INTERNATIONAL MONETARY FUND

IMF Country Report No. 22/229

GERMANY

July 2022

2022 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR GERMANY

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2022 Article IV consultation with Germany, the following documents have been released and are included in this package:

- A **Press Release** summarizing the views of the Executive Board as expressed during its July 18, 2022 consideration of the staff report that concluded the Article IV consultation with Germany.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on July 18, 2022, following discussions that ended on May 20, 2022, with the officials of Germany on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on June 30, 2022.
- An **Informational Annex** prepared by the IMF staff.
- A **Staff Supplement** updating information on recent developments.
- A **Statement by the Executive Director** for Germany.

The documents listed below have been or will be separately released.

Selected Issues

The IMF's transparency policy allows for the deletion of market-sensitive information and premature disclosure of the authorities' policy intentions in published staff reports and other documents.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org
Price: $18.00 per printed copy

International Monetary Fund
Washington, D.C.

© 2022 International Monetary Fund

PRESS RELEASE

PR22/268

IMF Executive Board Concludes 2022 Article IV Consultation with Germany

FOR IMMEDIATE RELEASE

Washington, DC – July 18, 2022: The Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Germany. This also included a discussion of the findings of the Financial Sector Assessment Program (FSAP) exercise for Germany.[2] The publication of the Staff Report and Financial System Stability Assessment (FSSA) bundles will be followed by publication of the FSAP Technical Notes underpinning the FSSA.

Before Russia's invasion of Ukraine, economic activity in Germany was firming up. Auto production and services activity were picking up by late 2021 and early 2022 on easing semiconductor shortages and relaxation of pandemic restrictions. The war in Ukraine has created new headwinds, including a curtailment of gas flows from Russia, higher energy prices, scarcity of key intermediate inputs, weaker external demand and confidence, and tighter financial conditions. Growth is expected at 1.2 percent in 2022 and 0.8 percent in 2023, down from 2.9 percent in 2021. Surging energy costs are reducing the current account surplus and feeding into to broad-based price pressures, with inflation expected to average 7.7 percent in 2022 and 4.8 percent in 2023.

Uncertainty is very high, with risks to the baseline growth forecast skewed downward and risks to the inflation forecast skewed upward. The greatest threat is a persistent shut-off of the remaining Russian gas exports to Europe, which could cause sizable reductions in German economic activity and increases in inflation. A prolonged war and resurging COVID-19 infections could also intensify supply chain disruptions. Persistently-high inflation and fears of a de-anchoring of inflation expectations can prompt major central banks to tighten policies faster than currently expected, potentially triggering a sharp tightening in financial conditions and corrections in asset prices. Over the medium term, a fragmentation of global economic supply chains related to the war could compound longstanding challenges related to decarbonization, population aging, infrastructure gaps, and digitalization.

In response to surging energy prices, the government is expanding income support for vulnerable households, cutting fuel taxes, and providing liquidity support to firms. However, the fiscal stance in 2022 is expected to be broadly neutral as COVID-19 relief measures are phased out. The debt brake rule is set to resume in 2023. To finance increased climate- and defense-related spending, the government has created

---

[1]Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

[2]Under the FSAP, the IMF assesses the stability of the financial system, and not that of individual institutions. The FSAP assists in identifying key sources of systemic risk and suggests policies to help enhance resilience to shocks and contagion. In member countries with financial sectors deemed by the IMF to be systemically important, it is a mandatory part of Article IV surveillance, and in the case of Germany it is supposed to take place every five years. The last FSAP exercise took place in 2016.

extrabudgetary funds that are not bound by the debt brake rule. To secure energy supplies, the government is diversifying away from Russian oil, coal, and gas, establishing facilities to re-gasify liquified natural gas, and requiring operators to fill gas storage tanks before the winter.

The war has so far had limited effects on the financial sector. Overall, banks remain largely resilient to solvency and liquidity shocks. Since the last FSAP, the authorities have strengthened microprudential frameworks for banking and insurance, resolution planning, and crisis preparedness. However, low bank profitability remains a source of vulnerability, and stress tests identify shortfalls of capital and US dollar liquidity at some individual banks under adverse scenarios. Macroprudential institutions are well developed, and the authorities have tightened macroprudential policy this year. Nevertheless, house price valuations remain stretched and lending standards appear loose in certain segments.

Executive Board Assessment[3]

Executive Directors agreed with the thrust of the staff appraisal. They commended the authorities for their timely and well-designed response to mitigate the spillovers from Russia's war against Ukraine, including proactively looking at contingency plans in the event of gas supply disruptions. Directors noted that growth is likely to be muted in the coming quarters, and that risks associated with a potential further disruption of natural gas supplies, a gloomy global outlook, and supply bottlenecks loom large. Inflation is also likely to remain elevated in the next two years, mostly reflecting the pass-through of recent increases in natural gas prices.

Directors agreed that the fiscal stance is appropriate for 2022, and the authorities' plan to return to the debt brake rule in 2023 by ending COVID-19 and energy-related relief measures should be manageable. Given the high uncertainty, Directors called for maintaining flexibility and recalibrating near-term fiscal plans as needed if downside risks materialize.

Directors encouraged the authorities to continue to cushion the impact of any further sizable increases in energy prices via targeted and time-bound measures for vulnerable households, and generally recommended allowing the higher international gas prices to pass through to end-users to incentivize energy savings and facilitate the build-up of gas inventories. A few Directors saw merit in the authorities' temporary subsidies for firm's energy bills. Directors recommended allowing automatic stabilizers to operate fully and if needed consider activating the escape clause of the debt break rule for another year if downside risks materialize. Directors supported the authorities' efforts to ensure energy security, including their plan to introduce financial incentives to encourage further voluntary gas conservation, and close cooperation with other EU countries in planning for potential gas shortages.

Directors welcomed the authorities' ambitious decarbonization plans and their digitalization and transportation infrastructure push. They encouraged the authorities to continue investing in Germany's growth potential and resilience, through further enhancing energy security, digitalization, innovation, labor supply and training, and social

---

[3] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.IMF.org/external/np/sec/misc/qualifiers.htm.

protection. Improving economic opportunities for women and migrants will also be important. Boosting green public investment is vital to tackle network externalities and crowd-in private investments in clean technologies, which can also help lower Germany's large external imbalances. Directors urged the authorities to overcome the longstanding obstacles to ramping up public investment rapidly and decisively. To maintain the credibility of Germany's fiscal framework, Directors generally stressed that structural increases in spending for strategic priorities should be integrated into the core budget over time.

Directors welcomed that the financial sector has weathered the challenging circumstances well. They noted the generally positive assessment of the resilience of the German banking system in the FSAP and broadly supported the report's recommendations. Given pockets of vulnerability and structurally low bank profitability, Directors recommended continued close monitoring of the sensitivity of banks' balance sheets to evolving risks and strengthening banks' capital buffers as needed. Directors appreciated the progress in enhancing the microprudential frameworks for banks and the insurance sector and underscored the need to further strengthen BaFin's operational independence and certain aspects of the overall supervisory framework. Some Directors suggested reviewing the design of the fragmented deposit insurance system. Directors welcomed Germany's recent macroprudential policy tightening and underscored the need to add income-based measures to the macroprudential toolkit and expedite the closure of data gaps. Some Directors also encouraged activation of borrower-based instruments if appropriate. Continued strengthening of the AML/CFT framework will also be important.

It is expected that the next Article IV consultation with Germany will be held on the standard 12-month cycle.

Germany: Selected Economic Indicators, 2020–23

	2020	2021	*Projections* 2022	2023
Output		(unadjusted)		
Real GDP growth (%)	-4.6	2.9	1.2	0.8
Total domestic demand growth (%)	-4.0	2.3	2.2	0.7
Output gap (% of potential GDP)	-3.6	-1.6	-1.2	-1.2
Employment				
Unemployment rate (%, ILO)	3.8	3.6	3.1	3.4
Employment growth (%)	-1.0	-0.7	1.6	-0.2
Prices				
Inflation (%, headline, period avg.)	0.4	3.2	7.7	4.8
Inflation (%, core, period avg.)	0.8	2.3	4.0	3.9
General Government Finances				
Fiscal balance (% of GDP)	-4.3	-3.7	-3.2	-1.8
Revenue (% of GDP)	46.5	47.9	47.1	46.9
Expenditure (% of GDP)	50.8	51.6	50.2	48.7
Public debt (% of GDP)	68.7	70.2	70.9	68.9
Money and Credit				
Broad money (M3) (end of year, % change) 1/	8.2	5.6		
Credit to private sector (% change)	4.9	5.4		
10-year government bond yield (%)	-0.5	-0.3		
Balance of Payments				
Current account balance (% of GDP)	7.1	7.4	5.7	6.2
Trade balance (% of GDP)	5.7	5.4	3.9	4.4
Exports of goods (% of GDP)	35.2	38.3	37.5	37.6
Volume (% change)	-9.0	10.0	1.9	4.2
Imports of goods (% of GDP)	29.6	32.9	33.7	33.0
Volume (% change)	-5.3	8.0	1.5	3.4
FDI balance (% of GDP)	-0.1	2.9	1.6	1.5
Reserves minus gold (billions of US$)	64.0	99.2		
External Debt (% of GDP)	165.1	171.8		
Exchange Rate				
REER (% change)	1.3	0.9		
NEER (% change)	2.4	0.8		
Real effective rate (2005=100) 2/	96.7	97.6		
Nominal effective rate (2005=100) 3/	103.8	104.7		

Sources: Deutsche Bundesbank, Eurostat, Federal Statistical Office, Haver Analytics, and IMF staff calculations.
1/ Reflects Germany's contribution to M3 of the euro area.
2/ Real effective exchange rate, CPI based, all countries.
3/ Nominal effective exchange rate, all countries.

INTERNATIONAL MONETARY FUND

GERMANY

STAFF REPORT FOR THE 2022 ARTICLE IV CONSULTATION

June 30, 2022

KEY ISSUES

Context. The fallout from the war in Ukraine has hit the German economy before it regained its pre-pandemic GDP level, with effects running through higher energy costs, the possibility of gas shortages and broader supply disruptions, and weaker confidence. Consumer price inflation has spiked above 8 percent, largely because of energy price increases, but inflation pressures are becoming more widespread.

Outlook and risks. Growth is projected to slow to about 1.5 percent in 2022, mostly reflecting significant headwinds from the war. The recovery should pick up modestly in 2023 if energy supplies are secured, supply bottlenecks dissipate, and disruptive COVID-19 infection waves are avoided. Risks are to the downside, especially from a potential further cut-off of Russia's natural gas exports.

Policies. The authorities' policy response to the pandemic and war spillovers has been timely and generally well-designed. Staff's main policy recommendations are as follows:

- **Fiscal policy.** The broadly neutral fiscal stance in 2022 is appropriate under the baseline forecast. The government's plan to tighten policy and return to the debt brake rule in 2023 should be manageable under the baseline assumptions of waning drags from the pandemic and energy prices. If downside risks materialize, however, the government should allow automatic stabilizers to operate fully and continue to flexibly provide targeted support, and if needed consider activating the escape clause of the debt break rule for another year. Looking ahead, Germany needs to invest in its own productive potential and resiliency through enhancing energy security, digitalization, life-long learning, innovation, labor supply, and social protection. Higher investment can also help lower Germany's large external imbalances. Structural increases in spending for strategic priorities should be integrated into the core budget over time, which may require a review of the fiscal framework, including expenditure and revenue policies, and the fiscal rule.

- **Contingency planning for a gas shutoff scenario.** Staff's analysis suggests that a full and permanent Europe-wide shutoff could lower annual German GDP by 1–3 percent in 2022, 2023, and 2024, which would not be recovered later, and could raise inflation by about 2 percentage points on average. A cold winter, economic frictions, and inefficient rationing could increase these losses. Cooperation with

other EU countries to prepare contingency plans for possible gas shortages is key. The authorities should clarify infrastructure needs and potential rationing plans in various cut-off scenarios, to encourage further preparation and investment. Most of the existing measures to help vulnerable households and firms cope with spiking energy costs and potential gas shortages are generally well-designed. However, tax cuts on fossil fuels and subsidies for firms' energy bills reduce incentives to conserve energy at a critical time, and should be phased out as planned; other support facilities for firms need clear termination dates.

- **Public investment and structural reforms.** Germany needs to boost public investment in energy security and decarbonization; digitalization; and transportation infrastructure. The authorities should rapidly and decisively overcome the long-standing obstacles to ramping up public investment—burdensome administrative procedures, legal hurdles, limited planning capacity, labor and material shortages, and imperfect coordination across different levels of government. Structural reforms should focus on boosting labor supply, skills, and business dynamism.

- **Financial stability.** The 2022 FSAP assesses the German banking sector generally resilient to shocks, but points to pockets of vulnerability and downside risks that require close monitoring and call for some additional buffers for less capitalized banks. Given continued rapid house price gains, the recently activated capital-based measures should be supplemented with borrower-based measures, such as supervisory guidance on a loan-to-value cap. The authorities are also urged to accelerate the closure of data gaps, strengthen guidance on lending standards and add income-based measures to their macroprudential toolkit. The authorities should also consolidate the existing mandatory deposit insurance schemes into a single scheme with a government liquidity backstop.

Approved By
Laura Papi (EUR) and Kevin Fletcher (SPR)

The mission took place in a virtual format during May 9–13, 2022, and in Berlin during the following week. The team comprised Ms. Celasun (head), Mmes. Lan, Mineshima, and Zhou and Mr. Sher (all EUR), with Mr. Ananthakrishnan (MCM, head of the FSAP team) joining a subset of meetings including the concluding meeting. The mission met with officials from the Finance, Economy and Climate Action, Labor, Housing, Transport and Digital Ministries, the Bundesbank, BaFin, the Federal Employment Agency, the ECB, and EIOPA, as well as representatives from the banking sector, auto industry, trade unions, employers' association, chamber of commerce, real estate sector, academia, credit rating agencies, and think tanks. Members of the German ED office joined the meetings. Mmes. Evio and Chen (both EUR) assisted in preparing the report.

CONTENTS

CONTEXT AND RECENT DEVELOPMENTS ____ 5

OUTLOOK AND RISKS ____ 9

POLICY DISCUSSIONS ____ 14

A. Cushioning the Impact of Spiking Energy Prices and Supply Disruptions, and Enhancing Energy Security ____ 14

B. Mitigating Climate Change ____ 17

C. Ensuring a Dynamic Labor Market ____ 18

D. Putting it all together—Fiscal Policy ____ 21

E. Ensuring Financial Sector Stability ____ 25

F. Governance and Transparency ____ 26

STAFF APPRAISAL ____ 28

BOX

1. Digitalization of the German Economy—Status Quo ____ 22

FIGURES

1. Real Activity ____ 31
2. Prices and Labor Market ____ 32
3. Fiscal Developments and Outlook ____ 33
4. Balance of Payments ____ 34
5. Credit Conditions and Asset Prices ____ 35
6. Housing Market Developments ____ 36
7. Recent Developments in the German Banking Sector ____ 37

TABLES

1. Selected Economic Indicators, 2019–23 ____ 38
2. General Government Operations, 2018–27 ____ 40
3. Medium Term Projections, 2018–27 ____ 41
4. Balance of Payments, 2018–27 ____ 42
5. International Investment Position, 2013–21 ____ 42
6. Core Financial Soundness Indicators for Banks, 2016–21 ____ 44
7. Additional Financial Soundness Indicators, 2016–21 ____ 45

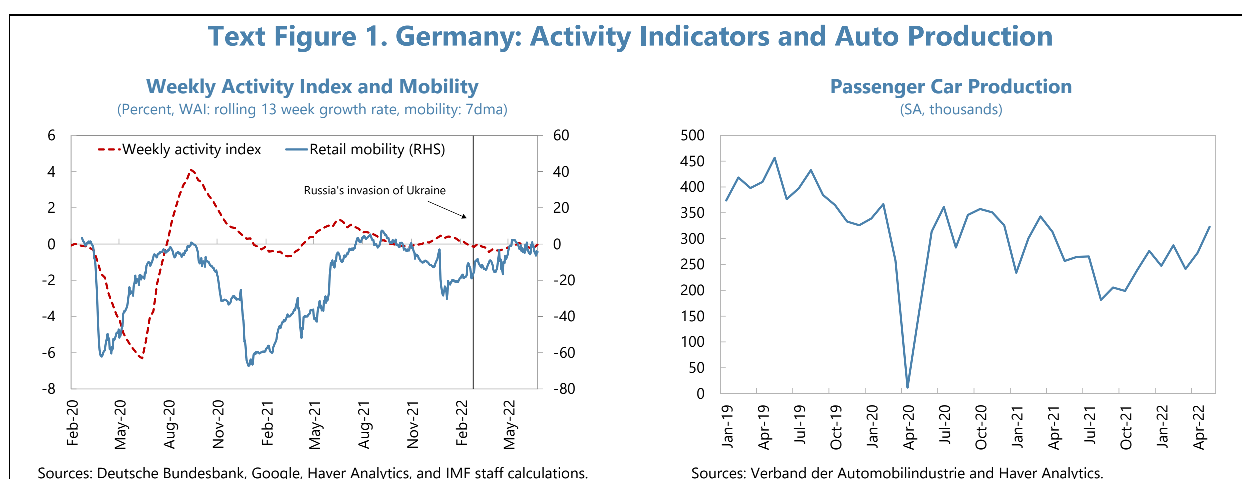
ANNEXES

I. External Sector Assessment ____ 47
II. Selected Sanctions on Russia and Belarus ____ 48
III. Risk Assessment Matrix ____ 49
IV. Measures Taken to Mitigate the Impact of Higher Energy Prices ____ 52
V. Measures Taken to Secure Energy Supply ____ 54
VI. Germany's Key Climate Goals and Measures ____ 56
VII. Governance and Transparency ____ 58
VIII. Public Debt Sustainability Analysis ____ 60
IX. Authorities' Response to Past IMF Policy Recommendations ____ 68

CONTEXT AND RECENT DEVELOPMENTS

1. **Before the war in Ukraine, activity was firming up.** The German economy lost steam in the second half of 2021, with global supply bottlenecks hampering manufacturing production and surging COVID-19 infections holding back service spending. By the end of 2021 and in early 2022, easing semiconductor shortages allowed auto production to pick up, while reduced caution and the elimination of almost all pandemic restrictions helped services PMIs and consumer confidence to regain some strength. Nonetheless, output remained 1.1 percent below its pre-pandemic level in the last quarter of 2021.

Text Figure 1. Germany: Activity Indicators and Auto Production



Sources: Deutsche Bundesbank, Google, Haver Analytics, and IMF staff calculations.

Sources: Verband der Automobilindustrie and Haver Analytics.

2. **The fallout from the war in Ukraine is posing new headwinds to the German economy.** Near-term impacts run through a surge in energy prices and associated losses in purchasing power and profits, shortages of a range of products and commodities used in manufacturing, weaker external demand and confidence, and uncertainty surrounding the continuation of natural gas flows from Russia. At end-April 2022, 35 percent of Germany's natural gas was pipelined from Russia, down from 55 percent in 2021. In mid-June, Russian supplies through Nord Stream 1 and the Czech Republic were cut by about two-thirds (a decline of about a quarter to a third of Germany's natural gas imports). Natural gas accounts for 9 percent of economy-wide energy consumption. Authorities and staff expect that in the event of a complete stoppage, imports from Russia cannot be fully replaced until 2024.

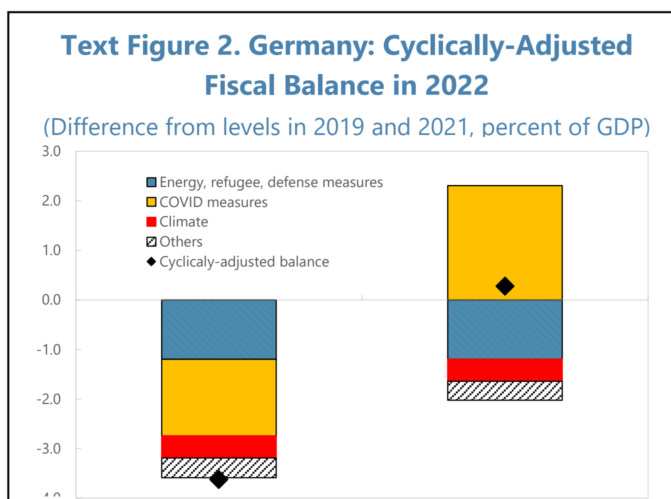
3. **Russia's invasion of Ukraine caused significant changes to some German policies.** In December 2021, Germany swore in a new coalition government comprising the Social Democrats, Greens, and Free Democrats. The Coalition Treaty displays broad continuity with the agenda of the previous government while seeking to enhance green investments and digitalization, introduce a higher minimum wage, and promote skilled immigration. Following Russia's invasion of Ukraine, Germany suspended its approval of the Nord Stream 2 gas pipeline, announced its intention to wean itself of energy imports from Russia by 2024, and to increase defense spending to exceed NATO's benchmark. In line with EU-wide agreements, Germany has imposed sanctions on Russia, including on Russia's central bank and selected banks, and restricted imports of Russian coal and

oil.[1] The need to bolster energy security is strengthening the determination to exit from fossil fuels, but the reliance on coal is increasing in the short run as natural gas becomes scarce.

4. Fiscal policy is geared towards supporting the economy and attaining strategic objectives. Key COVID-19 relief measures, such as the expansion of the short-time work benefits program (Kurzarbeit) and grants to firms, were repeatedly extended over the course of 2021, but the headline deficit shrank to 3.7 percent of GDP (from 4.3 percent in 2020) as revenues rebounded and the demand for COVID-19 relief measures declined.[2] Despite the sizable overall deficit and additional borrowing of about 1.7 percent of GDP to boost the "Energy and Climate Fund," the public debt-to-GDP ratio increased by a modest 1.5 percentage points in 2021 given a favorable interest rate-growth differential.[3] A broadly neutral fiscal stance is expected in 2022, with 1.2 percent of GDP in new spending to cushion higher energy prices, increase defense spending, and support refugees, together with higher climate-related spending, broadly offsetting the impact of the phase-out of most COVID-19 relief measures (Figure 2).[4] To avoid a conflict between the announced hike in defense spending by about ½ percentage point of GDP per year and the constitutional debt brake that is scheduled to come back into effect in 2023, the government also announced additional borrowing of around €100 billion (2.6 percent of GDP) to be injected into a newly created Special Defense Fund. Public debt in 2022, however, is projected at 70.4 percent of GDP, broadly unchanged from 2021 reflecting once again a favorable interest-growth differential.

Text Figure 2. Germany: Cyclically-Adjusted Fiscal Balance in 2022

(Difference from levels in 2019 and 2021, percent of GDP)



5. The financial sector has weathered the pandemic well, and the impact of the war has so far been limited. High pre-crisis capital and liquidity buffers, strong public and private sector balance sheets, and sizable policy support for firms and workers helped German financial institutions

[1] The list of EU sanctions adopted following Russia's invasion of Ukraine is available on the European Commission website. An analysis of the global spillovers of sanctions can be found in the April 2022 World Economic Outlook. In line with the recently revised Institutional View on the liberalization and management of capital flows, some of the sanctions imposed on Russia can be capital flow management measures (CFMs) imposed for national and international security reasons.

[2] The general government budget released in April 2021 had envisaged a deficit of 9 percent of GDP.

[3] Unspent funds appropriated for COVID-19 measures were repurposed and injected into the Energy and Climate Fund in December 2021. Disbursements from the special fund are recorded as part of general government spending in accordance with the European System of National and Regional Accounts 2010 standards, but the associated borrowing (recorded as part of federal public debt) is not bound by the national debt-brake rule.

[4] At least 780,000 Ukrainians fleeing the war had registered as refugees in Germany by early-June.

weather the pandemic. Solvency, liquidity, and non-performing loans were stable in 2021, with regulatory capital of 18.8 percent of risk-weighted assets, a liquidity coverage ratio of about 160 percent, and non-performing loans of 1.5 percent of gross loans. Germany's immediate financial risks from the war in Ukraine appear manageable, given small financial links with Russia and Ukraine.[5] Nevertheless, some individual financial institutions could have material exposures to Russia, Ukraine, or other hard-hit banks in Europe. Moreover, non-performing loans could rise, and property prices could fall if spillovers from the war intensify, while high inflation is likely to affect operating costs, interest margins and insurance claims. The war has also raised malicious cyber activity, with recent attacks affecting German wind turbines and oil pipelines. Financial conditions have tightened in 2022, with 10-year Bund yields rising 180 basis points and DAX stock prices falling 18 percent.

6. Labor markets are tight, reflecting demographic change and policy support. As of April 2022, the unemployment rate (3.0 percent based on the ILO/European definition) had fallen below its pre-pandemic lows, and the ratio of vacancies to the unemployed reached 60 percent—10 percentage points higher than in 2019. These tight conditions partly stem from weaker labor force participation relative to 2019, as the trend increase in participation rates—which used to offset the ongoing drag from population aging in the pre-pandemic years—has come to a halt (Text Figure 8, top right). That said, the labor market continues to benefit from policy support; with the number of workers on Kurzarbeit in March 2022—about 1¼ percent of the workforce—four times larger than the maximum level in 2019.

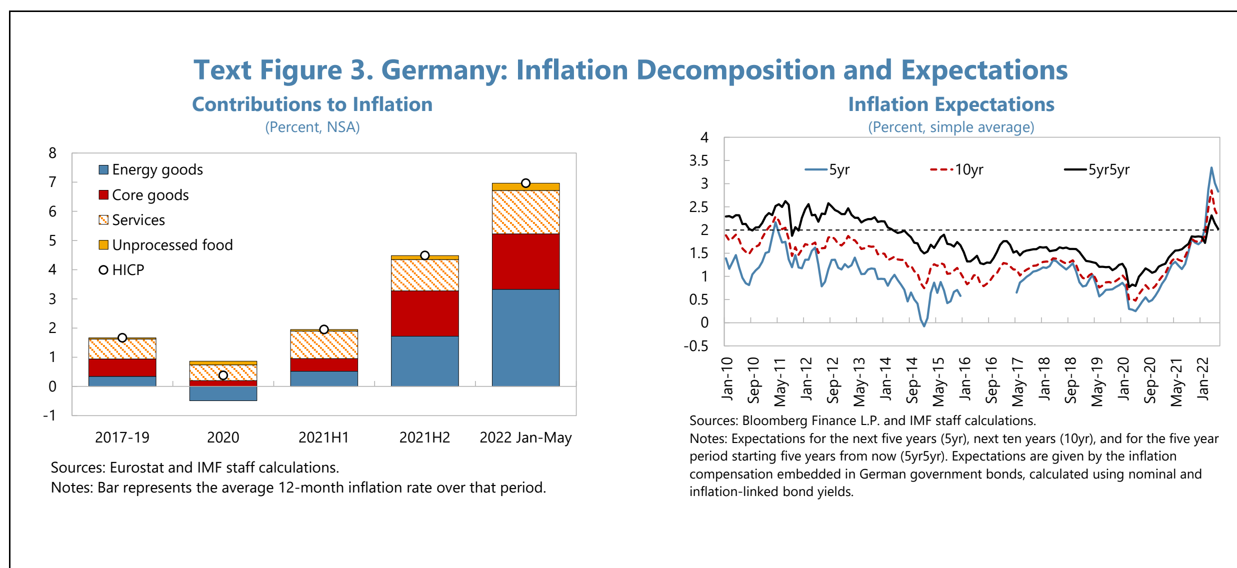
7. Rising energy costs and supply bottlenecks have pushed inflation to multi-decade highs. Harmonized consumer price (HICP) inflation reached 8.7 percent in May. Energy goods contributed about ⅗ of the increase in HICP inflation this year relative to the pre-pandemic years (2017–19). Non-energy goods accounted for ¼ of the increase, and services for the rest (Text Figure 3), with the former reflecting ongoing supply constraints in manufacturing and passthrough from energy inflation.[6] Higher services inflation appears to reflect catch-up with forgone price adjustments during the pandemic, and more recently, passthrough from the surge in goods price inflation—a sign that price pressures are becoming more widespread. Medium-term inflation expectations have been fluctuating but remain around 2 percent (Text Figure 3). Wage inflation has been more muted; wages per hour—both with and without one-off payments such as bonuses—have increased about 6.5 percent between 2020Q1 and 2022Q1, slightly higher than the 5.8 percent increase in the GDP deflator but lower than the 7.7 percent rise in the CPI over the same period.[7] Negotiated wages (excluding one-off payments and ancillary benefits) have risen by 1.6

[5] For example, German banks' cross-border claims and liabilities towards Russia are each about 1.5 percent of their capital and Germany's portfolio investment claims on Russia are 0.12 percent of GDP.

[6] Celasun et al. (2022) estimate that supply shocks contributed about half the increase in manufacturing PPI inflation between the pre-pandemic years and the second half of 2021, and added 0.5 percentage point to core CPI inflation in the first three quarters of 2021.

[7] Real output per hour worked grew close to 2 percent over the same period.

percent in 2022Q1 relative to same quarter last year, more slowly than the 2.5 percent growth in 2019.

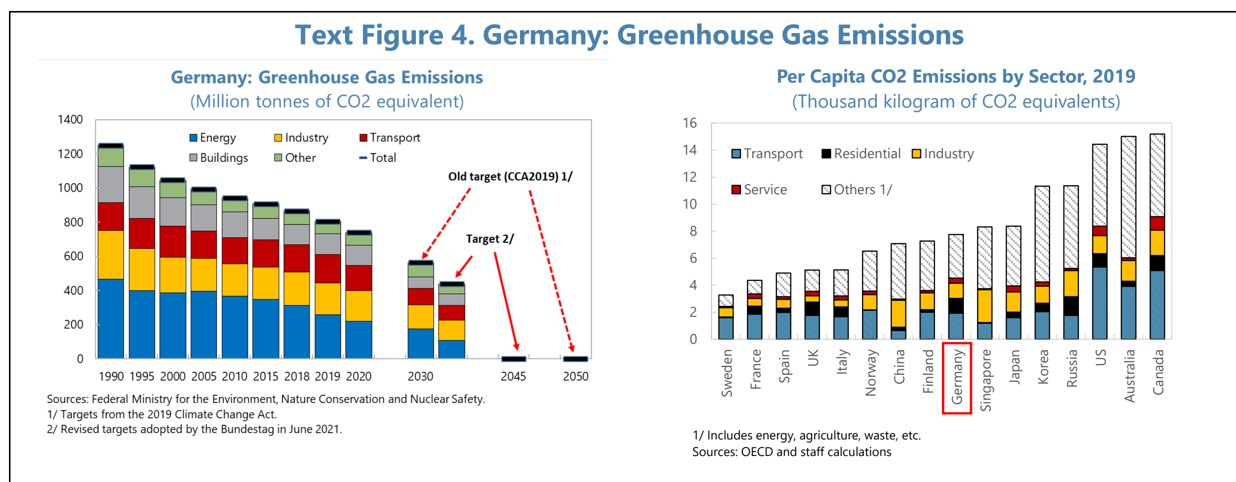


8. The current account surplus widened marginally in 2021, and the external position is assessed as stronger than the level implied by medium-term fundamentals and desirable policies (Annex I). The current account surplus came in at 7.4 percent of GDP in 2021—compared with 7.1 percent in 2020 and 7.8 percent on average over 2017–19—driven by a recovery of earnings on foreign direct investment, within the primary income balance, as economies recovered from the pandemic slump. While the goods trade balance remained weaker than pre-pandemic levels, largely due to costlier energy imports, the services trade balance remained stronger, due to elevated licensing fees for COVID-19 vaccines and still subdued outlays for tourism and travel services. Overall, the 2021 current account is assessed to be between 3.1 and 4.1 percent of GDP above the norm implied by fundamentals and desirable policies (Annex I).

9. Germany remains a major greenhouse gas (GHG) emitter. Over the last decade, Germany reduced its GHG emissions significantly, thanks to increased use of renewables in electricity generation and reduced emissions by industry and buildings (Text Figure 4).[8] Germany's per capita carbon emissions exceed those of its European peers because of relatively higher emissions by residences, electricity generation, and agriculture.

[8]To adhere to the 2015 Paris Agreement commitments in an inter-generationally fair manner, in June 2021 the German government raised its targeted reduction in GHG emissions between 1990 and 2030 to 65 percent and advanced its net zero emissions target to 2045. The Climate Change Act (2021) sets annual aggregate emissions targets through 2040 and sectoral targets through 2030.

Text Figure 4. Germany: Greenhouse Gas Emissions



OUTLOOK AND RISKS

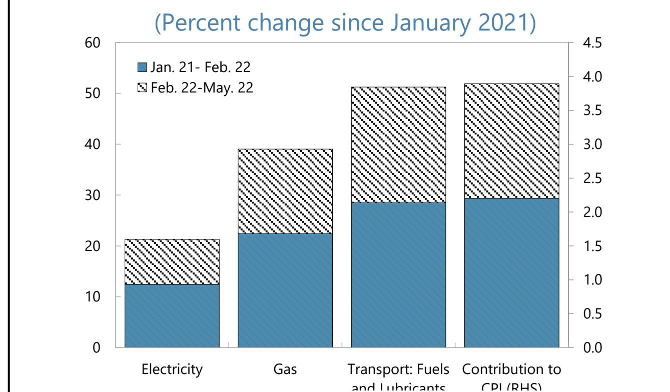
10. The baseline forecast is for a sharp growth slowdown in 2022 and some pickup next year. GDP growth is projected at 1.5 percent in 2022 and 1.9 percent in 2023. The war is estimated to have lowered GDP by about 2.5 percent in 2022; of which around 0.5 percentage points would be offset by the fiscal measures announced since February. The revisions to the growth forecasts relative to the pre-war forecasts reflect the following considerations:

Text Table 1. Germany: Macroeconomic Projections, 2021-23

	GDP growth 1/			Inflation		
	2021	2022	2023	2021	2022	2023
Staff report 2022	2.9	1.5	1.9	3.2	7.5	4.5
Apr 2022 WEO		2.1	2.7		5.5	2.9
Jan 2022 WEO update		3.8	2.5		2.4	2.0
Bundesbank (June)		1.8	2.2		7.1	4.5
OECD (June)		1.9	1.7		7.2	4.7
European Commission (May)		1.6	2.4		6.5	3.1
Ministry of Economy and Climate Action (Apr)		2.2	2.5		6.1	2.8
Joint Economic Forecst (Apr)		2.7	3.1		6.1	2.8

- **Energy prices:** The increases in international energy prices since January have alone reduced projections for growth in 2022 by about 1¼ percentage points, based on historical relationships between international oil and gas prices, Germany's energy import prices, and growth.[9] Retail prices of electricity and gas are expected to continue climbing in 2023, given a gradual passthrough of higher input costs to consumers on annual utility contracts.

Text Figure 5. Germany: HICP Prices of Selected Energy Products



[9] The historical relationship between energy import prices and growth suggests that a 10 percent increase in oil or natural gas import prices erodes growth by 0.2 percentage points.

- **Sanctions and reduced trade:** The sanctions introduced against Russia and Belarus are assumed to remain unchanged (Annex II).[10] Weaker activity in Russia, Ukraine, and Germany's key trading partners is expected to lower net exports and reduce growth.[11]

- **Supply bottlenecks:** With Russia and Ukraine being among the leading suppliers of certain critical raw materials, such as nickel, palladium, and some inert gases used for semiconductor production, as well as intermediate products like wire harnesses for autos, the war is expected to hinder manufacturing activity, and extend supply bottlenecks into 2023.[12]

- **Monetary and financial conditions:** The ECB is assumed to reduce net asset purchases to zero in 2022Q3 and raise the policy interest rate by at least 1 percentage point by end-2022, followed by another 1 percentage point increase in 2023. Financial market indicators, which tightened after Russia's invasion of Ukraine, are thus expected to tighten further, to a moderate degree, leaving conditions still accommodative.

- **Sentiment:** Uncertainty, impaired confidence, and slightly tighter financial conditions are assumed to depress consumption and investment.

- **Fiscal support:** Measures introduced since February to alleviate the impact of higher energy prices on households and firms and increase defense spending are estimated to add about 1 percent of GDP to the fiscal deficit and to lift output by around half a percentage point.

- **Base effects and the overall growth revision for 2022:** Economic activity in 2022Q1 was stronger than expected pre-war. Together with a gross impact of -2.5 percentage points from the war, an offset from fiscal policy of 0.5 percentage point, and the adverse impact from the lockdowns in China, this brings the overall downward growth revision to over 2 percentage points for 2022. Thus, projected growth is revised down from 3.8 percent expected before the war to 1.5 percent now.

- **Growth projected for 2023:** With sanctions expected to persist and only a partial reversal projected for energy prices and supply disruptions, growth is expected to firm up modestly to 1.9 percent in 2023. Production is expected to gain steam on the back of easing bottlenecks to meet a large stock of unfilled orders, and consumption would strengthen with energy inflation abating and infection rates falling.

---

[10] The immediate economic impact of the suspension of Nord Stream 2 in Germany and other countries is limited as the pipeline had not been operating yet. Gas pipelined through Nord Stream 2 would have replaced flows through other pipelines. Spillovers from EU sanctions on Russia and Belarus will be analyzed in the staff report for the 2022 Article IV consultation with the euro area.

[11] Prior to the war, value added exports to Russia were 0.7 percent of total exports.

[12] Celasun et al. (2022) estimate that post-pandemic supply constraints reduced 2021 real GDP growth by 2.5 percentage points.

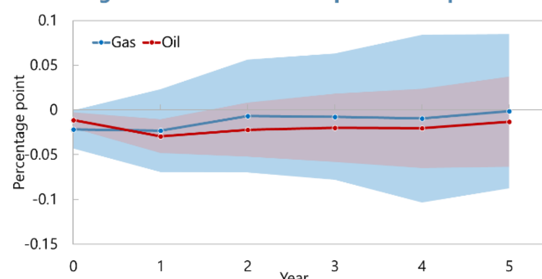
Text Figure 6. Germany: Response of Growth to Energy Price Changes

Crude Oil and Natural Gas Price Assumptions

	2019	2021	2022	2023	2027
Crude oil	64	70	109	98	74
Natural gas	14	46	109	89	31

Source: Bloomberg Finance L.P., and IMF staff calculations.
Note: Crude oil is based on the Brent crude oil price in USD per barrel, and natural gas is based on the Netherlands TTF price in Euro per MWh.

Change in Growth Rate in Response to Import Price

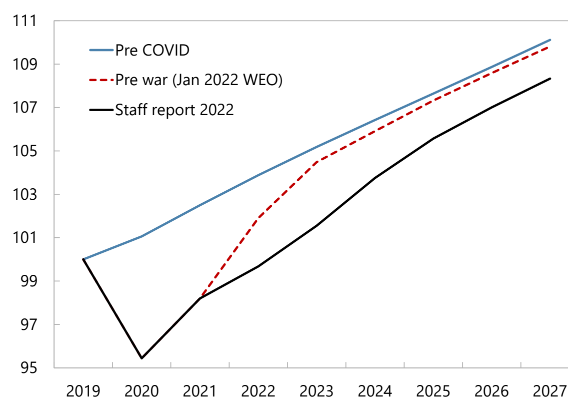


Sources: Destatis and IMF staff calculations.
Notes: Import prices for gas and oil were 7000 Euro per Tj and 430 Euro per ton, respectively, in 2021. The IRFs are estimated using local projection method based on annual data. The lines represent the change in annual real GDP growth rate (in percentage point) associated with one-precent increase in energy import price. The shaded areas represent 90 percent confidence interval. Newey west method is used in correcting serial correlation in standard errors.

11. Ample policy support will partially limit the impact of the pandemic and war on the economy's productive potential. Relief measures introduced since 2020 supported employment and kept businesses afloat, helping to limit losses in human and physical capital. Nonetheless, some loss in medium-term output (close to 1.5 percent by 2027, of which 1/3 is from the pandemic and 2/3 from the war in Ukraine) is projected due to the underutilization of resources during the pandemic, headwinds to private investment in Germany's energy-intensive manufacturing sector from elevated energy prices, weaker external demand, and greater economic and geopolitical uncertainty following the war. Moreover, Germany's potential growth is projected to decline steadily in the coming years because of population aging, with small offsets expected from a mild recovery in labor force participation and some productivity gains from digitalization. The output gap is projected at about 1 percent in 2022 and to close in 2025 (2024 in pre-war forecasts).

Text Figure 7. Germany: Real GDP

(Index, 2019=100)



Sources: Destatis and IMF staff calculations.

12. High inflation will likely persist into 2023 and moderate afterwards. Inflation is projected at about 7½ and 4½ percent in 2022 and 2023, respectively, materially higher than pre-war forecasts. The spike in international oil and gas prices account for the bulk of the revision relative to pre-war forecasts (passthrough into consumer energy prices tends to be stronger for large increases in oil and gas prices, as discussed in the accompanying Selected Issues Paper). Core inflation forecasts are also higher, by about 1¾ percentage points relative to pre-war projections, at about 4 percent in 2022 and 2023, respectively (end-year projections are 4.2 and 3.7 percent, respectively; headline inflation is projected to peak in 2022Q2). The revision to core inflation reflects the passthrough from higher energy costs and supply bottlenecks for non-energy goods, offset to a

small degree by a more negative output gap. Inflation is projected to moderate in 2023 as energy prices and supply disruptions subside, and to fall back to the ECB's target of 2 percent in the medium run.

13. Wage growth should pick up to some extent in the next couple of years, but is expected to stay reasonably contained. The 15 percent increase in the minimum wage that takes place in October (to €12/hour from €10.45/hour now) is expected to push up aggregate wages by 0.6–0.8 percent in 2023, mostly due to direct impacts. New rounds of negotiations with large trade unions start in late 2022; these will likely entail some catch-up in wages with recent price increases, but the tendency of trade unions to negotiate using the ECB's inflation target and downside risks to activity limit the risks of a wage-price spiral. Nonetheless, the possibility that wage growth significantly outstrips inflation is a risk.

14. The current account surplus is expected to shrink as energy imports surge, and supply constraints and weaker external demand curtail exports. The current account surplus is expected to narrow in 2022 by 1.3 percentage points, to 6.1 percent of GDP, given the surge in energy prices, and higher volumes of natural gas imports to raise storage levels to 90 percent by end-November. Furthermore, sanctions are expected to lower exports to Russia and the war in Ukraine is disrupting the supplies of some parts used in auto production. The current account surplus is projected to rebound in 2023 and 2024 as energy prices and supply bottlenecks ease, before declining over the medium term on reduced competitiveness and revived domestic demand.

15. Uncertainty is very high, with risks to the baseline growth forecast skewed downward and risks to the inflation forecast skewed upward (see Annex III):

- The greatest threat is a persistent and full shut-off of Russia's gas exports to Germany and Europe more broadly. This would likely force the German authorities to ration gas to industry to safeguard household consumption, leading to a sizable loss in output and employment (see Paragraph 19 and the accompanying Selected Issues Paper). After the reduction of flows through the Nord Stream 1 pipeline in mid-June, the possibility of gas shortages has increased. Persistently elevated energy prices in such a scenario could shift existing energy-intensive production abroad and discourage new investment in these industries. The government has taken actions to limit the possibility of gas shortages and mitigate their economic impacts (Annex IV and V). Even without a cut-off in Russia's gas exports, the war in Ukraine can trigger further supply disruptions, higher energy prices, and a greater hit to confidence.

- A prolonged war, accompanied by an escalation of sanctions, could cause deglobalization, higher commodity prices, extended supply disruptions, and persistently lower external demand. These effects would weigh on productivity and growth and push potential below the current baseline, especially given Germany's high level of trade integration.

- If COVID-19 infections resurge, possibly with more dangerous and highly contagious variants, consumer confidence and spending could weaken, and supply bottlenecks intensify further

(supply chains are already under pressure from lockdowns in China as well as the fallout from the war). Persistently-high inflation and fears of a de-anchoring of inflation expectations can prompt major central banks to tighten policies faster than currently expected, potentially triggering a sharp tightening in financial conditions and corrections in asset prices. These risks can amplify each other. On the upside, a waning of the pandemic would help rebalance global demand from goods to services, allowing supply bottlenecks to ease and Germany's manufacturing firms to catch up with a historically high backlog of orders.

- External factors pose upside risks to inflation. Inflation can climb higher and persist for longer if global commodity prices shoot up further, or if gas shortages and other global supply bottlenecks intensify. Risks from domestic factors are broadly balanced. While a stronger recovery in aggregate domestic demand than currently expected (e.g., due to large scale energy sector investments and the stock of excess household savings) could bolster inflation, especially if wages grow strongly, hampered confidence could weaken it.

- Over the medium term, delays in securing renewable energy supply or in enhancing digitalization could weigh on Germany's potential growth. A more permanent fragmentation of the world economy would entail high adjustment costs and efficiency losses for the German economy, including from reconfiguration of supply chains and increased barriers in cross-border investment and trade. The most imminent threat to supply chains is the risk of a full shutoff of Russian gas supplies to Europe, which is analyzed in an accompanying Selected Issues Paper.

Authorities' Views

16. The authorities broadly shared staff's assessment of outlook and risks. They expect the recovery to regain momentum by mid-2022 when supply bottlenecks and energy prices begin to ease. The envisaged fiscal consolidation in 2023 is driven by the automatic phasing out of the temporary measures to mitigate the impact of the pandemic and high energy prices, thus would have limited impact on growth. They agreed that prolonged supply bottlenecks and surging energy prices would keep inflation elevated in 2022–23, and expect core inflation to remain higher than 2 percent in 2023 due to lagged transmission from international energy and raw material prices. They view the labor market as resilient and expect wage growth to pick up significantly in the second half of 2022 when major wage negotiations start, but noted that real wage gains were unlikely given the downside risks ahead. Nevertheless, they expressed concerns of a potential wage-price spiral if surprises in inflation outturns feed into persistently high inflation expectations, especially given firms' high profits and the tight labor market. The views on other risks were broadly aligned. The authorities noted upside risks to growth, such as the use of excess household savings accumulated during the pandemic and record-high outstanding orders at manufacturing firms. Both the authorities and private sector contacts noted the possibility of a reconfiguration of supply chains due to a fragmentation of the world economy, but agreed that it may be too early to see evidence of such a trend.

POLICY DISCUSSIONS

A. Cushioning the Impact of Spiking Energy Prices and Supply Disruptions, and Enhancing Energy Security

17. The German government has responded to the fallout from the war with timely and generally well-designed measures (Annex IV and V).

- **Households.** Higher consumer prices are reducing households' real disposable income, especially among low- and middle-income groups that tend to spend a greater share of their incomes on energy. The government has introduced several measures to help, including various forms of income support for vulnerable households, a one-time payment to the employed, a cut in the "renewable energy surcharge" (a surcharge on electricity bills that helped finance the subsidies for renewable energy generation)[13], and a temporary cut in the fixed excise taxes for gasoline and diesel (taking effect between June and August). Providing one-off income support payments to vulnerable individuals while allowing high energy import prices to pass through onto domestic prices are the ideal way to help the economy as they provide temporary relief to those with the least means to cope with the shock while preserving incentives to conserve energy. By contrast, cuts to the renewable energy surcharge or the energy tax are not targeted and thus an inefficient way of supporting the vulnerable, and they blunt the incentives to save energy. The fuel tax cut should be phased out after three months as planned and the government should strive to rely on income support measures for lower income groups should additional relief become necessary. The work being done to develop a comprehensive information system on households will in the future allow the government to deliver relief to a broader group than only those that are currently receiving social assistance benefits, which can be also helpful during the green transition.

- **Firms.** The war has led to an abrupt surge in the prices of energy commodities, which, in the case of natural gas, has been more pronounced for European economies. Futures markets suggest that the price increase is likely to be partially reversed. Even if temporary, the surge in energy costs and intensified supply disruptions may damage firms' balance sheets, discourage new investments and/or lead to unwanted bankruptcies of otherwise viable firms, scarring economic potential. In this context, the government has sketched a new plan for liquidity support to firms that includes loans through KfW (the state-owned development bank) on favorable terms, an extension of the pandemic-era loan guarantee programs, and loans to energy producers to post margins on their hedging contracts.[14] Staff agree with the need to

[13] The subsidies for renewable energy producers will be instead covered by the federal budget going forward.

[14] Energy producers guarantee their sales prices ahead of time by selling their products (e.g., gas or electricity) through forward contracts. When the spot price rises above their contracted forward price, they have to post a security deposit (margin) that increases with the price difference. By financing the margin calls that have followed sharp increases, the government is preventing financial stress in energy producing firms.

prepare contingent plans and, by being available for firms to draw on if severe downside risks are realized, these facilities can help to put a floor under the economy in such circumstances. However, the government has also announced that it would offer temporary and targeted subsidies for firms' increased energy costs over the summer.[15] Given the need to accumulate gas reserves as soon as possible, which would be easier if consumption were to be reduced, such energy subsidies should be dropped.

18. The immediate priority for Germany is to secure energy supplies and build resilience. Germany plans to stop its imports of Russian coal by the fall of 2022 and oil by end-2022. At the same time, it also aims to reduce its imports of Russian gas by half this year and terminate them by 2024. To diversify sources of gas imports and lessen dependence on gas, the government is securing additional LNG supplies, establishing facilities to re-gasify LNG, requiring operators to fill their storage tanks before the winter, reactivating previously shuttered coal-fired power stations, and encouraging voluntary reductions in energy demand. Activating the first stage of the national emergency plan for gas allowed intensive monitoring of the market. Laws were amended to allow the government to take control of critical energy infrastructure and order retail price adjustments. However, infrastructure bottlenecks under gas shut-off scenarios remain unclear—more transparency would be helpful to plan the necessary investment and help firms develop their crisis plans. Cooperation with other EU countries, including in the context of the REPowerEU, is key to secure additional gas supplies, and to ensure that infrastructure and legal frameworks are adequate to share gas between members in the event of a shortage. Germany has signed solidary agreements with Denmark and Austria, and a Memorandum of Understanding with other neighboring countries, including to ensure adequate supplies in land-locked countries dependent on flows through Germany. A program could be offered to exchange gas heaters for heat pumps. To encourage voluntary gas-saving behavior and build gas reserves, meaningful financial incentives—such as rebates or block tariffs, which would depend on technical feasibility constraints—could be considered. Following the curtailment of gas supplies from Russia in mid-June, the authorities declared the second phase of the three-stage emergency gas plan and took measures to accelerate the filling of storage facilities, reduce the use of gas for power generation (which will raise reliance on coal-fired plants), and announced their intention to develop an auction mechanism that could encourage further gas savings by firms.

19. A Russian gas shutoff can entail substantial costs, requiring additional policy support. Most existing studies put the output loss at up to 6 percent of yearly GDP, spread over one to two years, with the wide range of estimates partly reflecting uncertainty around the potential amount of gas shortages and how the economy can adjust. Staff assess that the impact of production constraints, downstream amplification, and elevated uncertainty alone could reduce GDP by about 1.5 percent in 2022, 2.7 percent in 2023 and 0.4 percent in 2024, with output then converging to its baseline level in subsequent years (for details, see the accompanying Selected Issues Paper). Depending on how much European wholesale gas prices rise, German headline inflation could be 2

[15] Germany's measures are designed to comply with the EC's temporary state aid framework to address the fallout from the war in Ukraine, which was adopted on March 23.

percentage points higher on average in 2022 and 2023. To protect vulnerable households and workers, automatic stabilizers would be the first line of defense. To help ensure the solvency of energy companies, which is important to prevent financial constraints from exacerbating the shortages, the government might allow energy companies to pass on cost increases to end-users on otherwise fixed-price contracts. If that happens, it should be complemented with further targeted support for vulnerable households. Also, firms' demand for the government's liquidity support facilities would grow, and further discretionary financial support to firms might be necessary. The authorities' ongoing assessments of the economic and financial implications of this scenario will help to plan such support. If rationing becomes necessary, macroeconomic implications should be considered alongside technical, legal, and social dimensions. The authorities' ongoing efforts to plan the distribution of gas in a potential emergency are welcome.

Authorities' Views

20. The government agreed that international energy prices should be allowed to pass through onto domestic prices while the vulnerable should be protected with targeted support, but also highlighted that the need for a quick deployment of relief measures currently warranted certain less targeted measures. Cuts to fuel taxes, which are under the control of the Ministry of Finance, can be enacted quickly and the associated relief can begin to unfold immediately. The government also pointed out that a lump-sum income-taxable transfer to all the employed, another quick measure, is progressive because the fixed lump-sum is more material for lower-income households and progressive income taxation means that the after-tax benefit is greater for lower income groups. The abolition of the renewable surcharge is also progressive because the relief for lower income households is greater as a percentage of income. The government is concerned that households are vulnerable to higher energy prices, thus it is developing an information system to allow even more targeted relief measures in the future. The government considers temporary support to firms justifiable to cushion the immediate impact of the war, the associated economic impact of sanctions, and higher energy prices. In the authorities' view, subsidies for firms' gas and electricity costs would not materially disincentivize energy saving because they have strict eligibility criteria (including a doubling of energy prices relative to one year ago), last only until September, cover only a portion of the increased energy cost, and they also decline over time.

21. The government is putting significant efforts into enhancing energy security, analyzing the economic impact of a potential Russian gas shutoff, and developing contingency plans. The authorities agreed that the economic impact of a shut-off of Russian gas would be sizable but emphasized that difficulties in substituting gas and energy-intensive intermediate inputs could lead to even larger impacts than estimated by staff. To build resilience against a gas shutoff scenario, the government is in discussions with neighboring countries about concluding further solidarity agreements. It agreed that financial incentives could be offered to encourage gas saving behavior, which would allow gas inventories to build faster ahead of next winter. However, the government expressed concerns about implementation constraints, such as the lack of smart meters for households to monitor consumption in real time and technical constraints

on the ability to vary supply to different users. The authorities agreed that additional fiscal support would be needed in the event a Russian gas shutoff. The government noted that it aimed to spare households from rationing, and that market mechanisms would be used as much as possible to distribute gas in a way that minimizes the economic effects of rationing. The energy regulator is actively working on such plans, including by surveying and interviewing firms on how they use gas.

B. Mitigating Climate Change

22. A green investment push is a key priority to achieve Germany's climate and energy-security goals and boost its potential growth, which requires an improved public investment management system. The Coalition Treaty sets out numerous goals in line with Germany's emissions targets, some of which have been made more stringent recently in a bid to boost energy security (Annex VI). Much of additional green investment must be undertaken by the private sector, for which strong carbon pricing is key. However, public green investment—e.g., upgrades to the electricity transmission system and an expansion of electric-vehicle charging stations—is vital to tackle network externalities and crowd-in private investments. Several experts estimate that additional investment spending of €72 bn (1.3 percent of GDP) per year over a decade is needed to achieve Germany's emissions targets.[16] The Energy and Climate Fund is the federal government's key vehicle for financing green projects, which is currently expected to provide €157 bn (3.8 percent of GDP) during the period 2022–25. The government also plans to transform the state-owned development bank KfW to a major co-risk capital provider for the private sector and leverage the balance sheet of public corporations, such as the state-owned railway company. Scaling up public investment has been proven challenging in recent years as Germany lacks a multi-year public plan to set out a clear national vision for the priority public investments and an institutional framework that would ensure its implementation. To boost public investment in energy security and decarbonization, digitization, and transportation infrastructure, the government should urgently simplify administration and enhance planning capacity, financing, and coordination across different levels of governments. This investment would also help reduce Germany's large external imbalances.

23. Additional measures could enhance the cost-effectiveness of the climate change mitigation strategy.[17] The introduction of a national Emission Trading System (ETS) in 2021 for the transportation and building sectors was an important step, ahead of the introduction of EU ETS2 under the "Fit for 55" initiative, which is expected to cover these sectors. However, national carbon price (€30/tonne) is considerably lower than EU ETS carbon prices (fluctuating around €80–90/tonne in May) and also lower than the levels needed to decarbonize these sectors. Measures to raise the carbon prices for buildings and transportation to equalize them with the levels of the EU ETS carbon prices would not only help decarbonize these sectors faster, but also help ensure that abatement occurs where marginal costs are lowest. If international fossil fuel prices decline (as implied by futures markets), it would become possible to raise the level of national carbon pricing without

[16] "Investing EUR 5 trillion to reach climate neutrality," KfW (2021).

[17] See Chen, R., A. Mineshima, S. Black, V. Mylonas, I. Parry, and D. Prihardini, "Enhancing Climate Mitigation Policy in Germany." IMF Working Paper 21/241.

increasing retail energy prices relative to previous levels. In addition, introducing feebates and enhancing support for improving the energy efficiency of buildings could be an additional helpful tool in hard-to-decarbonize sectors. Germany has been making commendable efforts to boost international cooperation on climate, such as Chancellor Scholz's proposal of an "international climate club," which seeks agreement with large emitters on minimum standards for emissions-measurement and carbon pricing. Further enhancing the venture capital market and reduce administrative red tape can also promote green innovation and, more broadly, private investment.

Authorities' Views

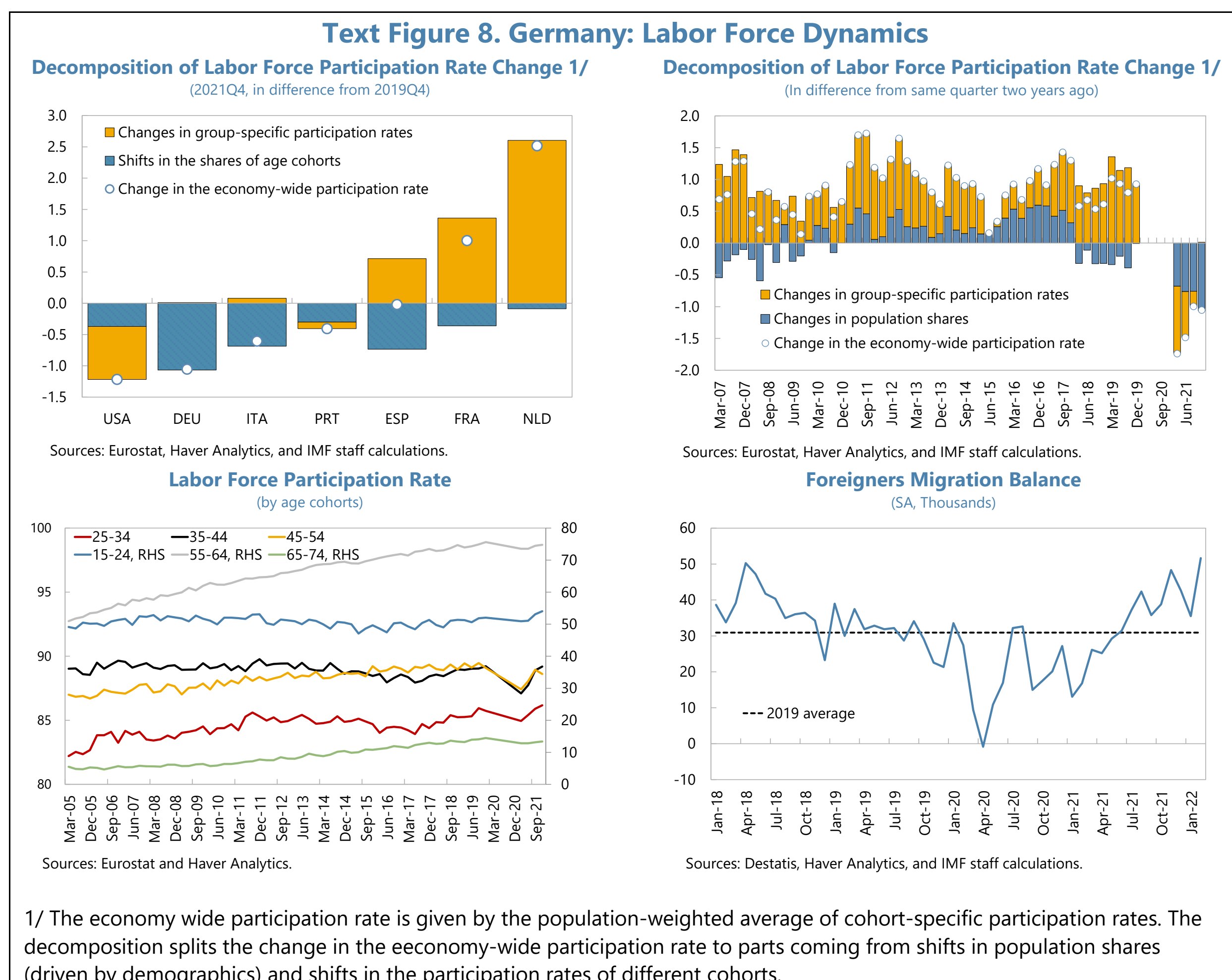
24. The authorities agreed that removing obstacles to investment is key to a green investment push and emphasized the government's commitment to addressing the issue. The government is keenly aware of the obstacles to ramping up investment even faster—e.g., cumbersome administrative procedures, legal hurdles related to environmental regulations, lack of planning capacity, labor and material shortages, and difficulties in coordination across different levels of government—and highlighted that a working group has been set up in the Chancellery to address or at least reduce them. In addition, the government has been expanding the publicly-owned consultancy firm Partnerschaft Deutschland, which provides consultancy services for all levels of government (federal, state, and local) to supplement their planning and procurement capacity. Regarding climate-change mitigation policy, the "Easter package" contains an omnibus of legislative changes to accelerate the expansion of renewable energy. The "summer package" will contain another bundle of decarbonization measures in transport, building, and agriculture. The finance ministry highlighted that carbon pricing is the most efficient and effective instrument to reduce emissions and saw merit in having a single carbon price in the EU. It also emphasized the importance of the predictability of carbon pricing, and thus is reluctant to alter the already-planned path of national carbon pricing (for transportation and buildings) through 2026. The government continues to focus on enhancing the funding possibilities of start-ups for the capital-intensive scaling-up phase. In this context, as part of the 10 billion Euro Future Fund, the government has commissioned KfW Capital, a 100 percent subsidiary of KfW Group, to implement a growth fund as a market-conforming, non-aid venture capital fund of funds, aiming to broaden the investor base in the venture capital market.

C. Ensuring a Dynamic Labor Market

Boosting Participation in the Labor Market

25. Germany's labor force will continue to shrink amidst population aging unless labor force participation rises meaningfully or immigration rebounds. In the last quarter of 2021, the labor force participation rate was 0.5 to 1 percentage point smaller than two years ago (depending on the data source used), in contrast to the gains observed in some peers during the pandemic period (Text Figure 7). Much of the drop in Germany's labor force can be explained by demography: a decline in the share of the German population in the prime-age group and an increase in the share of the population older than 60 years, where participation rates tend to be lower. In the pre-

pandemic years, within-group participation rates had been rising and partially offsetting the effects of aging. By contrast, participation rates weakened in 2021, contributing to the drop in the overall labor force participation rate. Unless participation rates (especially for those 40 and older) resume their pre-pandemic upward trend, or a recovery in immigration augments the share of the working-age population, Germany will have to confront a rapidly diminishing labor force, a growing dependency-ratio, and lessened per capita potential growth in the years ahead.



1/ The economy wide participation rate is given by the population-weighted average of cohort-specific participation rates. The decomposition splits the change in the eeconomy-wide participation rate to parts coming from shifts in population shares (driven by demographics) and shifts in the participation rates of different cohorts.

26. The government should continue its efforts to boost participation, especially via removing the obstacles and disincentives to work.

- Expanding high-quality childcare and strengthening incentives to work for secondary earners—e.g., by reducing the high effective marginal tax rate for secondary earners within couples (IMF, 2019)—can promote labor-force participation by females and increase their working hours.

- Training to reskill/upskill workers, especially in the context of accelerated digitalization, can encourage higher participation rates among older workers.

- The Federal Employment Agency estimates that 400 thousand immigrants are needed each year to replace those retiring from the workforce. In this context, the new government's plan to address the shortage of skilled workers by further easing immigration rules is welcome. To continue supporting job-seeking refugees, including Ukrainians, integration programs paused during the pandemic, such as language training and vocational training, should swiftly resume.

- Reducing the labor tax for lower-skilled workers would boost their disposable income and stimulate their labor supply at the same time. Such a measure would be ideally accompanied by a permanent increase in revenue.

Authorities' Views

27. The authorities agreed that tax and structural reforms should provide incentives for labor force participation. Expanding the provision of needs-based and high-quality childcare facilities is key to increasing working hours and participation of female workers. In this context, besides the newly-introduced measures (e.g., an investment program "Childcare Financing"), the government is planning additional investment programs to further improve childcare facilities, such as the Act on Providing All-Day Care and Education for Primary School Children. To address the high effective marginal tax rate for secondary earners, the government plans to promote the use of the tax class IV/IV with improved factor procedure for married couples, [18] in which both earners face the same marginal tax rate on the first euro earned, thus increasing net income for the secondary earner (although net income for the primary earner decreases). The planned increase in the social security contribution threshold for mini and midi jobs in October would partly reduce the labor tax wedge for low-income earners and could incentivize their labor supply. While acknowledging the merits of increasing the statutory retirement age in boosting labor force participation, the government noted that prolonging working years within the current statutory retirement age—e.g., by promoting life-long learning and disincentivizing early retirement—would be useful. It also reiterated their commitment to further enhancing integration programs for migrants.

Boosting Skills and Human Capital

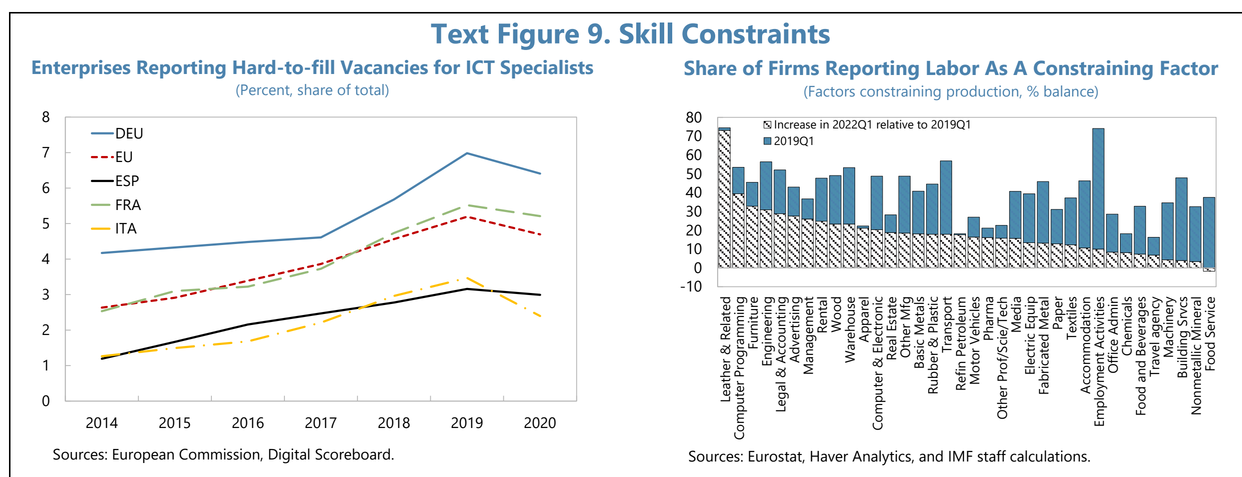
28. Long-standing skill mismatches and the efforts to green the economy and jobs call for policy actions to boost training and reskilling. Information Communication Technology (ICT) specialists were already scarce before the pandemic. The pandemic accelerated digitalization and enhanced skills mismatches. To mitigate shortages in digital skills and facilitate adaption to new technologies, it will be crucial to provide workers with lifelong learning opportunities in collaboration with employers, leveraging digital learning formats that could ease time and location constraints. Curricula reforms to include computer programming and upgrades in ICT equipment in schools would foster the acquisition of digital skills. Transition from internal combustion engine production to EVs will require prime-age workers to transition into greener occupations. Targeted

---

[18] Under the "tax class IV/IV with improved factor procedure," married couples where both spouses earn income are taxed individually but with a factor accounting for their income splitting tax benefits.

training programs can facilitate the needed reallocations, and stepped-up efforts would help to make up the learning deficits caused by the pandemic.

29. The authorities acknowledged the need for up- and re-skilling of workers to facilitate structural transformation. They assess that the green transition would increase labor demand, most notably in the construction sector and in the areas of battery production and digitalization of the automotive sector. A decrease of labor demand will take place in the automotive sector that produces parts for the internal combustion engine and in some basic business-related services (e.g., travel agencies). While highlighting the role of the National Skills Strategy with the goal to reform, systematize, and strengthen Continuing Education and Training (CET) policies, the government noted weak pockets such as lower participation in CET programs among workers in SMEs and shortages in teachers in digital training. To address the weakness, the government has launched the "Hubs for Tomorrow" program to support companies and employees in shaping digital change and is currently working on a national user-centered one-stop shop CET platform.

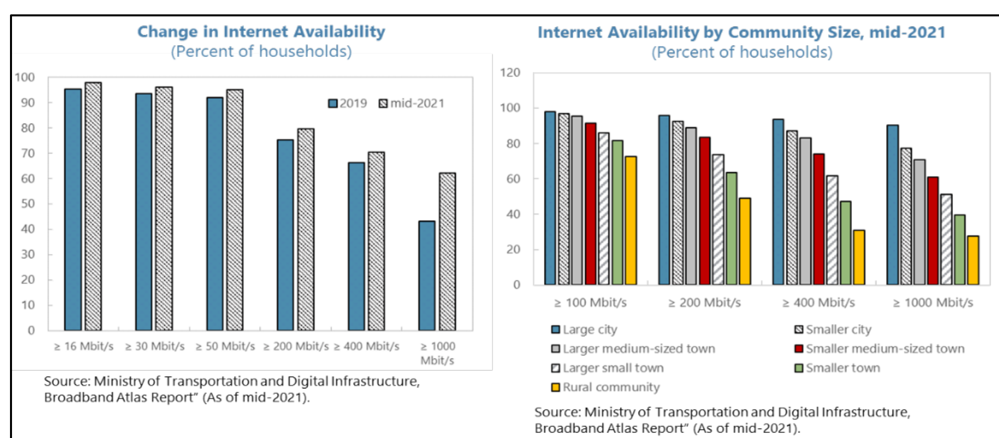


D. Putting It All Together—Fiscal Policy

30. Faced with a new shock of uncertain duration and intensity, the government has been appropriately vigilant and flexible in setting fiscal policy in 2022. It has introduced generally well-designed and time-bound support to the economy and launched measures that can help avert an adverse macro-financial feedback loop in a potential gas cut-off scenario. The broadly neutral overall fiscal stance is appropriate for 2022, striking a balance between supporting the economy through generally well-targeted relief measures and not adding too much to inflationary pressures. Near-term fiscal plans may have to be revised again to accommodate any other spending needs stemming from the fallout from the war, including assistance for refugees. The government has already stepped-up humanitarian support for refugees, with a budget allocation of €4 billion (0.1 percent of GDP), and more may be needed.

Box 1. Digitalization of the German Economy—Status Quo

The pandemic has accelerated the expansion of high-speed internet and boosted demand for data-driven services. The necessity for work-from-home during the pandemic has advanced the availability of broadband, yet the availability outside large cities and towns remains relatively limited (Box Figure 1). At the same time, German firms have lagged in adopting key ICT tools required to create value with data (see the 2021 Article IV Staff Report). Further expanding the coverage of fiber optic connections and the 5G mobile network is important to enhance productivity and innovation.[1] The expansion will be driven mostly by the private sector,[2] but in rural and sparsely populated regions where market-driven expansion is weak, the federal government is promoting the expansion of digital infrastructures with additional financing via the "digital infrastructure" special fund (BMWK 2022). To accelerate the expansion of the broadband network, the government has helpfully streamlined digital application and approval procedures, standardized alternative laying techniques, and established a nationwide gigabit land register.



Source: Ministry of Transportation and Digital Infrastructure, Broadband Atlas Report" (As of mid-2021).

Source: Ministry of Transportation and Digital Infrastructure, Broadband Atlas Report" (As of mid-2021).

Promoting the development of a modern, digital, and innovative economy requires a multi-faceted strategy. To strengthen technological sovereignty, the Coalition Treaty indicates that the EU's digital single market should be deepened, data infrastructure further developed in accordance with European standards, and digital skills and innovation promoted. At the same time, to secure a safe data-driven economy, the Treaty also calls for secure data access and trading, as well as effective and fair competition on digital marketplaces, as is intended with the Digital Markets Act. It is also advisable to expand ICT training for teachers and to introduce computers and programming earlier in curricula (OECD 2020).

1/ The government is also considering the development of a 6G mobile network.
2/ At least €43 billion are available for the commercial expansion of fiber optic networks in Germany over the next five years (BMWK 2022).

31. Fiscal policy should remain flexible in 2023. The draft federal budget for 2023 assumes a return to complying with the debt brake rule that limits new borrowing to 0.35 percent of GDP. Yet, the government can carry a deficit exceeding that amount in the coming years, since spending to be financed by general reserves and special funds (totaling €240 bn or 6.7 percent of GDP)[19], including the Energy and Climate Fund and Special Defense Fund, is not bound by the debt rule. The government's plan is to reduce the general government deficit by 1¾ percentage of GDP to 2 percent of GDP in 2023 by letting the relief measures introduced for the pandemic and high energy prices expire at the end of the year. This adjustment is manageable under the baseline economic forecast where international energy prices would soften, and the take-up of the programs introduced during the pandemic would drop autonomously as private demand strengthens. However, if downside risks materialize, such as higher commodity prices and weaker growth, further relief measures would be called for. In particular, the government would likely extend relief to vulnerable households for coping with higher energy costs, maintain the expanded Kurzarbeit program to avert layoffs, and prolong the pandemic-era grant program for firms. Given high inflation, continuing with targeted relief measures rather than broad-based fiscal support would be of the essence. In a severe downside scenario, postponing the reactivation of the debt-brake rule by a year might be called for, to ensure that fiscal policy can be sufficiently supportive.

Text Table 2. Germany: Fiscal Balances
(Percent of GDP)

	2019	2020	2021	2022	2023	2024	2025	2026	2027
Headline balance	1.5	-4.3	-3.7	-3.0	-1.5	-1.0	-0.8	-0.6	-0.5
Cyclically-adjusted balance	1.2	-2.2	-2.7	-2.3	-1.0	-0.8	-0.8	-0.6	-0.5
Drawdown of the Energy and Climate Fund, Special Defense Fund, and Reserves	0.0	0.0	0.0	0.6	1.1	1.0	0.7	0.5	0.0
Balance that is compatible with the debt brake	1.2	-2.2	-2.7	-1.7	0.0	0.2	-0.1	-0.1	-0.5
	-				-	-	-	-	-
Memorandum: Debt brake	0.35	...	...	...	0.35	0.35	0.35	0.35	0.35
Government debt	58.9	68.7	70.2	70.4	67.5	64.6	62.4	60.6	59.3

Sources: Destatis, Federal Ministry of Finance, and IMF staff.

32. Extensive use of extra-budgetary funds can undermine the credibility of the fiscal framework over time, and should therefore be minimized. Given a political commitment to return to Germany's debt-brake rule, the government is increasingly leveraging extra-budgetary vehicles for boosting investments in decarbonization and defense spending. All associated spending is reported above the line in the general government accounts under the EU Stability and Growth Pact standards. Nonetheless, extensive use of extra-budgetary funds to bypass the debt-brake rule may undermine the credibility of the fiscal framework, and erode support for the reforms and transformation the funds are meant to facilitate. Further use of extrabudgetary funds should therefore be minimized. To further enhance fiscal transparency and risk management, the Ministry of Finance could provide a consolidated report of fiscal risks, covering the contingent liabilities

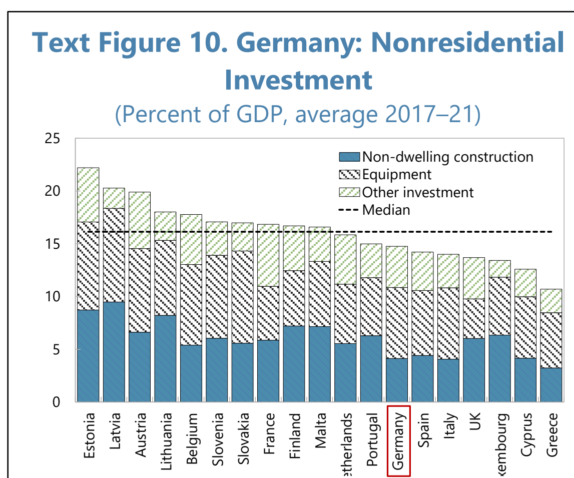
[19] Special funds include: (i) the Special Fund for Defense (€100 billion); (ii) the Energy and Climate Fund (€60 billion); (iii) the Refugee Fund from 2015 (€40 billion); and (iv) other miscellaneous funds (€40 billion).

associated with the quasi-fiscal activities undertaken by state-owned banks (e.g., KfW) and public corporations, based on analysis by line ministries on the public corporations under their respective span of control. The expected cost and maximum probable loss of contingent liabilities should be quantified in this report.

33. Germany continues to have ample fiscal space that it can use to invest to enhance its growth potential and resilience. Higher spending compared to the pre-pandemic era—on childcare, decarbonization, defense, energy security, innovation, and digitalization—and some tax reduction (e.g., partial abolition of the solidarity surcharge) have narrowed the room for maneuver within the constitutional debt brake rule (which limits the federal deficit to 0.35 percent of GDP in the medium term).[20] Despite heightened spending, however, Germany's public debt is projected to resume its downward trajectory from 2023 onwards, declining to its pre-pandemic level of about 60 percent of GDP by 2027 (Annex VIII). In addition to tapping into the remaining room within the rule, the government could review Germany's overall fiscal framework—including the level and composition of expenditures and revenues, and the design of the debt-brake rule—to ensure that fiscal policy can continue to respond to structural needs.

Text Figure 10. Germany: Nonresidential Investment

(Percent of GDP, average 2017–21)



Authorities' Views

34. The government generally shared staff's assessment of the fiscal stance and agreed that fiscal policy should be tuned to help cushion the economic effects of the war and the pandemic, while still supporting the green and digital transformation. They concurred that the fiscal stance in 2022 would be broadly neutral, and such a fiscal stance under the baseline, with vulnerable households and firms receiving generally well-targeted support, should add little to inflation pressures. The government noted that once resources in the defense fund are used up and climate and defense spending are fully brought under the coverage of the debt limit, fiscal space (under the national debt-brake rule) would be largely exhausted. While the government does not plan to modify the debt brake rule by amending the constitution, the government suggested that technical modifications—such as the method of adjusting fiscal variables for the business cycle and symmetric use of the control account—could create additional fiscal space. They noted that line ministries are primarily in charge of managing fiscal risk related to public corporations, yet the

[20] Staff analysis in the 2021 Article IV suggests that a permanent 1 percent of GDP expansion of public investment from 2022 onwards would boost private productivity and increase real GDP by more than 2 percent in the long run, narrowing scarring from the pandemic and war, while still allowing Germany's debt-to-GDP ratio to trend down over time.

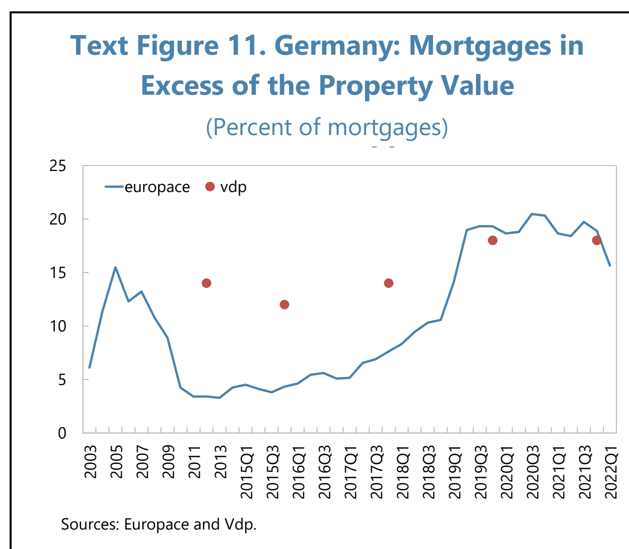
finance ministry reports public corporations' financial conditions in a collective manner on an annual basis.

E. Ensuring Financial Sector Stability

35. Staff assess the German banking sector to be generally resilient to shocks, but pockets of vulnerability require close monitoring and some additional action. In the FSAP, staff assessed that overall bank capital is generally sufficient to withstand a severe adverse scenario including a three-standard deviation shock to growth over two years. Stress tests also confirmed that the banking system is resilient to liquidity shocks. Yet, the stress tests identified shortfalls of capital and US dollar liquidity at some individual banks under severe adverse scenarios. Furthermore, structurally low bank profitability remains a persistent source of vulnerability. To address vulnerabilities identified in the stress tests, the FSAP has suggested that the authorities continue to closely monitor prudential ratios for large, systemically important commercial banks, establish additional bank-specific buffers for less capitalized banks as needed, and strengthen data collection at less systemically-important institutions about remaining maturity of retail deposits, wholesale funding, and interest-bearing assets to allow them to perform their own top-down stress tests of interest rate risk. The authorities should also review the design of the fragmented deposit insurance system and consolidate existing mandatory schemes into a single scheme with a government liquidity backstop, which would facilitate greater risk pooling and diversification.

Text Figure 11. Germany: Mortgages in Excess of the Property Value

(Percent of mortgages)



Sources: Europace and Vdp.

36. Further analysis of the financial stability implications of the war, sanctions, and rising energy prices would be useful. The authorities' preliminary analyses suggest that exposures of the financial sector to energy-intensive firms will be manageable. The authorities are analyzing the financial stability implications of gas shutoff scenarios, which would be useful to develop a full stress test.

37. The authorities have appropriately tightened macroprudential policy in the face of house price risks, but further actions are needed. Rapid rises in housing prices (12.4 percent between 2021Q4 and 2020Q4) have led to residential real estate valuations above fundamental levels for Germany overall, and even greater misalignment in larger cities. Nationwide, price-to-rent and price-to-income indicators suggested deviations from the long-run average of about 37 and

21 percent, respectively at end-2021,[21] while estimates of an econometric model suggest overvaluations of 10–15 percent at 2021Q3. Meanwhile, a city-level panel model suggests greater overvaluation in the largest cities.[22] Mortgage origination has also been strong and lending standards appear somewhat loose in certain segments. For example, according to different private sector data sources, between 7 and 20 percent of mortgage loans exceed the underlying property value (e.g., Text Figure 11).[23] With these vulnerabilities in mind, the authorities appropriately raised the counter-cyclical capital buffer to 0.75 percent, from zero previously, and introduced a sectoral systemic risk buffer of two percent on loans secured by domestic residential real estate to apply from February 1, 2023. The authorities have also cautioned banks against taking excessive risks in mortgage lending. However, legal concerns and a lack of comprehensive data on lending standards remain obstacles to the activation of borrower-based measures, like the imposition of limits on loan-to-value ratios on new lending. As noted in the FSAP, precautionary use of borrower-based measures is warranted, and the authorities should remove obstacles to their activation by modifying the law on borrower-based measures, while in the interim strengthening guidance on lending standards (for example, encouraging banks to adhere to loan-to-value ratio limits through issuing a Guidance Note to banks). The authorities are also urged to accelerate the closure of data gaps and add income-based measures into the macroprudential toolkit.

Authorities' Views

38. While generally sharing staff's assessment of financial sector health and recommendations, the authorities assessed that risks in the housing market do not warrant the activation of borrower-based measures at this juncture. The authorities appreciated the FSAP's stress tests of bank solvency and liquidity and found the results to be in line with their expectations. They are aware of U.S. dollar liquidity risks at some LSIs but judge that these are already sufficiently managed in the supervisory process. They emphasized the risk-sharing that takes place between savings and cooperative banks and their regional wholesale bank partners. The authorities highlighted the appropriateness of the macroprudential policy package announced by BaFin in January 2022. They noted that important data gaps on lending standards will be closed in 2023 and legislative proposals are being drafted to add income-based instruments to the toolkit. Furthermore, the Bundesbank has set up a project dedicated to monitoring the effects of the macroprudential policy package—inter alia its effects on lending standards. Existing private sector data on LTV and DSTI ratios currently provide mixed signals. On financial safety nets, the authorities considered that maintaining the existing multiple deposit guarantee schemes appropriately reflects the three-pillar structure of the German banking system.

F. Governance and Transparency

[21] Price-to-rent deviation from the long-run average, however, is less indicative for Germany due to rent controls.

[22] Bundesbank's estimates suggest an overvaluation in residential real estate prices of 20–35 percent nationwide, and 15–40 percent in cities, in 2021.

[23] The true percentage will only be known in 2023, when official data become available.

39. FATF indicated in 2010 and 2014 that Germany's anti-money laundering and countering the financing of terrorism (AML/CFT) measures are generally sound, but implementation needs strengthening in some areas. Preventive measures relevant for helping prevent foreign officials from laundering the proceeds of corruption largely comply with the AML/CFT standards and are well implemented by most, especially larger, financial institutions but some smaller non-financial businesses find such implementation challenging. Information on beneficial ownership of companies and trusts is available (through a Transparency Register) for use by the private sector and by the authorities in investigations, and to provide to foreign partners but some gaps exist. Germany provides good assistance to other countries in foreign corruption cases and prosecutes and obtains convictions for ML related to corruption, as well as freezes and confiscates proceeds of foreign corruption. The authorities should continue to strengthen the AML/CFT system, by: (i) continuing to focus, in AML/CFT supervision, on enhancing compliance with customer due diligence requirements and reporting of suspicious transactions as well as using more remedial actions and sanctions to deal with non-compliance; (ii) strengthening AML/CFT supervision of sectors favored by foreign corrupt actors such as lawyers and trust and company service providers; (iii) continuing to improve the availability of beneficial ownership information in the Transparency Register; and (iv) putting more emphasis during criminal investigation on pursuing money laundering independently of the underlying crime.

40. The government has taken measures to reduce fraud cases related to the COVID relief measures, which would also be useful for future firm subsidy programs, including envisaged energy subsidies. The implementation of COVID-related firm support programs and associated criminal proceedings are carried out by Länder governments. Through March 2022, Länder reported about 24,000 cases in which investigation proceedings were open, with the majority pertaining to the first Immediate Assistance Programme in 2020. To reduce misuse in the assistance programs, the government has refined the approval process and enhanced screening criteria within the process (e.g., applications for companies were required to be made by tax consultants, auditors, or lawyers in order to guarantee an additional assessment of admissibility). Furthermore, it also introduced an automated comparison of application data with the data of tax authorities.

Authorities' Views

41. The authorities agreed with staff's assessment on the AML/CFT system and noted a range of ongoing initiatives to further strengthen the system. In 2021, the government implemented the FATF "Travel Rule," requiring virtual asset providers to collect and share customer data for transactions over a certain threshold. In March, BaFin restructured its AML department, aiming to focus on specific issues (e.g., banks, non-bank financial institution, digital supervision, strategy, and national coordination). BaFin has also been stepping up targeted training of AML/CFT supervisory staff and enhancing information exchanges across government entities. Federal and Lander coordinating offices are currently conducting in-depth analysis of AML/CFT risks in the domestic real estate sector, aiming to update the National Risk Assessment (NRA) by end-2022. The government also intends to reflect on findings of the June 2022 FATF assessment.

STAFF APPRAISAL

42. The war in Ukraine has clouded the outlook for the German economy. After a likely sharp slowdown in 2022, a tepid recovery is expected for next year. Inflation is expected to stay elevated before moderating in 2023, though remaining well above target. However, growth could prove weaker and inflation higher than in the baseline. The greatest threat is a persistent and complete shut-off of Russia's gas exports to Germany and Europe more broadly. Other risks include greater impacts from the war and COVID-related restrictions, both of which can intensify global supply bottlenecks, make inflation more persistent, de-anchor inflation expectations and spark asset price corrections. Furthermore, fragmentation of global value chains or delays in securing renewable energy supply or in enhancing digitalization could weigh on Germany's potential growth.

43. In this highly uncertain environment, fiscal policy should remain flexible. The broadly neutral fiscal stance in 2022 is appropriate under the baseline, with well-targeted support adding little to inflation. Also, the government's plan to return to the debt brake rule in 2023 should be manageable under the baseline. However, if downside risks materialize, the government should allow automatic stabilizers to operate fully, continue to flexibly provide targeted support, and consider activating the escape clause of the debt break rule for another year.

44. The immediate policy priority is to cushion the spillovers from the war and limit scarring effects on potential growth. The government's package of measures to support households and firms in the face of high energy prices is generally well-designed—especially its one-off income support payments to vulnerable individuals. However, cuts to fuel taxes should be phased out as planned because they are distortive and costly. Better targeting will be possible once information on households' income and energy use has been integrated.

45. Efforts should continue to boost energy security and build resilience. The government's efforts to diversify sources of gas, financing of facilities to re-gasify LNG, requirements to fill gas storage facilities, and additional emergency powers are welcome steps. However, more transparency about infrastructure bottlenecks in gas shortfall scenarios is needed to encourage investment and help firms develop their crisis plans. Cooperation with other EU countries, including in the context of the REPowerEU, is key to secure additional gas supplies, and to ensure that infrastructure and legal frameworks are adequate to share gas between members in the event of a shortage. Subsidies for firms' energy expenditures outlined in early April should be kept temporary as planned. In addition, meaningful financial incentives could be considered to encourage further voluntary gas-saving behavior.

46. In a full gas shutoff scenario, the economy will need more policy support as the impact will likely be sizable. Automatic stabilizers would be the first line of defense. In addition, it would be important to ensure the solvency of energy companies to prevent financial constraints from exacerbating shortages. The plan to allow energy companies to pass on cost increases to end-users would help in this regard and would have to be complemented with further targeted income

support for vulnerable households. The authorities' ongoing assessments of the economic and financial implications of this scenario will help plan any additional support for firms. Should rationing become necessary, macroeconomic implications should be considered alongside technical, legal, and social dimensions.

47. Removing obstacles to public investment is essential for a green investment push, which is a key priority in view of Germany's climate and energy-security goals. Germany's ambitious emissions goals are laudable, and staff welcomes the Easter package of legislative initiatives to expand renewable energy. Much of the additional green investment must be undertaken by the private sector, but scaling up public green investment is also vital to tackle network externalities and crowd in private investment. Therefore, the government should urgently simplify administration and enhance planning capacity, financing, and coordination across different levels of governments. This investment would also help reduce Germany's large external imbalances, since the external position is assessed as stronger than the level implied by medium-term fundamentals and desirable policies.

48. Increasing labor force participation is critical to counter population aging, and boosting skills would facilitate structural transformation. Expanding high-quality childcare and strengthening incentives to work for secondary earners can further promote female labor-force participation and working hours. The government's plan to address the shortage of skilled workers by further easing immigration rules is welcome, and should be complemented with continued efforts to integrate immigrants. Reducing the labor tax for lower-skilled workers would boost their disposable income and labor supply. At the same time, enhancing training and up- or re-skilling workers are key to address skill mismatches, facilitate efforts to green the economy and jobs, and adapt to digitalization.

49. Looking ahead, Germany should continue to use its fiscal space to invest in its growth potential and resilience. Staff welcomes spending on energy security and the transition to net zero emissions, and encourages further investments in life-long learning, digitalization, innovation, labor supply, and social protection. Meanwhile, extensive use of extra-budgetary funds outside the core federal budget—to create borrowing allowances in view of unforeseen needs associated with the pandemic and the war—may undermine the credibility of Germany's fiscal framework. Therefore, structural increases in spending for strategic priorities should be integrated into the core budget over time.

50. The German banking sector was assessed in the FSAP as generally resilient to shocks, but pockets of vulnerability warrant continued close monitoring and some additional action. Stress tests undertaken in the context of the 2022 FSAP find that overall bank capital is generally sufficient. However, to address vulnerabilities, the FSAP has suggested that the authorities continue to closely monitor prudential ratios for large, systemically important commercial banks, establish additional bank-specific buffers for less capitalized banks as needed, and strengthen data collection at less systemically-important institutions. The authorities should also review the design of the fragmented deposit insurance system and consolidate existing mandatory schemes into a single scheme, which would facilitate greater risk pooling and diversification.

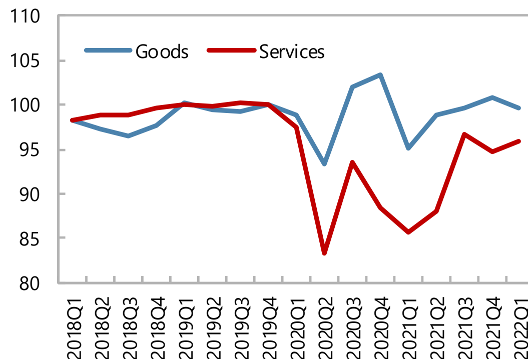
51. The authorities have appropriately tightened macroprudential policy in the face of elevated and rising house prices, but further actions are needed. Staff welcome the counter-cyclical capital buffer increase and the introduction of a sectoral systemic risk buffer on loans secured by domestic residential real estate. Nevertheless, with house prices estimated to be above fundamentals, precautionary use of borrower-based measures is warranted, and the authorities should address obstacles to their activation by modifying the law on borrower-based measures, while in the interim strengthening guidance on lending standards. The authorities are also encouraged to accelerate the closure of data gaps and add income-based measures into the macroprudential toolkit.

52. It is recommended that the next Article IV consultation take place on the regular 12-month cycle.

Figure 1. Germany: Real Activity

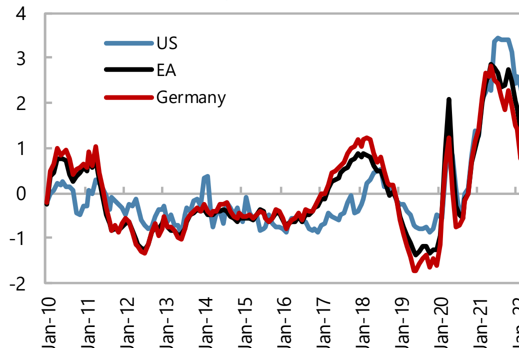
The pandemic has shifted the composition of spending towards goods.

Real Private Consumption on Goods and Services
(Index, 2019Q4=100)



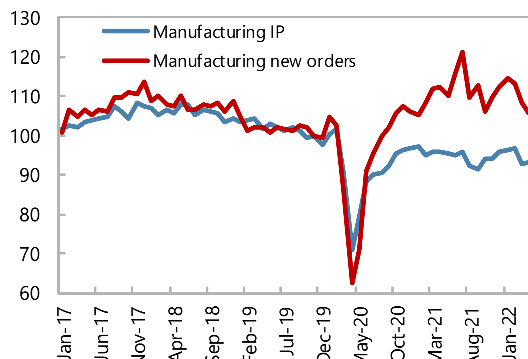
Shortages in goods and labor alongside congested ports have constrained supply, ...

Manufacturing Suppliers' Delivery Times
(Normalized, positive denotes increase)



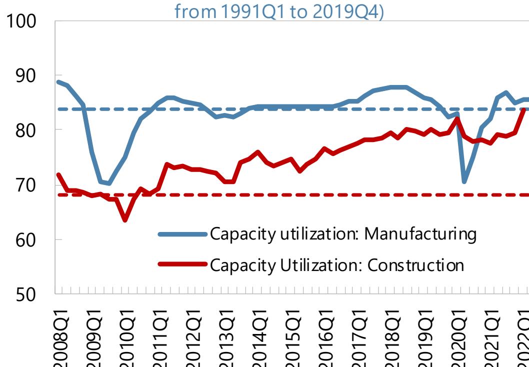
... dragging production behind new orders, ...

Industrial Production and Manufacturing New Orders
(Index 2015=100, seasonally adjusted)



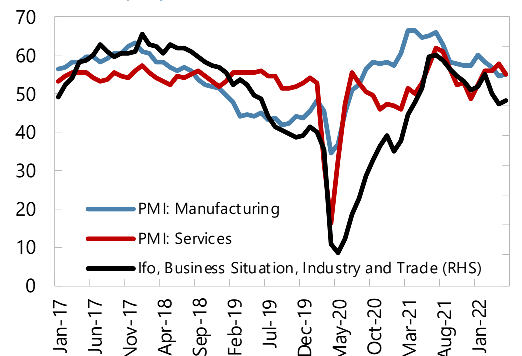
... despite a strong rebound in capacity utilization.

Indicators of Capacity Utilization
(Percentage points, dotted lines denote averages from 1991Q1 to 2019Q4)



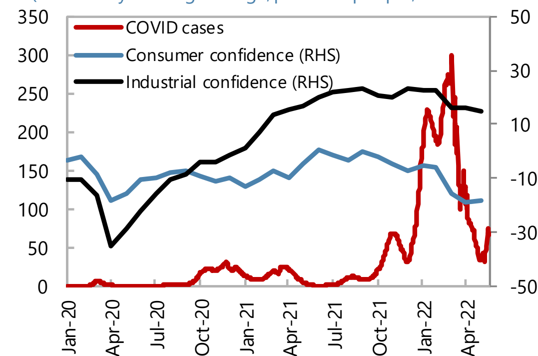
The war in Ukraine has begun to weigh on industry, ...

Business Survey 1/
(Seasonally adjusted, LHS: 50+=expansion, RHS: % balance)



... and consumer and business confidence, despite lower COVID cases.

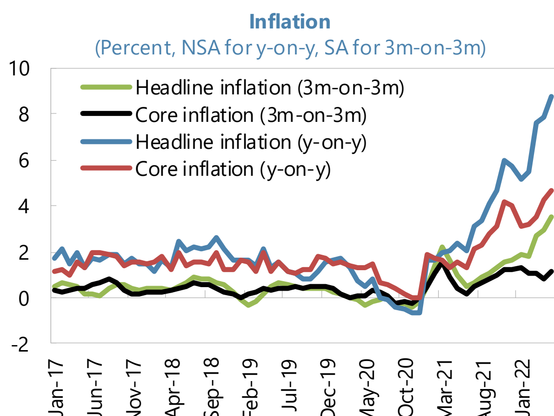
COVID-19 New Daily Infections and Confidence Indicators
(LHS: 7-day moving average, per 100K people; RHS: % balance



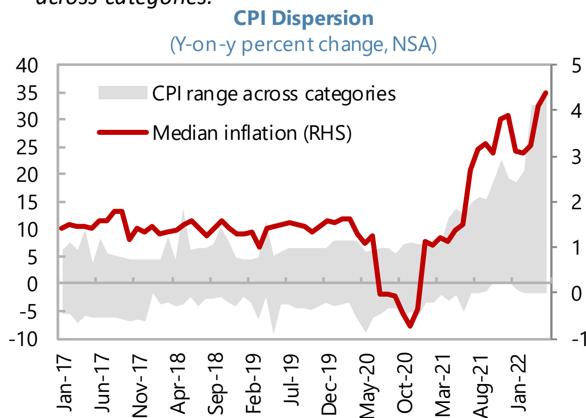
Sources: BMWK, Destatis, Deutsche Bundesbank, European Commission, Eurostat, Haver Analytics, IFO Institute, Markit, Oxford University, and IMF staff calculations.
1/ Manufacturing PMI is a composite index based on a weighted combination of new orders, output, employment, suppliers' delivery times, and stocks of materials purchased.

Figure 2. Germany: Prices and Labor Market

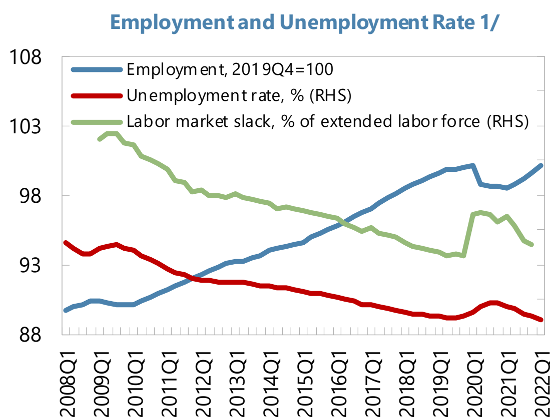
Inflation has surged…



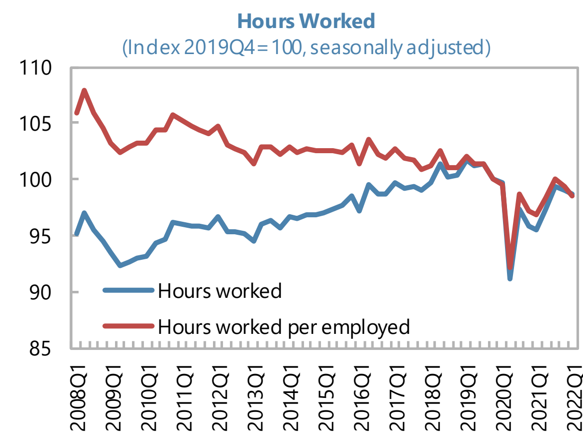
… with pressures broadening and dispersion widening across categories.



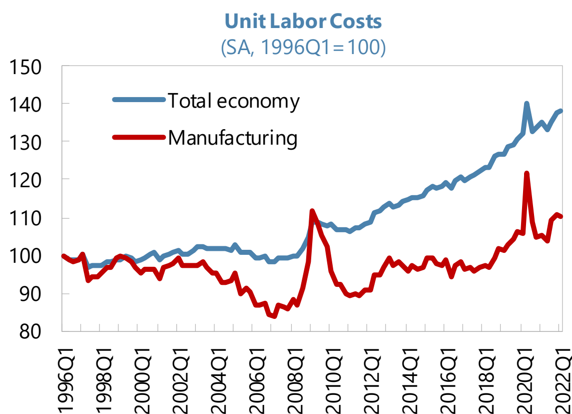
The unemployment rate and employment have returned to pre-pandemic levels, but labor market slack has not fully disappeared, …



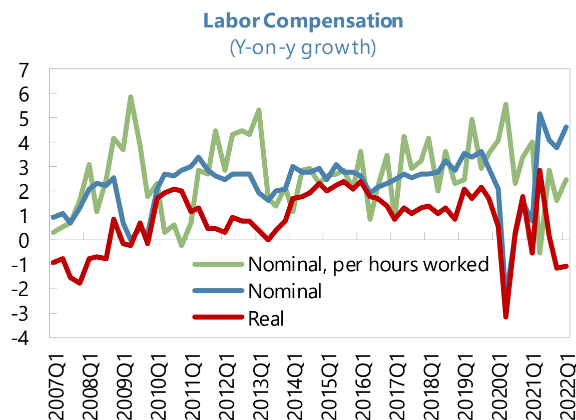
… and hours worked remain below pre-pandemic levels.



Unit labor costs spiked in H1 2020 on the back of job retentions through Kurzarbeit, but has since reverted to its pre-pandemic trend.



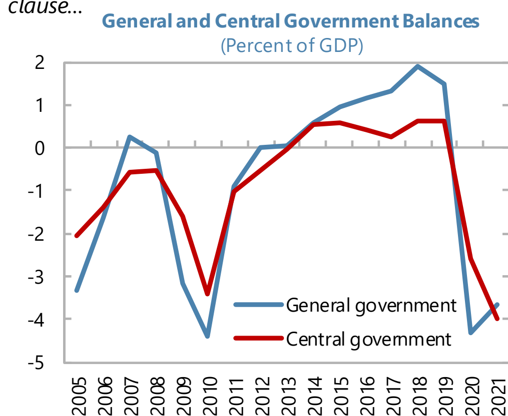
Nominal compensation rebounded sharply but y/y real compensation growth turned negative from end-2021.



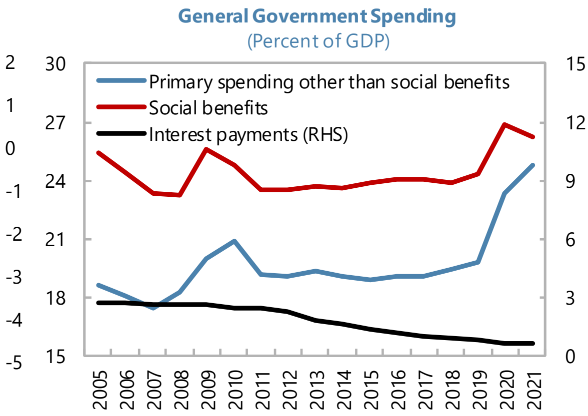
Sources: Bundesbank, Eurostat, Federal Statistical Office, Haver Analytics, and IMF staff calculations.
1/ Employment and the unemployment rate are National Accounts Concepts.

Figure 3. Germany: Fiscal Developments and Outlook

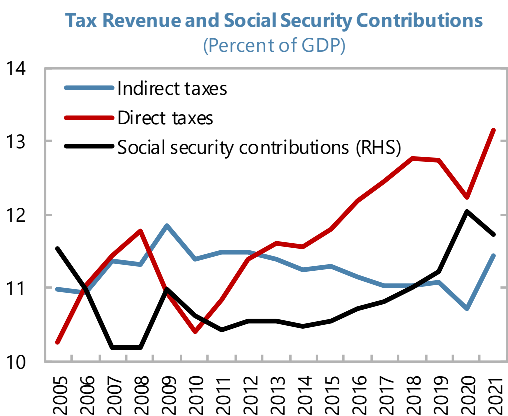
Germany maintained historically-large fiscal deficits in 2021, enabled by the continued activation of the escape clause...



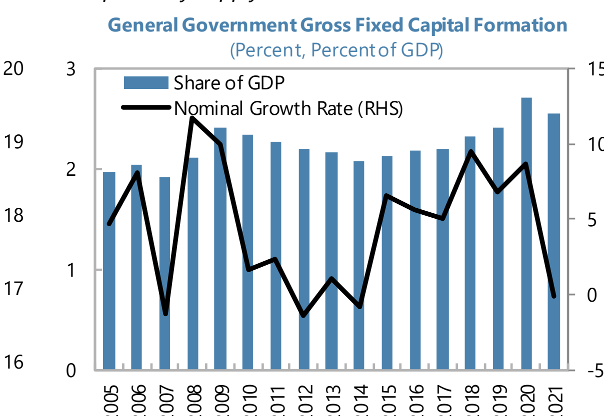
... on the back of elevated spending on COVID aid...



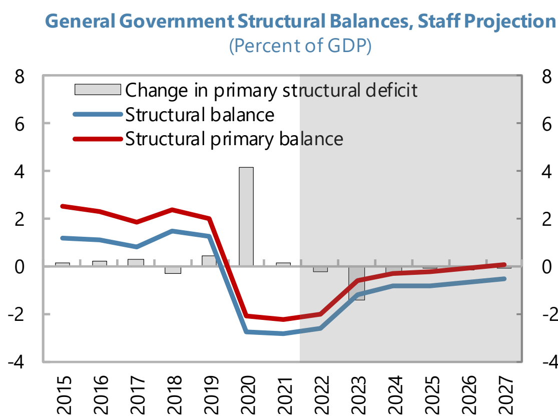
... while tax collections rebounded strongly.



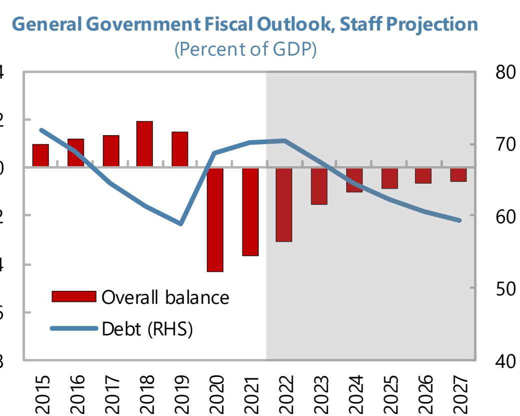
The upward trend in public investment was hampered by supply bottlenecks in 2021.



With continued COVID aid and new measures to alleviate the impact of high energy prices, cyclically-adjusted balances are expected to remain broadly unchanged in 2022.



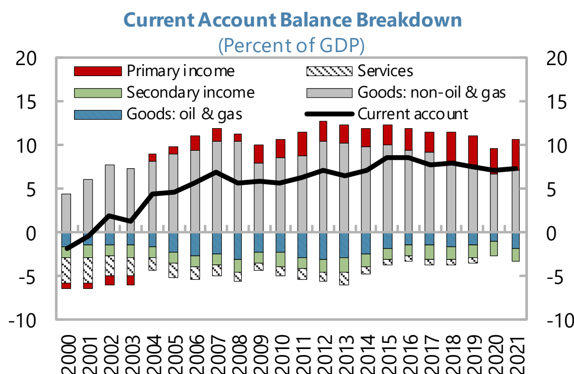
The public debt ratio is projected to fall back to the pre-crisis level over the medium term as the overall balance improves.



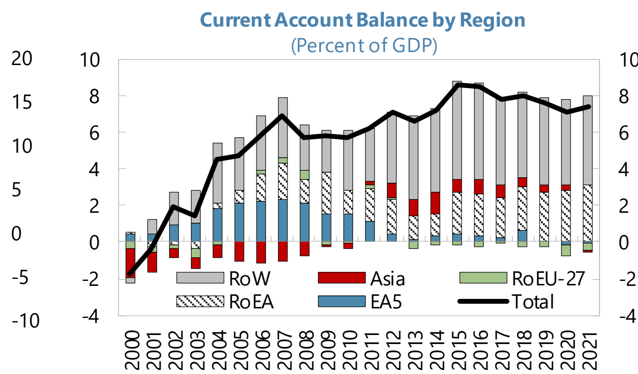
Sources: Federal Statistical Office, Ministry of Finance, and IMF staff calculations and projections.

Figure 4. Germany: Balance of Payments

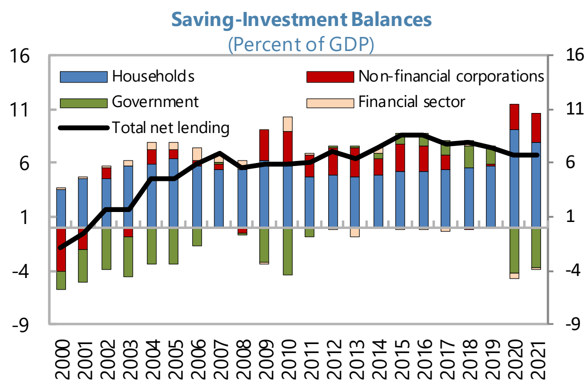
The current account (CA) rebounded in 2021 to 7.4 percent of GDP.



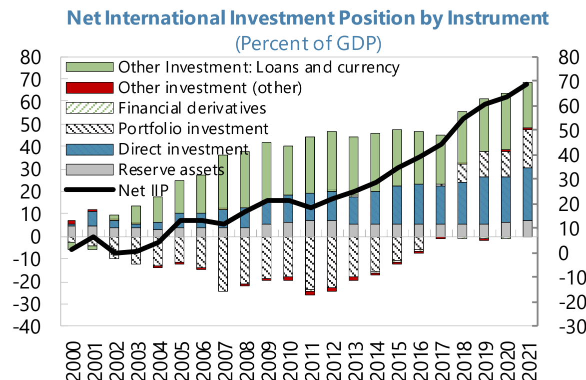
The widening of the CA surplus was broad based, driven by an incresae in surplus relative to the EA.



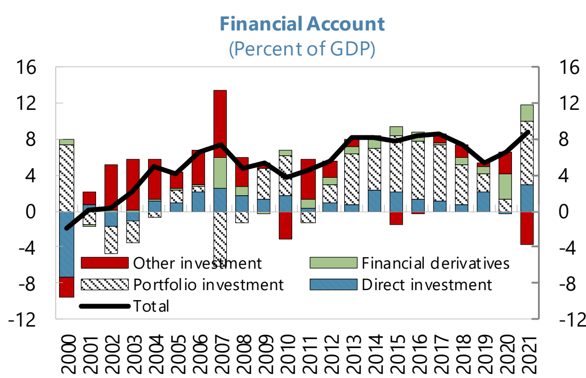
The CA surplus is driven by net savings of the private sector and is partially offset by net dissaving by the government.



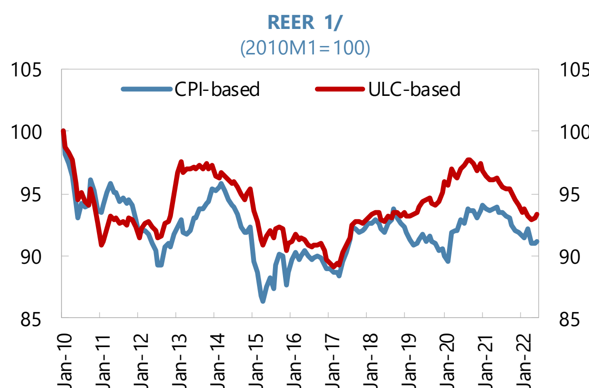
The Net International Investment Position continued to rise, approaching 70 percent of GDP by end-2021.



Outward portfolio and direct investment in 2021 was mirrored by other investment inflows.



The CPI- and ULC-based REERs depreciated in 2021.

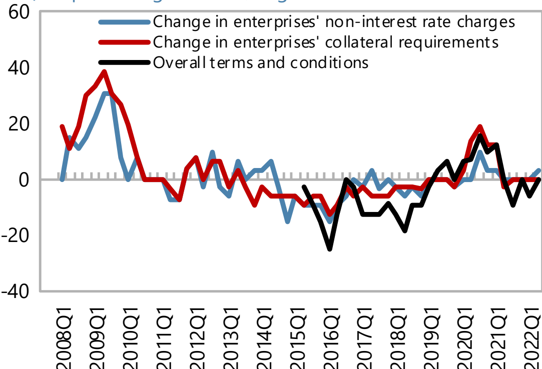


Sources: Bundesbank, DOTS, GDS, Haver Analytics, IMF *World Economic Outlook*, and IMF staff calculations.
1/ The ULC-based REER is measured using ULC statistics for the manufacturing sector in Germany and 37 trading partners, using the OECD System of Unit Labor Cost Indicators.
Note: EA5= Euro area economies (Greece, Ireland, Italy, Portugal, Spain) with high borrowing spreads during the 2010-11 sovereign debt crisis.

Figure 5. Germany: Credit Conditions and Asset Prices

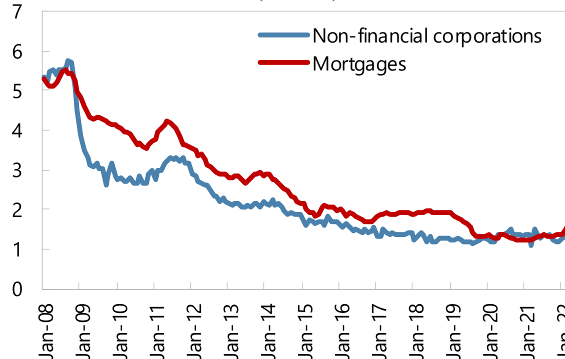
After tightening at the onset of the pandemic, a slight majority of banks eased lending standards in 2021.

Change in Bank Lending Standards, past 3 months
(Net percentage balance; negative indicates looser standard)



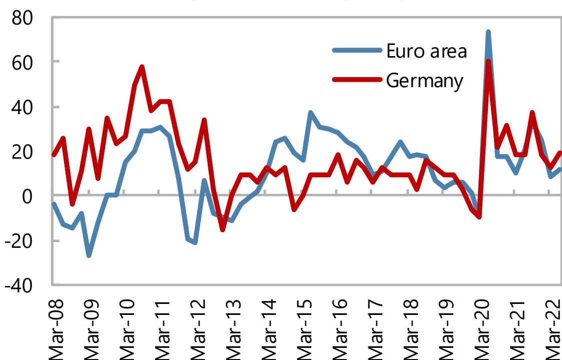
Rising government bond yields passed through to lending rates, especially for mortgages.

Lending Rates on New Loans
(Percent)



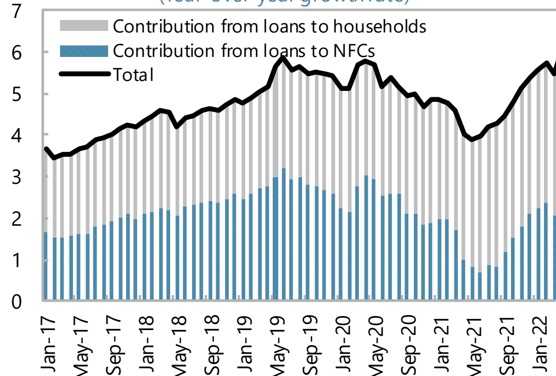
Following a surge in precautionary liquidity demand in Q2 2020, demand for corporate credit eased.

Change in Credit Demand by Enterprises in the Next 3 Months
(Net percentage of banks reporting stronger demand)



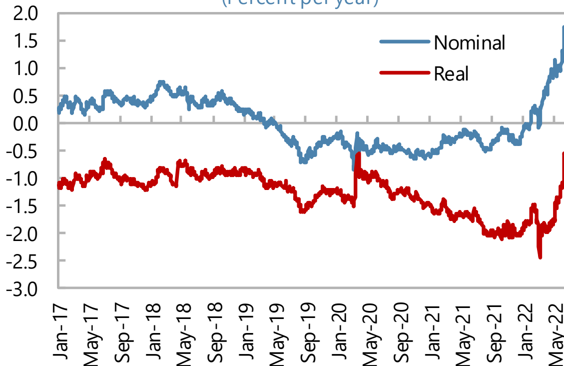
Credit growth picked up in 2021 and 2022 as the economic recovery proceeded and as some mortgagors anticipated rising interest rates.

Lending by Monetary Financial Institutions
(Year-over-year growth rate)



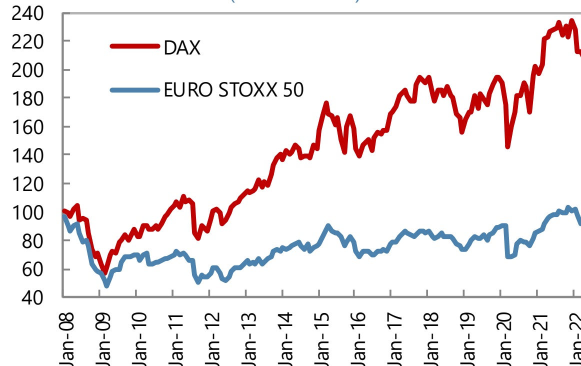
The war in Ukraine has led to higher inflation expecations and a tighter monetary stance that increased government bond yields.

10-year Bond Yield
(Percent per year)



Stock prices surpassed pre-pandemic levels, but pared back gains after Russia's invasion of Ukraine.

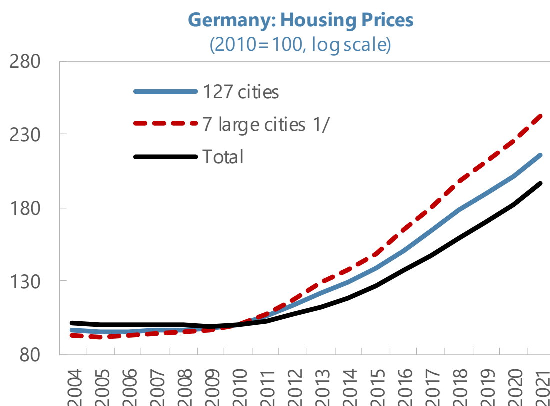
Stock Market Indices
(2007M1=100)



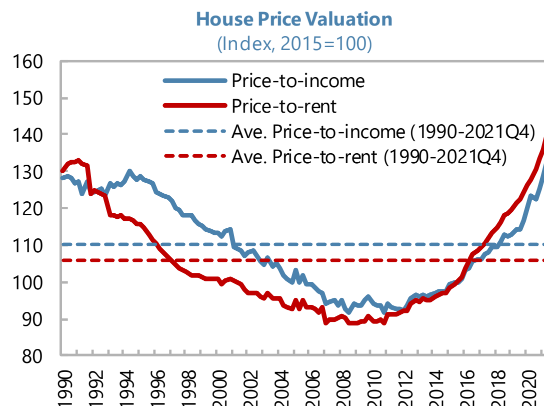
Sources: Bundesbank, ECB, Haver Analytics, Tullett Prebon Information, and IMF staff calculations.

Figure 6. Germany: Housing Market Developments

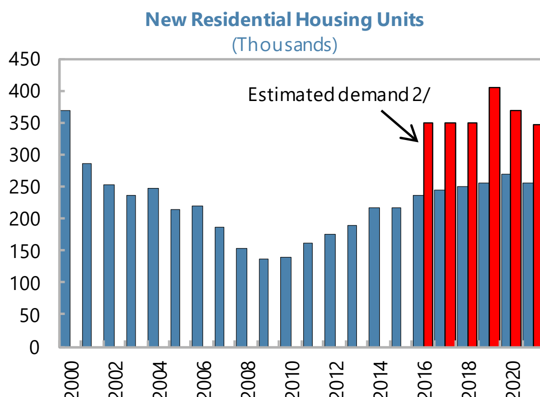
The pandemic has not altered the decade-long upward trend in real estate prices...



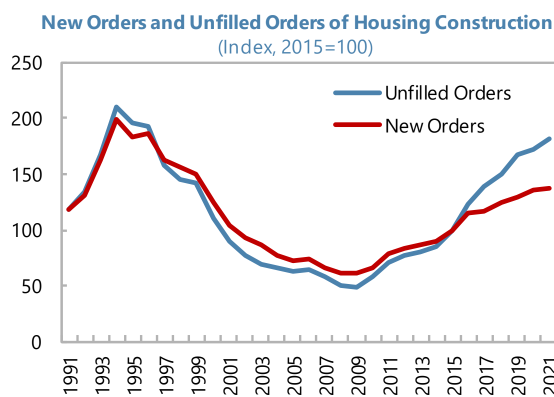
... leading to the valuations at historical highs.



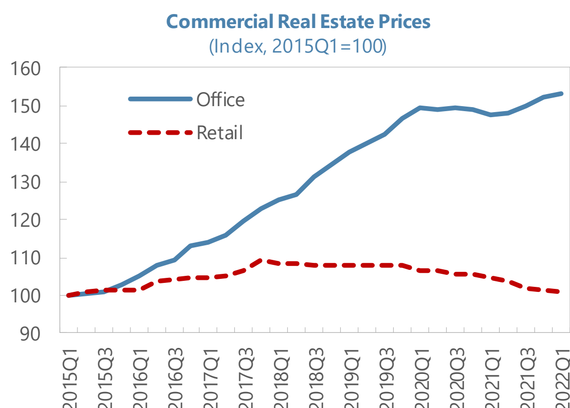
Gradual increases in new housing construction is not adequate to meet demand...



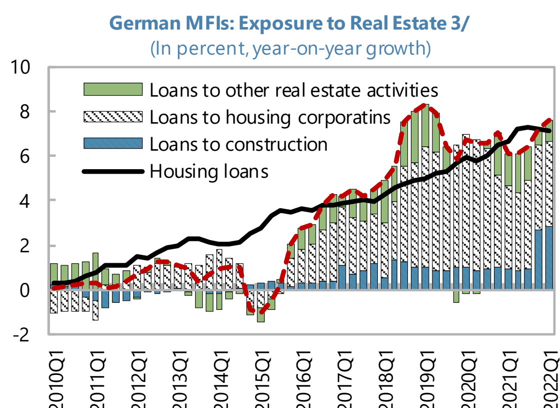
... with unfilled orders continued to accumulate.



The pandemic has weakened retail CRE prices while office CRE prices started rising again after pausing for a year.



Housing loans continue to grow at record levels while loans to CRE sectors decelerated marginally from the peak of 8.3 percent in early 2019



Sources: bulwiengesa AG, Destatis, Deutsche Bundesbank, Federal Ministry of the Interior, Building and Community, vdpResearch, Local Real Estate Surveyor Commission, Haver Analytics, OECD, and IMF staff calculations.

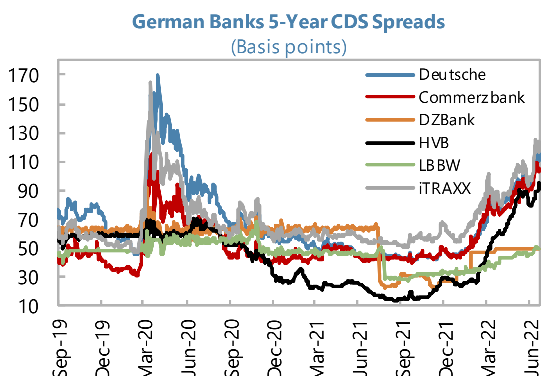
1/ Berlin, Dusseldorf, Frankfurt am Main, Hamburg, Cologne, Munich, and Stuttgart.

2/ The estimate by the Federal Ministry for the Environment for 2016-18 and by the Federal Ministry of Interior for 2019-20.

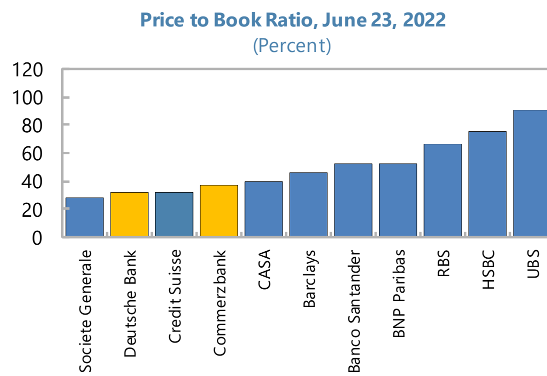
3/ CRE sectors proxied by construction, housing corporations, and other real estate activities.

Figure 7. Germany: Recent Developments in the German Banking Sector

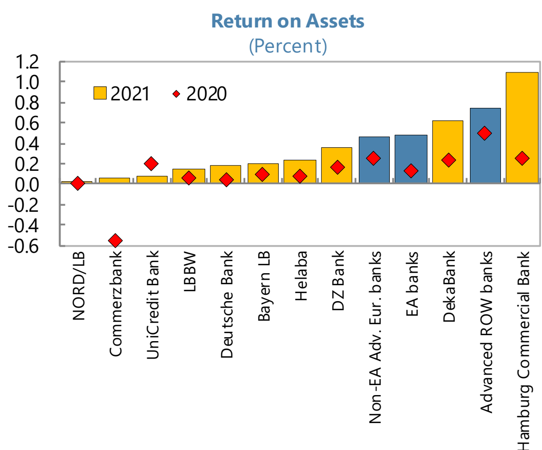
After narrowing with the economic recovery, the fallout from the war in Ukraine lifted banks' credit spreads.



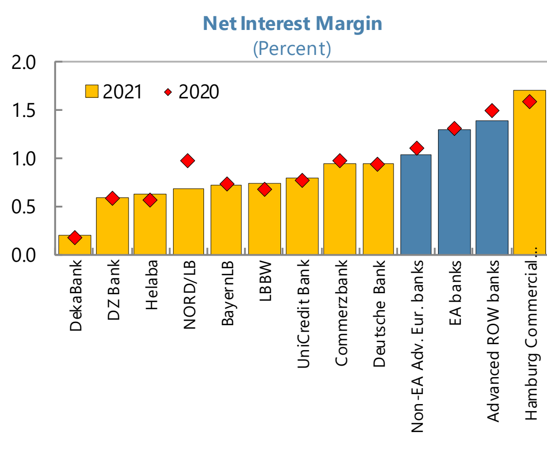
The two largest commercial banks continue trading at a discount relative to many European peers...



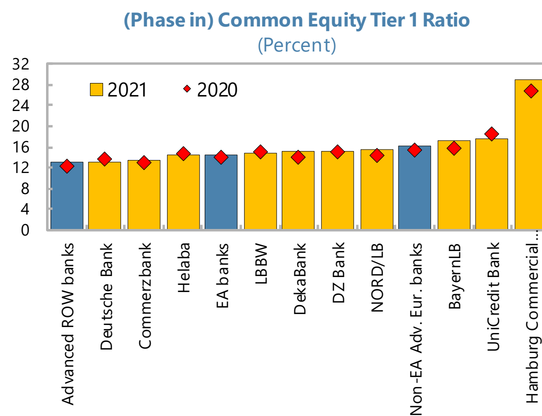
...on the back of generally low profitability...



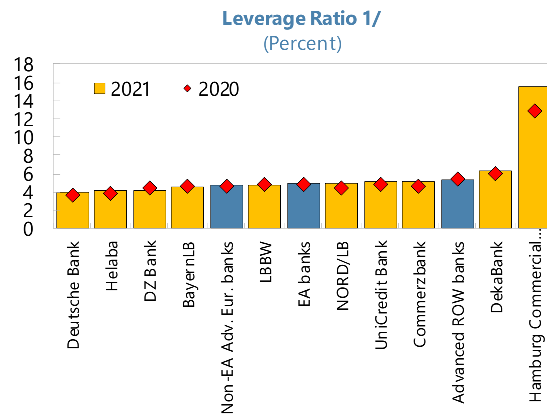
...that in part reflects lower interest rate margins than European peers.



Despite the recession in 2020, German banks maintained generally comfortable risk-weighted capital buffers in 2021...



...yet some German banks have lower leverage ratios than European peers.



Sources: Bloomberg Finance L.P., ECB, IFS, S&P Global Market Intelligence, and IMF staff calculations.
1/ Leverage ratio is defined as common equity net of intangibles as a percent of total assets net of intangibles.

Table 1. Germany: Selected Economic Indicators, 2019–23

	2019	2020	2021	*Projections* 2022	2023
National Accounts	(Percent change, working-day adjusted)				
GDP	1.1	-4.9	2.9	1.6	2.1
Private consumption	1.6	-6.1	0.3	3.3	2.7
Public consumption	3.0	3.5	2.9	-0.1	-0.5
Gross fixed investment	1.9	-3.3	1.0	3.5	2.9
Construction	1.1	1.6	-0.2	4.0	2.6
Machinery and equipment	1.1	-12.3	3.2	4.2	3.6
Final domestic demand	2.0	-3.4	1.1	2.5	2.0
Inventory accumulation 1/	-0.1	-0.8	1.1	0.0	0.0
Total domestic demand	1.9	-4.2	2.3	2.4	2.0
Exports of goods and services	1.1	-10.1	9.5	3.2	3.7
Imports of goods and services	2.9	-9.2	9.0	5.1	3.6
Foreign balance 1/	-0.7	-1.0	0.7	-0.7	0.2
	(Percent change, non-adjusted)				
GDP	1.1	-4.6	2.9	1.5	1.9
Private consumption	1.6	-5.9	0.3	3.3	2.4
Public consumption	3.0	3.5	2.9	-0.2	-0.8
Gross fixed investment	1.8	-2.2	1.1	3.3	2.7
Construction	1.1	2.5	0.0	3.9	2.4
Machinery and equipment	1.0	-11.2	3.3	4.1	3.4
Final domestic demand	1.9	-3.0	1.1	2.4	1.8
Inventory accumulation 1/	-0.1	-0.9	1.1	0.0	0.0
Total domestic demand	1.8	-4.0	2.3	2.4	1.8
Exports of goods and services	1.1	-9.3	9.6	3.1	3.5
Imports of goods and services	2.9	-8.6	9.1	5.0	3.4
Foreign balance 1/	-0.7	-0.8	0.7	-0.7	0.2
Output gap (percent of potential GDP)	0.4	-3.6	-1.6	-0.9	-0.6
Unemployment	(Percent)				
Unemployment rate 2/	3.2	3.8	3.6	3.2	3.1
Unemployment rate 3/	3.0	3.6	3.3		
Prices and Incomes	(Percent change)				
GDP deflator	2.1	1.6	3.0	5.8	3.1
Consumer price index (harmonized)	1.4	0.4	3.2	7.5	4.5
Consumer price index (harmonized), core	1.4	0.8	2.3	4.1	4.0
Compensation per employee (total economy)	3.4	0.4	3.4	3.5	4.0
Unit labor cost (total economy)	3.2	4.4	0.6	4.5	3.1
Real disposable income 4/	1.0	0.0	-0.9	-1.1	1.3
Household saving ratio (percent)	10.8	16.1	15.0	11.2	10.2

1/ Contribution to GDP growth.

2/ ILO definition.

3/ National Accounts Concepts.

4/ Deflated by national accounts deflator for private consumption; not SWDA.

Table 1. Germany: Selected Economic Indicators, 2019–23 (concluded)

	2019	2020	2021	2022	2023
				Projections	
Public Finances			(Percent of GDP)		
General government					
Overall balance 5/	1.5	-4.3	-3.7	-3.0	-1.5
Structural balance	1.2	-2.8	-2.9	-2.6	-1.2
General government debt	58.9	68.7	70.2	70.4	67.5
Balance of Payments			(Percent of GDP)		
Current account	7.6	7.1	7.4	6.1	6.7
Trade balance 6/	6.2	5.6	5.4	4.5	5.4
Services balance	-0.5	0.1	0.0	-0.1	-0.3
Primary income balance	3.3	2.9	3.5	3.2	3.1
Secondary income balance	-1.4	-1.6	-1.5	-1.5	-1.5
Monetary Data			(Percent change)		
Money and quasi-money (M3) 7/ 8/	4.6	8.2	5.6		
Credit to private sector 7/	5.4	4.9	5.4		
Interest Rates			(Period average in percent)		
Three-month interbank rate 7/	-0.4	-0.4	-0.5		
Yield on ten-year government bonds 7/	-0.2	-0.5	-0.3		
Exchange Rates					
Euro per US$	0.89	0.88	0.84		
Nominal effective rate (2005=100) 9/	101.4	103.8	104.7		
Real effective rate (2005=100) 10/	95.4	96.7	97.6		
Memorandum Items:					
Nominal GDP (billions of euros)	3473.4	3367.6	3570.6	3835.4	4030.3
Population growth (percent)	0.2	0.1	0.0		
GDP per capita (thousands of euros)	41.8	40.5	42.9		

Sources: Deutsche Bundesbank, Federal Statistical Office, IMF staff estimates and projections.

5/ Net lending/borrowing.

6/ Excluding supplementary trade items.

7/ Data refer to end of December.

8/ Data reflect Germany's contribution to M3 of the euro area.

9/ Nominal effective exchange rate, all countries.

10/ Real effective exchange rate, CPI based, all countries.

Table 2. Germany: General Government Operations, 2018–27
(Percent of GDP)

					Projections					
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Revenue	46.2	46.5	46.5	47.9	47.0	46.9	47.0	47.1	47.2	47.2
Taxes	23.8	23.8	23.0	24.6	23.7	23.8	23.9	23.9	23.9	23.9
Indirect taxes	11.0	11.1	10.7	11.5	11.4	11.5	11.5	11.5	11.5	11.5
Direct taxes	12.8	12.7	12.2	13.2	12.3	12.3	12.4	12.4	12.4	12.4
Social contributions	17.0	17.2	18.1	17.7	17.5	17.5	17.5	17.6	17.7	17.7
Grants	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.2	0.2	0.2
Other current revenue	5.3	5.3	5.4	5.5	5.4	5.3	5.3	5.3	5.3	5.3
Expense	44.4	45.0	50.9	51.6	49.9	48.3	47.9	47.8	47.7	47.6
Compensation of employees	7.7	7.9	8.4	8.2	8.0	8.0	8.0	8.0	8.0	8.0
Goods and services	5.2	5.3	6.2	6.4	6.3	5.9	5.5	5.5	5.4	5.4
Interest	0.9	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Subsidies	0.8	0.9	2.1	3.1	2.1	1.7	1.8	1.8	1.7	1.7
Social benefits	23.9	24.4	26.9	26.2	25.9	25.1	25.2	25.3	25.4	25.4
Social benefits in kind	8.5	8.6	9.2	9.2	9.1	9.0	9.0	9.0	9.0	9.0
Social transfers	15.4	15.7	17.7	17.0	16.8	16.1	16.2	16.3	16.4	16.4
Pensions	8.9	9.1	9.7	9.4	9.4	9.3	9.4	9.4	9.5	9.5
Child benefits	0.6	0.6	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Unemployment benefits	1.2	1.2	1.9	1.7	1.4	1.2	1.2	1.2	1.2	1.2
Other social transfers	4.8	4.9	5.3	5.2	5.2	4.9	4.9	4.9	4.9	4.9
Other expense	5.7	5.8	6.6	7.0	7.0	7.0	6.9	6.7	6.6	6.5
Gross public investment	2.3	2.4	2.7	2.5	2.9	2.9	2.9	2.9	2.8	2.8
Net acquisition of nonfinancial assets	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Net lending/borrowing	1.9	1.5	-4.3	-3.7	-3.0	-1.5	-1.0	-0.8	-0.6	-0.5
Primary balance	2.8	2.3	-3.7	-3.1	-2.5	-0.9	-0.5	-0.2	-0.1	0.0
Memorandum Items:										
Structural balance	1.6	1.2	-2.8	-2.9	-2.6	-1.2	-0.9	-0.8	-0.6	-0.5
Change in structural balance	*0.4*	*-0.3*	*-4.0*	*-0.1*	*0.3*	*1.4*	*0.4*	*0.0*	*0.2*	*0.1*
Structural primary balance	2.5	2.0	-2.1	-2.3	-2.0	-0.6	-0.3	-0.2	-0.1	0.0
Change in structural primary balance	*0.3*	*-0.5*	*-4.2*	*-0.1*	*0.2*	*1.4*	*0.3*	*0.1*	*0.2*	*0.1*
Public gross debt (Maastricht definition)	61.2	58.9	68.7	70.2	70.4	67.5	64.6	62.4	60.6	59.3

Sources: Bundesbank, Federal Statistical Office, Ministry of Finance, and IMF staff estimates and projections.

Table 3. Germany: Medium Term Projections, 2018–27

					Projections					
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Real Sector	(Percentage change unless otherwise indicated, working-day adjusted)									
Real GDP	1.1	1.1	-4.9	2.9	1.6	2.1	2.2	1.7	1.4	1.2
Total domestic demand	1.7	1.9	-4.2	2.3	2.4	2.0	1.9	1.7	1.3	1.3
Private consumption	1.4	1.6	-6.1	0.3	3.3	2.7	2.2	1.7	1.2	1.2
Households saving ratio (in percent)	11.3	10.8	16.1	15.0	11.2	10.2	10.3	10.3	10.5	10.7
Foreign balance (contribution to growth)	-0.5	-0.7	-1.0	0.7	-0.7	0.2	0.3	0.2	0.1	0.0
	(Percentage change unless otherwise indicated, non-adjusted)									
Real GDP	1.1	1.1	-4.6	2.9	1.5	1.9	2.2	1.7	1.4	1.2
Total domestic demand	1.7	1.8	-4.0	2.3	2.4	1.8	1.9	1.7	1.3	1.3
Private consumption	1.4	1.6	-5.9	0.3	3.3	2.4	2.0	1.8	1.2	1.2
Households saving ratio (in percent)	11.3	10.8	16.1	15.0	11.2	10.2	10.3	10.3	10.5	10.7
Foreign balance (contribution to growth)	-0.5	-0.7	-0.8	0.7	-0.7	0.2	0.4	0.2	0.1	0.0
Output gap (percent of potential GDP)	0.8	0.4	-3.6	-1.6	-0.9	-0.6	-0.3	0.0	0.0	0.0
	(Percentage change unless otherwise indicated)									
Employment (millions of persons)	41.8	42.2	41.7	41.4	42.1	42.1	42.1	42.1	42.0	41.9
Labor productivity (per employed person)	-0.3	0.1	-3.8	2.9	-0.4	1.4	1.8	1.4	1.2	1.2
Consumer prices	1.9	1.4	0.4	3.2	7.5	4.5	3.2	2.2	2.0	2.0
Consumer prices (core)	1.5	1.4	0.8	2.3	4.1	4.0	3.3	2.2	2.0	2.0
Compensation per employee	2.9	3.4	0.4	3.4	4.2	4.5	4.0	3.3	3.3	3.3
External Sector	(Percent of GDP)									
Current account balance	7.9	7.6	7.1	7.4	6.1	6.7	7.0	7.1	7.0	6.9
Trade balance (goods and services)	6.1	5.7	5.7	5.4	4.3	5.1	5.2	5.1	5.1	5.0
Net international investment position	54.8	60.3	63.4	68.4	72.3	74.7	77.9	81.8	85.9	88.7
General Government										
Overall balance	1.9	1.5	-4.3	-3.7	-3.0	-1.5	-1.0	-0.8	-0.6	-0.5
Gross debt	61.2	58.9	68.7	70.2	70.4	67.5	64.6	62.4	60.6	59.3

Sources: Federal Statistical Office, Bundesbank, and IMF staff estimates.

Table 4. Germany: Balance of Payments, 2018–27 1/
(Percent of GDP)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
					Projections					
Current account	7.9	7.6	7.1	7.4	6.1	6.7	7.0	7.1	7.0	6.9
Trade balance	6.1	5.7	5.7	5.4	4.3	5.1	5.2	5.1	5.1	5.0
Trade in goods	6.6	6.2	5.6	5.4	4.5	5.4	5.7	5.7	5.8	5.8
Exports	38.3	37.5	35.2	38.3	38.0	37.6	37.5	37.5	37.5	37.5
Imports	31.7	31.3	29.6	32.9	33.5	32.2	31.8	31.8	31.7	31.7
Trade in services	-0.5	-0.5	0.1	0.0	-0.1	-0.3	-0.5	-0.6	-0.7	-0.8
Exports	9.0	9.2	8.3	9.2	9.6	8.9	8.9	9.0	9.0	9.0
Imports	9.5	9.7	8.2	9.2	9.7	9.3	9.4	9.5	9.7	9.8
Primary income balance	3.3	3.3	2.9	3.5	3.2	3.1	3.4	3.5	3.4	3.4
Secondary income balance	-1.5	-1.4	-1.6	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Capital and Financial Account	7.3	5.3	6.3	8.8	6.1	6.7	7.0	7.1	7.0	6.9
Capital account	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial account	7.3	5.4	6.4	8.8	6.1	6.7	7.0	7.1	7.0	6.9
Direct Investment	0.6	2.2	-0.1	2.9	1.6	1.5	2.0	1.7	1.7	1.8
Abroad	4.9	4.0	3.5	4.6	4.0	4.1	4.2	4.1	4.1	4.2
Domestic	4.2	1.8	3.7	1.7	2.4	2.6	2.2	2.4	2.4	2.4
Portfolio investment balance	4.6	2.0	1.3	7.1	3.1	3.7	4.5	4.1	4.1	4.1
Financial derivatives	0.7	0.7	2.9	1.7	0.1	0.8	0.5	0.7	0.6	0.6
Other financial transactions	1.5	0.5	2.4	-3.8	1.2	0.8	0.0	0.7	0.6	0.4
Change in reserve assets	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Net errors and omissions	-0.6	-2.2	-0.5	1.4	0.0	0.0	0.0	0.0	0.0	0.0

Sources: Bundesbank, Federal Statistical Office, IMF Statistics Department, and IMF staff estimates.
1/ Based on Balance of Payments Manual 6.

Table 5. Germany: International Investment Position, 2013–21 1/
(Percent of GDP)

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Assets	247.1	261.7	260.8	264.2	261.4	260.6	276.4	310.1	316.4
Direct investment	54.0	56.2	59.4	60.3	61.0	64.1	66.1	70.6	73.2
Portfolio investment	79.5	86.5	88.2	90.1	93.3	89.1	99.1	108.8	113.4
Equity and investment fund shares	23.7	26.4	28.9	30.5	34.6	31.5	38.2	43.5	53.2
Debt securities	55.8	60.1	59.3	59.6	58.7	57.6	60.9	65.4	60.1
Financial derivatives (other than reserves) and employee stock options	22.4	27.0	22.0	19.5	14.5	12.6	18.0	25.0	17.7
Other investment	86.1	86.6	85.9	88.7	87.5	89.7	87.5	99.2	104.8
Reserve assets	5.1	5.4	5.3	5.6	5.1	5.1	5.7	6.5	7.3
Liabilities	222.5	232.7	226.3	225.0	217.1	205.8	216.1	246.7	248.1
Direct investment	41.3	41.3	42.2	42.9	43.8	45.5	45.6	51.0	50.4
Portfolio investment	97.6	102.1	99.2	95.5	92.3	80.4	87.4	97.0	95.8
Equity and investment fund shares	32.2	33.2	34.2	34.0	36.9	29.1	34.3	35.6	37.6
Debt securities	65.4	68.9	64.9	61.5	55.4	51.3	53.1	61.4	58.2
Financial derivatives (other than reserves) and employee stock options	22.0	27.8	22.5	20.4	15.0	13.2	18.9	25.2	17.7
Other investment	61.6	61.5	62.4	66.2	66.0	66.7	64.2	73.5	84.2
Net International Investment Position	24.7	29.0	34.6	39.2	44.2	54.8	60.3	63.4	68.4
Direct investment	12.7	14.8	17.2	17.4	17.2	18.5	20.5	19.6	22.9
Portfolio investment	-18.1	-15.5	-11.0	-5.4	1.0	8.7	11.7	11.9	17.6
Financial derivatives (other than reserves) and employee stock options	0.4	-0.8	-0.5	-0.9	-0.4	-0.6	-0.9	-0.3	0.0
Other investment	24.6	25.1	23.6	22.6	21.4	23.0	23.3	25.7	20.6

Sources: Deutsche Bundesbank, IMF Statistics Department, and IMF staff calculations.
1/ Based on Balance of Payments Manual 6.

Table 6. Germany: Core Financial Soundness Indicators for Banks, 2016–21
(Percent, unless otherwise indicated)

	2016	2017	2018	2019	2020	2021
Capital Adequacy						
Regulatory capital to risk-weighted assets	18.8	19.4	18.9	18.6	19.2	18.8
Commercial banks	17.9	18.8	18.1	18.3	19.8	20.1
Landesbanken	21.4	22.3	20.2	20.0	19.9	20.0
Savings banks	16.9	17.4	17.6	17.3	17.6	16.7
Credit cooperatives	17.7	17.6	17.5	17.1	17.2	16.6
Regulatory Tier I capital to risk-weighted assets	16.3	16.9	16.6	16.5	17.2	16.8
Commercial banks	16.0	16.7	16.0	16.4	17.6	17.4
Landesbanken	16.6	17.5	15.6	15.7	15.8	15.9
Savings banks	15.2	15.8	16.2	16.1	16.4	15.7
Credit cooperatives	14.5	14.8	15.0	14.9	15.4	15.0
Asset Composition and Quality						
Sectoral distribution of loans to total loans						
Loan to households	28.5	28.6	29.1	29.5	28.4	27.9
Commercial banks	20.9	20.8	21.4	22.2	21.1	20.2
Landesbanken	5.4	5.0	4.2	4.0	3.8	3.7
Savings banks	57.8	57.1	55.3	54.5	51.6	50.9
Credit cooperatives	68.2	67.0	66.0	64.7	61.5	60.3
Loans to non-financial corporations	14.9	15.1	15.7	16.1	15.4	15.1
Commercial banks	11.0	11.4	12.6	13.1	11.9	11.3
Landesbanken	24.1	23.3	22.2	21.9	20.9	21.8
Savings banks	23.1	24.0	25.1	25.2	24.2	23.8
Credit cooperatives	17.4	18.3	19.0	19.6	19.6	20.1
NPLs to gross loans	1.7	1.5	1.2	1.1	1.7	1.5
Commercial banks	1.2	1.1	1.1	1.0	2.1	1.9
Landesbanken	3.6	3.2	1.7	0.9	0.9	0.9
Savings banks	1.6	1.3	1.2	1.1	1.5	1.3
Credit cooperatives	1.8	1.6	1.4	1.2	1.7	1.5
NPLs net of provisions to capital	14.7	11.9	9.1	6.8	6.2	5.4
Commercial banks	9.2	5.5	6.1	3.0	9.3	7.8
Landesbanken	30.7	30.1	10.6	4.9	5.9	5.8
Savings banks	16.3	13.6	11.9	10.4	3.0	2.4
Credit cooperatives	17.3	15.9	14.4	12.5	5.2	4.5

Table 6. Germany: Core Financial Soundness Indicators for Banks, 2016–21 (concluded)
(Percent, unless otherwise indicated)

	2016	2017	2018	2019	2020	2021
Earnings and Profitability						
Return on average assets (after-tax)	0.2	0.2	0.2	0.0	0.1	...
Commercial banks	0.1	0.1	0.1	-0.5	-0.1	...
Landesbanken	-0.1	0.1	-0.2	0.1	0.0	...
Savings banks	0.6	0.6	0.4	0.4	0.3	...
Credit cooperatives	0.7	0.6	0.5	0.6	0.4	...
Return on average equity (after-tax)	4.3	4.1	2.4	-0.4	1.1	...
Commercial banks	3.2	2.8	1.5	-9.0	-2.9	...
Landesbanken	-2.0	1.0	-3.9	1.6	0.9	...
Savings banks	7.4	6.7	4.8	4.8	3.4	...
Credit cooperatives	8.4	7.1	5.5	6.6	5.0	...
Interest margin to gross income	71.2	69.5	72.3	69.5	67.3	...
Commercial banks	63.4	60.7	67.8	61.8	57.6	...
Landesbanken	74.9	73.9	74.2	73.0	76.0	...
Savings banks	76.4	73.9	71.7	71.4	70.5	...
Credit cooperatives	76.5	75.3	74.6	73.5	72.3	...
Trading income to gross income	2.4	4.5	2.9	2.1	2.9	...
Commercial banks	2.6	8.0	4.9	3.2	5.3	...
Landesbanken	10.2	11.5	8.8	6.4	6.2	...
Savings banks	0.0	0.0	0.0	0.0	0.0	...
Credit cooperatives	0.0	0.0	0.0	0.0	0.0	...
Noninterest expenses to gross income	69.3	71.9	73.1	76.0	72.3	...
Commercial banks	74.3	79.4	79.3	84.9	77.7	...
Landesbanken	63.6	72.5	76.6	78.5	76.0	...
Savings banks	67.8	67.1	68.3	71.4	70.1	...
Credit cooperatives	66.6	65.7	66.2	67.2	67.2	...
Liquidity						
Liquid assets to total short-term liabilities	146.6	151.3	151.7	161.2	169.6	170.9
Commercial banks	127.9	131.4	140.3	147.4	157.4	160.9
Landesbanken	146.4	150.8	126.0	152.6	178.4	152.6
Savings banks	253.7	263.6	198.6	186.0	187.2	174.4
Credit cooperatives	246.9	242.2	162.2	169.9	158.6	166.9
Sensitivity to Market Risk						
Net open positions in FX to capital	4.0	3.7	3.2	3.7	3.4	4.3
Commercial banks	1.9	2.1	2.2	2.6	2.4	2.8
Landesbanken	6.4	4.0	3.1	2.6	3.2	3.4
Savings banks	4.4	4.3	3.5	4.0	3.6	4.6
Credit cooperatives	7.9	8.2	7.4	7.6	7.4	9.6

Source: Deutsche Bundesbank. The authorities provide annual data only and disseminate them once a year.

Table 7. Germany: Additional Financial Soundness Indicators, 2016–21

(Percent, unless otherwise indicated)

	2016	2017	2018	2019	2020	2021
Deposit-taking Institutions						
Capital to assets	6.0	6.3	6.5	6.3	5.9	5.9
Commercial banks	5.1	5.6	5.7	5.5	4.8	4.9
Landesbanken	5.7	5.4	5.0	4.8	3.7	3.6
Savings banks	8.6	9.0	9.1	9.1	8.7	8.5
Credit cooperatives	7.9	8.2	8.3	8.4	8.2	8.2
Geographical distribution of loans to total loans						
Germany	76.6	78.7	78.0	77.6	79.8	79.0
EU-member countries	14.0	12.6	13.2	14.2	9.4	9.4
Others	9.4	8.7	8.8	8.2	10.9	11.6
FX loans to total loans	11.2	9.8	9.7	9.4	7.6	8.1
Personnel expenses to noninterest expenses	50.3	50.4	50.2	49.3	50.8	...
Commercial banks	42.7	42.5	41.5	40.8	43.5	...
Landesbanken	45.1	46.0	50.4	49.0	49.7	...
Savings banks	62.6	63.3	62.2	61.7	62.2	...
Credit cooperatives	60.0	59.7	59.0	57.3	57.3	...
Trading and fee income to total income	28.8	30.5	27.7	30.5	32.7	...
Commercial banks	36.6	39.3	32.2	38.2	42.4	...
Landesbanken	25.1	26.1	25.8	27.0	24.0	...
Savings banks	23.6	26.1	28.3	28.6	29.5	...
Credit cooperatives	23.5	24.7	25.4	26.5	27.7	...
Funding						
Customer deposits to total (non-interbank) loans	82.1	80.6	81.8	82.1	82.2	81.1
Commercial banks	90.5	84.9	88.3	91.1	83.6	82.7
Landesbanken	39.8	40.0	32.8	35.8	42.6	41.0
Savings banks	109.5	108.0	107.5	105.1	105.9	104.3
Credit cooperatives	117.7	116.2	115.2	112.8	114.7	112.0
Deposits/total assets	66.8	68.8	69.1	66.5	67.9	70.2
Commercial banks	68.5	72.9	73.3	67.7	68.5	73.3
Landesbanken	58.4	60.3	59.9	57.5	60.0	60.5
Savings banks	86.5	86.2	85.9	86.2	86.9	87.2
Credit cooperatives	87.2	87.1	87.1	87.2	87.6	87.6
Interbank assets/total assets	34.9	36.2	35.6	33.9	35.5	37.1
Commercial banks	39.3	41.0	39.4	35.6	37.3	40.8
Landesbanken	30.7	35.5	38.2	36.2	36.9	35.9
Savings banks	17.9	17.3	17.7	17.9	20.9	21.5
Credit cooperatives	21.2	20.4	20.2	20.3	22.4	22.4
Interbank liabilities/total assets	21.9	21.9	21.2	20.1	22.1	24.2
Commercial banks	26.0	26.8	25.3	23.1	25.5	29.9
Landesbanken	27.0	27.5	30.8	27.8	31.1	31.2
Savings banks	11.1	10.7	10.2	10.3	11.6	12.9
Credit cooperatives	12.3	12.6	12.4	12.4	13.9	14.7
Loans/assets	41.6	42.8	44.3	43.3	41.6	42.7
Commercial banks	29.7	32.0	34.7	32.8	30.8	32.1
Landesbanken	46.1	44.9	44.6	43.9	42.6	45.9
Savings banks	65.5	66.1	66.0	66.2	63.7	63.4
Credit cooperatives	62.0	62.6	63.1	63.5	61.8	62.0
Securities holdings/assets	17.4	16.7	16.2	15.3	14.1	13.6
Commercial banks	11.9	11.3	10.7	9.7	8.6	8.6
Landesbanken	18.2	16.9	15.7	15.1	13.3	12.0
Savings banks	24.6	23.7	23.2	22.2	20.8	19.9
Credit cooperatives	26.8	26.0	25.4	24.2	23.3	22.3
Spread between highest and lowest interbank rates 1/	3.5	4.1	...	49.4	59.3	62.7
Spread between reference loan and deposit rates 2/	280.0	260.0	242.0	225.0	208.0	193.0

Table 7. Germany: Additional Financial Soundness Indicators, 2016–21 (concluded)
(Percent, unless otherwise indicated)

	2016	2017	2018	2019	2020	2021
Insurance Sector						
Solvency ratio, Life	343.7	393.7	461.2	386.8	373.6	456.0
Solvency ratio, Non-life (without reinsurance and health insurance)	285.5	291.8	288.8	285.1	277.4	275.9
Return on average equity, Life 3/	2.2	3.6	5.4	4.8	...	...
Return on average equity, Non-life (without reinsurance and health insurance) 3/	3.9	4.6	4.1	3.9	...	...
Market Liquidity						
Average bid-ask spread in the securities market (government bills)	0.00475	0.00485	0.00474	0.00219	0.00372	0.00035
Corporate Sector						
Total debt to equity 4/	91.3	84.1	102.7	97.8	96.8	91.1
Earnings to interest and principal expenses 4/ 5/	1875.1	1769.2	1955.6	1977.1	1836.3	2183.1
Number of applications for protection from creditors 4/ 6/	12056.0	11967.0	11434.0	11434.0	10566.0	8677.0
Households						
Household debt to GDP 4/	52.5	51.8	51.6	52.6	55.7	54.8
Household debt service and principal payments to income 4/ 5/	1.3	1.2	1.0	0.9	0.9	0.8
Real Estate Markets						
Real estate prices, new dwellings 7/	100	109.7	118.9	127.3	134.5	143.4
Real estate prices, resale 7/	100	108.7	118	125.3	133.6	143.3
Real estate prices, new and resale 7/	100	108.9	118.2	125.6	133.7	143.3
Real estate prices, long time series 8/	126	133.7	142.5	150.8	162.4	180.3
Real estate prices, commercial property 9/	139.8	154.6	163.2	171.7	166.8	158.1
Residential real estate loans to total loans	18.5	18.6	19.4	20.4	19.9	19.9
Commercial real estate loans to total loans	5.6	5.6	5.9	6.3	6.2	4.6

Source: Deutsche Bundesbank. The authorities provide annual data only and disseminate them once a year.
1/ Spread between highest and lowest three month money market rates as reported by Frankfurt banks (basis points). The value for 2018 is missing due to the methodology change in Q4 2018.
2/ Spread in basis points.
3/ Profits after tax devided by equity.
4/ Indicator compiled according to definitions of the Compilation Guide on FSIs.
5/ Excluding principal payments.
6/ Resident enterprises that filed for bankruptcy.
7/ Residential property price index (yearly average, 2016 = 100); source: Bundesbank calculations based on price data provided by bulwiengesa AG for 127 towns and cities, weighted by transactions.
8/ Residential property price index (yearly average, 2010 = 100, long time series); source: Bundesbank calculations based on varying data providers (until 2005: bulwiengesa AG, from 2006 onwards: vdpResearch, from 2014 onwards: Federal Statistical Office); varying composition of regions and housing types.
9/ Commercial property price index (office and retail property, yearly average, 2010 = 100); source: capital growth data provided by bulwiengesa AG for 127 towns and cities; separate indices are calculated for office property and retail property.

Annex I. External Sector Assessment

<table>
<tr><td colspan="8"> Overall Assessment: The external position in 2021 was stronger than the level implied by medium-term fundamentals and desirable policies. This assessment accounts for continued temporary weakness in outbound travel in 2021 due to the ongoing COVID-19 pandemic. Russia's invasion of Ukraine in February 2022 and the associated economic sanctions are expected to weaken Germany's current account significantly in 2022, as energy import prices surge, supply disruptions intensify and exports to Russia collapse. The current account surplus is projected to increase in 2023 and 2024 as energy prices and supply bottlenecks ease, before declining over the medium term on reduced competitiveness and revived domestic demand. Potential Policy Responses: Policies aimed at promoting investment and diminishing excess saving would support external rebalancing and a further reduction of the current account balance towards its norm. In particular, the sizeable fiscal stimulus in response to the COVID-19 crisis and the fiscal measures to relieve the current impact of high energy prices are welcome. An investment push is a key priority to achieve Germany's climate, digital and energy security goals, including to expand the generation and distribution of renewable electricity, broaden the network of electric vehicle charging stations, and widen coverage of fiber optic and 5G mobile networks. Structural reforms to foster innovation, including development of the venture capital market and reducing the administrative steps needed to start a business, would also stimulate investment. Additional tax relief for lower-income households would help reduce excess saving and ameliorate external imbalances. </td></tr>
<tr><td>Foreign Asset and Liability Position and Trajectory</td><td colspan="7"> Background. Germany's NIIP reached 65 percent of GDP in 2021, from 67 percent in 2020. The NIIP increased in 2021 slightly less than the year's CA balance, suggesting slight valuation losses over the year. Germany's TARGET2 claims on the Eurosystem increased to €1.3 trillion by end-2021, from €1.1 trillion at the end of 2020. In 2021, the NIIP was revised up by 3.4 percent of GDP, for the period between 2017 and 2021, due to new data becoming available on the safe custody accounts abroad of German insurers and pension funds. The allocation of SDRs in 2021 did not affect the NIIP, because it caused both assets and liabilities to rise by the same amounts. Between 2017 and 2021, the NIIP has increased by some 23 percent of GDP, which lifts the primary income balance of the CA going forward. Assessment. Germany's exposure to the Eurosystem remains large, given continued quantitative easing by the ECB. </td></tr>
<tr><td>2021 (% GDP)</td><td>NIIP: 65</td><td>Gross Assets: 302</td><td>Debt Assets: 170</td><td colspan="2">Gross Liabilities: 237</td><td colspan="2">Debt Liabilities: 163</td></tr>
<tr><td>Current Account</td><td colspan="7"> Background. The current account surplus came in at 7.4 percent of GDP in 2021 (compared with 7.1 percent in 2020 and 7.8 percent on average over 2017–19). The strengthening of the current account in 2021 was driven by a recovery of earnings on foreign direct investment, within the primary income balance. The goods trade balance remained weaker than pre-pandemic levels, largely due to costlier energy imports. The services trade balance remains stronger than pre-pandemic levels, due to elevated licensing fees for COVID-19 vaccines and still subdued imports of tourism and travel services. The bulk of the CA surplus reflects the large saving—investment surplus of households, which is only partially offset by the saving—investment deficit of the government. Assessment. The cyclically adjusted CA balance is estimated by the EBA model to reach 7.5 percent of GDP. Staff assess the cyclically adjusted CA balance to be 6.9 percent of GDP, which is 0.6 percent of GDP lower than estimated by the model, after accounting for the temporary drop in outbound travel (+0.5), the temporary pandemic-induced shift of consumption from services to goods (+0.2), and temporarily higher net exports of medical goods (-0.1), all associated with the pandemic. Staff assesses the CA norm to be between 2.8 and 3.8 percent of GDP, with a midpoint of 3.3 percent of GDP, in line with the EBA model. The difference between the cyclically adjusted CA and the CA norm implies that the CA gap in 2021 is in the range of 3.1 to 4.1 percent of GDP, with a midpoint of 3.6 percent of GDP. Note that the demographic adjuster from past assessments has been phased out this year. </td></tr>
<tr><td>2021 (% GDP)</td><td>CA: 7.4</td><td>Cycl. Adj. CA: 7.5</td><td>EBA Norm: 3.3</td><td>EBA Gap: 4.2</td><td>COVID-19 Adj.: -0.6</td><td>Other Adj.: 0</td><td>Staff Gap: 3.6</td></tr>
<tr><td>Real Exchange Rate</td><td colspan="7"> Background. The REER based on consumer prices depreciated by 2 percent in 2021, driven by real depreciations against the United States, China and the U.K. Between December 2021 and February 2022, the REER based on consumer prices depreciated a further 0.3 percent. Assessment. The staff CA gap implies a REER gap of 10.6 percent in 2021, after applying an estimated elasticity of 0.34. The EBA REER level and index models suggest an undervaluation of 7.8 percent and an overvaluation of 8 percent, respectively. Consistent with the staff CA gap, staff assess the REER to be undervalued with a midpoint of 10.6 percent and a range of uncertainty of +/-1.5 percent. </td></tr>
<tr><td>Capital and Financial Accounts: Flows and Policy Measures</td><td colspan="7"> Background. In 2021, the global economy began to recover from the COVID-19 pandemic. As such, the safe-haven inflows that Germany experienced in 2020 were reversed in 2021, resulting in large portfolio outflows. Net foreign direct investment outflows resumed in 2021, after recording negligible outflow in 2020. The portfolio and direct investment outflows were partially mirrored by "other" inflows, which partly reflect: (i) declining net foreign assets of the Bundesbank; and (ii) banks' transfer of some securities business from the U.K. to Germany. Assessment. Risks are limited, given Germany's safe haven status and the strength of its external position. </td></tr>
<tr><td>FX Intervention and Reserves Level</td><td colspan="7"> Background. The euro has the status of a global reserve currency. Assessment. Reserves held by euro area countries are typically low relative to standard metrics. The currency floats freely. </td></tr>
</table>

Annex II. Selected Sanctions on Russia and Belarus

In response to the invasion of Ukraine on February 24, 2022, the EU introduced sanctions against Russia and Belarus. A full list of the EU's sanctions are available at the following link: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/international-relations/restrictive-measures-sanctions/sanctions-adopted-following-russias-military-aggression-against-ukraine_en.

In addition to implementing these sanctions, Germany suspended the certification process for the Nord Stream 2 Pipeline.

Annex III. Risk Assessment Matrix[1]

Source of Risks	Relative Likelihood	Impact	Policy Response
Global Conjunctural and Structural Risks			
Russia's invasion of Ukraine leads to escalation of sanctions and other disruptions. Sanctions on Russia are broadened to include gas and food sectors. Russia is disconnected almost completely from the global financial system and large parts of the trade system. This, combined with Russian countersanctions and secondary sanctions on countries and companies that continue business with Russia, leads to even higher commodity prices, refugee migration, tighter financial conditions, and other adverse spillovers, which particularly affect LICs and commodity-importing EMs.	**High**	**High** Given its heavy dependence on energy imports from Russia and high integration in global value chain, Germany is vulnerable to the disruptions in energy and trade associated with the war in Ukraine. Severe disruptions in Russia natural gas imports would weigh on economic activity, given that it can not be fully replaced with alternative supplies in the short-term.	• Intensify search for secure alternative energy resources and the associated storage and processing facilities. • Support firms to preserve the jobs that will be viable once the disruptions ease. • Closely monitor refugee influx from Ukraine and use fiscal space if necessary to accommodate refugees and enhance integration programs.
Outbreaks of lethal and highly contagious COVID-19 variants. Rapidly increasing hospitalizations and deaths, due to low vaccine protection or vaccine-resistant variants, force more social distancing and/or new lockdowns. This results in extended supply chain disruptions and a reassessment of growth prospects triggering capital outflows, financial tightening, currency depreciations, and debt distress in some EMDEs.	**Medium**	**Medium** Renewed outbreaks and associated containment measures could weaken growth in trade partners, weighing on Germany's external demand. Domestic demand in contact-intensive services would remain subdued for longer.	• Maintain and intensify if needed public health measures, and measures to expand vaccination and treatment options as rapidly and widely as possible. • Extend COVID-19 fiscal measures, targeting the most affected households and businesses. • Carefully calibrate capital relief measures to the progress of the pandemic, in order not to impede bank lending.

[1] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path. The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 and 50 percent). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly. The conjunctural shocks and scenario highlight risks that may materialize over a shorter horizon (between 12 to 18 months) given the current baseline. Structural risks are those that are likely to remain salient over a longer horizon.

Source of Risks	Relative Likelihood	Impact	Policy Response
Global Conjunctural and Structural Risks			
De-anchoring of inflation expectations in the U.S. and/or advanced European economies. Worsening supply-demand imbalances, higher commodity prices (in part due to war in Ukraine), and higher nominal wage growth lead to persistently higher inflation and/or inflation expectations, prompting central banks to tighten policies faster than anticipated. The resulting sharp tightening of global financial conditions and spiking risk premia lead to lower global demand, currency depreciations, asset market selloffs, bankruptcies, sovereign defaults, and contagion across EMDEs.	Medium (for U.S.)/ Medium/ Low (for Euro Area)	Medium Inflation pressures have been high in Germany on the back of supply bottlenecks and high energy prices, but medium-term inflation expectation remain anchored. De-anchoring of inflation expectations could lead to costly price-wage spiral, and rising rates in the U.S. and Euro Area could lead to tighter financial conditions for firms.	• Monetary policy responses will be needed at the euro area level. • Recalibrate macro-prudential policies to ease tightening in the financial market if needed.
Abrupt growth slowdown in China. A combination of extended COVID-19 lockdowns, rising geopolitical tensions, a sharper-than-expected slowdown in the property sector, and/or inadequate policy responses result in a sharp slowdown of economic activity, with spillovers affecting other countries through supply chain disruptions, trade, commodity-price, and financial channels.	Medium	Medium As one of Germany's largest trading partners, lower growth in China will weaken the external demand and production in Germany.	• Implement targeted support to heavily hit firms and facilitate associated labor reallocation. • Further accelerate public investment in areas that could facilitate global trade, e.g., digital infrastructural.
Rising and volatile food and energy prices. Commodity prices are volatile and trend up amid supply disruptions, war in Ukraine, exports restrictions, and currency depreciations. This leads to short-run disruptions in the green transition, bouts of price and real sector volatility, food insecurity, social unrest, and acute food and energy crises (especially in EMDEs with lack of fiscal space).	High	High High energy prices would erode households—especially the low-income—purchasing power and firms profit margin, deter consumption and investment, and setback production. High energy prices would directly increase inflation and spillover to other goods/services prices, risk de-anchoring of medium-term inflation expectations.	• Provide additional targeted support to cushion the impact of high energy prices on the vulnerable groups. • Intensify search for secure alternative energy resources and the associated storage and processing facilities.
Geopolitical tensions and de-globalization. Intensified geopolitical tensions, security risks, conflicts, and wars cause economic and political disruptions, fragmentation of the international monetary system, production reshoring, a decline in global trade, and lower investor confidence.	High	High With its high degree of trade openness, Germany is especially susceptible to fluctuations in global trade.	• Continue support for the multilateral rules-based trading system, trade liberalization, and free trade agreements. Ensure cooperation within EU and avoid retaliatory policies.

Source of Risks	Relative Likelihood	Impact	Policy Response
Global Conjunctural and Structural Risks			
Cyberthreats. Cyberattacks on critical physical or digital infrastructure (including digital currency platforms) trigger financial instability or widespread disruptions in socio-economic activities.	Medium	**High** With increased remote work and digitalization, Germany's economic activity would be severely disrupted, and confidence weakened by cyber-attacks.	• Assessing and addressing the loopholes and other potential weakness exposed by the cyberattacks. • Update and further strengthen governance and risk management of large public and private organizations, including in the financial system, and scale up investment in cyber resilience.
Regional Risks			
A shift in market sentiment against some high-debt euro area countries. Policy slippages with weak growth outturns in some high-debt euro area countries could raise concerns over debt sustainability, while disregard for the common fiscal rules and rising yields test the euro area policy framework in the medium term.	High	**Medium** A rise in sovereign yields may have knock-on effects on the broader financial sector and affect German banks.	• Ensure that banks' liquidity and capital buffers are adequate, and engage in contingency planning.
Domestic Risks			
Correction in real estate market	Medium	**Medium** Sharp correction of the residential real estate price overvaluation could impair banks' balance sheet, lead to financial market disruption, and weigh on firms financial condition and economic activity.	• Release CCyB and sectoral systemic risk buffer and allow banks to use capital buffers to prevent credit crunch.
Key sectors fail to adjust in a timely fashion to technological change and digitalization. Lack of progress in adapting to the technological and digital revolution, as well as pandemic-related change in production and consumption preferences, could undermine Germany's position as an innovation leader.	Medium	**High** Loss of competitiveness and shrinking market shares for Germany's key export products (automobiles and machinery) threaten the country's growth model, increasing structural unemployment and lowering potential growth.	• Greater public investment in digitalization, helping crowd-in private investment and boost digital infrastructure. • Ensure that the energy transition (including from coal to renewable energy) proceeds as planned.

Annex IV. Measures Taken to Mitigate the Impact of Higher Energy Prices

Measures to Mitigate the Price Effect

- Reduced the renewable energy surcharge from 3.7 cents per kWh to zero.
- Reduced the energy tax on fuel products to the EU minimum during June-August.

Income Support Measures

- One-off heating allowance for those receiving housing benefits, students, and trainees (€270 for a single-person household, €350 for a two-person household, and €70 for each additional family member).
- One-off energy price lump sum of €300 for all employees as a salary supplement.
- One-off grant of €100 for recipients of unemployment benefits and €200 for recipients of social benefits.
- One-off family allowance of €100 for each child via the family benefits.
- Temporary incentive for the use of public transportation (monthly public transportation pass costing €9 euros/month during June-August).
- Increase benefits for children receiving social benefits by €20/month starting from July 1, 2022.
- Tax reliefs:
  - Increased permanently employee allowance for income tax from €1000 euros to €1200.
  - Increased permanently the basic personal income tax allowance from €9984 to €10,347
  - Allowed long-distance commuters to claim 38 cents per kilometer in tax relief, retrospectively from the beginning of the year, from the 21st kilometer. The increase will also provide relief for low-income earners through the mobility premium.

Measures to Support Firms

- A proposed KfW credit program to secure the liquidity of companies in the short term. Companies of all sizes gain access to low-interest, non-liability loans. The program will have a volume of approximately up to seven billion euros.
- Individual extensions to the federal and state guarantee programs for companies demonstrably affected by the war in Ukraine, which were already introduced during the corona pandemic, are to be continued.

Planned Measures to Promote Energy Savings

- Amended Building Energy Act later this year to make the efficiency standard 55 binding in new buildings from January 1, 2023.
- Modified the subsidy rates of the federal program for efficient buildings (BEG) to reflect greenhouse gas emissions per square meter of living space and life cycle costs.
- Stipulated by law that from January 1, 2024, every newly installed heating system should be operated with 65 percent renewable energies. To do so, the government will launch a heat pump drive in industry, trade, and private households.
- The government will introduce nationwide municipal heat planning and anchor it as a central coordination instrument for local, efficient use of heat.
- At least 50 percent of district heating will become climate-neutral by 2030.
- Introduce a gas auction mechanism in the summer, which will encourage industrial gas consumers to save gas.

Annex V. Measures Taken to Secure Energy Supply

Short Term

- Required Germany's privately-operated gas storage facilities to augment gas in storage to 90 percent of capacity by November 1, compared with 80 percent proposed by the European Commission for 2022 (90 percent for the EU also starting in 2023). Gas Storage Act was passed on April 8 and to take effect from May 1. The legislation leaves open the possibility of public subsidies. On June 23, the government announced its plan to make additional KfW credit lines available, which will initially provide the market area manager Trading Hub Europe GmbH with the liquidity needed to purchase gas and press ahead with filling the storage facilities. The loan is secured by a guarantee from the German government.

- One-off allocation of EUR 1.5 bn for immediate procurement of gas of 0.7 bn m^3(8 percent of Germany's annual gas consumption in 2020).

- The EU agreed with the U.S. that the latter would supply 15 billion cubic meters of LNG in 2022.

- Exploring the charter of up to three floating storage and regasification terminals, which can increase the capacity to import LNG to 27 bn m^3 (31 percent of Germany's annual gas consumption in 2020) and can be deployed within a year.

- German gas utility company Uniper will increase its LNG import capacity rights at the Gate terminal in Rotterdam, Netherlands, by one bcm/year.

- Activated the national gas security emergency plan, setting the crisis level to "early warning," which allows enhanced monitoring of gas flows and storage levels. The regulator sought contingency plans from large industrial firms. Following a cut in gas supplies from Russia via the Nord Stream 1 pipeline, the government on June 23 raised the crisis to the second stage.

- Reactivate previously shuttered coal-fired power stations.

- A campaign asking residents to conserve energy voluntarily.

- The Ministry of Economy and Climate Protection, which regulated energy markets, has put the German subsidiary of Gazprom into administration by a trust overseen by the Federal Network Agency.

Medium Term

- Agreed a long-term gas supply partnership with Qatar.

- Announced an intention to accelerate the construction of three new regasification terminals for the import of LNG, at Wilhelmshaven (10 bcm/year), Brunsbüttel (8 bcm/year) and Stade

(12 bcm/year), which could take 2–5 years to complete. These are to be partly financed by KfW and built by the private sector. A memorandum of understanding for the first terminal in Brunsbüttel has been signed by the parties, with plans for operation in 2026.

- Target 100 percent of electricity supply with renewables by 2035, from "well before 2040" previously. Evaluated the costs and benefits of prolonging the lives of three nuclear power plants that are due to be closed this year. The government decided against it, judging that the costs and risks outweigh the benefits.
- A KfW program to exchange electric heat pumps for gas furnaces.

Annex VI. Germany's Key Climate Goals and Measures

The following measures are contained in the Coalition Treaty and Easter package.

Electricity sector:

- 80 percent of electricity demand will be met with renewables by 2030, from 42 percent in 2021, and reach 100 percent renewable electricity by 2035. The Easter Package envisages 215 gigawatts (96 percent of Germany's installed production capacity in 2020) of solar power and at least 30 (13.5 percent) gigawatts of offshore wind power by 2030. To achieve these goals, the Package outlines a number of measures.
    - Electrolyze 10 gigawatts (4.5 percent of Germany's installed production capacity in 2020) of green hydrogen by 2030, and to ensure that all new natural gas power plants are compatible with future hydrogen fuel sources.
    - Increase the subsidy rates for rooftop photovoltaic (PV), with privileges being given to systems that feed all electricity into the grid.
    - For onshore wind, suspend the degression of the maximum values of the feed-in tariff for two years; improve the reference yield model for low-wind locations; lift the size limit for pilot plants; allow municipalities to financially participate in onshore and ground-mounted wind turbines.
    - Increase tenders for biomethane to 600 MW per year from 2023, while reducing those for biomass.
    - Enhance subsidies for innovation and storage.
    - Introduce a new tender segment "Renewables + Hydrogen" to provide additional support for ramping up the hydrogen economy.
    - The new Energy Allocation Act (EnUG) regulates that in the future, levies will only be payable for withdrawal from the grid. Self-consumption, direct delivery and, heat pumps in general will be exempt from paying surcharges.
- Aim to bring forward the coal phase-out to 2030, from 2038 previously.
- Increase targets and tender volumes of offshore wind energy.
- Develop strategies for alternative energy sources, including bioenergy and geothermal.
- Accelerate the expansion of grid networks and aligning it with the GHG neutrality goal.

1. Carbon pricing: Introduce a minimum carbon price of €60 per tonne domestically, even if Europe-wide prices fall below this level.[1]

2. Transport: 15 million fully electric cars on the roads (31 percent of total registered cars in 2021), one million public charging stations, and to electrify three-quarters of the rail network, by 2030. Phase out internal combustion engine cars by 2035, electrify rail transport, and create incentives to route more freight and passenger traffic from roads and air to railways, which are more carbon efficient.

3. Building: 65 percent of energy used by newly installed heating systems should be renewable from 2025, half of all energy used to heat buildings should be climate-neutral by 2030, solar panels will be required on new commercial buildings.

[1] The minimum carbon price is currently planned to be applied the sectors covered by the EU ETS. Germany's national carbon price (for transportation and buildings) is scheduled to be raised in a stepwise manner from €30 per tonne in 2022 to €55 per tonne in 2025; in 2026 auctions will be introduced alongside a price collar of €55-65 per tonne CO2.

Annex VII. Governance and Transparency

1. FATF indicated in 2010 and 2014 that Germany's anti-money laundering and countering the financing of terrorism (AML/CFT) measures relevant for helping prevent foreign officials from laundering the proceeds of corruption are generally sound.[1] Since FATF's assessment, Germany has taken many initiatives to strengthen its AML/CFT system. Those most relevant to combating the laundering of proceeds of foreign corruption include: introducing, in 2017, a Transparency Register to provide better access to information on the beneficial ownership of companies and trusts; legislating to allow for non-conviction based asset confiscation; and, in 2019, publishing an ML/TF risk assessment that identified corruption as a medium risk and specifically flagged the potential that issuance of golden passports by some EU members may facilitate the laundering of proceeds of foreign corruption.

2. Preventive measures largely comply with the AML/CFT standards and are well implemented by most, especially larger, financial institutions but some smaller non-financial businesses find such implementation challenging. As part of that implementation, banks typically use software to screen for foreign politically exposed persons (PEPs). Smaller non-financial businesses have less financial resources to use software solutions to determine PEP status or beneficial ownership, and the implementation of prevention measures is therefore a challenge, in particular as regards customer due diligence (CDD) requirements, including PEPs, and reporting suspicious transactions.

3. Information on beneficial ownership of companies and trusts is available (through a Transparency Register) for use by the private sector and by the authorities in investigations, and to provide to foreign partners but some gaps exist. While the Transparency Register has increased access to this type of information, some information not yet entered in the Transparency Register itself is available only through interlinked other registries, not all the information is verified, and some data is in older registers.

4. Germany has a very good legal and operational framework for cooperating with other countries in foreign corruption cases and provides good assistance. This includes forming joint investigation teams with foreign counterparts to investigate cases where proceeds of foreign corruption are suspected of having been laundered in Germany.

5. Germany has a robust legal framework, prosecutes and obtains convictions for different types of ML, including related to corruption, and freezes and confiscates proceeds of foreign corruption. There are specialized units within law enforcement agencies that investigate

[1] The last comprehensive assessment of Germany's AML/CFT framework was conducted in 2010 with an update provided in 2014. The update is available at: http://www.fatf-gafi.org/media/fatf/documents/reports/mer/FUR-Germany-2014.pdf. The measures relevant for helping prevent the laundering of the proceeds of foreign corruption are those related to implementing preventive measures, transparency of legal persons and arrangements, investigating and prosecuting money laundering, and providing international legal cooperation. The findings of the next comprehensive assessment, against the current FATF methodology using the 2013 methodology, which focuses on the effectiveness of the AML/CFT system, are due to be discussed in June 2022 and published by September 2022.

cases of corruption. From 2016 to 2020, the authorities have frozen almost €280 million in corruption cases[2] , some of which related to foreign cases. However, Germany tends to pursue the underlying crimes rather than the related ML. As a result, there may not be sufficient focus on the identification and pursuit of some, particularly complex, cases of laundering of proceeds of foreign corruption in Germany.

6. The authorities should continue efforts to strengthen the AML/CFT system. They should continue focusing, in AML/CFT supervision for all obliged entities, on enhancing compliance with CDD requirements, including those related to PEPs and obtaining suspicious transaction reports of better quality. This includes using more remedial actions and sanctions to deal with non-compliance. There needs to be more resources applied and better coordination to strengthen supervision in the non-financial sector, especially exposed to risks from foreign corrupt actors, such as lawyers and trust and company service providers. The authorities should also continue efforts to improve the effectiveness of the Transparency Register, such as verifying more of its information. Law enforcement should put more emphasis on pursuing ML independently of the underlying crime, as this is particularly relevant for cases involving proceeds of foreign corruption.

[2] Figures for 2021 are not yet available.

Annex VIII. Public Debt Sustainability Analysis

After rising by nearly 10 percent of GDP in 2020, Germany's public debt increased by 1.5 percent of GDP in 2021 to 70.2 percent of GDP. The increase last year was driven by continued extraordinary COVID-19 fiscal support measures and the repurposing of the unspent debt envelope permitted for the COVID-19 measures to expand the Climate Transformation Fund, together with the lackluster economic recovery due to supply bottlenecks and repeated COVID-19 waves. Public debt is expected to broadly stabilize in 2022 due to high nominal GDP growth and elevated inflation, despite the assumed 100 bn (2.6 percent of GDP) new borrowing to create the Special Defense Fund and fiscal measures to cushion higher energy prices, increase defense spending, support Ukrainian refugees. Given the temporary nature of the relief measures for COVID-19 and high energy prices, the expected economic recovery, and low borrowing costs, Germany's debt sustainability will not be jeopardized. The debt ratio is projected to fall afterwards, returning to below 60 percent of GDP by 2027. A negative growth shock and a combined macro-fiscal shock represent the largest risk to the debt outlook. However, in both cases, debt would return to a downward trajectory after the shock.

A. Baseline Scenario

1. Macroeconomic assumptions. After contracting by 4.8 percent, the economy grew by 2.8 percent 2021, weaker than expected due to supply bottlenecks and repeated COVID-19 waves. Real GDP is projected to grow by 1.5 percent in 2022 and pick up in 2023 to about 2 percent if energy prices and supply bottlenecks subside, and COVID infections remain under control. Growth should converge to its potential over the medium run, estimated at just above 1 percent per year. Inflation—measured by the GDP deflator—is projected to rise to 5.8 percent in 2022 and return to around 2 percent only in 2025 onwards. On the back of heightened inflation and associated expectation in monetary policy tightening, 10-year bund yields rose by nearly 200 basis points from a year ago. Yet, effective interest rates are projected to rise only gradually, remaining around 1 percent through 2027.[1]

2. Germany's temporarily high level of public debt warrants use of the high scrutiny framework. Public gross debt in 2022 is expected to be above the indicative DSA threshold (60 percent of GDP) for high scrutiny. Debt is projected to start declining in 2023, reflecting the phase-out of the extraordinary COVID-19 fiscal measures and measures to cushion the impact of high energy prices. Due to the temporary nature of the policy measures and the expected economic recovery, the debt ratio is projected to fall back to 59.3 percent of GDP by 2027. Estimated gross financing needs should decline from about 19 percent of GDP in 2022 to around 9 percent of GDP in 2027.

3. The realism of baseline assumptions. Previous forecasts of macro-fiscal variables have been conservative. The median forecast error for real GDP growth during 2012–20 is close to zero. The

[1] The interest rate on new borrowing is derived from forecasts of the real interest rate and inflation, and it does not necessarily match market-based interest rate forecasts. Using market-based forecasts would make little difference to the debt sustainability analysis.

median forecast error for inflation (GDP deflator) is 0.33 percent, suggesting that inflation tended to be underestimated in the past. The median forecast bias for the primary balance is 0.5 percent of GDP (implying better than projected performance), relatively conservative for surveillance countries.

4. The projected fiscal adjustment is feasible. The maximum 3-year adjustment of the cyclically-adjusted primary balance (CAPB) lies just below the top quartile of historical and cross-country experience. However, this adjustment mainly reflects the phasing-out of the sizable and temporary fiscal measures adopted in response to the pandemic and higher energy prices.

B. Shocks and Stress Tests Through the Medium Term

5. Germany's government debt could rise above the 2022 peak to around 72½ percent of GDP under the combined macro-fiscal shocks, while gross financing needs should continue to fall to around 12 percent of GDP or below by 2027. Under all considered macro-fiscal stress tests, both the debt-to-GDP ratio and gross financing needs either continue to drop or return to a downward path after the shock. Temporary shocks to real GDP growth or a combined macro-fiscal shock would drive a temporary increase in debt. At the same time, gross financing needs would continue to decrease throughout the projection period. Given the historical variability of growth, Germany's debt dynamics are most sensitive to growth shocks (detailed results below).

List of Shocks and Stress Tests[2]

- **Growth shock.** Under this scenario, real output growth rates are lower than in the baseline by one standard deviation over 2023–24 (i.e., by 2.2 percentage points). The assumed decline in growth leads to lower inflation (0.25 percentage points per 1 percentage point decrease in GDP growth), and the interest rate on new debt is assumed to increase 25 basis points for every 1 percent of GDP worsening of the primary balance. Debt would peak at 72.1 percent of GDP in 2024 in this case, but decline to around 66 percent of GDP by 2027.

- **Primary balance shock.** This scenario examines the effect of a dual shock of lower revenues and a rise in the interest rate, leading to a cumulative deterioration in the primary balance by 2.4 percent of GDP over 2023–24. The shock would result in a modest deterioration of debt dynamics, yet the debt ratio is projected to continue to decline throughout the projection period.

- **Interest rate shock.** This scenario assumes an increase of 327 basis points in debt servicing costs during 2023–27, mimicking the historical maximum real interest rate experienced since 2012. The effect on public debt and gross financing needs would also be relatively modest.

---

[2] Given that virtually all outstanding sovereign debt is denominated in euros, the scenario of a real exchange rate shock would not have a relevant effect on debt and is therefore not discussed.

- **Additional stress test.** The combined macro-fiscal shock scenario tests combined shocks to growth, the interest rate, and the primary balance; while avoiding double-counting the effects of individual shocks. The impact on debt dynamics is slightly worse than that of a growth shock.

- **Additional stress test.** This contingent fiscal shock scenario assumes a cumulative 3 percent of GDP (about 120 billion euros) additional fiscal cost for public guarantees called over 2023–24 based on the assumption that contracted guarantees will double from the level of end-2021, and about one-third of the guarantees contracted will be called. The scenario also assumes a higher funding cost—25 bps compared to the baseline scenario per year—for 2023–27. The shock would raise debt to 80 percent of GDP in 2023, which would decline over the medium time yet remain above the pre-shock level.

Figure AVIII.1. Germany: Public Sector Debt Sustainability Analysis—Baseline Scenario

(in percent of GDP unless otherwise indicated)

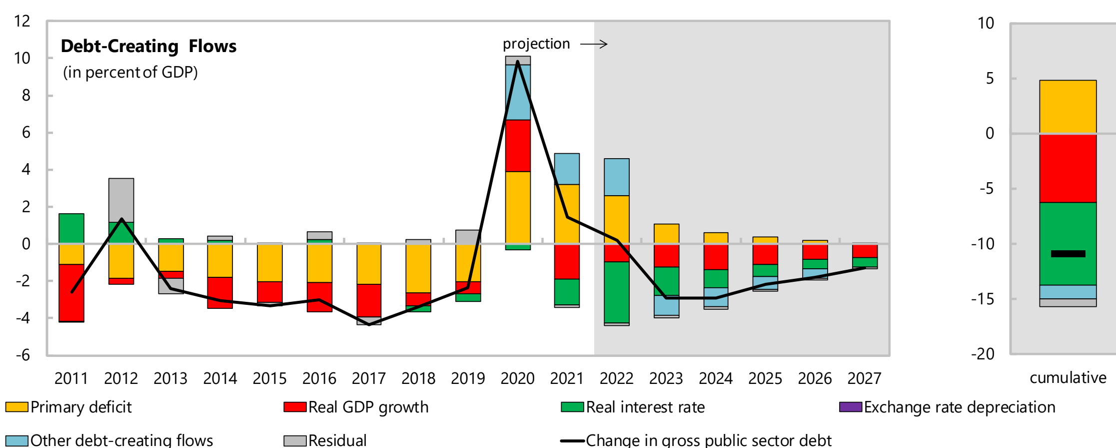
Debt, Economic and Market Indicators [1/]

	Actual			Projections					
	2011-2019 [2/]	2020	2021	2022	2023	2024	2025	2026	2027
Nominal gross public debt	71.0	68.7	70.2	70.4	67.5	64.6	62.4	60.6	59.3
Public gross financing needs	13.8	18.3	18.0	19.3	13.9	12.2	9.7	9.7	9.3
Real GDP growth (in percent)	1.7	-4.6	2.9	1.5	1.9	2.2	1.7	1.4	1.2
Inflation (GDP deflator, in percent)	1.7	1.6	3.0	5.8	3.1	2.3	2.0	1.8	1.8
Nominal GDP growth (in percent)	3.4	-3.0	6.0	7.4	5.1	4.6	3.7	3.2	3.1
Effective interest rate (in percent) [4/]	2.1	1.0	0.9	0.9	0.9	0.9	0.9	1.0	1.0
10-year bond yield	0.9	-0.5	-0.3	1.1	1.8	1.8	1.9	2.0	2.0

As of June 23, 2022		
Sovereign Spreads		
EMBIG (bp) 3/		0
5Y CDS (bp)		13
Ratings	Foreign	Local
Moody's	Aaa	Aaa
S&Ps	AAA	AAA
Fitch	AAA	AAA

Contribution to Changes in Public Debt

	Actual			Projections							
	2011-2019	2020	2021	2022	2023	2024	2025	2026	2027	cumulative	debt-stabilizing primary balance [10/]
Change in gross public sector debt	-2.6	9.8	1.4	0.2	-2.9	-2.9	-2.2	-1.8	-1.3	-10.9	
Identified debt-creating flows	-2.8	9.3	1.6	0.3	-2.8	-2.8	-2.1	-1.7	-1.2	-10.1	
Primary deficit	-1.9	3.9	3.2	2.6	1.1	0.6	0.4	0.2	0.1	4.9	-1.2
Primary (noninterest) revenue and grants	45.0	46.3	47.8	46.9	46.8	46.8	47.0	47.1	47.1	281.6	
Primary (noninterest) expenditure	43.1	50.2	51.0	49.5	47.8	47.4	47.3	47.2	47.1	286.5	
Automatic debt dynamics [5/]	-0.9	2.5	-3.3	-4.3	-2.8	-2.4	-1.7	-1.3	-1.2	-13.8	
Interest rate/growth differential [6/]	-0.9	2.5	-3.3	-4.3	-2.8	-2.4	-1.7	-1.3	-1.2	-13.8	
Of which: real interest rate	0.3	-0.3	-1.4	-3.3	-1.5	-1.0	-0.7	-0.5	-0.5	-7.5	
Of which: real GDP growth	-1.2	2.8	-1.9	-1.0	-1.3	-1.4	-1.1	-0.8	-0.7	-6.3	
Exchange rate depreciation [7/]	0.0	0.0	0.0	…	…	…	…	…	…	…	
Other identified debt-creating flows	0.0	3.0	1.7	2.0	-1.1	-1.0	-0.7	-0.5	0.0	-1.2	
Privatization/Drawdown of Deposits (negative)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other stock/flow adjustments [8/]	0.0	3.0	1.7	2.0	-1.1	-1.0	-0.7	-0.5	0.0	-1.2	
Residual, including asset changes [9/]	0.3	0.5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.7	



Source: IMF staff.

1/ Public sector is defined as general government.

2/ Based on available data.

3/ Long-term bond spread over German bonds.

4/ Defined as interest payments divided by debt stock (excluding guarantees) at the end of previous year.

5/ Derived as $[(r - \pi(1+g) - g + ae(1+r)]/(1+g+\pi+g\pi))$ times previous period debt ratio, with r = interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

6/ The real interest rate contribution is derived from the numerator in footnote 5 as $r - \pi(1+g)$ and the real growth contribution as $-g$.

7/ The exchange rate contribution is derived from the numerator in footnote 5 as $ae(1+r)$.

8/ Positive entries for 2021 and 2022 reflect the accumulation of debt to create the Energy and Climate Fund (60 bn) and Special Defense Fund (100 bn), respectively. Negative entries for 2023-26 reflect deficits financed by these funds and general reserves.

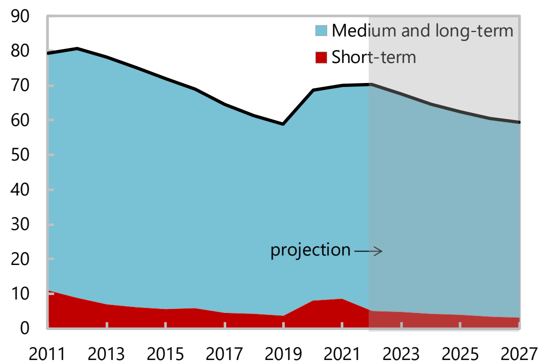
9/ Includes asset changes and interest revenues (if any). For projections, includes exchange rate changes during the projection period.

10/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

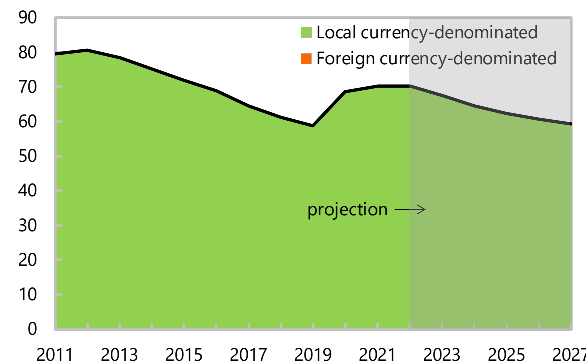
Figure AVIII.2. Germany: Public Debt Sustainability Analysis—Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

By Maturity
(in percent of GDP)



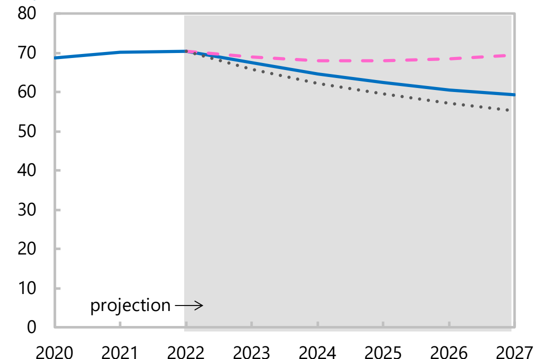
By Currency
(in percent of GDP)



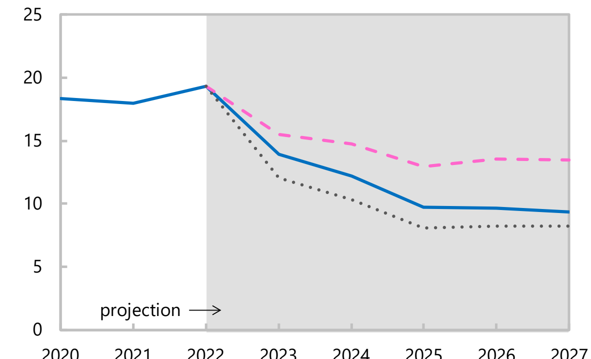
Alternative Scenarios

Baseline　Historical　Constant Primary Balance

Gross Nominal Public Debt
(in percent of GDP)



Public Gross Financing Needs
(in percent of GDP)



Underlying Assumptions
(in percent)

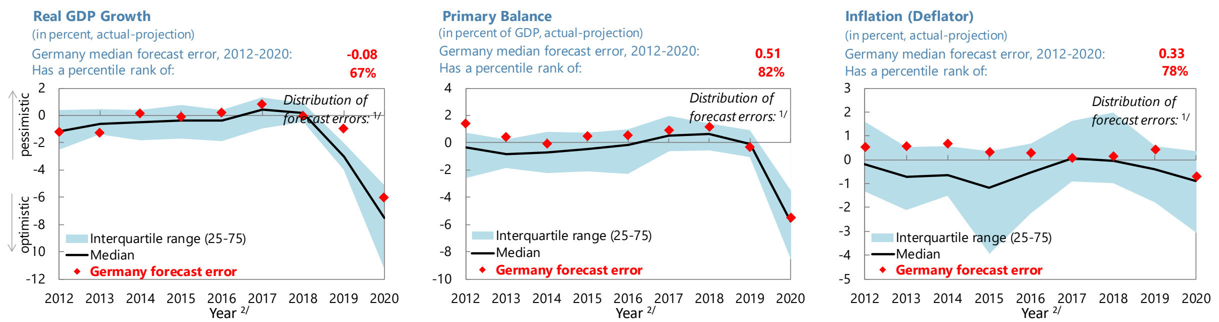
Baseline Scenario	2022	2023	2024	2025	2026	2027
Real GDP growth	1.5	1.9	2.2	1.7	1.4	1.2
Inflation	5.8	3.1	2.3	2.0	1.8	1.8
Primary Balance	-2.6	-1.1	-0.6	-0.4	-0.2	-0.1
Effective interest rate	0.9	0.9	0.9	0.9	1.0	1.0
Constant Primary Balance Scenario						
Real GDP growth	1.5	1.9	2.2	1.7	1.4	1.2
Inflation	5.8	3.1	2.3	2.0	1.8	1.8
Primary Balance	-2.6	-2.6	-2.6	-2.6	-2.6	-2.6
Effective interest rate	0.9	0.9	0.9	0.9	0.9	0.9

Historical Scenario	2022	2023	2024	2025	2026	2027
Real GDP growth	1.5	1.3	1.3	1.3	1.3	1.3
Inflation	5.8	3.1	2.3	2.0	1.8	1.8
Primary Balance	-2.6	0.9	0.9	0.9	0.9	0.9
Effective interest rate	0.9	0.9	1.2	1.5	1.6	1.8

Source: IMF staff.

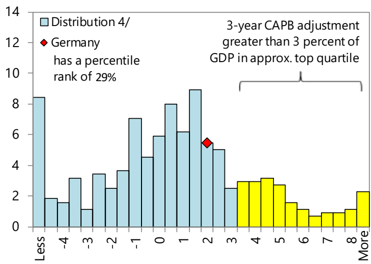
Figure AVIII.3. Germany: Public Debt Sustainability Analysis—Realism of Baseline Assumptions

Forecast Track Record, Versus Surveillance Countries

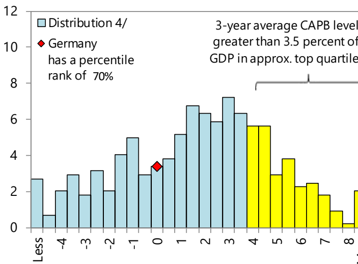


Assessing the Realism of Projected Fiscal Adjustment

3-Year Adjustment in Cyclically-Adjusted Primary Balance (CAPB)
(Percent of GDP)

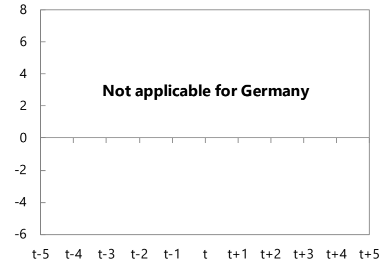


3-Year Average Level of Cyclically-Adjusted Primary Balance (CAPB)
(Percent of GDP)



Boom-Bust Analysis [3/]

Real GDP Growth
(in percent)



Source : IMF Staff.
1/ Plotted distribution includes surveillance countries, percentile rank refers to all countries.
2/ Projections made in the spring WEO vintage of the preceding year.
3/ Not applicable for Germany, as it meets neither the positive output gap criterion nor the private credit growth criterion.
4/ Data cover annual obervations from 1990 to 2011 for advanced and emerging economies with debt greater than 60 percent of GDP. Percent of sample on vertical axis.

Figure AVIII.4. Germany: Public Debt Sustainability Analysis —Stress Tests

Primary Balance Shock	2022	2023	2024	2025	2026	2027
Real GDP growth	1.5	1.9	2.2	1.7	1.4	1.2
Inflation	5.8	3.1	2.3	2.0	1.8	1.8
Primary balance	-2.6	-2.3	-1.8	-0.4	-0.2	-0.1
Effective interest rate	0.9	0.9	0.9	1.0	1.0	1.0
Real Interest Rate Shock						
Real GDP growth	1.5	1.9	2.2	1.7	1.4	1.2
Inflation	5.8	3.1	2.3	2.0	1.8	1.8
Primary balance	-2.6	-1.1	-0.6	-0.4	-0.2	-0.1
Effective interest rate	0.9	0.9	1.5	1.9	2.2	2.5
Combined Shock						
Real GDP growth	1.5	-0.3	0.0	1.7	1.4	1.2
Inflation	5.8	2.6	1.8	2.0	1.8	1.8
Primary balance	-2.6	-2.4	-3.3	-0.4	-0.2	-0.1
Effective interest rate	0.9	0.9	1.5	2.0	2.2	2.5

Real GDP Growth Shock	2022	2023	2024	2025	2026	2027
Real GDP growth	1.5	-0.3	0.0	1.7	1.4	1.2
Inflation	5.8	2.6	1.8	2.0	1.8	1.8
Primary balance	-2.6	-2.4	-3.3	-0.4	-0.2	-0.1
Effective interest rate	0.9	0.9	0.9	1.1	1.0	1.0
Real Exchange Rate Shock						
Real GDP growth	1.5	1.9	2.2	1.7	1.4	1.2
Inflation	5.8	3.6	2.3	2.0	1.8	1.8
Primary balance	-2.6	-1.1	-0.6	-0.4	-0.2	-0.1
Effective interest rate	0.9	0.9	0.9	0.9	1.0	1.0

Source: IMF staff.

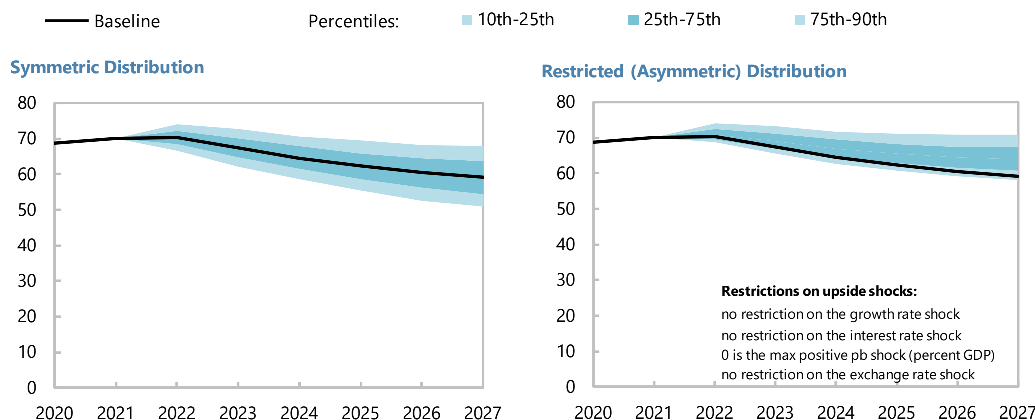
Figure AVIII.5. Germany: Public Debt Sustainability Analysis Risk Assessment

Heat Map

Debt level 1/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability shock
Gross financing needs 2/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability Shock
Debt profile 3/	Market Perception	External Financing Requirements	Change in the Share of Short-Term Debt	Public Debt Held by Non-Residents	Foreign Currency Debt

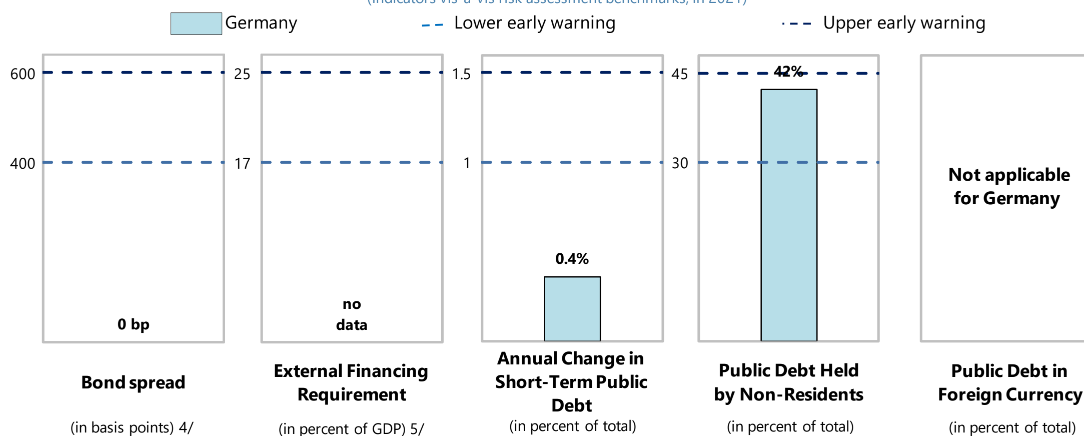
Evolution of Predictive Densities of Gross Nominal Public Debt

(in percent of GDP)



Debt Profile Vulnerabilities

(Indicators vis-à-vis risk assessment benchmarks, in 2021)



Source: IMF staff.

1/ The cell is highlighted in green if debt burden benchmark of 85% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant.

2/ The cell is highlighted in green if gross financing needs benchmark of 20% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant.

3/ The cell is highlighted in green if country value is less than the lower risk-assessment benchmark, red if country value exceeds the upper risk-assessment benchmark, yellow if country value is between the lower and upper risk-assessment benchmarks. If data are unavailable or indicator is not relevant, cell is white.
Lower and upper risk-assessment benchmarks are:

400 and 600 basis points for bond spreads; 17 and 25 percent of GDP for external financing requirement; 1 and 1.5 percent for change in the share of short-term debt; 30 and 45 percent for the public debt held by non-residents.

4/ Long-term bond spread over German bonds, an average over the last 3 months, 25-Mar-22 through 23-Jun-22.

5/ External financing requirement is defined as the sum of current account deficit, amortization of medium and long-term total external debt, and short-term total external debt at the end of previous period.

Annex IX. Authorities' Response to Past IMF Policy Recommendations

IMF 2021 Article IV Recommendations	Authorities' Response
Fiscal Policy	
• The pace of withdrawal of COVID-19 relief measures should be carefully calibrated to the progress of the pandemic and the economic recovery. Policies should become more targeted and focus on facilitating resource reallocation once the recovery firms up.	• Given the repeated COVID-19 infection waves, key pandemic measures—e.g., the expanded Kurzarbeit scheme and grants to firms—were extended through mid-2022. • To incentivize training and facilitate reallocation, employers who provide their employees with training during Kurzarbeit will be reimbursed for half of their social security contributions until July 31, 2023. • In response to Russia's invasion of Ukraine, and the associated sanctions and rises in energy prices, the government announced a package of liquidity support measures for firms, including loans, guarantees, and subsidies.
• Fiscal space should be used fully to raise the growth potential, facilitate structural transformation, and reduce external imbalances.	• The government has considerably expanded support for the green transition, energy security, innovation, digitalization, childcare, and defense. Once resources in the defense fund are used up and climate and defense spending are fully brought under the coverage of the debt limit, fiscal space (under the national debt-brake rule) would be largely exhausted.
• Address capacity constraints in implementing public investment at the municipal level.	• The federal government has set up an inter-ministerial steering group involving the Länder and plan to improve public investment execution in the areas including administrative procedures, human resources, digitalization of planning and approval process. • The government has been expanding the publicly-owned consultancy firm Partnerschaft Deutschland, which provides consultancy services for all levels of government (federal, state and local) to supplement their planning and procurement capacity.
• Redress pandemic-induced income inequality by targeted support for low-income people and vulnerable workers.	• The expanded access to the basic income support for job seekers remains through end-2022. • To help children and the youth reduce pandemic-induced education deficits, the government has allocated €2 bn to launch the post-COVID catch-up program • The government set out in the Treaty a range of measures to reduce gender pay inequality, and income inequality among workers and pensioners. Some measures include reforming family taxation, raising the minimum wages, maintaining the benefit ratio of the statutory pension system, and enhancing the private pension system. • To improve female labor force participation, the federal government provides €5.5bn to Länder through end-2022 under Good Daycare Facilities Act. In addition, to implement the legal entitlement for primary school children to receive all-day care from 2026 onwards, the federal government also provides financial assistance of up to €3.5bn for Länder's investment in expanding all-day education and childcare service facilities.
Financial Sector Policy	
• Expand the macroprudential toolkit with income-based instruments and address data gaps to better prevent excessive build-up of vulnerabilities in the real estate market.	• The authorities in February 2022 raised the counter-cyclical capital buffer to 0.75 percent, from zero, and introduced a sectoral systemic risk buffer of 2 percent on loans secured by domestic residential real estate to apply from February 1, 2023. • A new procedure for collecting data on lending standards is expected to close data gaps in 2023. • Legislative proposals are being drafted to add income-based instruments to the macroprudential toolkit. • Bundesbank has set up a project dedicated to monitoring the effects of the macroprudential policy package—inter alia its effects on lending standards.

IMF 2021 Article IV Recommendations	Authorities' Response
Financial Sector Policy	
• Strengthen the oversight of nonbank operations.	• The "Act to Strengthen Financial Market Integrity" passed in 2021 has entered into full force. • An organizational reform of BaFin has been implemented. These reforms are aimed at strengthening BaFin's ability to supervise complex credit institutions, undertake forensic audits, and strengthen financial accounting oversight. • For progress on the implementation of outstanding FSAP recommendations see 2022 FSAP Annex II.
Structural Reforms	
• Enhance the cost-effectiveness and acceptability of climate mitigation strategy. Improve measures to cushion the impact of higher carbon prices on households.	• To strengthen national carbon pricing, the government aims to introduce a minimum carbon price of €60 per tonne domestically in 2027, even if Europe-wide prices fall below this level. • All revenue generated by the national emission trading system will be returned to citizens, especially through lower electricity prices via a reduction of the EEG surcharge, that was abolished as of July 1, 2022. • To protect lower income households from rising heating costs, the federal government has increased the housing benefit in parallel to the introduction of carbon pricing. • The tax allowance for long distance commuters has been increased and a mobility bonus for lower income households is provided.
• Expand investment in digital infrastructure, enhance the diffusion of ICT tools.	• The government has been promoting the expansion of digital infrastructures in rural and sparsely populated regions, where market-driven is weak, with additional financing via the "digital infrastructure." • To accelerate the expansion of the broadband network, the government is currently developing a gigabit strategy in close consultation with stakeholders. The core areas include simplifying approval procedures, standardizing alternative laying techniques, and establishing a nationwide gigabit land register. • The government is making progress in implementing the National e-Government Strategy. • The government has launched so-called "hubs for tomorrow" to support companies and employees in shaping digital change. Since 2021, several more "regional hubs for tomorrow" are being funded in the western "Länder" and Berlin. • In 2019, the federal and Länder governments launched the Digital Pact for Schools to modernize digital school infrastructure. During the pandemic, three supplements were agreed, allowing schools to lend digital devices to students and teachers, as well as to obtain funding for the training of school administrators.
• Promote innovation and foster business dynamism, including facilitating technology diffusion and improving access to finance.	• To further support venture capital, as part of the €10 billion Future Fund, the government has commissioned KfW Capital to implement a growth fund as a market-conforming, non-aid venture capital fund of funds. • The government enrolled a legislative package to accelerate public planning and authorization procedures with regard to renewable energy ("Easter-Package"). • To spur private investment, the coalition treaty agreed to introduce a "super depreciation" for climate protection and digital assets.

INTERNATIONAL MONETARY FUND

GERMANY

STAFF REPORT FOR THE 2022 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

July 1, 2022

Prepared By European Department

CONTENTS

FUND RELATIONS ____ 2

STATISTICAL ISSUES ____ 4

FUND RELATIONS

(As of June 12, 2022; unless specified otherwise)

Mission: May 9–23, 2022. The concluding statement of the mission is available at https://www.imf.org/en/News/Articles/2022/05/23/germany-staff-concluding-statement-of-the-2022-article-iv-mission.

Staff team: Ms. Celasun (head), Mmes. Lan, Mineshima, and Zhou and Mr. Sher (all EUR), with Mr. Ananthakrishnan (MCM, head of the FSAP team) joining a subset of meetings including the concluding meeting.

Country interlocutors: Bundesbank President Nagel, Director General of the Federal Ministry of Finance Reuter, Director General for Economic Policy in the German Federal Ministry for the Economy and Climate Protection Steinberg, officials from the Federal Chancellor's office, the Finance, Economic and Climate Action, Labor, Housing, Transport and Digital Ministries, the Bundesbank, the BaFin, the Federal Employment Agency, the ECB (SSM), the EIOPA, representatives from the banking sector, auto industry, trade unions, employers' association, chamber of commerce, real estate sector, academia, credit rating agencies, and think tanks.

Fund relations: The previous Article IV consultation discussions took place during May 2021 and the staff report was discussed by the Executive Board on July 14, 2021. The Executive Board's assessment and staff report are available at https://www.imf.org/en/Publications/CR/Issues/2021/07/14/Germany-2021-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-462176.

Membership Status: Joined August 14, 1952; Article VIII.

General Resources Account:	**SDR Million**	**Percent of Quota**
Quota	26,634.40	100.00
IMF's Holdings of Currency	19,938.09	74.86
Reserve Tranche Position	6,718.16	25.22
Lending to the Fund		
New Arrangements to Borrow	171.88	

SDR Department:	**SDR Million**	**Percent of Allocation**
Net cumulative allocation	37,587.04	100.00
Holdings	38,123.01	101.43

Outstanding Purchases and Loans: None

Latest Financial Commitments: None

Overdue Obligations and Projected Payments to Fund[1/] (SDR Million; based on existing use of resources and present holdings of SDRs):

	Forthcoming				
	2022	2023	2024	2025	2026
Principal					
Charges/Interest		0.48	0.48	0.48	0.48
Total		0.48	0.48	0.48	0.48

1/ When a member has overdue financial obligations outstanding for more than three months, the amount of such arrears will be shown in this section.

Exchange Arrangements

The currency of Germany is the euro. The exchange rate arrangement of the euro area is free floating. Germany participates in a currency union (EMU) with 18 other members of the EU and has no separate legal tender. The euro, the common currency floats freely and independently against other currencies.

Germany is an Article VIII member and maintains an exchange system free of multiple currency practices and restrictions on payments and transfers for current international transactions. It maintains measures adopted for security reasons, which have been notified to the Fund for approval in accordance with the procedures of Decision 144 and does so solely for the preservation of national or international security.

Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT)

Germany was last assessed against the previous AML/CFT standard in 2009/10, with a follow-up in 2014. Since then, the legal and organizational framework for AML/CFT has been comprehensively restructured, including to transpose the EU’s fifth Money Laundering Directive (5AMLD), and some of the measures taken are discussed in the staff report. Germany was recently assessed against the current AML/CFT standard, using the 2013 assessment methodology which notably focuses on the effectiveness of AML/CFT measures. The assessment was conducted by the Financial Action Task Force (FATF) in November 2021. The relevant report was discussed in June 2022 and will be published by September 2022.

STATISTICAL ISSUES

(As of June 12, 2022)

I. Assessment of Data Adequacy for Surveillance
General: The economic database is generally comprehensive and of high quality, and data provision is adequate for surveillance.
National Accounts: Germany adopted the *European System of Accounts 2010 (ESA2010)* in September 2014, with GDP calculated both annually and quarterly on a current and chained volume basis. Germany has received multiple derogations from *ESA2010* requirements, most of which were scheduled to be addressed by 2020. A direct source for quarterly changes in inventories, which is an important indicator of changes in GDP over the business cycle, is lacking. Extrapolations of changes in inventories are based on the difference between the monthly production index and turnover index in manufacturing.
Government Finance Statistics: Comprehensive data reporting systems support the accuracy and reliability of the government finance statistics. However, these data are based on cash accounting systems, although documentation exists to explain the differences between the general government data in the ESA2010 (noncash) classification and the general cash data on an administrative basis; Germany publishes—through Eurostat—general government revenue, expenditure, and balances on a noncash/accrual basis on a quarterly basis (*ESA2010*) and these data are presented in a *GFSM 2014* format in International Financial Statistics, albeit with delay. Germany submits annual data for publication in the *Government Financial Statistics Yearbook,* in *GFSM 2014* format. Monthly data are disseminated on a cash basis. **Monetary and Financial Statistics:** The ECB reporting framework is used for monetary statistics and data are reported to the IMF through a "gateway" arrangement with the ECB. The arrangement provides an efficient transmission of monetary statistics to the IMF and for publication in the *IFS*. Monetary statistics for Germany published in the *IFS* cover data on central bank and other depository corporations (ODCs) using euro area-wide residency criterion. Data based on national residency criterion is also published as memorandum items. Germany reports data on some series and indicators of the Financial Access Survey (FAS), including the two indicators adopted by the UN to monitor Target 8.10 of the Sustainable Development Goals (SDGs). **Financial Sector Surveillance:** Germany participates in the IMF's Coordinated Direct Investment Survey (CDIS), Coordinated Portfolio Investment Survey (CPIS) and financial soundness indicators (FSIs) databases. The German authorities compiled a comprehensive set of FSI data and metadata. Of the 40 FSIs, Germany reports all except net foreign exchange exposure to equity (I31). Former FSI ratios on nonperforming loans have been switched from annual to quarterly periodicity. The quarterly data stemming from the harmonized FINREP reporting is due to the EBA ITS on

<table>
<tr><td colspan="2">reporting. The former use of data provided by the annual accounts has been suspended in line with the periodicity concept of the SDDS plus.

External Sector Statistics: The Bundesbank compiles the balance of payments in close cooperation with the Federal Statistical Office. Balance of payments, International Investment Position statistics, and related cross-border statistics are compiled according to the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6), and the legal requirements of the ECB and Eurostat.</td></tr>
<tr><th colspan="2">II. Data Standards and Quality</th></tr>
<tr><td>Adherent to the Special Data Dissemination Standard Plus (SDDS Plus) since February 2015.

Implementing G-20 DGI recommendations: Currently disseminates a residential property price index and a commercial property price index.</td><td>Data ROSC from 2006 is available.</td></tr>
</table>

Table of Common Indicators Required for Surveillance
(As of June 12, 2022)

	Date of Latest Observation	Date Received	Frequency of Data[7]	Frequency of Reporting[8]	Frequency of Publication[8]
Exchange Rates	Jun 12, 2022	Jun 12, 2022	D	D	D
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	May 2022	Jun 2022	M	M	M
Reserve/Base Money[2]	Apr 2022	May 2022	M	M	M
Broad Money[2]	Apr 2022	May 2022	M	M	M
Central Bank Balance Sheet	May 2022	Jun 2022	M	M	M
Consolidated Balance Sheet of the Banking System	Apr 2022	May 2022	M	M	M
Interest Rates[3]	May 2022	May 2022	M	M	M
Consumer Price Index	May 2022	May 2022	M	M	M
Revenue, Expenditure, Balance and Composition of Financing[4]—General Government[5]	Q1:2022	May 2022	Q	Q	Q
Stocks of General Government and Government-Guaranteed Debt[6]	2021	Apr 2022	A	A	A
External Current Account Balance	Apr 2022	Jun 2022	M	M	M
Exports and Imports of Goods and Services	Apr 2022	Jun 2022	M	M	M
GDP/GNP	Q1:2022	May 2022	Q	Q	Q
Gross External Debt	Q4:2021	Mar 2022	Q	Q	Q
International Investment Position[7]	Q4:2021	Mar 2022	Q	Q	Q

[1] Includes reserve assets pledged or otherwise encumbered as well as net derivative positions.
[2] Pertains to contribution to EMU aggregate.
[3] Both market-based and officially determined, including discount rates, money market rates, rates on treasury bills, notes, and bonds.
[4] Foreign, domestic bank, and domestic nonbank financing.
[5] The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.
[6] Including currency and maturity composition.
[7] Includes external gross financial asset and liability positions *vis-à-vis* nonresidents.
[8] Daily (D); weekly (W); monthly (M); quarterly (Q); annually (A); irregular (I); and not available (NA).

INTERNATIONAL MONETARY FUND

GERMANY

STAFF REPORT FOR THE 2022 ARTICLE IV CONSULTATION— SUPPLEMENTARY INFORMATION

July 12, 2022

Prepared By European Department

This supplement provides information that has become available since the staff report was issued to the Executive Board on July 1, 2022.

1. There are increasing signs of tightening gas supply in Germany. Prices of natural gas futures for the second half of 2022 and early 2023 have continued to increase in recent days, standing, as of July 12th, 2022, 50 percent higher than their levels prior to the reduction in Nord Stream 1 flows. Staff continues to estimate that Germany can avoid, albeit narrowly, shortages of gas in the next two winters if gas flows from Russia do not decline further (and re-exports of gas decline proportionally with the recent reduction in gas flows through Nord Stream 1). However, gas reserves would drop to low levels even under normal winter temperatures, thus leaving Germany vulnerable in case of a stoppage of the remaining supplies of Russian gas.

2. To avoid disorderly conditions in gas markets in case of a further drop in imports, the authorities have amended the Energy Security Act. Key changes include a temporary legal amendment to facilitate rapid government intervention to stabilize critical companies in the energy sector, and a price adjustment mechanism that would allow the increased costs of gas procurement to be passed on to end users. Staff continues to encourage such pass through to incentivize energy savings and to ensure that gas inventories can be built further ahead of the winter.

3. Escalating tensions in gas markets, a further downshift in consumer sentiment, together with growth slowdowns projected for many of Germany's trading partners, are expected to weigh on Germany's growth. Staff has made the following revisions to the key macroeconomic projections, which will also be reflected in the July 2022 Update of the World Economic Outlook:

- Germany's GDP growth has been revised down to 1.2 percent for 2022 and 0.8 percent for 2023 (-0.3 and -1.1 percentage points relative to the staff report projections, respectively), reflecting expectations of more subdued activity

through 2023.[1] Growth is expected to pick up from the second half of 2023 onwards, as floating LNG terminals come online, temperatures increase, and tensions in the gas market thus begin to ease. The output gap is expected to close in 2026, one year later than previously envisaged.

- Average headline consumer price inflation has been revised up further to 7.7 and 4.8 percent for 2022 and 2023, respectively (about 0.3 percentage point higher than the staff report projections for both years), with consumer energy prices expected to increase relative to prior projections.

4. Staff's fiscal advice remains as set out in the staff report. The more precarious outlook—with weaker growth and higher inflation—underscores the need for fiscal policy to remain flexible and ready to respond with well-targeted measures. The draft budget, approved by the Cabinet on July 1 (as part of the regular budget process) with only minor changes relative to the draft unveiled in April, confirms the authorities' intention to return to the constitutional debt-brake rule. The tightening in the cyclically-adjusted deficit would be around 1½ percent of GDP, close to the projection in the staff report, reflecting the expected phase-out of the majority of temporary COVID-19 and energy-related relief measures. Staff assesses that even under the revised baseline, which incorporates some decline in energy prices in 2023 and an easing pandemic, the envisaged fiscal tightening would remain manageable, with reduced support for domestic demand helping to cool inflation pressures. Moreover, the budget rule is flexible enough to accommodate some extra spending if nominal GDP growth disappoints. But the economy—and in particular low-income households and energy companies—would likely need more support in case of a further sizeable increase in gas prices. The authorities should plan for such a contingency, which would require relief measures to be well-targeted and time-bound to avoid adding to inflation pressures. If there is a complete shut-off of remaining gas flows from Russia, the government should allow automatic stabilizers to operate fully and if needed consider activating the escape clause of the debt break rule for another year to be able to respond flexibly to the change in the outlook.

5. The thrust of the staff appraisal remains unchanged.

[1] The total downward revision to growth triggered by the partial shut-off of Nord Stream 1 flows is about 0.5 percentage point for 2022 and 0.6 percentage point for 2023, meaning that staff has shifted 30–40 percent of the output loss for 2022 and 2023 in a full shut-off scenario (as shown in the last row of Table 3 of the Selected Issues Paper) into the baseline.

Table 1. Germany: Selected Economic Indicators, 2020–25

	2020	2021	2022	2023	2024	2025
			Projections			
Output			(unadjusted)			
Real GDP growth (%)	-4.6	2.9	1.2	0.8	2.4	2.2
Total domestic demand growth (%)	-4.0	2.3	2.2	0.7	2.4	2.4
Output gap (% of potential GDP)	-3.6	-1.6	-1.2	-1.2	-1.0	-0.3
Employment						
Unemployment rate (%, ILO)	3.8	3.6	3.1	3.4	3.1	3.0
Employment growth (%)	-1.0	-0.7	1.6	-0.2	0.1	0.1
Prices						
Inflation (%, headline, period avg.)	0.4	3.2	7.7	4.8	3.2	2.2
Inflation (%, core, period avg.)	0.8	2.3	4.0	3.9	3.3	2.5
General Government Finances						
Fiscal balance (% of GDP)	-4.3	-3.7	-3.2	-1.8	-1.3	-0.9
Revenue (% of GDP)	46.5	47.9	47.1	46.9	47.0	47.1
Expenditure (% of GDP)	50.8	51.6	50.2	48.7	48.3	48.0
Public debt (% of GDP)	68.7	70.2	70.9	68.9	65.8	63.2
Money and Credit						
Broad money (M3) (end of year, % change) 1/	8.2	5.6				
Credit to private sector (% change)	4.9	5.4				
10-year government bond yield (%)	-0.5	-0.3				
Balance of Payments						
Current account balance (% of GDP)	7.1	7.4	5.7	6.2	6.9	6.9
Trade balance (% of GDP)	5.7	5.4	3.9	4.4	4.7	4.5
Exports of goods (% of GDP)	35.2	38.3	37.5	37.6	37.4	37.3
Volume (% change)	-9.0	10.0	1.9	4.2	4.3	4.3
Imports of goods (% of GDP)	29.6	32.9	33.7	33.0	32.5	32.5
Volume (% change)	-5.3	8.0	1.5	3.4	4.4	4.8
FDI balance (% of GDP)	-0.1	2.9	1.6	1.5	2.0	1.7
Reserves minus gold (billions of US$)	64.0	99.2				
External Debt (% of GDP)	165.1	171.8				
Exchange Rate						
REER (% change)	1.3	0.9				
NEER (% change)	2.4	0.8				
Real effective rate (2005=100) 2/	96.7	97.6				
Nominal effective rate (2005=100) 3/	103.8	104.7				

Sources: Deutsche Bundesbank, Eurostat, Federal Statistical Office, Haver Analytics, and IMF staff calculations.
1/ Reflects Germany's contribution to M3 of the euro area.
2/ Real effective exchange rate, CPI based, all countries.
3/ Nominal effective exchange rate, all countries.

Statement by Mr. Joerg Stephan, Executive Director, and Mr. Tobias Krahnke, Advisor to the Executive Director July 1, 2022

On behalf of our authorities, we would like to thank staff for the substantive, insightful and constructive discussions, and the well-written and well-balanced report. We appreciate the high-quality analysis, which rightly focuses on the most pressing challenges posed by the fallout of Russia's war against Ukraine and the necessary policies to set the economy back on a path to a strong and sustained recovery.

Our authorities largely concur with staff's key findings and recommendations. Continuous efforts to cushion the spillovers from the war, limit scarring effects on potential growth, and to ensure energy security remain top priorities. Looking forward, the federal government recently adopted the draft of the 2023 federal budget and its fiscal plan to 2026. The government aims to gradually exit from the crisis-mode and to re-build risk buffers thereby also avoiding adding to inflationary pressure. At the same time, investments will be kept at historically high levels in order to promote a strong, green, and inclusive economy and to build up defense capacities. Germany is undertaking a broad-based public sector investment initiative focused on (early childhood) education and research, digital infrastructure, transport infrastructure and the climate-friendly transformation of the economy. The government also continues to be committed to preserve and further improve inclusiveness, inter alia through a lower labor tax wedge in particular on low-income earners, investment in social housing, assistance for job transition as well as further measures to address gender inequities in the labor market.

The current environment is characterized by exceptionally high uncertainties and the balance of risks is tilted to the downside. While the greatest immediate threat is a persistent and full shut-off of Russia's gas exports to Germany and Europe more broadly, extended supply disruptions and higher commodity prices would weigh on growth and increase the risks of persistently higher inflation and de-anchoring of inflation expectations. Renewed surges in COVID-19 infections, possibly with more dangerous and highly contagious variants, continue to pose risks to the economic outlook. In the absence of a materialization of these risks, our authorities expect the recovery to regain some momentum by mid-2022, also supported by recent fiscal policy measures. The aforementioned fiscal consolidation envisaged for 2023 is driven by the automatic phasing out of the temporary measures to mitigate the impact of the pandemic and high energy prices and automatic stabilizers. Thus, it has limited impact on growth.

Safeguarding the Recovery

Tackling the fallout from Russia's war against Ukraine has been a major challenge for countries around the world. Rising food and energy prices and major disruptions to already strained global supply chains have been weighing on growth and pushed up inflation further causing particular hardship for the most vulnerable both in Germany and worldwide. After

unprecedented policy support during the pandemic, the German government has responded to the fallout from the war with timely and targeted measures which included various forms of income support for vulnerable households. These measures were designed as an immediate and temporary relief for households amid rapidly rising energy prices. Our government is committed to phase them out as planned. In a similar vein – and while generally concurring with the need to allow price mechanisms to work as much as possible –, the government considers temporary support to firms justifiable. The respective subsidies for firms' gas and electricity costs would not disincentivize energy saving because of strict eligibility criteria, their temporary nature (last only until September), as well as the fact that they cover only a portion of the increased energy cost and decline over time. While the government aims to return to normality and phase out the extraordinary fiscal responses, our authorities continue to monitor the situation carefully and stand ready to employ additional measures if needed.

A central pillar of the comprehensive policy package that was already put in place during the pandemic is the enhancement of the short-time work allowance (*Kurzarbeitergeld*). Staff's analysis has repeatedly confirmed the effectiveness of this tested tool: The *Kurzarbeitergeld* has not only substantially and significantly contained unemployment but has also stabilized disposable income and, therefore, domestic demand. More recently, renewed disruptions to supply chains caused by the war led to some shortages in intermediary inputs and negatively affected production in the manufacturing sector. Against this backdrop, the government has decided to prolong the phase-out of the expanded *Kurzarbeit* program until September 2022 to avert layoffs and limit scarring.

A key priority to safeguard the recovery is ensuring energy security. The government is in a continuous process of analyzing the economic impact of a potential Russian gas shutoff and developing contingency plans. In mid-June, the authorities declared the second phase of the three-stage emergency gas plan which triggered measures such as accelerating the filling of storage facilities or reducing the use of gas for power generation. The government is also trying to actively encourage further gas savings by firms and households. In this context, it intends to develop an auction mechanism for industrial gas consumers and to consider ways to promote the exchange of gas heaters for heat pumps (while being mindful of potential capacity constraints in the respective industry).

While the exact GDP loss of a Russian gas shutoff is very difficult to predict, a shutoff can entail substantial costs and could require additional policy support. Our authorities welcome staff's comprehensive and sophisticated analysis on the potential output loss of a gas shutoff. This analysis adds to a number of studies that try to quantify the economic impact of such an event using very different assumptions. While the reduction in GDP estimated by staff appears reasonable (given their assumptions and the model used) and while agreeing that the economic impact would be sizeable, we generally call for treating point estimates with some caution. The economic models used (e.g. static general equilibrium models) can only capture part of the possible transmission mechanisms and spillovers and the results heavily depend on the underlying assumptions that are subject to high uncertainty.

The financial sector has weathered the COVID-19 crisis and the fallout from the war relatively well owing to comprehensive fiscal policy measures but also a full set of

macroprudential, regulatory and supervisory measures taken during the pandemic. So far, financial stability implications of the war seem to be manageable also given the financial sector's limited exposure to Russia and Ukraine as well as to energy-intensive firms. At the same time, further analysis and close monitoring is needed going forward in particular with a view to potential financial stability risks stemming from large energy companies that are directly affected by a plunge of Russian gas supply.

Beyond tackling the economic and humanitarian fallout from Russia's war in Ukraine domestically, Germany is committed to continue its efforts to counter the war's adverse and harmful regional and global impacts, including with a view to helping secure global energy and food security. The German government is stepping up to take its share of international responsibility for development cooperation, humanitarian aid and also international climate action. In the draft 2023 budget, the government has included EUR 22 billion for international development which leaves Germany among the top donor nations worldwide. Moreover, the government stands by its commitment to prospectively increase international climate finance from EUR 4 to 6 billion by 2025 the latest.

"Policies for a more Resilient and Sustainable Economy"

In this challenging environment, Germany will follow a forward-looking fiscal and economic policy that promotes sustainable public finances and boosts potential growth. The German government is continuing to pursue decisive fiscal policy action with a view to expand public investment, promote innovation and facilitate a structural transformation of the economy, including digitalization and decarbonization. To this end, the federal draft 2023 budget provides for EUR 58.4 billion in investment spending. The medium-term fiscal plan envisages government investment levels to remain continuously high, at about EUR 52 billion per year until 2026. At the same time, the government is committed to exiting the pandemic crisis mode. The goal in this respect is to safeguard against interest rate risks, and a rising fiscal burden from social expenditure and rebuild risk buffers that will enable Germany to address future crises.

In order to be able to confront the huge challenges of our time such as the green and digital transformation of our economy, Germany will need high investment levels, mostly in the private sector. The government aims to foster and crowd-in private investment. To attract private capital, it is essential to ensure a favorable business environment and to create conditions for innovation and entrepreneurship. Against this background, the government is working on a "law for financing the future" (*Zukunftsfinanzierungsgesetz*). This law will aim at reducing red tape, foster digitalization and financial innovation, and facilitate firms' access to private capital markets (in particular for start-ups and SMEs).

Higher public and private investment will be conducive to external rebalancing. In this context, we note that staff assesses Germany's external position in 2021 to be stronger than the level implied by medium-term fundamentals and desirable policies. Our authorities continue to acknowledge that the current account surplus remains high but emphasize that it is affected by demographic change and many exogenous variables, including non-domestic policy

influences. Moreover, despite the recent refinements of the EBA methodology, the EBA model underlying staff's assessment continues to perform rather poorly for Germany. The bulk of the EBA-estimated gap for 2021 reflects the regression's residual rather than gaps in the policy variables included in the EBA model. Looking ahead, the current account surplus this year is expected to shrink considerably, given the recent surge in energy prices as well as the huge investment needs to meet all the upcoming challenges in the fields of energy transition and digitalization. Its future evolution, however, is subject to high uncertainty and will also depend on the further evolution of energy prices, supply bottlenecks as well as the further course of the COVID-19 pandemic.

The current disruption to our world order and the foundations of prosperity that are posed by Russia's war against Ukraine should not let us lose sight of the urgent need to address the existential challenges of our time. Our authorities are of the view that in the medium to long term the goal of reducing CO2 emissions in the fight against climate change is complementary to our current efforts to ensuring energy security, by shifting to renewable energy and decarbonizing our economies.

Decisive climate action thus remains one of the government's key priorities. This is not only reflected in the government's decision to impose tighter emission targets and set the goal of reaching greenhouse gas neutrality already by 2045. This is also visible in Germany's efforts to boost international cooperation on climate, such as the recent endorsement of an international Climate Club. The targeted investment in research and infrastructure to accelerate the green transformation constitutes a significant part of the above-mentioned investment initiative. The government is committed to use the earmarked funds of over EUR 80 billion for climate policy measures to support strong investment in decarbonizing the housing sector, a comprehensive charging infrastructure for electric vehicles, an extension of (local) public transport, and the promotion of hydrogen research and development as part of the National Hydrogen Strategy.

Our government concurs with staff that enhancing the cost-effectiveness of the climate change mitigation strategy and achieving emission targets will require additional measures. Our authorities remain of the view that carbon pricing is the most efficient and effective instrument to reduce emissions and see merit in having a single carbon price in the EU. The national carbon pricing system and a rebating scheme aim to be socially fair and burden-neutral to the economy. Revenues raised through selling emission rights will be re-distributed to citizens and companies to avoid hardships and to further increase incentives for investments in climate-friendly technologies. Potential adjustments to the mechanism will be re-evaluated in the future, while also taking into account the importance of the predictability of carbon pricing. At the same time, our government holds the view that a carbon price path in line with the climate goals needs to be complemented by supporting sectoral measures. The yet-to-be announced "summer package" will contain another bundle of decarbonization measures in transport, building, and agriculture. Our authorities also take note of staff's suggestion to introduce feebates, however reiterate that in practice these measures might prove to be rather difficult to implement, also due to political economy factors.

The government agrees with staff on the need to boost labor force participation and address the demographic challenges that Germany is facing going forward. This will require efforts to promote up- and re-skilling of workers and to provide incentives for labor force participation. As regards the latter, our government is committed to expanding the provision of needs-based and high-quality childcare facilities in order to increase working hours and participation of female workers. To address the high effective marginal tax rate for secondary earners, the government plans to promote the more active use of existing alternatives in the current tax code which enable both earners to face the same marginal tax rate on the first euro earned, thus increasing net income for the secondary earner. In addition, the government is working on further enhancing integration programs for migrants to facilitate their participation in the labor market.

Financial Sector

The German financial sector is overall stable with high capital and liquidity buffers that have strengthened since the last FSAP was conducted. Robust public and private sector balance sheets have thus far supported financial stability in the face of the shocks of the COVID-19 pandemic and Russia's war against Ukraine. Our authorities take note of the broadly reassuring results of staff's adverse stress tests that take into account the potential fallout of current detrimental developments. Our authorities welcome the inclusion of emerging policy areas in this year's FSAP. Our authorities will also continue their ongoing efforts to ensure effective regulation and supervision in the context of climate risks as well as fintech and digitalization.

As also laid out in the staff report, our authorities have been undertaking continuous efforts to further improving macroprudential policy implementation and strengthening the microprudential supervisory framework. Our authorities share staff's assessment of the dynamics in the residential real estate market to a large extent and are in the process of planning and implementing various initiatives that are in line with staff's recommendations such as closing important data gaps on lending standards for housing loans to private households and working on adding income-based instruments to the macroprudential toolkit. It should be noted though that any potential activation of all borrower-based measures would require a solid financial stability risk assessment based on available information that generates sufficient evidence that such a step is needed for safeguarding financial stability. The recent tightening of macroprudential policy will also help bolster the banking system's resilience to adverse developments. Furthermore, our authorities will continue to intensively monitor residential and commercial real estate risks as well as banks' interest rate risks and analyze implications for the financial system.

Our authorities share staff's assessment that the initiated reforms of the depositor and institutional protection schemes will strengthen the German banking system. However, they are of the view that maintaining the existing multiple deposit guarantee schemes appropriately reflects the three-pillar structure of the German banking system and point out that this structure will not pose a pivotal obstacle to ongoing European discussions on a single European deposit insurance scheme.