

Ademmer, Martin et al.

**Article**

## German Economy Spring 2022 - Recovery at risk: Soaring inflation

Kiel Institute Economic Outlook, No. 89

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# KIEL INSTITUTE **ECONOMIC OUTLOOK**

**German Economy**  
Spring 2022

Finalized March 17, 2022

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**No. 89 (2022 | Q1)**

*Martin Ademmer, Jens Boysen-Hogrefe, Dominik Groll,  
Nils Jannsen, Stefan Kooths, Saskia Meuchelböck und Nils Sonnenberg*

# GERMAN ECONOMY SPRING 2022: RECOVERY AT RISK – SOARING INFLATION

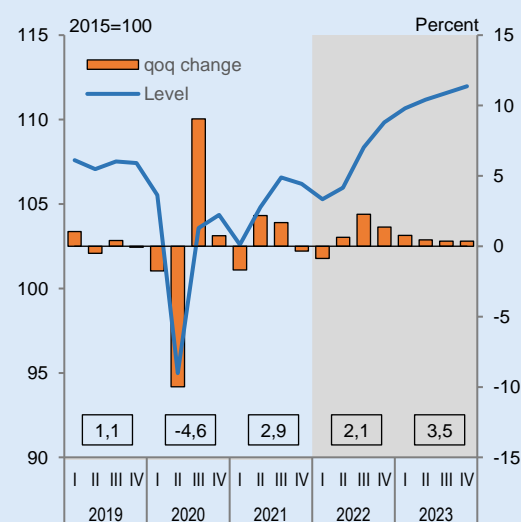
*Martin Ademmer, Jens Boysen-Hogrefe, Dominik Groll, Nils Jannsen, Stefan Kooths, Saskia Meuchelböck und Nils Sonnenberg*

The German economy is once again facing strong headwinds. The war in Ukraine is leading to a surge in commodity prices, additional supply bottlenecks and dwindling sales opportunities. These factors are hitting the economy in a phase in which the dampening effects of the pandemic are fading out and a strong recovery has begun to emerge. Higher commodity prices reduce the purchasing power of disposable incomes and thus dampen private consumption, while new supply bottlenecks will weigh on industrial production in the coming months. At the same time, sales opportunities deteriorate at least temporarily due to the sanctions and the uncertainty caused by the war. The negative effects, however, are cushioned because private households have accumulated large amounts of extra savings since the beginning of the pandemic, softening the blow to private consumption caused by higher inflation. In addition, manufacturing firms have an unusually high stock of orders, which will buffer lower sales opportunities. As a result, the recovery is likely to continue this year, albeit at a noticeably slower pace than previously expected. Overall, we expect GDP to rise by 2.1 percent this year (winter forecast: 4 percent) and by 3.5 percent in 2023 (winter forecast: 3.3 percent). At 5.8 percent, inflation is likely to be higher this year than ever before in reunified Germany. Even if commodity prices stop rising and supply bottlenecks gradually ease, inflation is still likely to be unusually high at 3.4 percent next year, also because recent producer price increases are only gradually being passed through to consumers. The labor market is expected to remain robust. Public spending will rise in response to the war and its economic consequences, so that budget deficits will remain at elevated levels for a longer period.

**The German economy is subject to opposing forces.** While the negative impact of the pandemic on the economy is fading out, high inflation and the economic consequences of the war in Ukraine dampen economic activity. The war leads to additional supply bottlenecks lowering production in manufacturing and to higher inflation weighing on private consumption. Lower sales opportunities in Russia and in Ukraine or due to an increase in uncertainty associated with lower demand for capital goods will be cushioned by the high stock of orders in the manufacturing industry – since the beginning of the pandemic stock of orders increased by about 15 percent of an annual production. As a result, the economy will recover from the pandemic but at a lower pace than expected in our winter forecast. After a decline in GDP in the first quarter, we expect GDP to grow with relatively high rates later in the year (Figure 1). GDP will grow by 2.1 percent (2022) and by 3.5 percent (2023), respectively.

**The war in Ukraine weighs on foreign trade.** Foreign trade expanded strongly last year despite adverse factors caused by the pandemic. Both exports and imports rose surprisingly strongly in the fourth quarter, after the recovery had slowed in the course of 2021, not least due to shortages of intermediate goods. Overall, exports and imports in 2021 were only slightly below their levels seen before the pandemic. While the volume of goods trade was already higher than in 2019 despite supply bottlenecks weighing particularly on capital goods exports, services trade was still well below its pre-crisis level. Russia and Ukraine play a fairly minor role in

**Figure 1:**  
Gross domestic product



Quarterly data: Volumes, seasonally and calendar adjusted.  
Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.

German foreign trade apart from imports of raw materials. Russia accounts for 2 percent of German exports and 2.8 percent of German imports. Ukraine's share in German exports and imports is less than 0.5 percent. Nevertheless, the war is hampering exports in the first half of 2022. In the first quarter, exports would have probably also declined without Russia's invasion of Ukraine, not least due to the ongoing supply bottlenecks. This is indicated by monthly trade data available through January. The war in Ukraine is placing an additional burden on German exporters. We expect shipments to Russia to decline significantly as a result of the sanctions and the voluntary withdrawal of many companies from the Russian market. However, we assume that goods originally produced for the Russian or Ukrainian market are likely to be redirected to other countries as foreign demand cannot be met in full anyway due to shortages of intermediate goods. In the short term, however, supply bottlenecks are likely to aggravate as a result of the war, weighing on production. As disruptions in international supply chains gradually ease, exports will continue their recovery in the second half of the year and the high order backlog from abroad can be gradually worked off. After a 9.9 percent increase in 2021, we expect exports to increase by 4.2 percent this year, followed by 6.6 percent in 2023. Imports are also temporarily weakening as indicated by trade data for January. Given our assumption that imports of Russian energy goods are continued, the direct effect of the war on imports is less pronounced than for exports as around 75 percent of imports from Russia are energy goods. As the recovery of the domestic economy from the pandemic continues in spring, imports are also picking up again. The recovery in services imports, in particular travel, is also contributing to the strong expansion. Overall, imports are set to rise by 5.9 percent in 2022, following an increase of 9.3 percent last year. For 2023, we expect an increase of 6.4 percent. The already high upward pressure on prices in foreign trade will be further exacerbated by the Ukraine war. Already in the last quarter of 2021, the terms of trade deteriorated more sharply than ever before in reunified Germany. In view of the recent jumps in energy and raw material prices, no improvement is expected in the first half of the year. Overall, we expect the terms of trade to deteriorate by 5.5 percent in 2022. In 2023, they will improve by 0.7 percent.

**Price pressures remain high.** Inflation is set to remain exceptionally high as the inflationary environment that built up during the pandemic is likely to persist for some time. On the supply side, price pressures are driven by raw material prices and disrupted supply chains, while demand is robust on the consumer side. At the end of last year, inflation was 5.3 percent, having risen above the 5 percent mark for the first time in November. In January 2022, the rate fell to 4.9 percent. The core rate excluding energy also declined slightly from 3.8 percent in December to 3.2 percent. In January, however, the expiring effect from the VAT cut in mid-2020 had a lowering effect on the inflation rate. It was probably in the order of about 1 percentage point, so the disproportionately small decline indicates increasing inflationary pressures. In February, inflation rose to 5.1 percent and the core rate to 3.3 percent. Consumer price inflation is broad-based, as inflation rates across the product categories of the CPI indicate. The median inflation rate amounted to 3.2 percent in February; the 10 and 90 percent quantiles equal 0 and 9.4 percent, respectively. Overall, inflation is currently more broad-based than at any other time since the start of the European Monetary Union and, for Germany, is most comparable with the period of the reunification boom. The war in Ukraine is exacerbating the already high price pressure. Raw material prices were already high before the war, but continued to rise sharply after the start of the war. The available monthly figures and the development of energy prices indicate that the year-on-year rate for the first quarter as a whole is over 5 percent. Compared with the previous quarter, prices are likely to have risen by around 2 percent. The sharp increases in raw material prices and the high inflation rates for intermediate inputs are likely to be passed on to consumers only gradually. Inflation is therefore expected to remain high for some time to come, even if – according to our assumption – raw material prices decline somewhat and supply bottlenecks gradually ease in the second half of the year. After 3.1 percent last year, inflation in the current year is expected to be considerably higher at 5.8 percent and will only gradually moderate to 3.4 percent in 2023.

**High inflation weighs on private consumption.** The large increases in consumer prices will lead to a decline of real disposable income this year and to an only moderate increase next year. However, private consumption will be supported by a decline in the savings rate. During the pandemic, the savings rate increased considerably due to the containment measures that dampened consumption in particular in contact-intensive service industries. With the negative impact of the pandemic fading out, we expect the savings rate to normalize from 15 percent in 2021 to 11 percent in this year – close to the level observed in 2019. This normalization of consumption patterns is also reflected in high frequency data, including mobility data and restaurant bookings indicating that consumption has started to recover in January despite high infection rates. For 2023, we assume that the savings rate will further decline to about 9 percent because private households will use some of their extra-savings for private



consumption. Since the beginning of the pandemic, private households have built up extra-savings of about 200 bn euro (or 10 percent relative to disposable income in 2021). A decline of the savings rate to 9 percent in 2023 implies that households will use about 20 percent of these extra-savings for private consumption. Against this backdrop, we expect private consumption to continue its recovery in the second quarter, after a renewed setback in the first quarter. Overall, private consumption will increase by 3.9 percent this year and by 3.7 percent in 2023.

**Wages and salaries accelerate noticeably.** Collectively agreed earnings are largely fixed for 2022. Given existing agreements, earnings are expected to increase by 2.7 percent this year. This is a much stronger increase than last year, when growth was comparatively low at 1.5 percent due to the pandemic, but much weaker than consumer price inflation. Future collective agreements are likely to include noticeably higher wage increases due to the surge in inflation, but they will not prevent a temporary decline in purchasing power for employees due to the delayed response of wages to prices. In addition, part of the surge in inflation is caused by the war in Ukraine and thus by a negative supply shock, which in itself dampens economic activity, labor demand, and wage growth. We expect collectively agreed earnings to rise by 3.9 percent in 2023; this would be the highest increase since 1995. Effective earnings (gross wages and salaries per employee) grew much faster than collectively agreed earnings last year, largely due to the reduction in short-time work. Going forward, effective earnings continue to rise faster than collectively agreed earnings. While a further reduction in short-time work will be the dominant factor in the current year, higher inflation will play an increasingly important role as time goes on. High wage momentum is supported by the fact that labor shortages have already reached a historically high level. The strong hike of the statutory minimum wage to 12 euro planned for October 2022 will have a limited impact on wages per employee, as we expect a reduction in hours worked of the affected employees, similar to what happened in response to the introduction of the minimum wage in 2015. All in all, earnings per employee are set to rise by 4.0 percent (2022) and 4.2 percent (2023), respectively.

**Employment continues its recovery from the Covid-19 shock despite the war in Ukraine, albeit with declining rates.** Short-time work declined further despite the renewed dent in economic activity caused by the pandemic at the end of last year. In December, 641,000 employees were on short-time work – only around one-tenth of the 6 million short-time workers registered at the peak in April 2020 but still significantly more than before the pandemic (an average of 60,000 workers were on short-time work in 2019). Employment continued its recovery unabatedly, though the individual types of employment have developed differently. While employment subject to social security contributions continued to rise at an accelerated pace, marginal employment has recently declined after having recovered somewhat during the summer. Self-employment continued to trend downward, but the decline slowed. According to the ifo employment barometer, companies' willingness to hire was at an exceptionally high level by historical standards before the start of the war in Ukraine. The same applies to the assessments of local employment agencies regarding the future development of employment in the short term (IAB labor market barometer). Against this background, and due to the strong figure in January, total employment has likely risen substantially during the first quarter. We expect an increase of 180,000 persons, which would be a larger climb than in the previous quarter. For the remainder of the forecast horizon, we expect the recovery in employment from the Covid-19 crisis to continue, although the pace is likely to slow. While the pace naturally slows as the recovery progresses, several additional factors are dampening further employment growth. Firstly, the economic consequences of the Ukraine war are likely to put some brakes on companies' willingness to hire, although we expect the effects to be primarily reflected in working hours (including short-time work) and labor productivity, rather than in the number of jobs. This is mainly the result of the extraordinarily high level of labor shortages that has materialized, despite the fact that the economy has not yet fully recovered from the pandemic. Secondly, the statutory minimum wage will be increased to 12 euro per hour on October 1, 2022. In view of the high degree of intervention into the lower parts of the wage distribution, we expect employment losses especially among the marginally employed, which will gradually materialize and thus dampen the rise in employment. Third, in 2023, the labor force is likely to reach its peak due to aging. All in all, the unemployment rate as defined by the German Federal Employment Agency will decrease to an annual average of 4.9 percent (2022) and 4.7 percent (2023), down from 5.7 percent in 2021.

**Due to the war in Ukraine the fiscal deficit decreases less than previously expected.** The moderation of the Covid-19 pandemic reduces payments for company grants as well as for vaccinations and tests, and thus substantially relieves the budget. At the same time, several measures are taken to counteract the surge in energy prices for several groups of private households. Further, we expect additional expenditures for hosting refugees from Ukraine. However, expenditures will increase at a slower pace

than revenues despite rather modest expansion of tax revenues. However, the reduced speed is also the consequence of the strong rebound that has already taken place in 2021. Overall, we expect the budget deficit to remain at 2.5 percent relative to GDP. In 2023, the public budget will improve only slightly. While the economic upswing supports the budget balance, we expect the new federal government to follow an expansionary fiscal policy stance leading to higher expenditures for subsidies and especially investments that are particularly driven by additional defense spending. Overall, the fiscal deficit of the general government will decline only modestly to 2 percent relative to GDP. The structural budget balance, by contrast, will deteriorate.

**Table 1:**

**Key indicators**

	2020	2021	2022	2023
Gross domestic product (GDP), price-adjusted	-4.6	2.9	2.1	3.5
Gross domestic product, deflator	1.6	3.0	2.9	3.3
Consumer prices	0.5	3.1	5.8	3.4
Labor productivity (per hour worked)	0.4	0.9	-0.1	2.2
Employment (1000 persons)	44,898	44,920	45,508	45,735
Unemployment rate (percent)	5.9	5.7	4.9	4.7
<i>in relation to nominal GDP</i>				
Public sector net lending	-4.3	-3.7	-2.5	-2.0
Gross public debt	69.1	69.4	68.0	65.1
Current account balance	7.1	7.4	4.1	4.6

GDP, consumer prices, labor productivity: percentage change on previous year; unemployment rate: as defined by the Federal Employment Agency.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; Federal Employment Agency, *Monthly Bulletin*; Federal Employment Agency, *Employment Statistics*; shaded: Kiel Institute forecast.

## **Data annex**

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## 1. Leading indicators

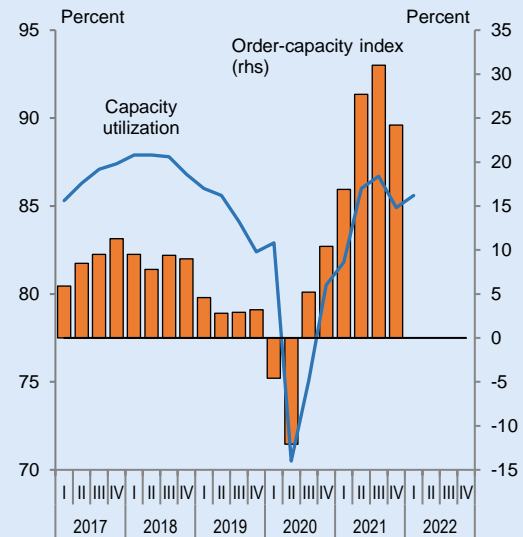
**Figure 1.1:**  
Leading indicators



Monthly data, seasonally adjusted.

Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; ifo, *Konjunkturperspektiven*; Kiel Institute calculations.

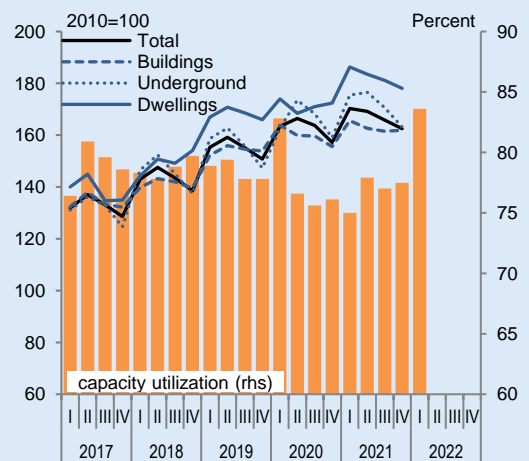
**Figure 1.2:**  
Capacity utilization



Quarterly data, seasonally adjusted; capacity utilization in manufacturing (axes cross at normal capacity utilization).

Source: EU Commission, *Business Survey*; Deutsche Bundesbank, *Monthly Report*.

**Figure 1.3:**  
Order stocks and capacity utilization in construction industry



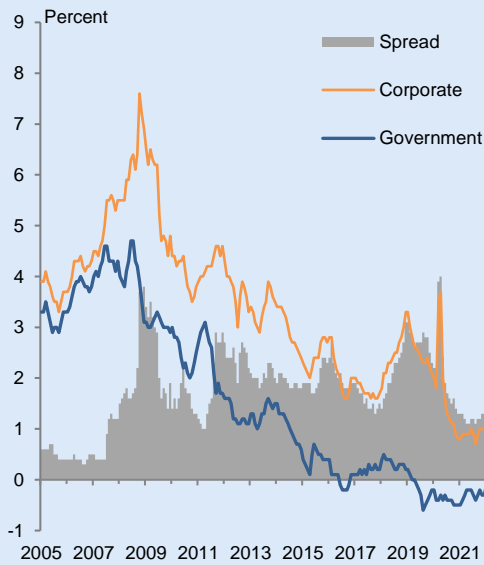
Quarterly data. Capacity utilization (deviation from normal level): seasonally adjusted; order stocks: price, seasonally and working-day adjusted.

Source: Federal Statistical Office, *GENESIS database*; ifo, *Konjunkturperspektiven*.



## 2. Monetary conditions and prices

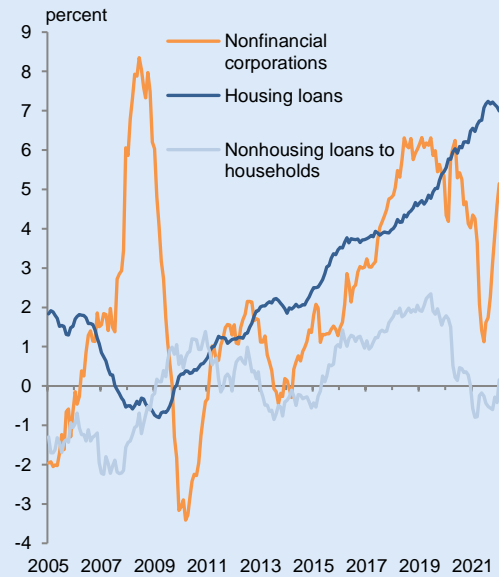
**Figure 2.1:**  
Bond yields



Monthly data, average maturities above three years.

Source: Deutsche Bundesbank, *Monthly Reports*; Kiel Institute calculations.

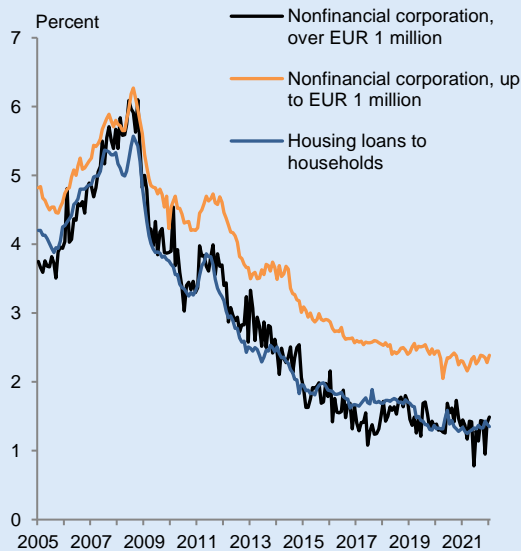
**Figure 2.3:**  
Credit growth



Change compared to one year ago; Monthly data.

Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Kiel Institute calculations.

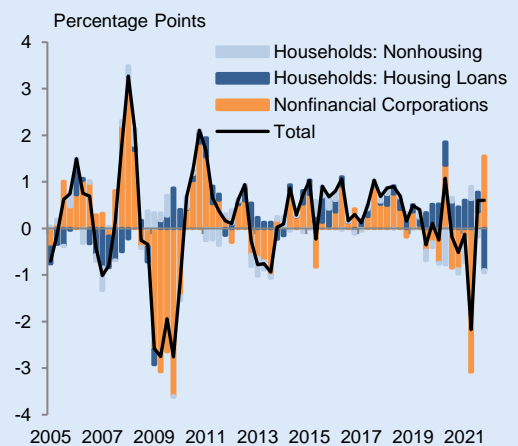
**Figure 2.2:**  
Loan interest



Monthly data; new business, 1–5 years, fixed.

Source: Deutsche Bundesbank, *MFI interest rate statistics*.

**Figure 2.4:**  
Credit impulse

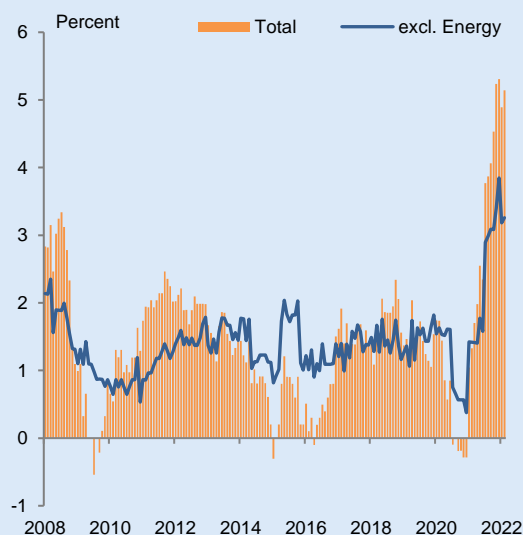


Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009), *Credit and economic recovery*, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam.

The credit impulse is the change of the credit growth relative to the growth in GDP.

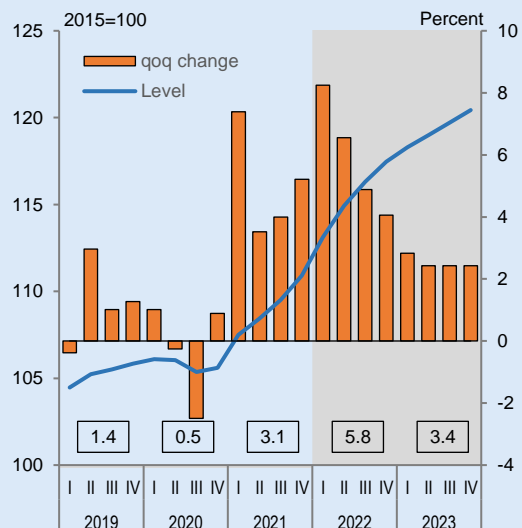
Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Kiel Institute calculations.

**Figure 2.5:**  
Consumer prices



Monthly data; year-on-year change.  
Source: Deutsche Bundesbank, *Time series databases*; Kiel Institute calculations.

**Figure 2.6:**  
Consumer price index



Quarterly data: seasonally adjusted; qoq change: annualized.  
Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 17, Series 7*; shaded: Kiel Institute forecast.

**Table 2.1:**  
Projections and assumptions on the international environment

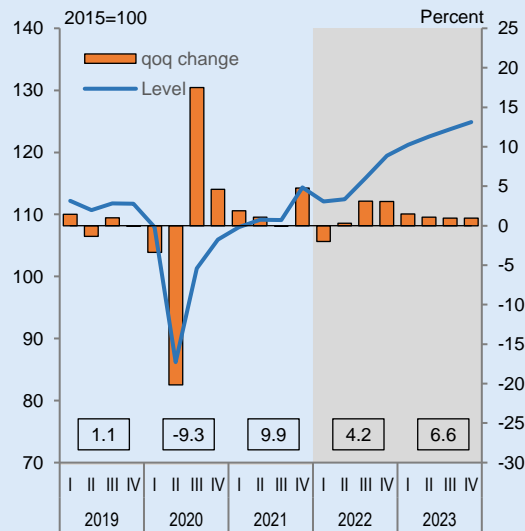
	2020				2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.25	0.50	0.75	1.00	1.00
Long-term interest rate	-0.41	-0.48	-0.45	-0.56	-0.47	-0.23	-0.35	-0.22	0.10	0.40	0.60	0.70	0.80	0.90	1.10	1.10
US-dollar/euro exchange rate	1.10	1.10	1.17	1.19	1.21	1.21	1.18	1.14	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Price competitiveness	88.9	90.5	91.0	90.9	91.6	91.7	91.1	89.9	89.1	88.9	89.0	89.3	89.2	88.9	88.6	88.4
Export markets	-2.9	-8.9	9.9	0.6	0.5	2.0	1.7	1.0	0.2	0.4	0.8	0.8	0.8	0.7	0.6	0.6
Oil price	51.2	33.4	43.4	45.3	61.1	69.1	73.2	79.8	96.6	105.0	101.0	97.0	92.0	88.0	86.0	85.0

ECB key interest rate: main refinancing operations; long-term interest rate on 9–10 year bonds; price competitiveness: against 60 trading partners, based on consumer price inflation; index: 1991:I = 100, increasing values indicate deterioration of price competitiveness; export markets: GDP growth in 41 countries, weighted with shares in German exports, change over previous quarter. Oil Price: US-Dollar per barrel North Sea Brent.

Source: ECB, *Monthly Bulletin*; Deutsche Bundesbank, *Monthly Bulletin*; IMF, *International Financial Statistics*; Kiel Institute calculations; shaded: Kiel Institute forecast or assumption.

### 3. External trade

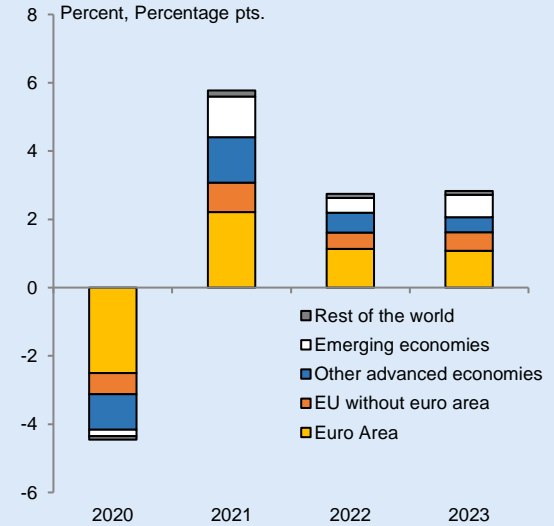
**Figure 3.1:**  
Exports



Quarterly data: Volumes, seasonally and calendar adjusted.  
Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.

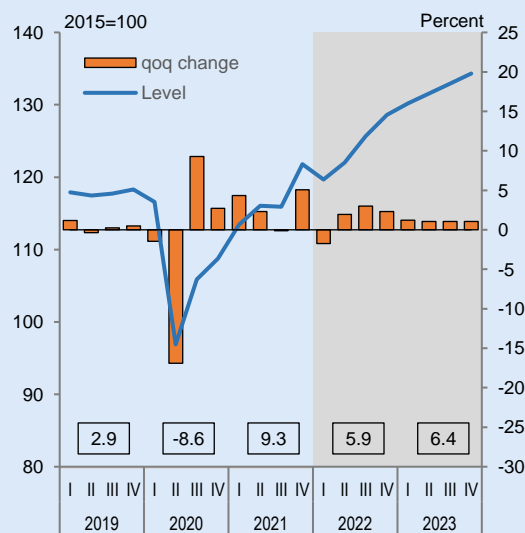
**Figure 3.3:**  
German export markets



Annual data, volumes; GDP growth in 59 countries, weighted with shares in German exports.

Source: Federal Statistical Office, *Fachserie 7 Series 1*; national sources; Kiel Institute calculations and forecast.

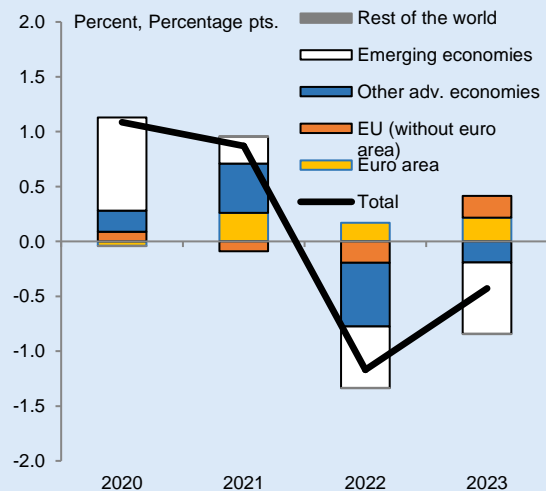
**Figure 3.2:**  
Imports



Quarterly data: Volumes, seasonally and calendar adjusted.  
Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.

**Figure 3.4:**  
Germany's price competitiveness



Annual data; vis-à-vis 55 countries based on consumer prices; weights according to Germany's price competitiveness indicator vis-à-vis 61 trading partners based on consumer price indices from the Deutsche Bundesbank. Increase reflects worsening of price competitiveness.

Source: Bundesbank, *Monthly Report 8.2020*; national sources; Kiel institute calculations and forecast.

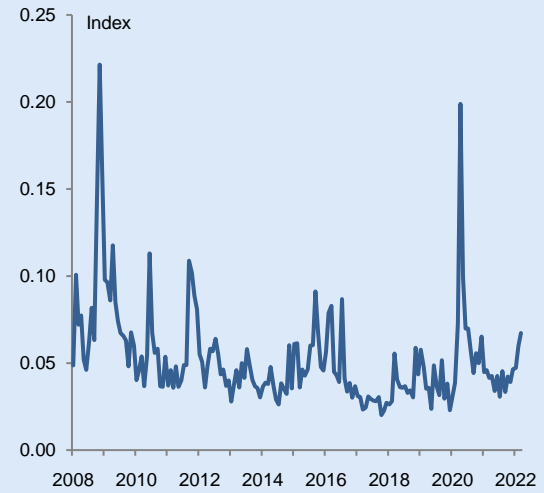
**Figure 3.5:**  
Export indicators



Quarterly data; exports, industrial production, volumes, change on previous year; order inflow: volumes, change on previous quarter; export expectations, foreign orders on hand: volumes; business expectations, industrial production: based on 42 countries weighted by shares of German exports.

Source: Deutsche Bundesbank; Thomson Reuters Datastream; ifo, Konjunkturperspektiven; Kiel Institute calculations.

**Figure 3.6:**  
Uncertainty in German export markets

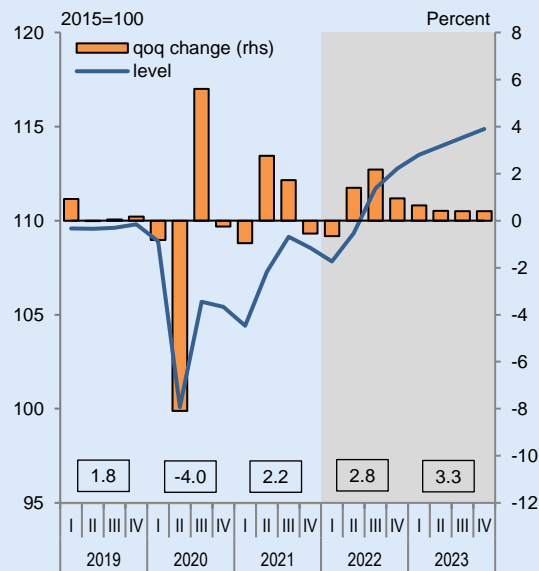


Monthly data; realized stock market volatilities based on daily stock price indices in 46 countries, weighted by shares of German exports. Last value: 10.12.2021.

Source: National sources; Kiel Institute calculations.

## 4. Domestic expenditure

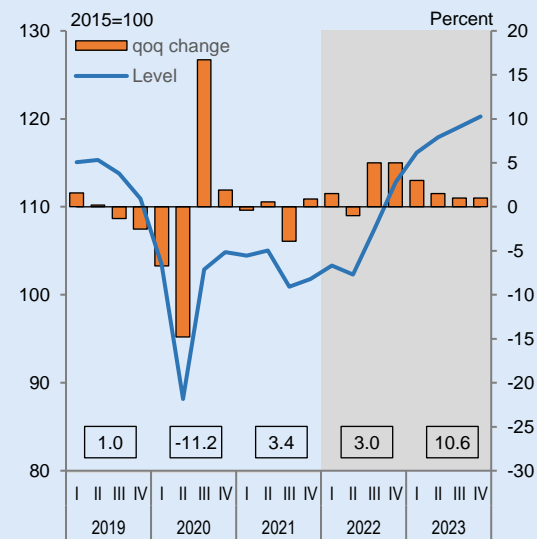
**Figure 4.1:**  
Final domestic expenditure



Quarterly data, price, seasonally and calendar adjusted, qoqchange. Annual data: price adjusted, annual rate (boxes).

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.

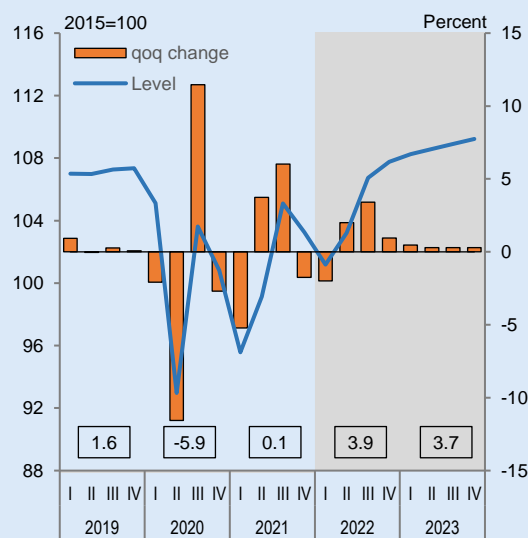
**Figure 4.3:**  
M&E investments



Quarterly data: Volumes, seasonally and calendar adjusted. Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.

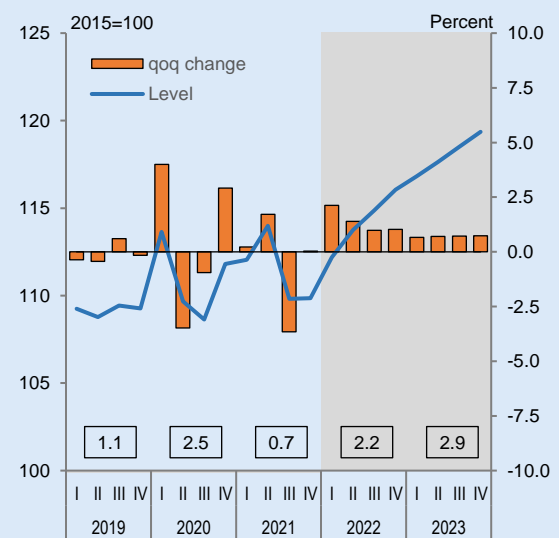
**Figure 4.2:**  
Private consumption



Quarterly data: Volumes, seasonally and calendar adjusted. Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.

**Figure 4.4:**  
Construction

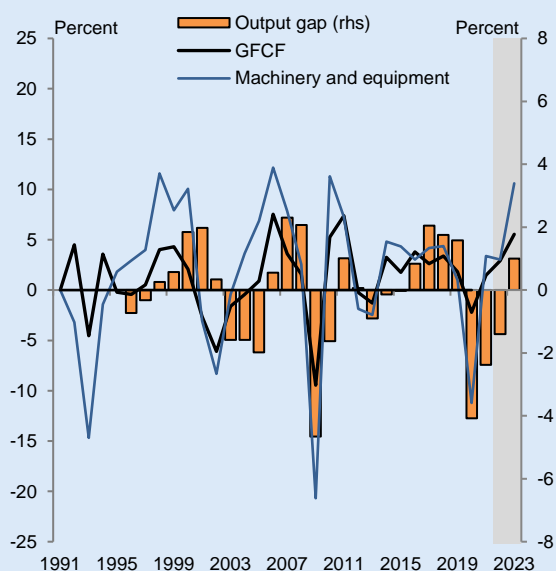


Quarterly data: Volumes, seasonally and calendar adjusted. Annual data (boxes): Volumes, change in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2 and 1.3*; shaded: Kiel Institute forecast.



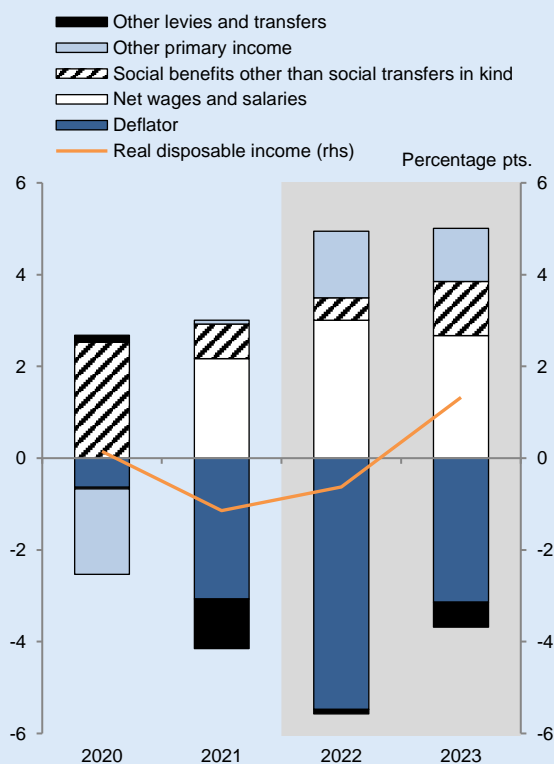
**Figure 4.5:**  
Investment cycles



Annual data; GFCF, machinery and equipment: volumes, change on previous year; output gap: in percent of potential output, estimation taken from medium-run projection.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; own calculations; shaded: Kiel Institute forecast.

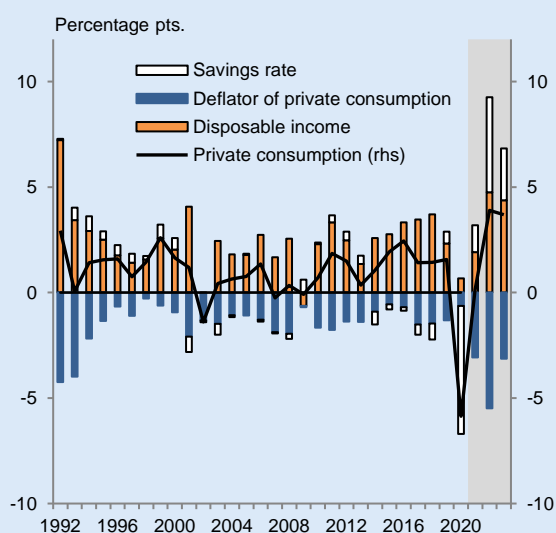
**Figure 4.7:**  
Contributions to changes in real disposable income



Annual data. Other levies and transfers: Levies on social benefits, taxes on consumption and other transfers received (net); Deflator: Deflator of private consumption.

Quelle: Federal Statistical Office, *Fachserie 18, Series 1.2*; Kiel Institute calculations; shaded: Kiel Institute forecast.

**Figure 4.6:**  
Decomposition of growth in private consumption



Annual data; disposable income including adjustment for the change in pension entitlements.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; Kiel Institute calculations, shaded: Kiel Institute forecast.

**Table 4.1:**  
Gross fixed capital formation

	2020	2021	2022	2023
Total	-2.2	1.5	2.9	5.5
Corporate investment	-5.5	2.1	3.1	7.0
Machinery and equipment	-11.2	3.4	3.0	10.6
Construction (non-dwellings)	-0.7	1.2	1.2	1.6
Other	1.0	0.7	4.7	5.7
Dwellings	3.4	1.3	3.2	3.1
Public (non-dwellings)	4.9	-3.5	-0.4	4.5
<i>Memorandum item:</i>				
Construction	2.5	0.7	2.2	2.9

Volumes; change over previous year in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; shaded: Kiel Institute forecast

## 5. Industries

Table: 5.1

Gross value added for industries

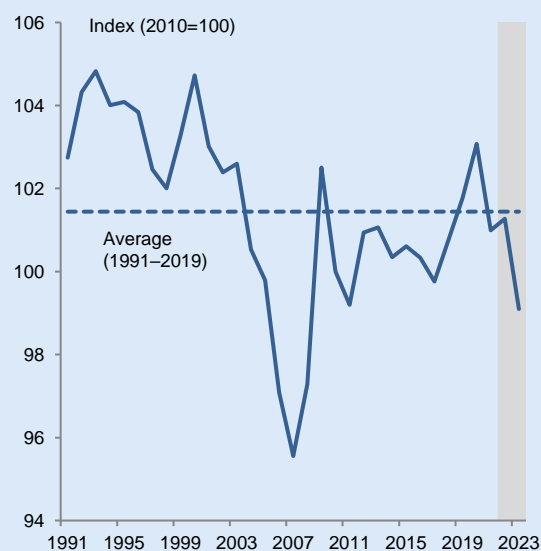
	2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
	Seasonally and calendar-adjusted, q-o-q change in percent											
Gross domestic product	-1.7	2.2	1.7	-0.3	-0.9	0.6	2.3	1.4	0.8	0.5	0.4	0.4
Gross value added	-0.9	1.6	2.2	-0.9	-0.6	0.6	2.3	1.4	0.8	0.5	0.4	0.4
Industry excl. construction	-1.1	-0.6	-1.6	1.8	2.5	-1.9	3.2	3.2	2.0	0.9	0.5	0.5
Manufacturing	-0.8	-0.9	-1.7	1.9	2.8	-2.0	3.5	3.5	2.2	1.0	0.5	0.5
Energy, Water etc.	-2.7	1.1	-0.7	1.2	0.4	-1.5	0.8	0.8	0.5	0.2	0.2	0.2
Construction	-4.6	2.3	-3.0	1.6	1.5	0.8	0.5	0.5	0.5	0.5	0.5	0.5
Trade, transport, accomodation, food services	-2.4	2.2	5.9	-1.6	-3.0	2.0	2.5	0.8	0.5	0.4	0.4	0.4
Information and communication	-0.3	0.4	1.6	1.9	0.5	1.0	1.5	1.5	1.0	1.0	1.0	1.0
Financial and insurance services	-1.1	1.2	1.0	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Real estate activities	0.3	-0.3	1.1	-0.3	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Business services	0.6	3.5	4.2	-0.9	0.0	1.0	1.0	1.0	0.7	0.7	0.7	0.7
Public services, education, health	-0.2	4.1	3.3	-3.9	-3.0	2.5	3.0	1.0	0.4	0.4	0.4	0.4
Other services	2.9	-0.1	13.9	-10.0	-7.5	5.0	10.0	1.5	0.3	0.3	0.3	0.3

Quarterly data, volumes.

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*; shaded: Kiel Institute forecast.

## 6. Wages

**Figure 6.1:**  
Real unit labor costs



Yearly data; compensation of employees per hour (nominal) in relation to gross value added per hour (nominal).

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; shaded: Kiel Institute forecast.

**Table 6.1:**  
Wages and productivity

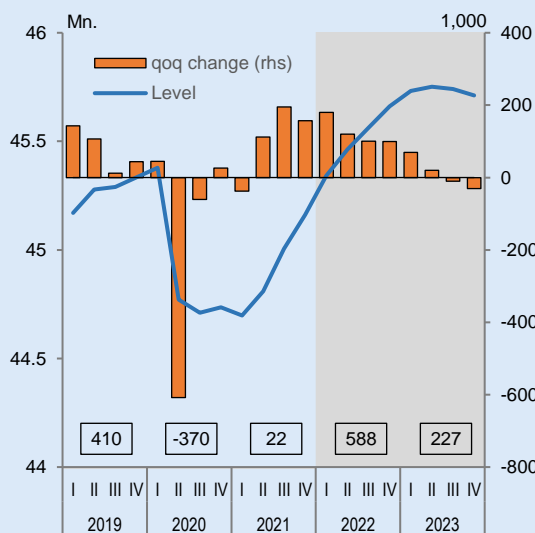
	2020	2021	2022	2023
<i>Per hour</i>				
Negotiated wages	2.0	1.5	2.7	3.9
Gross wages and salaries	3.4	1.6	3.2	3.6
Wage drift	1.4	0.0	0.5	-0.3
Compensation of employees	4.0	1.5	2.6	3.5
Labor productivity	0.4	0.9	-0.1	2.2
Unit labor costs	3.6	0.5	2.7	1.2
Unit labor costs (real)	1.9	-2.4	-0.2	-2.0
<i>Per capita</i>				
Negotiated wages	2.1	1.5	2.7	3.9
Gross wages and salaries	-0.1	3.5	4.0	4.2
Wage drift	-2.2	1.9	1.3	0.3
Compensation of employees	0.4	3.4	3.5	4.2
Labor productivity	-3.8	2.8	0.8	3.0
Unit labor costs	4.3	0.5	2.7	1.2
Unit labor costs (real)	2.7	-2.5	-0.2	-2.0

Change over previous year in percent; wage drift: difference between change of negotiated wages and change of gross wages and salaries in percentage points; labor productivity: real GDP per hour or per capita; unit labor costs: compensation of employees (per hour or per capita) in relation to labor productivity; unit labor costs (real): unit labor costs deflated by GDP deflator.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; Deutsche Bundesbank, *Negotiated Pay Rate Statistics*; shaded: Kiel Institute forecast.

## 7. Employment

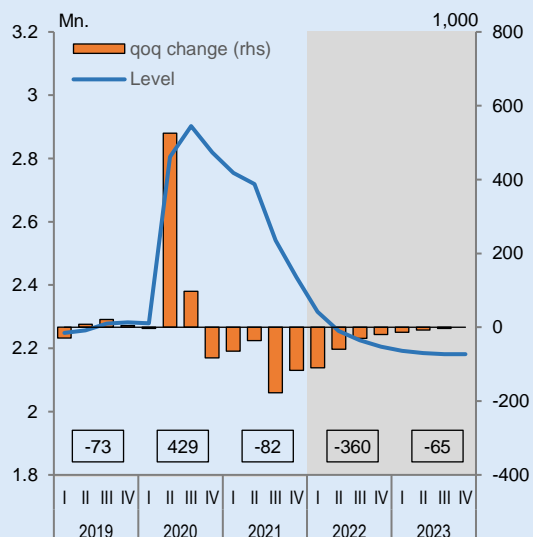
**Figure 7.1:**  
Persons employed



Quarterly data: seasonally adjusted.  
Annual data (boxes): yoy change in 1,000.

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*;  
shaded: Kiel Institute forecast.

**Figure 7.2:**  
Unemployed persons (registered)



Quarterly data: seasonally adjusted.  
Annual data (boxes): yoy change in 1,000.

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*;  
shaded: Kiel Institute forecast.

**Table 7.1:**  
Employment (1,000 persons)

	2019	2020	2021	2022	2023
Hours worked (domestic concept, mn. hours)	62,539	59,454	60,611	61,938	62,723
Persons in employment (domestic concept)	45,268	44,898	44,920	45,508	45,735
Self-employed	4,151	4,038	3,929	3,939	3,973
Employees (domestic concept)	41,117	40,860	40,991	41,569	41,762
Employees subject to social security contributions	33,537	33,577	33,926	34,457	34,644
Minijobs	4,575	4,273	4,104	4,178	4,185
Net commuting	143	95	116	136	145
Persons in employment (national concept)	45,126	44,803	44,804	45,373	45,590
Employees (national concept)	40,974	40,765	40,875	41,434	41,617
Unemployed persons (registered)	2,267	2,695	2,613	2,254	2,188
Unemployment rate (registered; percent)	5.0	5.9	5.7	4.9	4.7
Unemployment rate (ILO; percent)	3.0	3.6	3.3	2.8	2.6

Self-employed: including family workers; unemployed persons (registered): definition of the Federal Employment Agency (BA).

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; Federal Employment Agency, *Monthly Bulletin*; Federal Employment Agency, *Employment Statistics*; shaded: Kiel Institut forecast.

## 8. Public finances

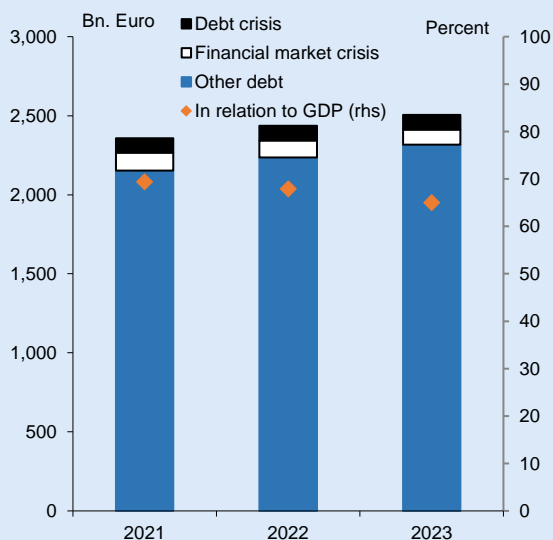
**Table 8.1**  
**Revenues and expenditures of the general government (bn. Euro)**

	2019	2020	2021	2022	2023
<b>Revenues</b>	<b>1,613.8</b>	<b>1,566.9</b>	<b>1,705.8</b>	<b>1,779.4</b>	<b>1,874.3</b>
→relative to GDP	46.5	46.5	47.8	47.4	46.7
Taxes	827.4	773.4	872.9	907.9	960.3
→relative to GDP	23.8	23.0	24.4	24.2	23.9
Social contributions	598.2	607.9	632.8	662.2	697.9
→relative to GDP	17.2	18.1	17.7	17.7	17.4
Other revenues	188.2	185.5	200.1	209.3	216.1
→relative to GDP	5.4	5.5	5.6	5.6	5.4
<b>Expenditures</b>	<b>1,562.7</b>	<b>1,712.1</b>	<b>1,838.2</b>	<b>1,871.8</b>	<b>1,955.4</b>
→relative to GDP	45.0	50.8	51.5	49.9	48.8
Compensation of employees	272.7	284.1	294.1	303.9	313.5
Intermediate consumption	184.2	209.8	232.5	255.7	255.2
Social transfers in kind	299.9	310.1	327.5	340.4	355.2
Gross capital formation	83.7	90.9	91.7	107.1	126.0
Capital transfers	27.3	21.0	21.0	20.2	19.4
Social benefits	546.6	595.1	609.0	618.4	642.8
Subsidies	30.9	71.3	105.0	63.4	64.1
Other current transfers	74.7	82.5	90.1	95.1	98.6
Other capital transfers and investment grants	43.5	48.0	68.1	68.5	81.3
Other expenditures	-1.3	-1.2	-1.3	-1.3	-1.3
<b>Net lending/ net borrowing</b>	<b>51.1</b>	<b>-145.2</b>	<b>-132.5</b>	<b>-92.4</b>	<b>-81.1</b>
→relative to GDP	1.5	-4.3	-3.7	-2.5	-2.0
<b>Revenues of central, state, and local governments</b>	<b>1,047.0</b>	<b>1,001.9</b>	<b>1,110.9</b>	<b>1,152.9</b>	<b>1,211.5</b>
Net of transfers from social security funds	1,045.9	1,000.7	1,109.8	1,151.8	1,210.3
Transfers from social security funds	1.1	1.1	1.2	1.2	1.2
<b>Expenditures of central, state, and local governments</b>	<b>1,005.0</b>	<b>1,112.1</b>	<b>1,247.8</b>	<b>1,242.5</b>	<b>1,294.7</b>
Net of transfers to social security funds	882.3	970.7	1,090.0	1,092.4	1,151.9
Transfers to social security funds	122.8	141.4	157.8	150.1	142.8
<b>Net lending/ net borrowing central, state, and local governments</b>	<b>42.0</b>	<b>-110.2</b>	<b>-136.9</b>	<b>-89.5</b>	<b>-83.1</b>
<b>Revenues of social security funds</b>	<b>690.7</b>	<b>717.8</b>	<b>782.7</b>	<b>779.5</b>	<b>806.8</b>
Net of transfers from central, state, and local governments	568.0	576.3	624.9	629.4	664.0
<b>Expenditures of social security funds</b>	<b>681.6</b>	<b>752.8</b>	<b>778.3</b>	<b>782.4</b>	<b>804.7</b>
Net of transfers to central, state, and local governments	680.5	751.6	777.1	781.2	803.6
<b>Net lending/ net borrowing social security funds</b>	<b>9.1</b>	<b>-35.0</b>	<b>4.4</b>	<b>-2.9</b>	<b>2.1</b>

Sums may deviate due to rounding. Relative to GDP in per cent.  
Source: Federal Statistical Office, *internal worksheet*; shaded: Kiel Institute forecast.



**Figure 8.1:**  
Government gross debt

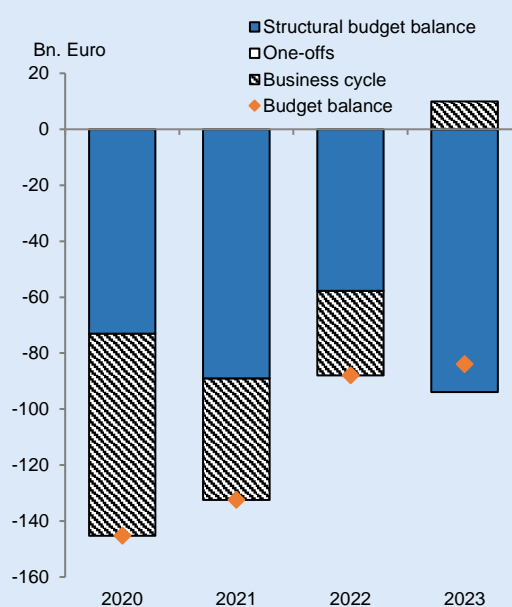


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

Financial market crisis: Liabilities due to bank rescue packages.

Source: Deutsche Bundesbank, *Monatsbericht*; BMF, *Monatsbericht*; Kiel Institute calculations and forecasts.

**Figure 8.2:**  
Structural budget balance



Source: Europäische Kommission, *AMECO*; Kiel Institute calculations and forecast.

## 9. GDP and its components

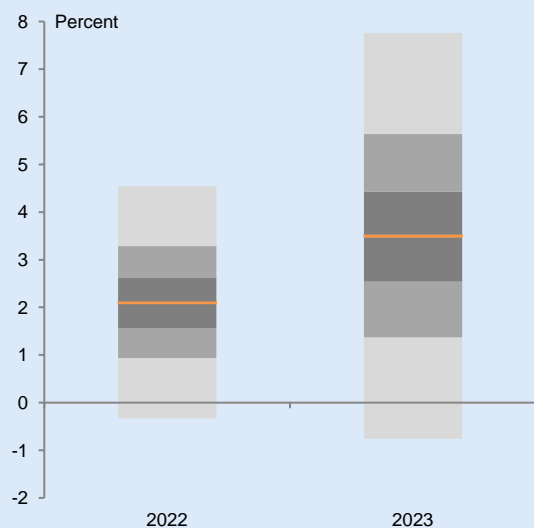
**Table 9.1:**  
Quarterly data

	2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	-1.7	2.2	1.7	-0.3	-0.9	0.6	2.3	1.4	0.8	0.5	0.4	0.4
Private consumption	-5.2	3.7	6.0	-1.8	-2.0	2.0	3.4	1.0	0.5	0.3	0.3	0.3
Government consumption	-1.1	5.1	-2.8	1.0	0.1	1.1	-0.6	-0.3	0.3	0.2	0.1	0.0
Machinery and equipment	-0.4	0.6	-3.9	0.9	1.5	-1.0	5.0	5.0	3.0	1.5	1.0	1.0
Constructions	0.2	1.7	-3.6	0.0	2.1	1.4	1.0	1.0	0.7	0.7	0.7	0.7
Other investment	-2.6	1.1	0.9	1.3	1.0	0.5	2.0	2.0	1.5	1.0	1.0	1.0
Change in inventories	2.0	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	-1.0	2.8	1.7	-0.5	-0.7	1.4	2.2	0.9	0.6	0.4	0.4	0.4
Exports	1.9	1.1	0.0	4.8	-2.0	0.3	3.1	3.1	1.5	1.1	0.9	0.9
Imports	4.3	2.3	-0.1	5.1	-1.8	2.0	3.0	2.3	1.2	1.0	1.0	1.0
Net exports	-0.8	-0.4	0.1	0.2	-0.2	-0.7	0.2	0.5	0.1	0.1	0.0	0.0
Employment (domestic)	44,698	44,810	45,005	45,162	45,342	45,462	45,562	45,662	45,732	45,752	45,741	45,711
Unemployment (registered)	2,755	2,719	2,541	2,425	2,315	2,255	2,225	2,206	2,192	2,185	2,182	2,182

Volumes, seasonally and working-day adjusted. Change on previous quarter in percent; change in inventories, net exports: Lundberg component (contribution to GDP growth); employment, unemployment: seasonally adjusted, 1,000 persons; unemployment: as defined by the Federal Employment Agency (BA).

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*; Federal Employment Agency, *Monthly Bulletin*; shaded: Kiel Institute forecast.

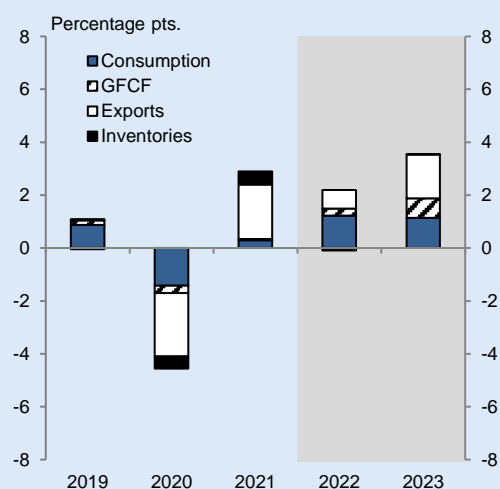
**Figure 9.1:**  
Forecast intervals for GDP growth



GDP: volumes, change over previous year. Point forecasts: orange lines. Forecast intervals grey shaded areas with confidence levels of 33, 66, and 95 percent. Confidence levels calculated based on historical forecast errors of the Kiel Institute in the first quarter 1994–2021.

Source: Kiel Institute calculations.

**Figure 9.2:**  
Import adjusted expenditure-side contributions to GDP growth



Annual data; price-adjusted, growth contribution of each expenditure component adjusted by import content; import content is estimated based on input/output tables; see Kooths and Stolzenburg (2018).

Source: OECD, Input Output Database; Federal Statistical Office, *Fachserie 18, Series 1.2*; shaded: Kiel Institute forecast.

## 10. The German economy, 2020–2023

	2020	2020	2021	2022	2023
	Bn. Euro	Change over previous year in percent			
<b>Use of gross domestic product, price-adjusted</b>					
GDP		-4.6	2.9	2.1	3.5
Private consumption expenditure		-5.9	0.1	3.9	3.7
Public consumption expenditure		3.5	3.1	1.1	0.2
Total fixed investment		-2.2	1.5	2.9	5.5
Machinery and equipment		-11.2	3.4	3.0	10.6
Construction		2.5	0.7	2.2	2.9
Other equipment		1.0	0.7	4.7	5.7
Changes in stocks		-0.9	1.0	-0.2	0.0
Domestic Demand		-4.0	2.2	2.8	3.3
Exports		-9.3	9.9	4.2	6.6
Imports		-8.6	9.3	5.9	6.4
Net exports		-0.8	0.8	-0.5	0.3
<b>Use of gross domestic product at current prices</b>					
GDP	3,367.6	-3.0	6.0	5.0	6.9
Private consumption expenditure	1,708.0	-5.3	3.2	9.6	7.0
Public consumption expenditure	754.6	7.0	6.2	5.5	2.6
Total fixed investment	735.9	-0.9	6.5	9.6	8.6
Machinery and equipment	216.9	-10.0	5.2	5.6	12.7
Construction	380.1	4.4	9.0	13.1	6.9
Other equipment	138.9	1.4	1.8	6.0	7.0
Changes in stocks (€ bn.)		-23.7	24.9	19.0	20.4
Domestic Demand	3,174.8	-3.1	6.2	8.4	6.3
Exports	1,462.1	-9.7	15.9	14.1	10.0
Imports	1,269.3	-10.8	17.9	22.9	8.9
Net exports (€ bn.)		192.8	197.5	94.8	123.3
Gross national income	3,461.3	-3.5	6.3	4.9	6.7
<b>Deflators</b>					
GDP		1.6	3.0	2.9	3.3
Private consumption expenditure		0.6	3.1	5.5	3.1
Public consumption expenditure		3.3	3.0	4.4	2.4
Investment in machinery and equipment		1.3	1.7	2.5	1.9
Investment in construction		1.9	8.3	10.7	3.9
Investment in other equipment		0.3	1.2	1.2	1.2
Exports		-0.4	5.4	9.6	3.1
Imports		-2.4	8.0	16.0	2.4
Addendum: Consumer prices		0.5	3.1	5.8	3.4
<b>Income distribution</b>					
Net national income (factor costs)	2,528.2	-3.1	6.7	2.3	7.6
Compensation of employees	1,852.1	-0.2	3.7	4.9	4.7
in percent of national income		73.3	71.2	73.0	71.0
Property and entrepreneurial income	676.1	-10.2	15.0	-4.0	15.3
Disposable income	1,975.2	0.8	1.9	4.8	4.5
Savings rate		16.1	15.0	11.1	8.9
Wages and salaries	1,514.1	-0.7	3.8	5.3	4.7
Wage per hour		3.4	1.6	3.2	3.6
Unit labor costs		3.6	0.5	2.7	1.2
Productivity per hour		0.4	0.9	-0.1	2.2
Unemployment (1,000)	2,695.4	2,613.5	2,253.6	2,188.4	2,188.4
Rate of unemployment (percent)		5.9	5.7	4.9	4.7
Total employment (1,000)	44,898.1	44,920.0	45,508.2	45,735.2	45,735.2
Public sector budget balance		-145.2	-132.5	-92.4	-81.1
Public sector budget balance (€ bn.)		-4.3	-3.7	-2.5	-2.0
Public debts (in percent)		69.1	69.4	68.0	65.1
Change in stocks, net exports: Lundberg-component (contribution to GDP growth); employment, unemployment: as defined by the Federal Employment Agency (BA); public debts: in relation to GDP.					
Source: Federal Statistical Office, Fachserie 18, Series 1.2; shaded: Kiel Institute forecast.					

## 11. National accounts

### National Accounts

Forecast period: 2022 to 2023

	2021	2022	2023	2022		2023	
				H1	H2	H1	H2

#### 1. Production

Change over the same period of the preceding year in %

Persons in employment	0.0	1.3	0.5	1.5	1.2	0.8	0.2
Hours worked	1.9	2.2	1.3	3.4	1.1	2.6	0.0
Hours worked by person in employment	1.9	0.9	0.8	1.9	-0.1	1.9	-0.3
Labor productivity <sup>1</sup>	0.9	-0.1	2.2	-1.3	1.1	2.3	2.1
<b>Gross domestic product, price-adjusted</b>	<b>2.9</b>	<b>2.1</b>	<b>3.5</b>	<b>2.0</b>	<b>2.2</b>	<b>5.0</b>	<b>2.1</b>

#### 2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 564.3	2 777.6	2 933.5	1 331.2	1 446.3	1 433.3	1 500.2
Private households <sup>2</sup>	1 763.0	1 932.0	2 066.3	916.8	1 015.2	1 010.3	1 056.0
Government	801.3	845.6	867.2	414.4	431.2	423.0	444.2
Gross fixed capital formation	783.9	859.5	933.0	405.1	454.4	448.7	484.4
Machinery and equipment	228.2	240.9	271.4	110.5	130.4	128.7	142.7
Construction	414.3	468.7	501.2	224.1	244.6	243.9	257.2
Other products	141.5	149.9	160.4	70.5	79.4	76.0	84.5
Changes in inventories <sup>1</sup>	24.9	19.0	20.4	11.2	7.8	10.4	10.0
Domestic expenditure	3 373.1	3 656.1	3 886.9	1 747.5	1 908.6	1 892.4	1 994.6
Net exports	197.5	94.8	123.3	65.0	29.7	72.9	50.4
Exports	1 694.6	1 934.2	2 127.1	928.9	1 005.3	1 056.2	1 070.8
Imports	1 497.0	1 839.4	2 003.8	863.8	975.6	983.4	1 020.4
<b>Gross domestic product</b>	<b>3 570.6</b>	<b>3 750.9</b>	<b>4 010.2</b>	<b>1 812.6</b>	<b>1 938.3</b>	<b>1 965.2</b>	<b>2 045.0</b>

b) Change over the same period of the preceding year in %

Consumption expenditure	4.1	8.3	5.6	9.3	7.4	7.7	3.7
Private households <sup>2</sup>	3.2	9.6	7.0	10.4	8.9	10.2	4.0
Government	6.2	5.5	2.6	7.1	4.1	2.1	3.0
Gross fixed capital formation	6.5	9.6	8.6	8.4	10.8	10.8	6.6
Machinery and equipment	5.2	5.6	12.7	0.6	10.2	16.5	9.4
Construction	9.0	13.1	6.9	13.7	12.6	8.9	5.1
Other products	1.8	6.0	7.0	5.3	6.6	7.7	6.4
Domestic expenditure	6.2	8.4	6.3	9.2	7.6	8.3	4.5
Exports	15.9	14.1	10.0	14.5	13.8	13.7	6.5
Imports	17.9	22.9	8.9	24.0	21.9	13.8	4.6
<b>Gross domestic product</b>	<b>6.0</b>	<b>5.0</b>	<b>6.9</b>	<b>5.7</b>	<b>4.4</b>	<b>8.4</b>	<b>5.5</b>

#### 3. Use of gross domestic product, price-adjusted (chain-linked, 2010=100)

a) EUR bn.

Consumption expenditure	2 319.0	2 388.9	2 451.7	1 160.5	1 228.4	1 209.2	1 242.6
Private households <sup>2</sup>	1 617.5	1 680.5	1 742.6	808.7	871.8	858.1	884.5
Government	699.6	707.1	708.5	350.8	356.3	350.7	357.8
Gross fixed capital formation	674.1	693.8	732.2	329.8	364.0	353.3	378.9
Machinery and equipment	214.9	221.5	244.9	102.0	119.5	116.4	128.5
Construction	326.6	334.0	343.6	161.9	172.1	168.0	175.6
Other products	131.2	137.4	145.2	64.9	72.5	69.1	76.2
Domestic expenditure	3 006.1	3 089.7	3 192.4	1 497.1	1 592.6	1 569.0	1 623.4
Exports	1 573.5	1 638.9	1 747.7	800.9	838.0	870.3	877.4
Imports	1 396.6	1 479.6	1 573.7	710.3	769.3	771.6	802.1
<b>Gross domestic product</b>	<b>3 186.4</b>	<b>3 253.5</b>	<b>3 368.7</b>	<b>1 589.3</b>	<b>1 664.2</b>	<b>1 669.3</b>	<b>1 699.5</b>

b) Change over the same period of the preceding year in %

Consumption expenditure	1.1	3.0	2.6	3.9	2.2	4.2	1.2
Private households <sup>2</sup>	0.1	3.9	3.7	5.2	2.7	6.1	1.5
Government	3.1	1.1	0.2	1.2	0.9	0.0	0.4
Gross fixed capital formation	1.5	2.9	5.5	0.3	5.4	7.1	4.1
Machinery and equipment	3.4	3.0	10.6	-1.8	7.6	14.1	7.6
Construction	0.7	2.2	2.9	0.2	4.2	3.8	2.0
Other products	0.7	4.7	5.7	4.0	5.3	6.4	5.1
Domestic expenditure	2.2	2.8	3.3	2.7	2.9	4.8	1.9
Exports	9.9	4.2	6.6	3.5	4.8	8.7	4.7
Imports	9.3	5.9	6.4	5.3	6.6	8.6	4.3
<b>Gross domestic product</b>	<b>2.9</b>	<b>2.1</b>	<b>3.5</b>	<b>2.0</b>	<b>2.2</b>	<b>5.0</b>	<b>2.1</b>

**National Accounts (cont.)**

Forecast period: 2022 to 2023

	2021	2022	2023	2022		2023	
				H1	H2	H1	H2
<b>4. Deflators (2010=100)</b>							
Change on the same period of the preceding year in %							
Private consumption <sup>2</sup>	3.1	5.5	3.1	5.0	6.0	3.9	2.5
Government consumption	3.0	4.4	2.4	5.8	3.1	2.1	2.6
Gross fixed capital formation	5.0	6.5	2.9	8.0	5.2	3.4	2.4
Machinery and equipment	1.7	2.5	1.9	2.5	2.5	2.1	1.7
Construction	8.3	10.7	3.9	13.5	8.0	4.9	3.1
Exports	5.4	9.6	3.1	10.6	8.6	4.6	1.7
Imports	8.0	16.0	2.4	17.8	14.3	4.8	0.3
<b>Gross domestic product</b>	<b>3.0</b>	<b>2.9</b>	<b>3.3</b>	<b>3.6</b>	<b>2.2</b>	<b>3.2</b>	<b>3.3</b>

**5. National income**

a) EUR bn.

Primary income of private households <sup>2</sup>	2 449.2	2 572.7	2 691.6	1 259.2	1 313.6	1 322.0	1 369.6
Employers social contributions	349.2	360.7	377.1	174.5	186.3	182.9	194.2
Gross wages and salaries	1 571.2	1 654.1	1 732.3	786.0	868.1	826.9	905.4
Other primary income <sup>4</sup>	528.8	557.9	582.2	298.7	259.2	312.2	270.0
Primary income of other sectors	535.3	549.1	665.6	229.1	320.0	305.4	360.2
<b>Net national income</b>	<b>2 984.5</b>	<b>3 121.8</b>	<b>3 357.3</b>	<b>1 488.3</b>	<b>1 633.5</b>	<b>1 627.4</b>	<b>1 729.9</b>
Consumption of fixed capital	694.0	737.7	762.2	366.0	371.7	379.0	383.2
<b>Gross national income</b>	<b>3 678.5</b>	<b>3 859.6</b>	<b>4 119.5</b>	<b>1 854.3</b>	<b>2 005.2</b>	<b>2 006.4</b>	<b>2 113.1</b>
memorandum item:							
Net national income (factor costs)	2 697.8	2 760.8	2 969.3	1 317.5	1 443.3	1 439.1	1 530.1
Property and entrepreneurial income	777.4	745.9	859.9	357.0	389.0	429.3	430.5
Compensation of employees	1 920.4	2 014.8	2 109.4	960.5	1 054.3	1 009.8	1 099.6

b) Change over the same period of the preceding year in %

Primary income of private households <sup>2</sup>	2.9	5.0	4.6	6.0	4.1	5.0	4.3
Employers social contributions	3.3	3.3	4.5	3.1	3.5	4.8	4.2
Gross wages and salaries	3.8	5.3	4.7	6.3	4.3	5.2	4.3
... per employee	3.5	4.0	4.2	4.9	3.3	4.5	4.1
Other primary income <sup>4</sup>	0.3	5.5	4.4	7.0	3.9	4.5	4.2
Primary income of other sectors	26.4	2.6	21.2	-0.3	4.7	33.3	12.6
<b>Net national income</b>	<b>6.5</b>	<b>4.6</b>	<b>7.5</b>	<b>5.0</b>	<b>4.2</b>	<b>9.3</b>	<b>5.9</b>
Consumption of fixed capital	5.4	6.3	3.3	7.7	4.9	3.5	3.1
<b>Gross national income</b>	<b>6.3</b>	<b>4.9</b>	<b>6.7</b>	<b>5.5</b>	<b>4.4</b>	<b>8.2</b>	<b>5.4</b>
memorandum item:							
Net national income (factor costs)	6.7	2.3	7.6	2.6	2.1	9.2	6.0
Property and entrepreneurial income	15.0	-4.0	15.3	-4.9	-3.2	20.3	10.7
Compensation of employees	3.7	4.9	4.7	5.7	4.2	5.1	4.3

**6. Disposable income of private households <sup>2</sup>**

a) EUR bn.

Mass income	1 595.7	1 660.7	1 736.6	799.0	861.6	837.9	898.7
Net wages and salaries	1 064.2	1 124.7	1 181.1	531.0	593.7	561.1	620.0
Social benefits other than social transfers in kind	674.0	683.8	708.8	340.4	343.4	351.6	357.2
less: Levies on social benefits, taxes on consumption	142.5	147.9	153.3	72.4	75.4	74.8	78.5
Other primary income <sup>4</sup>	528.8	557.9	582.2	298.7	259.2	312.2	270.0
Other transfers received (net) <sup>5</sup>	-111.2	-107.7	-113.8	-46.9	-60.8	-49.7	-64.1
<b>Disposable income</b>	<b>2 013.3</b>	<b>2 110.9</b>	<b>2 205.1</b>	<b>1 050.8</b>	<b>1 060.0</b>	<b>1 100.4</b>	<b>1 104.6</b>
Change in pension entitlements	60.8	61.7	62.6	30.0	31.8	30.4	32.2
Consumption expenditure	1 763.0	1 932.0	2 066.3	916.8	1 015.2	1 010.3	1 056.0
Saving	311.1	240.6	201.5	164.0	76.6	120.6	80.9
Saving ratio (%) <sup>4</sup>	15.0	11.1	8.9	15.2	7.0	10.7	7.1

b) Change over the same period of the preceding year in %

Mass income	3.6	4.1	4.6	4.2	4.0	4.9	4.3
Net wages and salaries	4.2	5.7	5.0	7.1	4.5	5.7	4.4
Social benefits other than social transfers in kind	2.3	1.5	3.7	-0.5	3.5	3.3	4.0
less: Levies on social benefits, taxes on consumption	1.5	3.8	3.7	1.6	6.0	3.3	4.0
Other primary income <sup>4</sup>	0.3	5.5	4.4	7.0	3.9	4.5	4.2
<b>Disposable income</b>	<b>1.9</b>	<b>4.8</b>	<b>4.5</b>	<b>5.3</b>	<b>4.4</b>	<b>4.7</b>	<b>4.2</b>
Consumption expenditure	3.2	9.6	7.0	10.4	8.9	10.2	4.0
Saving	-4.9	-22.6	-16.3	-16.6	-33.0	-26.5	5.6



**National Accounts (cont.)**

Forecast period: 2022 to 2023

	2021	2022	2023	2022		2023	
				H1	H2	H1	H2

**7. Revenue and expenditure by general government \***

a) EUR bn.

Revenue							
Taxes	872.9	907.9	960.3	433.7	474.2	461.2	499.1
Social contributions	632.8	662.2	697.9	320.2	342.0	338.6	359.3
Property income	15.8	15.4	14.8	8.1	7.3	7.8	7.0
Other current transfers	33.5	35.0	36.4	16.5	18.5	17.2	19.3
Capital transfers	17.2	18.4	19.6	8.1	10.3	8.7	10.9
Sales	133.4	140.4	145.1	64.9	75.5	67.1	78.0
Other subsidies	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Total</b>	<b>1 705.8</b>	<b>1 779.4</b>	<b>1 874.3</b>	<b>851.5</b>	<b>927.9</b>	<b>900.7</b>	<b>973.6</b>
Expenditure							
Intermediate consumption <sup>1</sup>	560.5	596.6	611.0	288.3	308.2	295.4	315.6
Compensation of employees	294.1	303.9	313.5	148.0	155.9	150.5	163.0
Property income (interest)	21.0	20.2	19.4	10.7	9.5	10.3	9.1
Subsidies	105.0	63.4	64.1	33.6	29.8	32.5	31.6
Social benefits	609.0	618.4	642.8	307.9	310.5	318.8	324.0
Other current transfers	90.1	95.1	98.6	45.5	49.7	47.1	51.5
Capital transfers	68.1	68.5	81.3	29.8	38.8	35.9	45.4
Gross capital formation	91.7	107.1	126.0	43.3	63.8	52.1	73.9
Net acquisitions of non-produced non-financial assets	- 1.3	- 1.3	- 1.3	- 0.6	- 0.7	- 0.6	- 0.7
<b>Total</b>	<b>1 838.2</b>	<b>1 871.8</b>	<b>1 955.4</b>	<b>906.4</b>	<b>965.5</b>	<b>941.9</b>	<b>1 013.5</b>
<b>Net lending</b>	<b>- 132.5</b>	<b>- 92.4</b>	<b>- 81.1</b>	<b>- 54.8</b>	<b>- 37.6</b>	<b>- 41.3</b>	<b>- 39.8</b>

b) Change over the same period of the preceding year in %

Revenue							
Taxes	12.9	4.0	5.8	4.2	3.9	6.4	5.2
Social contributions	4.1	4.6	5.4	4.7	4.6	5.7	5.1
Property income	- 19.9	- 3.0	- 3.7	- 3.2	- 2.8	- 3.9	- 3.5
Other current transfers	38.2	4.5	4.1	4.6	4.4	4.2	4.0
Capital transfers	11.1	6.8	6.6	7.4	6.4	7.2	6.2
Sales	6.0	5.2	3.4	6.4	4.3	3.5	3.3
Other subsidies	7.7	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>8.9</b>	<b>4.3</b>	<b>5.3</b>	<b>4.5</b>	<b>4.2</b>	<b>5.8</b>	<b>4.9</b>
Expenditure							
Intermediate consumption <sup>1</sup>	7.7	6.4	2.4	7.8	5.2	2.4	2.4
Compensation of employees	3.5	3.3	3.2	4.7	2.1	1.7	4.6
Property income (interest)	0.2	- 3.8	- 4.0	- 3.6	- 4.0	- 3.8	- 4.2
Subsidies	47.3	- 39.6	1.1	- 38.7	- 40.6	- 3.3	6.0
Social benefits	2.3	1.5	4.0	- 0.7	3.8	3.5	4.4
Other current transfers	9.2	5.6	3.7	5.3	5.8	3.7	3.7
Capital transfers	42.0	0.6	18.6	47.0	- 19.0	20.5	17.1
Gross capital formation	0.9	16.7	17.7	9.6	22.1	20.4	15.9
Net acquisitions of non-produced non-financial assets	8.2	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>7.4</b>	<b>1.8</b>	<b>4.5</b>	<b>2.2</b>	<b>1.5</b>	<b>3.9</b>	<b>5.0</b>

<sup>1</sup> Price-adjusted gross domestic product per hour worked.

<sup>2</sup> Incl. nonprofit institutions serving households.

<sup>3</sup> Incl. acquisitions less disposals of valuables.

<sup>4</sup> Operating surplus/mixed income, net property income

<sup>5</sup> Received less payed other current transfers.

<sup>6</sup> Savings in percent of disposable income (incl. change in pension entitlements).

<sup>7</sup> Central, regional, local and social security funds.

<sup>8</sup> Incl. social transfers in kind and other production taxes.

Source: Federal Statistical Office, *Fachserie 18: National Accounts*; Kiel Institute calculations and forecasts.