two large scale asset purchase programmes that have been ongoing for the past 8 years, the Public Sector Purchase Programme (PSPP) and the Pandemic Emergency Purchase Programme (PEPP). As a result, between more than 45% of the general government debt (Netherlands) and 25% (Italy) is on the ECB balance sheet (Chart 8). Net purchases under the PEPP have ended in March while net purchases under the PSPP have ended in June. Reinvestments of maturing bonds, however, will likely continue for years. Furthermore, the ECB has declared that it may deviate from the capital key in terms of reinvestments and thereby tilt its portfolio towards selected member states in order to reduce their government bond spreads.

CHART 8



Sources: ECB, Eurostat, own calculations
© Sachverständigenrat | 22-050-01

When starting the PSPP the Governing Council decided that purchases would largely be executed by the respective national bank on its own accounts. Thus, risks from holding the national government debt will be covered by the respective national central bank and they will receive interest paid on this debt. At the end of the year interest earned will be accounted for in the national central bank's profit and loss statement. Profits will be paid out to the member state finance ministry. As a result, member states such as Italy and Spain that pay positive interest rates on debt owned by the central bank ultimately recover the interest paid. Effectively, member states are funded at the cost of the central bank money issued when the central bank purchased their debt. In economic terms, the debt is financed by monetary means. This reduces the interest expenditure for highly indebted member states below the values calculated and reported in the next section. Of course, national central banks cannot decide on the volume of bond purchases, since ECB purchase programmes determine volumes.

Member states with negative bond rates such as Germany however are in the opposite situation. The negative interest rate reduces profits by the central bank. For example, in 2020 the Deutsche Bundesbank (2021b, p. 70) recorded losses on German government bonds of roughly €536 million. Added to this were interest payments for negative interest loans to banks of €1773 million. To ensure it was prepared for future risks, it transferred the remaining profit to provisions for risks rather than paying out to the Federal Ministry of Finance.

5. Scenarios going forward: Current yield curve versus higher bond rates

5.1 Assumptions

To assess the development of future interest expenditure quantitatively we need to make a range of assumptions regarding determining factors. We calculate different interest rate scenarios for central government bond debt for Germany, France, Italy and Spain. Central government bond debt reflects the largest part of general government debt in France, Italy and Spain. In Germany, by contrast, the share of government debt held by the central government is only about fifty percent. The remainder arises from downstream regional authorities and the social security funds (Chart 5, left panel).

We use a dataset of all outstanding bonds based on information from the respective governments and their debt management agencies. A large portion of the future interest expenditure results from bonds that have already been issued in the past. In most cases, the first interest payment is due one year after issuance. For short-term bonds of less than one year (Treasury discount paper), the price ("interest") is due immediately. The further we look into the future, the more bonds expire. In the course of time, the interest expenditure projection is increasingly determined by the assumptions we make regarding the type of new bonds and respective interest rates and less on bonds already known today.

Debt: we assume that central government debt ratios relative to GDP remain at 2021 levels till the end of the observation period in 2035. Of course, this means that as GDP grows, the total amount of debt increases along with it. In addition, the maturity structure from 2018 is assumed for future bond issues.

Nominal GDP: The development of nominal GDP is based on the IMF forecast published in the World Economic Outlook in April 2022. The trend is extrapolated to the end of the observation period.

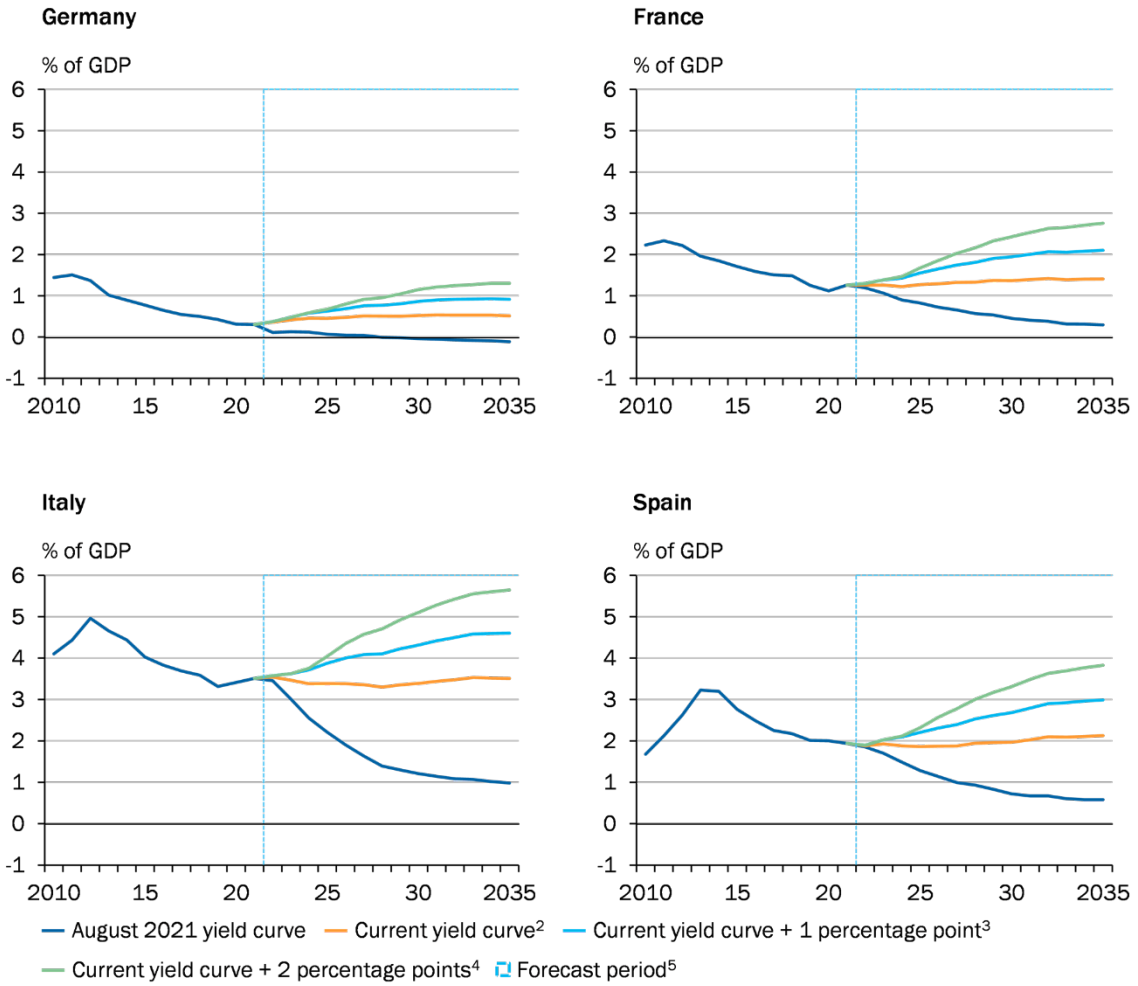
Bond rates: There are four interest rate scenarios shown in Chart 9 that are based on four different yield curves: (i) the yield curve from August 2021 (blue line), which replicates the baseline scenario from the annual report of the German Council of Economic Experts, (ii) the current yield curve dated from June 2, 2022 (orange line), (iii) a one percentage point upward shift of the June 2 yield curve at all maturities (light blue line), and (iv) a two percentage point upward shift of the June 2 yield curve at all maturities (green line). The upward shift in interest rates in scenario (iii) and (iv) is phased in over time in steps of 0.5% per year.

Neither, an unchanged yield curve nor an unchanged maturity structure are realistic. However, it is likely that if the yield curve changes, government debt management will adjust the maturity structure accordingly. Thus, the two effects may partially cancel each other out. For instance, if the yield curve steepened significantly, debt management could well reduce the issuance of long-term government bonds and partially substitute them with the issuance of short-term bonds.

A reduction in GDP-growth would raise the interest expenditure ratio if interest expenditure itself remains constant. However, our assumptions imply that the debt ratio will remain constant after 2021. Thus, with lower GDP-growth, fewer bonds are assumed to be issued and total interest expenditure declines. In a ceteris paribus analysis, the two effects cancel each other out. However, as economic growth falls, interest rates on government bonds could rise, such that the effect on the interest expenditure ratio would still be greater than zero.

CHART 9

Debt scenarios for central government interest expenditure[1]



1 – Assuming that the debt ratio from 2021 remains constant in all subsequent years. 2 – Yield curve from 02.06.2022. 3 – Current yield curve increases in 0.5 percentage point steps yearly from 2022 until 2023. 4 – Current yield curve increases in 0.5 percentage point steps yearly from 2022 until 2025. 5 – Scenario calculations are based on the outstanding bonds of the central government. From 2022 on, new issuances follow the maturity structure of the years 2019. For GDP, the IMF April 2022 forecast is used.

Sources: Agence France Trésor, Deutsche Finanzagentur, Eurostat, IMF, Ministry of Finance Italy, Ministry of Finance Spain, Refinitiv Datastream, own calculations

5.2 Results

The findings of the scenario analysis show the dependency of interest expenditure on future bond rate developments. With regard to Germany, it is important to keep in mind that central government debt is only about 50% of total government debt. Thus, total interest expenditure is about twice as high as is calculated in the scenarios discussed in the following.

August 16, 2021 yield curve: First, under the August 16, 2021 scenario for long-term interest rates, the ratio of interest expenditure to GDP would have continued to decline very quickly over the coming years. Even in Italy central government interest expenditure would have fallen below 2% of GDP within 3 years as shown in Chart 9 (lower left panel). In Germany it would have approached zero percent. For now, and possibly for a long while, this type of extremely benign outlook is history.

June 2, 2022 yield curve: The current yield curve would imply that under a constant debt-to-GDP ratio the interest expenditure relative to GDP would stabilize near the current level or a little above in all four member states under consideration. This is still a relatively benign scenario because the current level is relatively low by historical standards and has been borne without problems so far. Of course, the ratio is highest in Italy with a bit more than 3 percent of GDP in terms of central government interest expenditure. Yet, as long as action is taken to keep debt growing no faster than GDP it could be maintained under this scenario.

Parallel shift up by 1 percentage point: This scenario certainly describes a reasonably likely outcome. For example, a rise of the safe benchmark rate towards 1.5% as implied by the June 2 yield curve may not be sufficient to achieve long-run equilibrium. In the case of a parallel shift up by 1 percentage point, the interest expenditure to GDP ratio increases somewhat over time, in Germany towards 1% (for half of the total public debt) and in France towards 2%. These levels are not problematic. In Spain interest expenditure goes towards 3% of GDP and Italy towards 4.5% of GDP. This scenario should give reason to act soon in order to set the economy on a path where government expenditure grows more slowly than GDP and the debt-to-GDP ratio goes on a steady decline.

Parallel shift up by 2 percentage point: This scenario captures the possibility that the euro area economy might escape from the low real interest rate environment of the last decade. If potential growth does not rise along with the real interest rate, then government interest expenditure would rise substantially, in particular in highly indebted member states. This process requires a few years to take off. Yet, by 2030 the interest to GDP ratio in Italy would surpass 5% and in Spain 3% - levels last reached during the euro area debt crisis. These are signals of high medium-term sustainability risks due to an adverse movement of the long-run interest-growth differential. The recent April 2022 fiscal stability report of the European Commission raises similar concerns about fiscal sustainability in Italy, Spain and France on the basis of a simulation analysis.

6. Conclusion and policy implications

The extremely benign outlook that prevailed in past years with interest rates substantially below long-run growth is most likely history. Assuming that it would last for a long time, it had been argued that more deficit spending would then be needed to prevent debt-to-GDP ratios from declining too far. This outlook had also heavily influenced the discussion on the reform of the European Union's fiscal rules. Yet, independently of what the future will bring in the medium to longer run, the current developments show that the fiscal outlook can change rapidly and fiscal rules need to aim for an appropriate safety margin.

The projection of interest expenditures as a share of GDP on the basis of the June 2, 2022 yield curve still indicates a relatively benign scenario because the current level is relatively low by historical standards and has been borne without problems. Yet, the current conditions are only maintained as long as action is taken to keep debt growing no faster than GDP. Recent forecasts still anticipate a continuation of the recovery from the deep COVID recession. As a consequence, debt-to-GDP ratios are expected to decline in the near-term. However, substantial uncertainty remains regarding the further development of the Russia-Ukraine war and the energy crisis.

The scenario with a phased-in 1 percentage point upward shift from the June 2 yield curve provides a very relevant alternative outlook. As of June 23, yields have already increased further. Also, the long-run-equilibrium of nominal interest rates may well be higher than the 1.5% implied by the German yield curve. Clearly, there is good reason for timely action in order to set the economy on a path where government expenditure grows more slowly than GDP and the debt-to-GDP ratio goes on a steady

decline. This is also what needs to be done to stay within the EU's fiscal rules once the general escape clause is lifted end of 2023. Of course, member states such as Italy, France and Spain could have made better use of the period of very low interest rates and sustained growth from 2015 to 2019 to improve the sustainability of government finances. Going forward, it is even more important to take advantage of recovery and growth periods in order to bring debt-to-GDP ratios on a declining trajectory.

The scenario with a phased-in 2% shift shows that it is quite possible that interest expenditure to GDP ratios could breach levels last reached during the euro area debt crisis as soon as 2030. This scenario implies an adverse movement of the interest-growth differential as the path for nominal GDP remains as projected by the April 2022 IMF forecast.

In sum, member states should pursue fiscal policies and structural reforms that set them on a path with steadily declining debt-to-GDP ratios. This holds in particular for those states that are highly indebted. A safety margin is needed to improve resilience of the euro area economy in times of crisis.

There are a number factors that support this objective. EU fiscal rules provide a framework for improving sustainability once the currently applied escape clause expires. At this point, the EU is planning to reform the rules. Such a reform should aim to strengthen the rules and improve compliance. With the NGEU package the European Union has already provided support for public investment, in particular, in countries that have been heavily affected by the COVID crisis. Italy, for example, is a major net recipient. These investments are expected to be accompanied by structural reforms that strengthen potential growth and thereby also debt sustainability. Furthermore, a substantial amount of public debt is held by the national central banks whose profits are returned to national governments. This lowers the actual interest expenditure for highly indebted member states that have paid significant positive bond rates in past years.

Finally, the euro area already has effective mechanisms in place to avoid a debt crisis. Highly indebted countries can make use of loans from the European Stability Mechanism (ESM). The ESM already offered credit lines with minimal conditions to Member States during the COVID crisis that were not made use of. In the case of an ESM support package that is accompanied by conditions which enhance fiscal sustainability, the ECB can also engage in large-scale selective purchases in form of so-called Outright Monetary Transactions (OMT) – a programme that has already undergone judicial review.

References

Blanchard, O., Á. Leandro und J. Zettelmeyer (2020), Revisiting the EU fiscal framework in an era of low interest rates, 9. March, https://ec.europa.eu/info/sites/default/files/s3-p_blanchard_et_al_0.pdf.

German Council of Economic Experts (2021), "Shaping the transformation: Education, digitalization and sustainability", Annual Report 2021/22, Wiesbaden.

Insee (2022a), "In 2021, the public deficit reached 6.5% of GDP, the notified debt 112.9% of GDP", https://www.insee.fr/en/statistiques/6325548#consulter.

Insee (2022b), "Comptes nationaux des administrations publiques Année 2021", https://www.insee.fr/fr/statistiques/documentation/Compl%C3%A9ments%20comptes%20APU%202021_corr.pdf.

Krippner, L. (2013), Measuring the stance of monetary policy in zero lower bound environments, Economics Letters 118 (1), 135–138.

Krippner, L. (2015), Zero lower bound term structure modeling: A practitioner's guide, Palgrave Macmillan, Basingstoke.

Nöh, L. (2019), "Increasing public debt and the role of central bank independence for debt maturities", European Economic Review 119, 179–198.

Wu, J.C. und F.D. Xia (2017), Time-varying lower bound of interest rates in Europe, Chicago Booth Research Paper 17–06, University of Chicago Booth School of Business.

Wu, J.C. und F.D. Xia (2020), Negative interest rate policy and the yield curve, Journal of Applied Econometrics 35 (6), 653–672.

IMFS WORKING PAPER SERIES

Recent Issues

170 / 2022	Jens Weidmann	A new age of uncertainty? Implications for monetary policy
169 / 2022	Moritz Grebe Peter Tillmann	Household Expectations and Dissent Among Policymakers
168 / 2022	Lena Dräger Michael J. Lamla Damjan Pfajfar	How to Limit the Spillover from an Inflation Surge to Inflation Expectations?
167 / 2022	Gerhard Rösl Franz Seitz	On the Stabilizing Role of Cash for Societies
166 / 2022	Eva Berger Sylwia Bialek Niklas Garnadt Veronika Grimm Lars Other Leonard Salzmann Monika Schnitzer Achim Truger Volker Wieland	A potential sudden stop of energy imports from Russia: Effects on energy security and economic output in Germany and the EU
165 / 2022	Michael D. Bauer Eric T. Swansson	A Reassessment of Monetary Policy Surprises and High-Frequency Identification
164 / 2021	Thomas Jost Karl-Heinz Tödter	Reducing sovereign debt levels in the post-Covid Eurozone with a simple deficit rule
163 / 2021	Michael D. Bauer Mikhail Chernov	Interest Rate Skewness and Biased Beliefs
162 / 2021	Magnus Reif Mewael F. Tesfaselassie Maik Wolters	Technological Growth and Hours in the Long Run: Theory and Evidence
161 / 2021	Michael Haliassos Thomas Jansson Yigitcan Karabulut	Wealth Inequality: Opportunity or Unfairness?
160 / 2021	Natascha Hinterlang Josef Hollmayr	Classification of Monetary and Fiscal Dominance Regimes using Machine Learning Techniques
159 / 2021	Volker Wieland	The decline in euro area inflation and the choice of policy strategy

158 / 2021	Matthew Agarwala Matt Burke Patrycja Klusak Moritz Kraemer Kamiar Mohaddes	Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness
157 / 2021	Yvan Lengwiler Athanasios Orphanides	Collateral Framework:Liquidity Premia and Multiple Equilibria
156 / 2021	Gregor Boehl Cars Hommes	Rational vs. Irrational Beliefs in a Complex World
155 / 2021	Michael D. Bauer Eric T. Swanson	The Fed's Response to Economic News Explains the "Fed Information Effect"
154 / 2021	Alexander Meyer-Gohde	On the Accuracy of Linear DSGE Solution Methods and the Consequences for Log-Normal Asset Pricing
153 / 2021	Gregor Boehl Philipp Lieberknecht	The Hockey Stick Phillips Curve and the Zero Lower Bound
152 / 2021	Lazar Milivojevic Balint Tatar	Fixed exchange rate - a friend or foe of labor cost adjustments?
151 / 2021	Thomas Jost Franz Seitz	Designing a European Monetary Fund: What role for the IMF?
150 / 2021	Gerhard Rösl Franz Seitz	Cash and Crises: No surprises by the virus
149 / 2021	Wolfgang Lechthaler Mewael F. Tesfaselassie	Endogenous Growth, Skill Obsolescence and Output Hysteresis in a New Keynesian Model with Unemployment
148 / 2021	Gregor Boehl	Efficient Solution and Computation of Models with Occasionally Binding Constraints
147 / 2021	Brian Fabo Martina Jančoková Elisabeth Kempf Luboš Pástor	Fifty Shades of QE: Conflicts of Interest in Economic Research
146 / 2021	Robert C.M. Beyer Lazar Milivojevic	Dynamics and Synchronization of Global Equilibrium Interest Rates
145 / 2020	Lars P. Feld Volker Wieland	The German Federal Constitutional Court Ruling and the European Central Bank's Strategy
144 / 2020	Mátyás Farkas Balint Tatar	Bayesian Estimation of DSGE Models with Hamiltonian Monte Carlo
143 / 2020	Gregor Boehl Felix Strobel	U.S. Business Cycle Dynamics at the Zero Lower Bound