

Ademmer, Martin et al.

Article

German Economy Autumn 2021 - Protracted catching-up process

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KIEL INSTITUTE **ECONOMIC OUTLOOK**

German Economy Autumn 2021

Finalized September 23, 2021



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No. 83 (2021 | Q3)

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Nils Jannsen, Stefan Kooths, Saskia Meuchelböck, and
Ulrich Stolzenburg*

Research Center
Business Cycles and Growth

PROTRACTED CATCHING-UP PROCESS

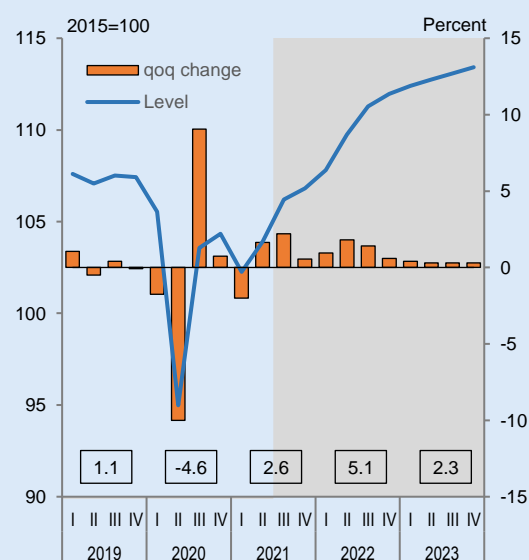
Martin Ademmer, Jens Boysen-Hogrefe, Dominik Groll, Nils Jannsen, Stefan Kooths, Saskia Meuchelböck, and Ulrich Stolzenburg

The recovery of the German economy needs more time. Ongoing precautionary measures to protect against infection as well as the supply bottlenecks will slow down the catch-up process in the winter. Especially in those service sectors that have been particularly affected by the pandemic the recovery is likely to slow down. Moreover, supply bottlenecks have increased noticeably and will probably only ease gradually. Once the economic burdens of the pandemic and the supply bottlenecks will have eased in the coming spring, the recovery will regain strength and economic activity will quickly return to normal levels. Overall, GDP will increase by 2.6 percent this year, making up only part of the losses of 2020 when it declined by 4.6 percent. The recovery will become fully visible in the 2022 growth rate of 5.1 percent. In 2023, GDP is expected to increase markedly again by 2.3 percent as some of the previously lost economic activity will be made up for. The high inflation rate of 2.9 percent this year is largely due to temporary factors. However, they are likely to persist until next year and will lead to another strong increase in consumer prices before inflation moderates in 2023. On the labor market, the negative impact of the pandemic will be overcome by next year, the unemployment rate will fall from 5.9 percent in 2020 to 5.1 percent in 2023. The recovery from the Covid-19 crisis will also be reflected in the public budget. After an increase to about 5 percent relative to GDP this year, the public deficit is expected to fall to 0.7 percent in 2023 amid the phasing out of pandemic-related aid and the recovery of GDP.

The ongoing pandemic as well as supply bottlenecks temporarily slow down the recovery. With the easing of the pandemic-related restrictions the recovery of the German economy restarted in the second quarter. After an increase by 1.6 percent in the second quarter, we expect GDP to increase by 2.2 percent in the third quarter (Figure 1). The main reason is the strong increase in activity in industries that have been particularly affected by the pandemic-related restrictions, such as contact-intensive services or parts of retailers. For the winter half-year, we expect that ongoing precautionary measures will slow down the recovery in these industries, even though we do not assume that further public measures will be implemented that restrict business activity. Demand expectations in these industries have considerably declined in recent months and point to a slower pace of the recovery. Also, sales expectations in the retail industry have deteriorated recently. The recovery will also be dampened by supply bottlenecks that weigh on production in manufacturing and that have further intensified recently. For our forecast we assume that supply bottlenecks will start to ease and that the negative impact of the pandemic will fade out in Spring of the next year. We expect the recovery to regain momentum and GDP to reach its pre-crisis level in that period.

Supply bottlenecks dampen production in the manufacturing industry. Production in manufacturing has declined since the beginning of the year and is still about 5 percent below its pre-crisis level.

Figure 1:
Gross domestic product

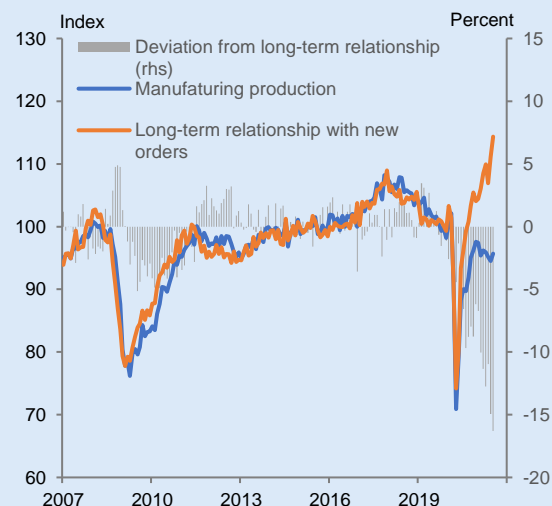


Quarterly data: Volumes, seasonally and calendar adjusted.
Annual data (boxes): Volumes, change in percent.

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

At the same time new orders have increased and were about 15 percent above its pre-crisis level in July. The main reason behind this discrepancy are supply bottlenecks that dampen production. Recently, the bottlenecks have further increased according to business surveys. In August, about 70 percent of the firms in the manufacturing industry reported that a shortage of material and/or equipment is limiting their production. This is an increase by about 25 percentage points compared to the second quarter and a new historical high. Estimates that assess the expected level of production via the long-term relationship between new orders and production suggest that production was 15 percent below the expected level in July (Figure 2).¹ If these bottlenecks persist until the end of the year production in the manufacturing sector will be dampened by about 7 percent or 40 bn. Euro in 2021. For our forecast, we assume that the supply bottlenecks will start to ease with the beginning of next year so that manufacturing production will increase strongly. However, it is unlikely that the bottlenecks will completely disappear soon. In earlier episodes of supply bottlenecks, for example following the Global Financial Crisis, it took several quarters until they disappeared completely according to survey data, even though they were less severe and affected only a smaller share of firms.

Figure 2:
Actual manufacturing output and long-term relationship with new orders



Monthly data, seasonally adjusted. Long-term relationship with new orders: Expected level of production given the level of new orders based on an estimated cointegration relationship from 1991 to 2019.

Sources: Deutsche Bundesbank, Kiel Institute calculations.

Supply bottlenecks are slowing down the recovery of foreign trade. The bottlenecks due to missing materials and intermediate goods in the manufacturing sector, and especially the automotive industry, have mainly had an impact on exports so far. They expanded only modestly in the second quarter, after already having lost momentum at the beginning of the year. Demand was probably increasingly met from stocks, which according to surveys have decreased significantly. In the second half of the year, exports of goods probably will continue to be dampened by supply bottlenecks. Monthly special trade figures also point to a weak third quarter and export expectations in the manufacturing sector have deteriorated recently. We expect the recovery of exports to pick up again in the beginning of 2022 as the production-impeding shortages gradually ease and the high order backlog can be gradually worked off. All in all, we expect exports to increase by 8.1 percent this year, followed by 5.8 and 4.2 percent in 2022 and 2023, respectively. Imports continued to rise significantly in the second quarter due to the high demand for consumer and intermediate goods. In the third quarter, imports of goods are set to suffer a setback as indicated by the substantial drop in July according to data on special trade. At the same time, a strong recovery of services imports has likely set in amid the easing of travel restrictions. Overall, imports probably expanded only modestly in the third quarter. We expect them to increase at higher rates going forward, especially in 2022, in line with the recovery of the domestic economy. Imports will increase by 8.3 percent this year, followed by 6.5 and 5.0 percent in 2022 and 2023, according to our forecast. Prices of imports and – to a lesser extent – exports temporarily rise strongly due to an increase

¹ See Beckmann and Jannsen (2021, German language) for details on the empirical analysis. Beckmann, J. and N. Jannsen (2021). Bedeutung von Lieferengpässen für die laufende Produktion in Deutschland. Ifw-Box 2021.09. https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/-ifw/IfW_Box/2021/-Box_2021-9_Deutschland_Sommer.pdf.

in the prices of commodities, intermediate goods and transport services. We expect the terms of trade to deteriorate by 2.2 percent this year, followed by 1.6 percent in 2022, before improving somewhat in 2023.

Inflation is mainly driven by temporary factors, but will remain elevated for the time being. In August, consumer prices were 3.9 percent higher than one year ago; the highest inflation rate in Germany since 1993. One important reason for high inflation is the increase in raw material prices. The core inflation rate excluding energy stood at 3 percent. Another important reason behind the strong increase in consumer prices is the temporary cut in value added taxes from July to December 2020; this tax cut contributes to an increase by more than 1 percentage point in the year-over-year rate in the second half of this year. Finally, the introduction of the carbon tax at the beginning of the year led to an increase in energy prices; its impact on headline inflation is about 0.4 percentage points. However, even without these temporary factors price increases were above their long-run average. One of the reasons are supply bottlenecks that contributed to strong increases in producer prices that are passed through to consumer prices. The impact of these temporary factors will fade out in the next quarters, if raw material prices will remain largely unchanged as we assume for our forecast. Against this background, we expect that the inflation rate will moderate somewhat from 3 percent in this year to 2.6 percent in 2022 and 1.9 percent in 2023 (Table 1).²

The recovery of private consumption will take more time. After strong increases in the second and in the third quarter, we expect growth in private consumption to slow down somewhat due to ongoing precautionary measures to protect against infection. Also, shortages in consumer goods due to supply bottlenecks may dampen consumption to some extent. However, particularly affects goods, such as cars, only have a relatively small share in total private consumption. Overall, consumer surveys show that consumer climate or willingness to buy are still well below their pre-crisis levels indicating that a complete normalization of private consumption needs more time. We expect private consumption to reach its pre-crisis level in next spring. With the normalization of consumption behavior, the question arises what private households will do with their extra savings accumulated during the pandemic. Since the beginning of the pandemic pent-up savings have amounted to 200 bn. Euro or 10 percent of disposable income. For our forecast, we assume that only smaller parts of these extra savings will be used for additional private consumption in the near term. We expect the savings rate to decline to about 10 percent; in 2019 the savings rate was 10.8 percent.

While collectively agreed earnings will increase only moderately, effectively-paid gross wages and salaries will recover dynamically. At 1.5 percent, collectively agreed pay increases have slowed further in the current year due to the crisis (2019: 2.9 percent, 2020: 2.2 percent). For 2022, we expect only a moderate acceleration to 1.8 percent, as the recovery in economic activity will be reflected in collectively agreed wages with a time lag. One factor standing in the way of higher wage growth in the coming year is this year's agreement in the important metal and electrical industry. In 2023, the economic recovery is likely to have a much stronger impact on collectively agreed pay; we expect a noticeable increase of 2.9 percent overall. Effective earnings (gross wages and salaries per employee) will grow significantly faster than collectively agreed earnings in the current and coming year, after stagnating last year. The reason for the high fluctuations is short-time work, which was massively expanded with the outbreak of the crisis in spring of last year and has since been significantly reduced - with an interim rebound around the turn of the year. As short-time work tends to decline further, effective earnings are set to rise dynamically. Another factor in favor of a high wage momentum is that labor shortages have become important again. In the third quarter, the share of companies in the manufacturing sector complaining of labor shortages as a limit to production was 26.2 percent, only slightly below its all-time

² For a detailed discussion on potential drivers of inflation at the current juncture, see Beckmann, J., K.-J. Gern, P. Hauber, N. Jannsen, and U. Stolzenburg (2021). Rising Inflation: Transitory or Cause for Concern? Monetary Dialogue Papers, September. Study requested by the ECON committee, European Parliament. https://www.euro-parl.europa.eu/cmsdata/239442/1d_QA0921378ENN.pdf.

high in the second quarter of 2018. In the services sector, the previous high has come within reach, and in construction it has even been reached. All in all, we expect earnings per employee to rise by 2.8 percent (2021), 4.0 percent (2022) and 3.3 percent (2023).

Employment is continuing its recovery, though the pace is likely to slow initially. From February to June, the number of short-time workers fell considerably from 3.4 million to 1.6 million, and the average loss of working time fell from 57 to 44 percent. The volume of work lost in connection with short-time work thus fell by 63 percent in this period. Accordingly, working hours per employee increased substantially by 1.8 percent from the first to the second quarter. Both the notifications of short-time work received by the employment agencies by the end of August and the estimate of the ifo Institute according to the monthly business survey indicate a further, noticeable reduction in short-time work in July and August in the order of 50 percent overall, so that working hours per employee are likely to have increased by a similar amount in the third quarter as in the second quarter. Employment has begun to recover substantially from the crisis. Following the drastic slump in the spring of last year, employment remained broadly stagnant until May of this year. Then, in June and July, the number of people in work rose noticeably by (seasonally adjusted) 83,000 and 100,000 respectively compared with the previous month. Employment increased in all sectors of the economy, especially in the hotel and restaurant industry, where the highest (seasonally adjusted) monthly increase since the outbreak of the crisis was recorded. The number of self-employed continued to fall in the second quarter, but at a much slower pace than in previous quarters. Companies' willingness to hire has increased further in recent months and is at an exceptionally high level by long-term standards. Against this backdrop, we expect the third quarter to see a very significant increase in the number of people in employment of around 240,000 on a seasonally adjusted basis compared with the previous quarter. The pace will slow temporarily in the winter half-year due to the slower economic recovery, only to pick up again in the course of the coming year as the recovery resumes momentum. In 2023, employment growth will likely come to an end as labor supply will - according to our estimate - have reached its zenith due to aging of society. The internationally standardized unemployment rate according to the ILO concept is expected to fall - from 3.6 percent last year - to 3.4 percent (2021), 3.0 percent (2022) and 2.8 percent (2023).³

The budget deficit increases further in 2021, before declining fast afterwards. Expenditures for company grants and for vaccinations and tests will increase this year. Furthermore, some of the payments this year are due to government programs to compensate shutdown measures in November and December 2020. In sum, the rather strong increase in revenues is outpaced by expenditures. Overall, we expect a public deficit of 4.9 percent relative to GDP this year. The public deficit will decrease substantially in 2022. The economic recovery will lead to increasing revenues. Expenditure for short-time work and company grants will drop sharply as well as the spending for fighting the epidemic. However, several measures of the stimulus packages will lead to additional expenditures also in 2022, especially those related to the decarbonization of the economy. Thus, there will remain a substantial deficit of 1.7 percent relative to GDP. In 2023, the public budget will improve further. However, additional payments for pensions put pressure on the social security system. Budget deficits of the social insurances will remain almost unchanged despite substantially higher social security contribution rates. Overall, the budget balance for the general government will be -0.7 percent relative to GDP.

³ Due to a technical and methodological redesign of the labor force survey, which the ILO unemployment rate is based on, there was a substantial downward revision of the ILO unemployment rate extending back to the beginning of 2020, which amounted to around 0.7 percentage points in the first quarter of 2021. As a result, our forecast values are systematically lower than in our summer forecast.

Table 1:

Key indicators

	2020	2021	2022	2023
Gross domestic product (GDP), price-adjusted	-4.6	2.6	5.1	2.3
Gross domestic product, deflator	1.6	2.0	1.6	1.9
Consumer prices	0.5	2.9	2.6	1.9
Labor productivity (per hour worked)	0.4	0.8	2.0	1.6
Employment (1000 persons)	44,898	44,919	45,437	45,694
Unemployment rate (percent)	5.9	5.7	5.3	5.1
<i>in relation to nominal GDP</i>				
Public sector net lending	-4.3	-4.9	-1.7	-0.7
Gross public debt	69.1	70.9	67.4	64.5
Current account balance	6.9	6.6	5.8	5.7
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.

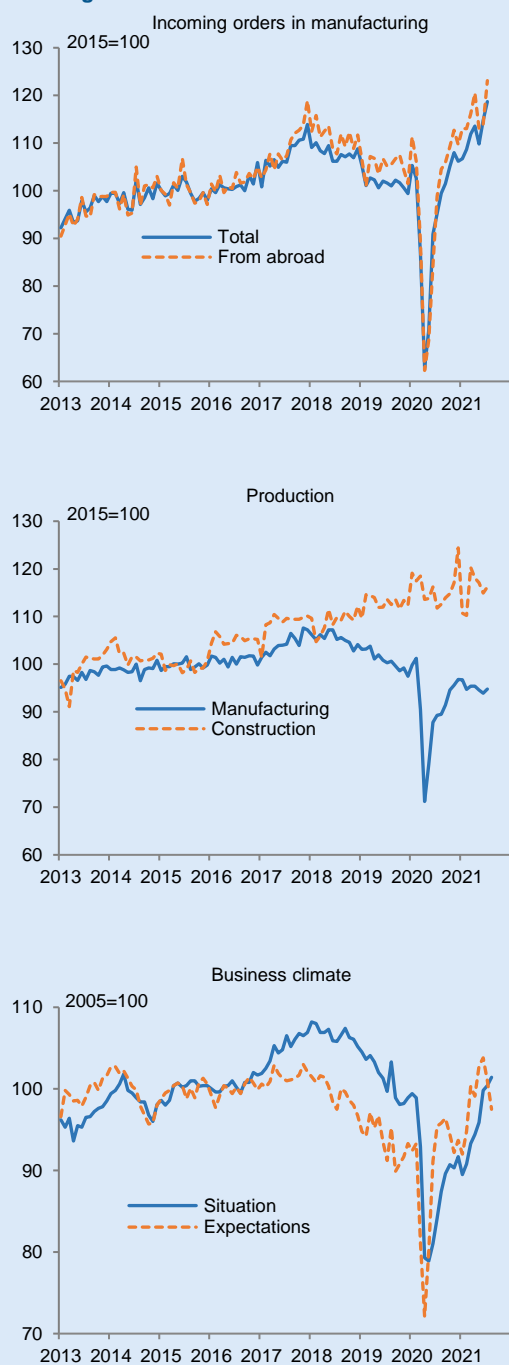
Data annex

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1. Leading indicators

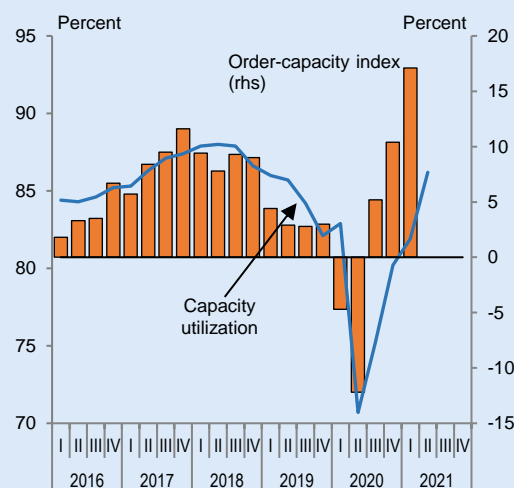
Figure 1.1:
Leading indicators



Monthly data, seasonally adjusted.

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

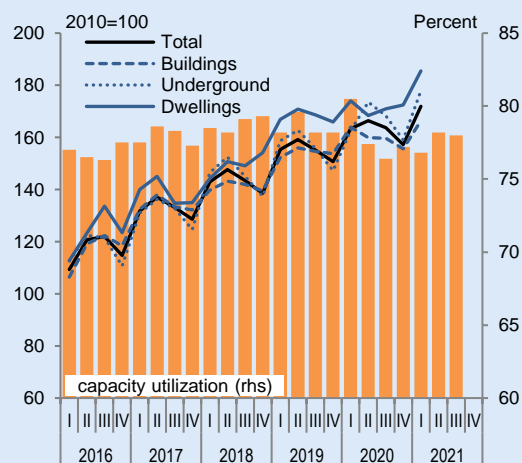
Figure 1.2:
Capacity utilization



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

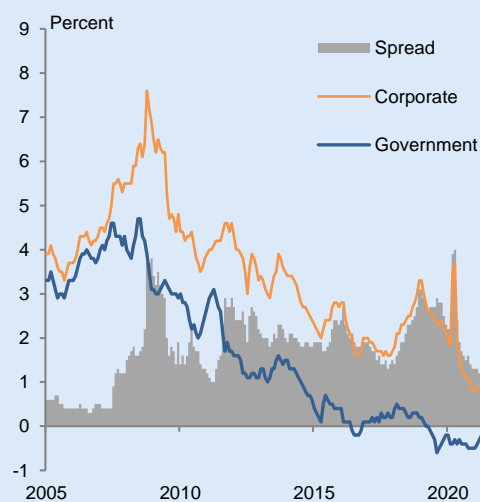


Quarterly data. Capacity utilization (deviation from normal level): seasonally adjusted; order stocks: price, seasonally and working-day adjusted.

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

2. Monetary conditions and prices

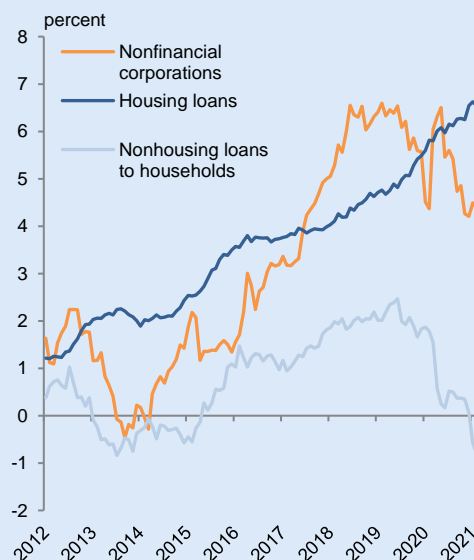
Figure 2.1:
Bond yields



Monthly data, average maturities above three years.

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

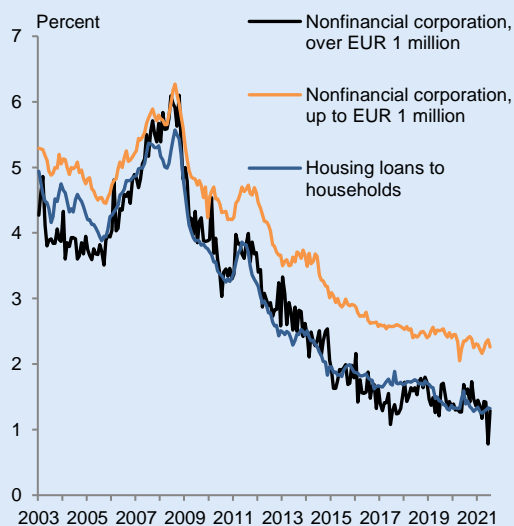
Figure 2.3:
Credit growth



Change compared to one year ago; Monthly data.

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

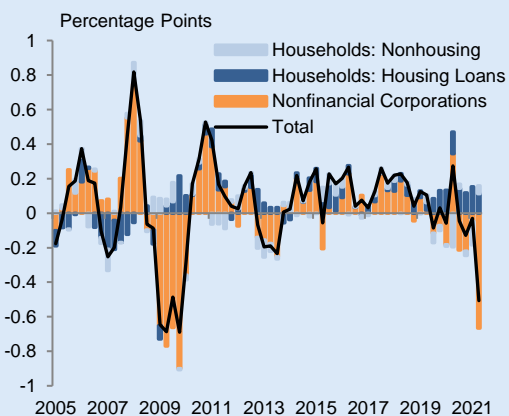
Figure 2.2:
Loan interest



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

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

Figure 2.4:
Credit impulse

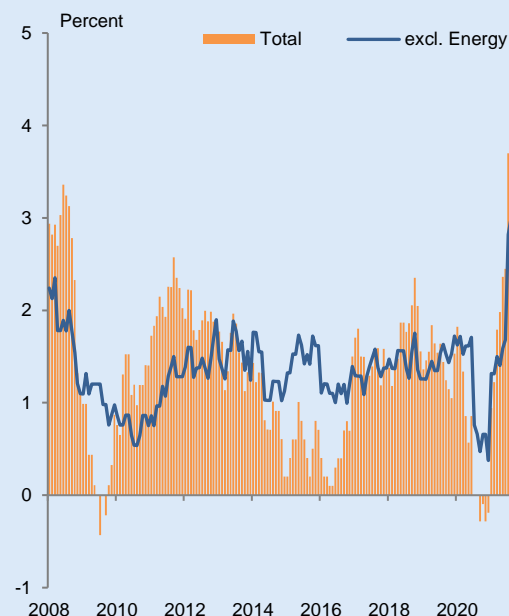


Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009), Credit and economic recovery, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam.

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

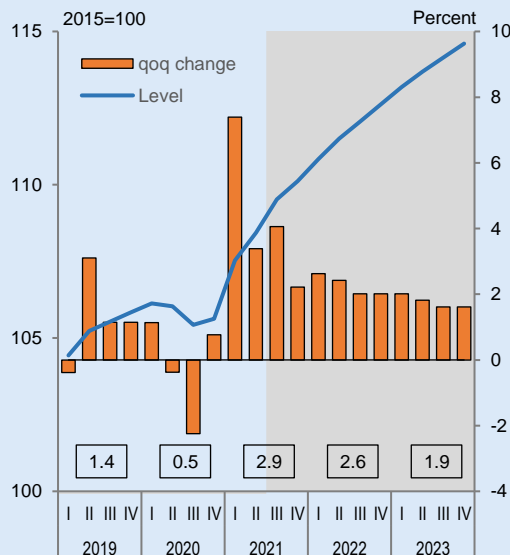
Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Kiel Institute calculations.

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

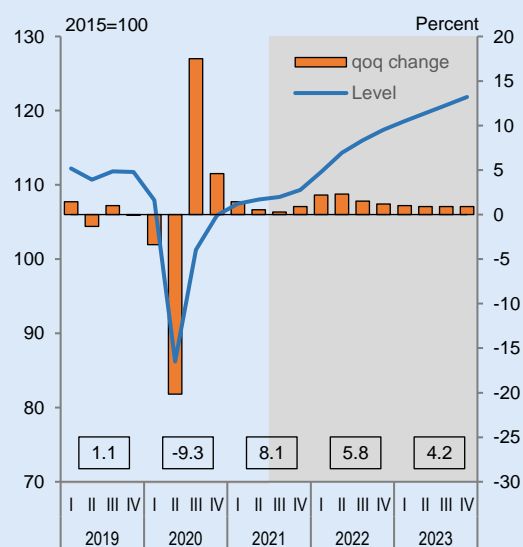
	2020				2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long-term interest rate	-0.40	-0.40	-0.50	-0.60	-0.40	-0.19	-0.37	-0.24	-0.21	-0.17	-0.14	-0.11	-0.08	-0.05	-0.02	0.01
US-dollar/euro exchange rate	1.11	1.13	1.18	1.22	1.19	1.20	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Price competitiveness	88.9	90.5	91.0	90.9	91.6	91.7	91.4	91.6	91.5	91.4	91.3	91.2	91.1	91.0	90.9	90.8
Export markets	-2.8	-9.1	9.8	0.6	0.4	2.0	1.5	0.9	0.7	0.8	0.8	0.7	0.7	0.7	0.6	0.6
Oil price	50.5	29.4	43.0	44.3	60.8	68.1	71.2	73.0	70.0	68.0	66.0	65.0	65.3	65.7	66.0	66.3

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

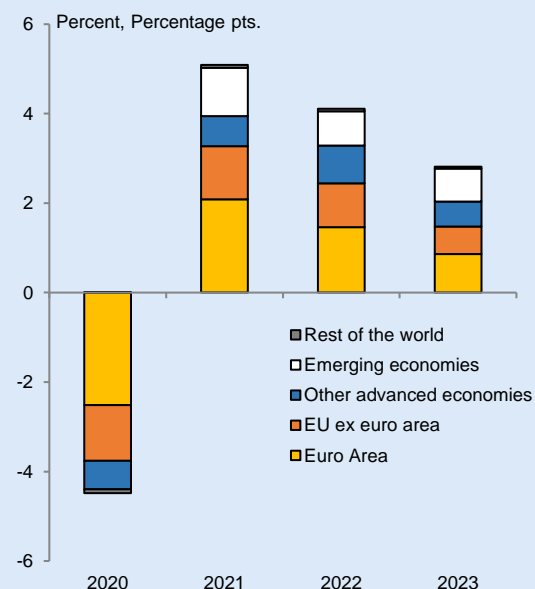
Figure 3.1:
Exports



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.

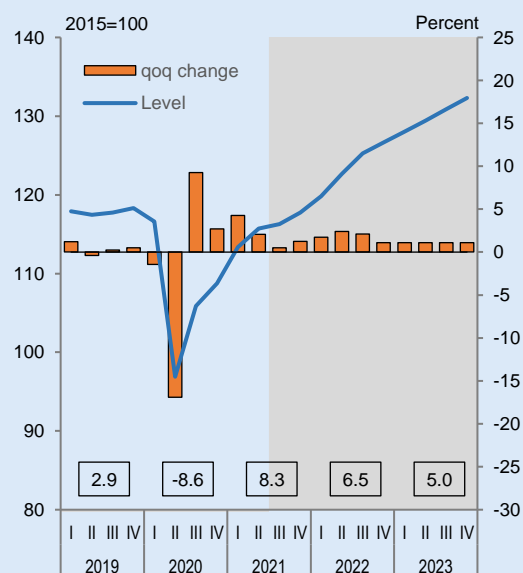
Figure 3.3:
German export markets



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.

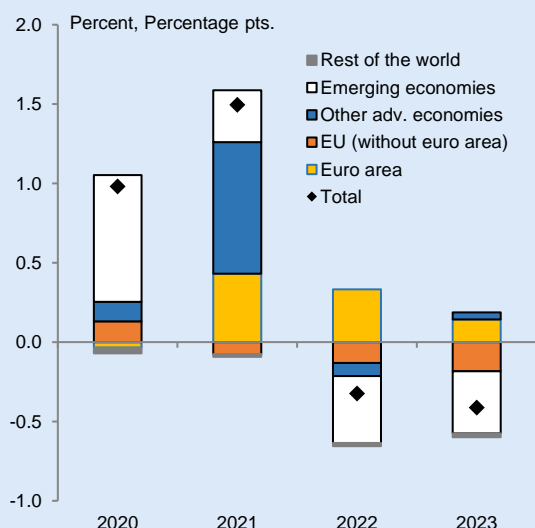
Figure 3.2:
Imports



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.

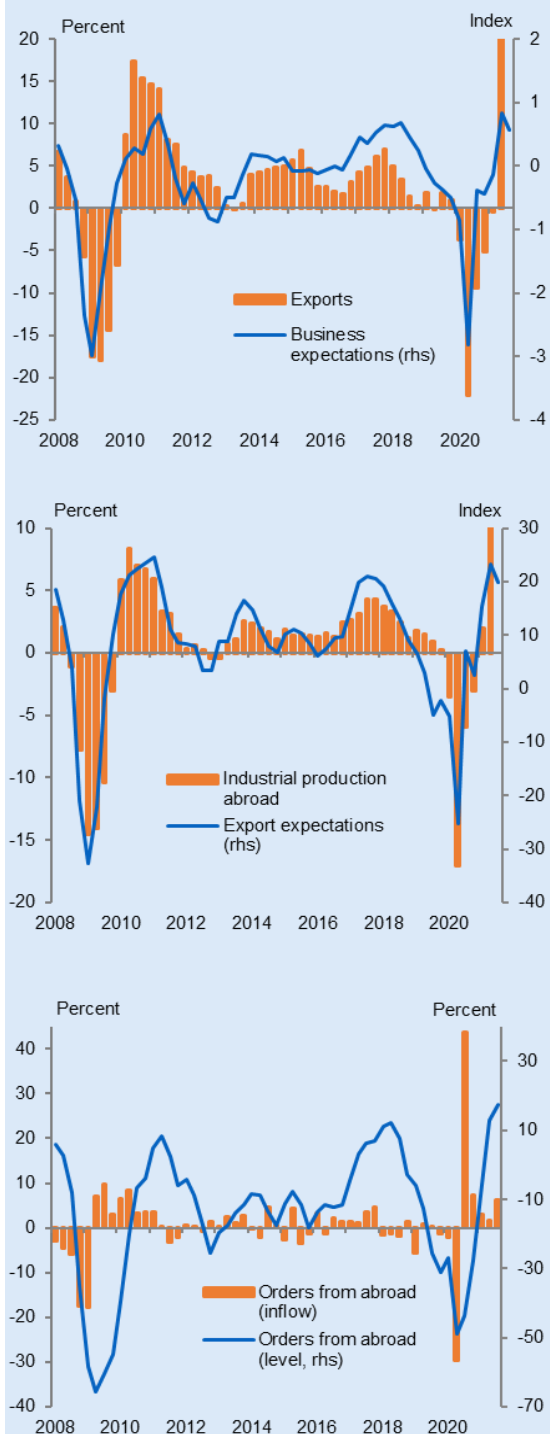
Figure 3.4:
Germany's price competitiveness



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.

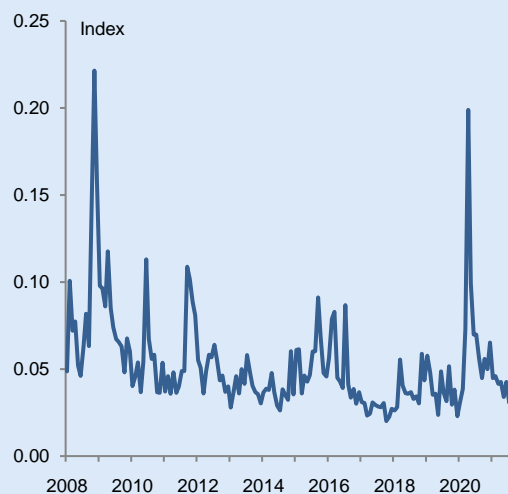
Figure 3.5:
Export indicators



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

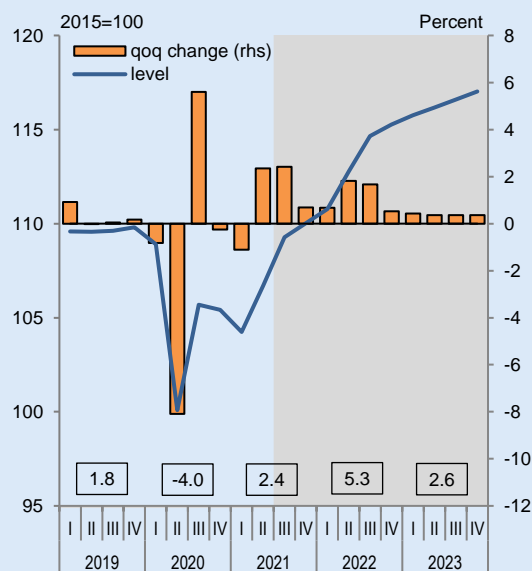


Monthly data; realized stock market volatilities based on daily stock price indices in 46 countries, weighted by shares of German exports. Last value: 15.09.2021.

Source: National sources; Kiel Institute calculations.

4. Domestic expenditure

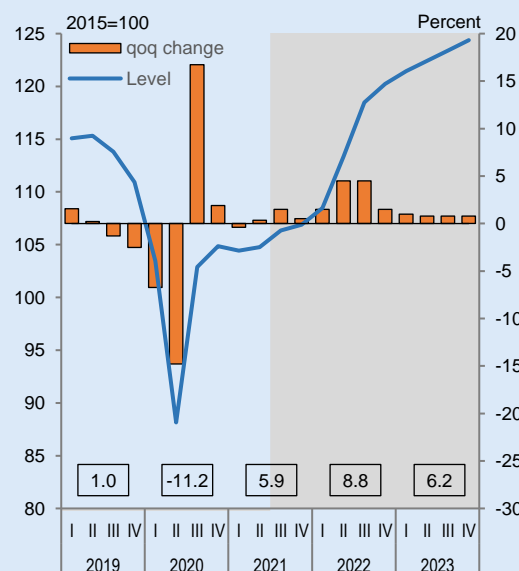
Figure 4.1:
Final domestic expenditure



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

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

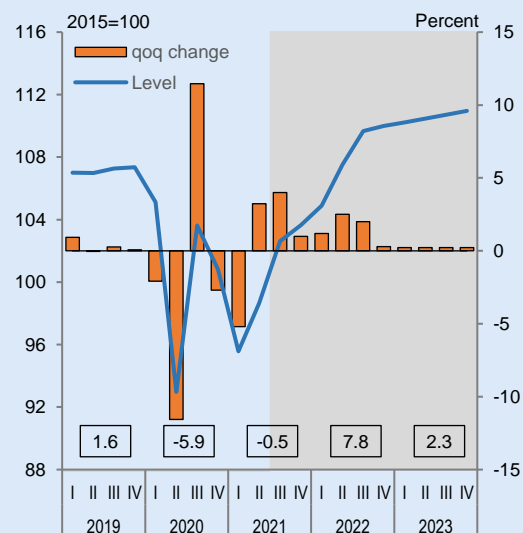
Figure 4.3:
M&E investments



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.

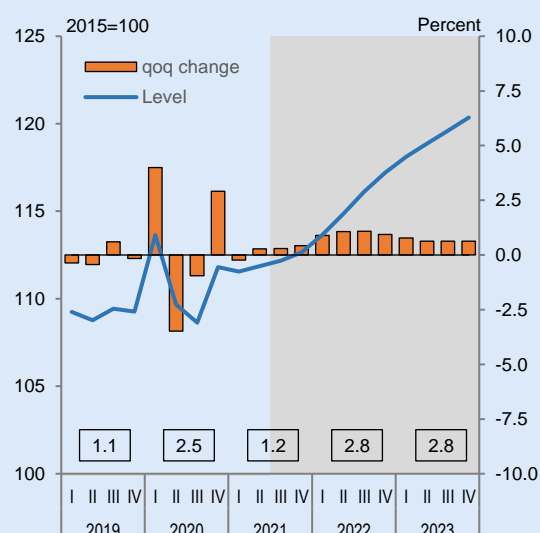
Figure 4.2:
Private consumption



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.

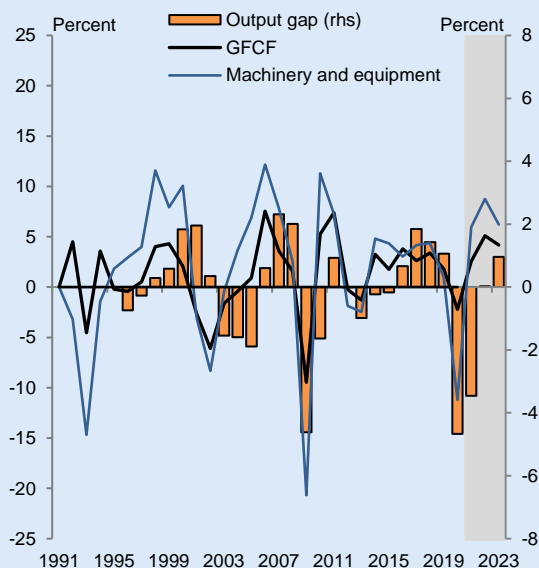
Figure 4.4:
Construction



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.

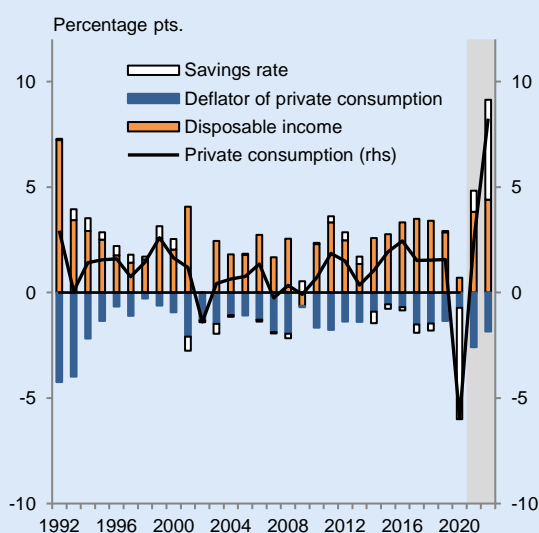
Figure 4.5:
Investment cycles



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.

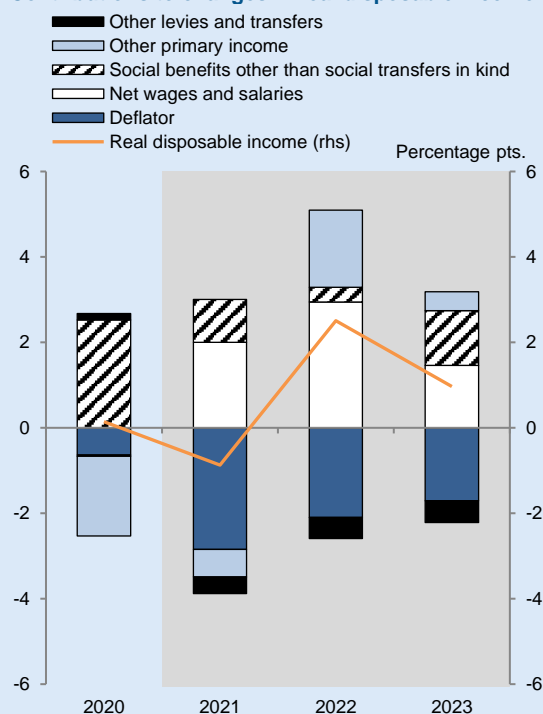
Figure 4.6:
Contributions to change in private consumption



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.

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.

Table 4.1:
Gross fixed capital formation

	2020	2021	2022	2023
Total	-2.2	2.5	5.1	4.2
Corporate investment	-5.5	3.1	6.2	4.6
Machinery and equipment	-11.2	5.9	8.8	6.2
Construction (non-dwellings)	-0.7	0.3	1.2	0.8
Other	1.0	0.8	5.8	4.8
Dwellings	3.4	2.0	3.9	3.7
Public (non-dwellings)	4.9	-0.6	0.1	1.9
<i>Memorandum item:</i>				
Construction	2.5	1.2	2.8	2.8

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

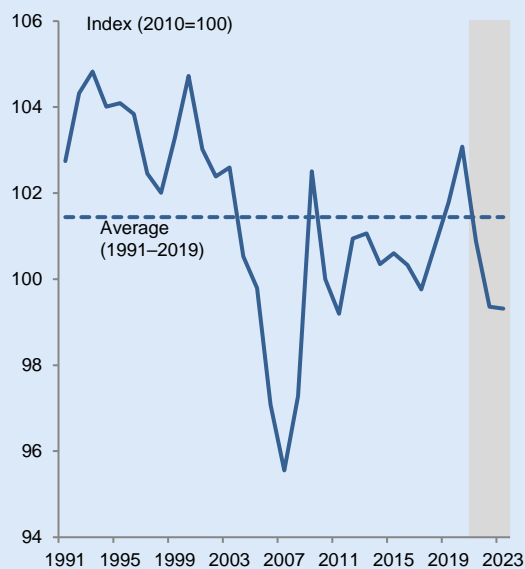
	2021				2022	
	I	II	III	IV	I	II
Seasonally and calendar-adjusted, q-o-q change in percent						
Gross domestic product	-2.0	1.6	2.2	0.6	0.9	1.8
Gross value added	-1.0	1.0	2.2	0.6	0.9	1.8
Industry excl. construction	-1.0	-1.0	0.3	0.4	2.5	4.8
Manufacturing	-0.8	-1.3	0.2	0.4	2.5	4.9
Construction	-5.2	0.1	0.2	0.9	0.7	0.6
Trade, transport, accomodation, food services	-2.7	1.1	5.2	0.2	0.5	2.3
Information and communication	0.0	1.5	1.5	1.0	0.5	0.5
Financial and insurance services	-0.5	1.1	0.1	0.1	0.0	0.0
Real estate activities	-0.2	0.0	0.8	0.2	0.2	0.2
Business services	0.2	1.3	2.5	1.7	1.1	1.1
Public services, education, health	-0.1	3.8	3.2	0.6	0.2	0.2
Other services	2.7	0.0	6.4	1.0	1.0	3.0

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



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

Table 6.1:
Wages and productivity

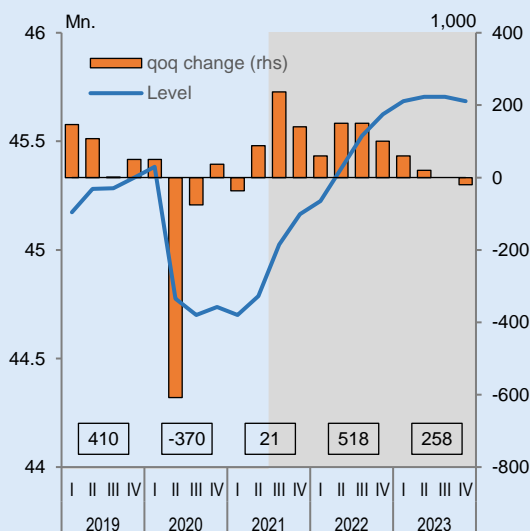
	2020	2021	2022	2023
<i>Per hour</i>				
Negotiated wages	2.2	1.5	1.8	2.9
Gross wages and salaries	3.4	0.9	2.3	3.2
Wage drift	1.3	-0.6	0.5	0.3
Compensation of employees	4.0	0.7	1.8	3.2
Labor productivity	0.4	0.8	2.0	1.6
Unit labor costs	3.6	-0.1	-0.2	1.6
Unit labor costs (real)	1.9	-2.1	-1.7	-0.3
<i>Per capita</i>				
Negotiated wages	2.2	1.5	1.8	2.9
Gross wages and salaries	-0.1	2.8	4.0	3.3
Wage drift	-2.3	1.2	2.1	0.3
Compensation of employees	0.4	2.5	3.5	3.4
Labor productivity	-3.8	2.6	3.9	1.7
Unit labor costs	4.3	-0.1	-0.3	1.6
Unit labor costs (real)	2.7	-2.0	-1.9	-0.3

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

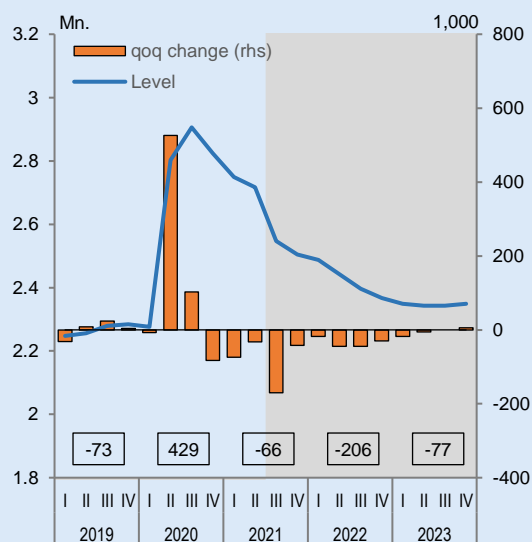
Figure 7.1:
Employment



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:
Unemployment, 2018–2022



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 5:
Employment 2019–2023 (1,000 persons)

	2019	2020	2021	2022	2023
Hours worked (domestic concept, mn. hours)	62,539	59,454	60,526	62,365	62,812
Persons in employment (domestic concept)	45,268	44,898	44,919	45,437	45,694
Self-employed	4,151	4,038	3,932	3,945	3,968
Employees (domestic concept)	41,117	40,860	40,987	41,492	41,727
Employees subject to social security contributions	33,537	33,577	33,914	34,337	34,542
Minijobs	4,575	4,273	4,118	4,225	4,255
Net commuting	143	95	132	145	145
Persons in employment (national concept)	45,126	44,803	44,787	45,292	45,549
Employees (national concept)	40,974	40,765	40,855	41,347	41,582
Unemployed persons (registered)	2,267	2,695	2,629	2,423	2,346
Unemployment rate (registered; percent)	5.0	5.9	5.7	5.3	5.1
Unemployment rate (ILO; percent)	3.0	3.6	3.4	3.0	2.8

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

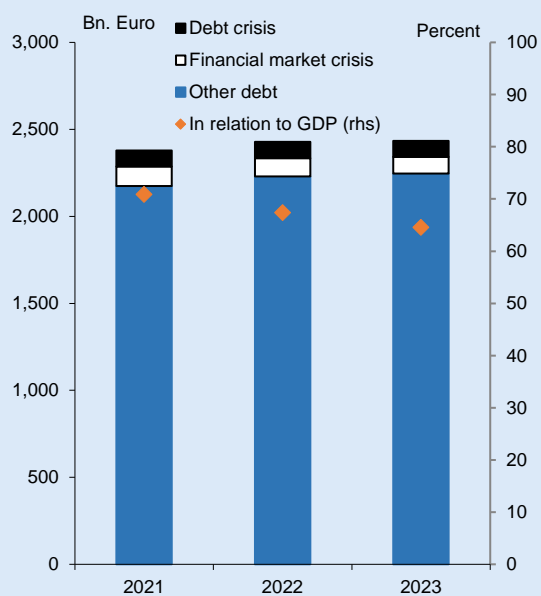
Revenues and expenditures of the general government (bn. Euro)

	2019	2020	2021	2022	2023
Revenues	1,613.8	1,566.9	1,645.1	1,738.2	1,832.6
→relative to GDP	46.5	46.5	46.7	46.2	46.7
Taxes	827.4	773.4	825.7	875.7	924.6
→relative to GDP	23.8	23.0	23.4	23.3	23.5
Social contributions	598.2	607.9	628.1	655.7	694.2
→relative to GDP	17.2	18.1	17.8	17.4	17.7
Other revenues	188.2	185.5	191.3	206.8	213.9
→relative to GDP	5.4	5.5	5.4	5.5	5.4
Expenditures	1,562.7	1,712.1	1,818.2	1,801.1	1,861.4
→relative to GDP	45.0	50.8	51.6	47.8	47.4
Compensation of employees	272.7	284.1	292.9	300.3	308.2
Intermediate consumption	184.2	209.8	218.5	212.9	224.3
Social transfers in kind	299.9	310.1	325.0	338.3	350.6
Gross capital formation	83.7	90.9	91.6	96.4	101.3
Capital transfers	27.3	21.0	18.6	17.0	16.2
Social benefits	546.6	595.1	614.3	620.6	647.2
Subsidies	30.9	71.3	110.4	65.6	57.2
Other current transfers	74.7	82.5	89.5	91.8	94.5
Other capital transfers and investment grants	43.5	48.0	58.1	58.7	62.5
Other expenditures	-1.3	-1.2	-1.3	-1.3	-1.3
Net lending/ net borrowing	51.1	-145.2	-173.2	-62.8	-28.8
→relative to GDP	1.5	-4.3	-4.9	-1.7	-0.7
Revenues of central, state, and local governments	1,047.0	1,001.9	1,057.5	1,117.6	1,174.4
Net of transfers from social security funds	1,045.9	1,000.7	1,056.3	1,116.4	1,173.2
Transfers from social security funds	1.1	1.1	1.2	1.2	1.2
Expenditures of central, state, and local governments	1,005.0	1,112.1	1,201.2	1,164.8	1,189.1
Net of transfers to social security funds	882.3	970.7	1,049.1	1,023.6	1,051.1
Transfers to social security funds	122.8	141.4	152.1	141.3	138.1
Net lending/ net borrowing central, state, and local governments	42.0	-110.2	-143.7	-47.3	-14.7
Revenues of social security funds	690.7	717.8	747.7	763.4	797.5
Net of transfers from central, state, and local governments	568.0	576.3	595.6	622.1	659.5
Expenditures of social security funds	681.6	752.8	777.1	778.9	811.6
Net of transfers to central, state, and local governments	680.5	751.6	776.0	777.7	810.4
Net lending/ net borrowing social security funds	9.1	-35.0	-29.5	-15.6	-14.0

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

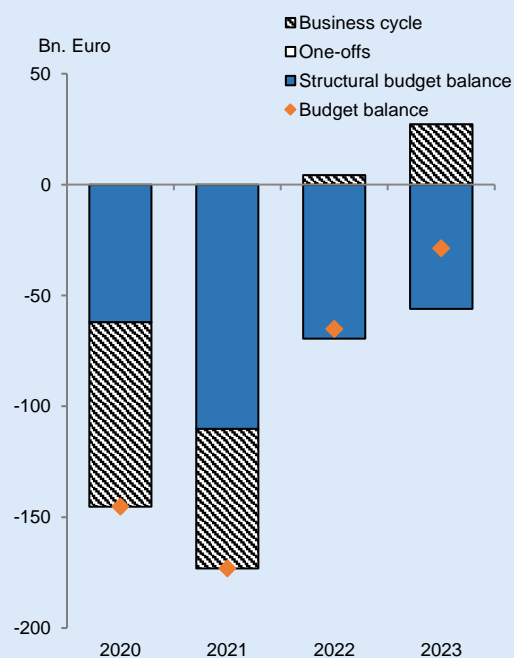


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

Financial market crisis: Liabilities due to bank rescue packages.

Source: Deutsche Bundesbank, *Monatsbericht*; BMF, *Monats-*

Figure 8.2:
Structural budget balance



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

9. GDP and its components

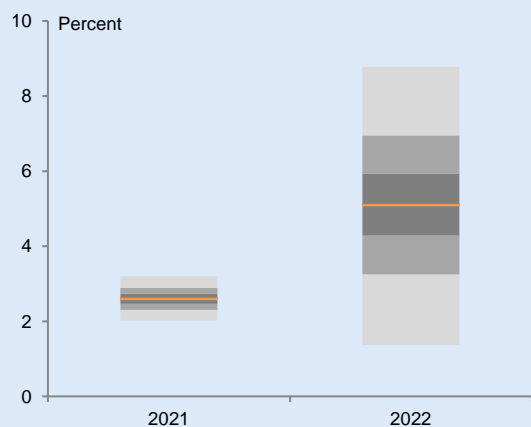
Table 9.1:
Quarterly data

	2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	-2.0	1.6	2.2	0.6	0.9	1.8	1.4	0.6	0.4	0.3	0.3	0.3
Private consumption	-5.2	3.2	4.0	1.0	1.2	2.5	2.0	0.3	0.2	0.2	0.2	0.2
Government consumption	-0.7	1.8	0.4	-0.1	-0.8	-0.2	0.4	0.5	0.5	0.5	0.5	0.5
Machinery and equipment	-0.4	0.3	1.5	0.5	1.5	4.5	4.5	1.5	1.0	0.8	0.8	0.8
Constructions	-0.2	0.3	0.3	0.4	0.9	1.1	1.1	0.9	0.8	0.6	0.6	0.6
Other investment	-2.6	1.3	1.2	1.3	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0
Change in inventories	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	-1.1	2.4	2.4	0.7	0.7	1.8	1.7	0.5	0.4	0.4	0.4	0.4
Exports	1.4	0.5	0.3	0.9	2.2	2.3	1.5	1.2	1.0	0.9	0.9	0.9
Imports	4.2	2.1	0.5	1.3	1.7	2.4	2.1	1.1	1.1	1.1	1.1	1.1
Net exports	-1.0	-0.6	-0.1	-0.1	0.3	0.1	-0.2	0.1	0.0	0.0	0.0	-0.1
Employment (domestic)	44,700	44,788	45,025	45,165	45,225	45,375	45,525	45,625	45,685	45,705	45,705	45,685
Unemployment (registered)	2,749	2,717	2,547	2,505	2,487	2,442	2,397	2,367	2,349	2,343	2,343	2,349

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.

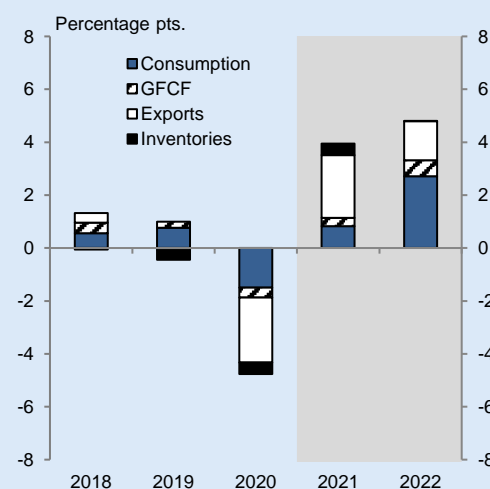
Figure 9.1:
Forecast intervals for GDP growth



GDP: volumes, change over previous year. Point forecasts: orange lines. Forecast intervals gray 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 third quarter 1994–2020.

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	2020	2021	2022	2023
	Bn. Euro	Change over previous year in percent			
Use of gross domestic product, price-adjusted					
GDP		-4.6	2.6	5.1	2.3
Private consumption expenditure		-5.9	-0.5	7.8	2.3
Public consumption expenditure		3.5	2.5	0.0	1.8
Total fixed investment		-2.2	2.5	5.1	4.2
Machinery and equipment		-11.2	5.9	8.8	6.2
Construction		2.5	1.2	2.8	2.8
Other equipment		1.0	0.8	5.8	4.8
Changes in stocks		-0.9	1.4	0.0	0.0
Domestic Demand		-4.0	2.4	5.3	2.6
Exports		-9.3	8.1	5.8	4.2
Imports		-8.6	8.3	6.5	5.0
Net exports		-0.8	0.4	0.0	-0.2
Use of gross domestic product at current prices					
GDP	3,367.6	-3.0	4.7	6.8	4.3
Private consumption expenditure	1,708.0	-5.3	2.3	10.1	4.0
Public consumption expenditure	754.6	7.0	3.9	1.1	3.7
Total fixed investment	735.9	-0.9	6.7	8.9	6.1
Machinery and equipment	216.9	-10.0	7.7	10.4	7.2
Construction	380.1	4.4	7.9	8.5	5.1
Other equipment	138.9	1.4	2.0	7.9	7.1
Changes in stocks (€ bn.)		-23.7	22.9	25.6	24.4
Domestic Demand	3,174.8	-3.1	5.2	7.7	4.4
Exports	1,462.1	-9.7	13.6	9.7	4.8
Imports	1,269.3	-10.8	16.3	12.2	5.0
Net exports (€ bn.)		192.8	184.6	165.4	169.3
Gross national income	3,461.3	-3.5	4.7	6.7	4.3
Deflators					
GDP		1.6	2.0	1.6	1.9
Private consumption expenditure		0.6	2.8	2.1	1.7
Public consumption expenditure		3.3	1.4	1.1	1.8
Investment in machinery and equipment		1.3	1.6	1.5	1.0
Investment in construction		1.9	6.6	5.6	2.2
Investment in other equipment		0.3	1.2	2.0	2.2
Exports		-0.4	5.1	3.7	0.6
Imports		-2.4	7.4	5.3	0.0
Addendum: Consumer prices		0.5	2.9	2.6	1.9
Income distribution					
Net national income (factor costs)	2,528.2	-3.1	5.5	5.2	3.6
Compensation of employees	1,852.1	-0.2	2.8	4.8	4.0
in percent of national income		73.3	71.4	71.1	71.4
Property and entrepreneurial income	676.1	-10.2	12.7	6.3	2.6
Disposable income	1,975.2	0.8	2.0	4.6	2.7
Savings rate		16.1	15.8	11.3	10.1
Wages and salaries	1,514.1	-0.7	2.9	5.1	3.8
Wage per hour		3.4	0.9	2.3	3.2
Unit labor costs		3.6	-0.1	-0.2	1.6
Productivity per hour		0.4	0.8	2.0	1.6
Unemployment (1,000)		2,695.4	2,629.2	2,422.9	2,345.6
Rate of unemployment (percent)		5.9	5.7	5.3	5.1
Total employment (1,000)		44,898.1	44,918.8	45,436.8	45,694.3
Public sector budget balance					
Public sector budget balance (€ bn.)		-145.2	-173.2	-62.8	-28.8
Public sector budget balance (in percent of GDP)		-4.3	-4.9	-1.7	-0.7
Public debts (in percent)		69.1	70.9	67.4	64.5
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: 2021 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	1.2	0.6	1.2	1.1	0.9	0.3
Hours worked	1.8	3.0	0.7	4.5	1.7	1.8	- 0.3
Hours worked by person in employment	1.8	1.9	0.1	3.2	0.6	0.9	- 0.6
Labor productivity ¹	0.8	2.0	1.6	1.2	2.7	1.7	1.4
Gross domestic product, price-adjusted	2.6	5.1	2.3	5.7	4.4	3.5	1.1

2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 532.3	2 717.0	2 823.4	1 313.3	1 403.7	1 381.1	1 442.3
Private households ²	1 748.1	1 924.6	2 001.6	927.2	997.3	981.3	1 020.3
Government	784.2	792.4	821.8	386.1	406.4	399.8	422.1
Gross fixed capital formation	785.3	855.6	907.4	404.8	450.7	436.8	470.6
Machinery and equipment	233.5	257.7	276.3	118.5	139.1	131.7	144.6
Construction	410.1	445.0	467.5	214.6	230.4	228.0	239.5
Other products	141.6	152.9	163.7	71.6	81.2	77.2	86.5
Changes in inventories ¹	22.9	25.6	24.4	15.1	10.5	14.3	10.1
Domestic expenditure	3 340.5	3 598.1	3 755.2	1 733.2	1 865.0	1 832.2	1 923.0
Net exports	184.6	165.4	169.3	95.9	69.5	98.8	70.4
Exports	1 661.0	1 821.6	1 908.8	898.5	923.1	949.5	959.3
Imports	1 476.3	1 656.2	1 739.5	802.5	853.7	850.7	888.9
Gross domestic product	3 525.1	3 763.5	3 924.5	1 829.1	1 934.4	1 931.1	1 993.5

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

Consumption expenditure	2.8	7.3	3.9	8.3	6.3	5.2	2.8
Private households ²	2.3	10.1	4.0	11.8	8.6	5.8	2.3
Government	3.9	1.1	3.7	0.8	1.3	3.5	3.9
Gross fixed capital formation	6.7	8.9	6.1	9.1	8.8	7.9	4.4
Machinery and equipment	7.7	10.4	7.2	8.2	12.3	11.1	3.9
Construction	7.9	8.5	5.1	10.3	6.9	6.2	4.0
Other products	2.0	7.9	7.1	7.2	8.6	7.7	6.5
Domestic expenditure	5.2	7.7	4.4	8.6	6.9	5.7	3.1
Exports	13.6	9.7	4.8	11.4	8.0	5.7	3.9
Imports	16.3	12.2	5.0	15.3	9.4	6.0	4.1
Gross domestic product	4.7	6.8	4.3	7.2	6.4	5.6	3.1

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

a) EUR bn.

Consumption expenditure	2 304.7	2 429.2	2 481.2	1 184.4	1 244.8	1 222.8	1 258.3
Private households ²	1 607.3	1 733.2	1 772.4	840.4	892.8	873.5	898.9
Government	695.6	695.5	708.3	343.6	351.9	349.1	359.2
Gross fixed capital formation	681.3	716.0	745.8	340.0	375.9	360.1	385.7
Machinery and equipment	220.3	239.5	254.4	110.2	129.4	121.3	133.1
Construction	328.5	337.6	346.9	163.7	173.9	169.8	177.1
Other products	131.4	139.0	145.7	65.6	73.4	69.1	76.6
Domestic expenditure	3 012.0	3 172.7	3 254.0	1 542.0	1 630.7	1 600.4	1 653.6
Exports	1 547.7	1 637.5	1 706.5	807.4	830.1	851.3	855.2
Imports	1 384.8	1 475.0	1 548.7	714.2	760.7	759.5	789.3
Gross domestic product	3 178.7	3 339.7	3 416.1	1 636.9	1 702.9	1 694.2	1 721.9

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

Consumption expenditure	0.4	5.4	2.1	6.6	4.3	3.2	1.1
Private households ²	-0.5	7.8	2.3	9.5	6.3	3.9	0.7
Government	2.5	0.0	1.8	0.3	-0.3	1.6	2.1
Gross fixed capital formation	2.5	5.1	4.2	4.2	5.9	5.9	2.6
Machinery and equipment	5.9	8.8	6.2	6.3	10.9	10.1	2.9
Construction	1.2	2.8	2.8	2.6	2.9	3.7	1.9
Other products	0.8	5.8	4.8	5.4	6.1	5.3	4.4
Domestic expenditure	2.4	5.3	2.6	6.1	4.6	3.8	1.4
Exports	8.1	5.8	4.2	5.0	6.6	5.4	3.0
Imports	8.3	6.5	5.0	5.8	7.2	6.3	3.8
Gross domestic product	2.6	5.1	2.3	5.7	4.4	3.5	1.1

National Accounts (cont.)

Forecast period: 2021 to 2023

	2021	2022	2023	2022		2023	
				H1	H2	H1	H2
4. Deflators (2010=100)							
Change on the same period of the preceding year in %							
Private consumption ²	2.8	2.1	1.7	2.1	2.1	1.8	1.6
Government consumption	1.4	1.1	1.8	0.5	1.6	1.9	1.8
Gross fixed capital formation	4.1	3.7	1.8	4.7	2.8	1.9	1.8
Machinery and equipment	1.6	1.5	1.0	1.7	1.2	0.9	1.0
Construction	6.6	5.6	2.2	7.5	3.9	2.4	2.1
Exports	5.1	3.7	0.6	6.1	1.3	0.2	0.9
Imports	7.4	5.3	0.0	8.9	2.1	- 0.3	0.4
Gross domestic product	2.0	1.6	1.9	1.4	1.8	2.0	1.9

5. National income

a) EUR bn.

Primary income of private households ²	2 419.0	2 546.3	2 634.6	1 249.9	1 296.4	1 303.0	1 331.5
Employers social contributions	346.1	356.9	372.8	173.7	183.1	181.3	191.5
Gross wages and salaries	1 558.6	1 638.7	1 701.7	779.5	859.2	815.7	886.0
Other primary income ⁴	514.3	550.7	560.0	296.7	254.0	306.0	254.0
Primary income of other sectors	522.7	606.1	649.7	267.4	338.7	301.4	348.3
Net national income	2 941.7	3 152.4	3 284.2	1 517.3	1 635.1	1 604.5	1 679.8
Consumption of fixed capital	681.7	712.8	746.7	353.9	358.9	370.7	376.0
Gross national income	3 623.4	3 865.2	4 030.9	1 871.2	1 994.0	1 975.2	2 055.7
memorandum item:							
Net national income (factor costs)	2 666.3	2 805.4	2 905.6	1 344.8	1 460.6	1 416.0	1 489.5
Property and entrepreneurial income	761.7	809.9	831.0	391.6	418.2	419.0	412.0
Compensation of employees	1 904.7	1 995.5	2 074.5	953.2	1 042.3	997.0	1 077.5

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

Primary income of private households ²	1.7	5.3	3.5	5.6	5.0	4.2	2.7
Employers social contributions	2.4	3.1	4.5	2.7	3.5	4.4	4.6
Gross wages and salaries	2.9	5.1	3.8	5.7	4.6	4.7	3.1
... per employee	2.8	4.0	3.3	4.5	3.5	3.7	2.8
Other primary income ⁴	- 2.4	7.1	1.7	6.9	7.3	3.1	0.0
Primary income of other sectors	23.4	16.0	7.2	18.5	14.0	12.7	2.8
Net national income	5.0	7.2	4.2	7.7	6.7	5.7	2.7
Consumption of fixed capital	3.5	4.6	4.7	4.4	4.7	4.7	4.8
Gross national income	4.7	6.7	4.3	7.0	6.4	5.6	3.1
memorandum item:							
Net national income (factor costs)	5.5	5.2	3.6	5.1	5.3	5.3	2.0
Property and entrepreneurial income	12.7	6.3	2.6	4.9	7.7	7.0	- 1.5
Compensation of employees	2.8	4.8	4.0	5.2	4.4	4.6	3.4

6. Disposable income of private households ²

a) EUR bn.

Mass income	1 595.3	1 657.0	1 708.9	790.9	866.0	821.7	887.2
Net wages and salaries	1 060.9	1 120.3	1 151.0	526.5	593.7	546.1	604.9
Social benefits other than social transfers in kind	678.9	685.7	712.8	337.0	348.7	351.3	361.5
less: Levies on social benefits, taxes on consumption	144.4	149.0	154.9	72.6	76.4	75.7	79.2
Other primary income ⁴	514.3	550.7	560.0	296.7	254.0	306.0	254.0
Other transfers received (net) ⁵	- 95.5	- 100.8	- 105.7	- 50.7	- 50.1	- 53.2	- 52.5
Disposable income	2 014.2	2 106.9	2 163.2	1 036.9	1 070.0	1 074.5	1 088.7
Change in pension entitlements	60.8	61.7	62.6	30.0	31.7	30.4	32.2
Consumption expenditure	1 748.1	1 924.6	2 001.6	927.2	997.3	981.3	1 020.3
Saving	326.8	244.0	224.3	139.7	104.4	123.6	100.6
Saving ratio (%) ⁶	15.8	11.3	10.1	13.1	9.5	11.2	9.0

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

Mass income	3.6	3.9	3.1	3.1	4.5	3.9	2.4
Net wages and salaries	3.9	5.6	2.7	6.4	4.9	3.7	1.9
Social benefits other than social transfers in kind	3.0	1.0	3.9	- 1.8	3.9	4.2	3.7
less: Levies on social benefits, taxes on consumption	3.0	3.1	3.9	1.9	4.4	4.2	3.7
Other primary income ⁴	- 2.4	7.1	1.7	6.9	7.3	3.1	0.0
Disposable income	2.0	4.6	2.7	4.1	5.1	3.6	1.8
Consumption expenditure	2.3	10.1	4.0	11.8	8.6	5.8	2.3
Saving	- 0.1	- 25.3	- 8.1	- 28.9	- 20.0	- 11.5	- 3.6

National Accounts (cont.)

Forecast period: 2021 to 2023

	2021	2022	2023	2022		2023	
				H1	H2	H1	H2

7. Revenue and expenditure by general government *

a) EUR bn.

Revenue							
Taxes	825.7	875.7	924.6	438.6	437.2	463.1	461.5
Social contributions	628.1	655.7	694.2	317.8	337.9	337.6	356.6
Property income	15.0	14.6	14.1	7.2	7.4	6.9	7.2
Other current transfers	26.1	27.6	29.0	12.2	15.4	12.9	16.1
Capital transfers	18.3	22.8	24.1	9.8	13.1	11.5	12.6
Sales	131.7	141.6	146.5	66.0	75.6	68.2	78.3
Other subsidies	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	1 645.1	1 738.2	1 832.6	851.6	886.7	900.3	932.3
Expenditure							
Intermediate consumption ¹	544.2	551.9	575.6	266.3	285.6	277.2	298.4
Compensation of employees	292.9	300.3	308.2	144.5	155.8	148.1	160.1
Property income (interest)	18.6	17.0	16.2	9.5	7.5	9.1	7.1
Subsidies	110.4	65.6	57.2	32.3	33.4	28.0	29.3
Social benefits	614.3	620.6	647.2	304.5	316.1	318.5	328.7
Other current transfers	89.5	91.8	94.5	44.3	47.4	45.6	48.9
Capital transfers	58.1	58.7	62.5	21.2	37.5	23.0	39.5
Gross capital formation	91.6	96.4	101.3	40.8	55.6	43.2	58.1
Net acquisitions of non-produced non-financial assets	- 1.3	- 1.3	- 1.3	- 0.6	- 0.7	- 0.6	- 0.7
Total	1 818.2	1 801.1	1 861.4	862.8	938.3	892.1	969.3
Net lending	- 173.2	- 62.8	- 28.8	- 11.2	- 51.6	8.2	- 37.0

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

Revenue							
Taxes	6.8	6.1	5.6	7.7	4.4	5.6	5.6
Social contributions	3.3	4.4	5.9	4.1	4.7	6.2	5.5
Property income	- 23.9	- 2.8	- 3.5	- 3.2	- 2.3	- 4.0	- 3.0
Other current transfers	7.8	5.7	5.1	6.3	5.2	5.6	4.7
Capital transfers	17.7	24.8	5.6	30.1	21.2	18.3	- 3.9
Sales	4.6	7.5	3.5	11.3	4.4	3.5	3.5
Other subsidies	- 0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total	5.0	5.7	5.4	6.7	4.7	5.7	5.1
Expenditure							
Intermediate consumption ¹	4.5	1.4	4.3	1.6	1.3	4.1	4.5
Compensation of employees	3.1	2.5	2.6	2.7	2.3	2.5	2.8
Property income (interest)	- 11.1	- 8.6	- 4.7	- 7.7	- 9.7	- 4.2	- 5.3
Subsidies	54.9	- 40.5	- 12.8	- 40.2	- 40.8	- 13.3	- 12.3
Social benefits	3.2	1.0	4.3	- 2.1	4.2	4.6	4.0
Other current transfers	8.5	2.5	3.0	2.5	2.6	3.0	3.1
Capital transfers	21.2	1.0	6.4	10.0	- 3.4	8.4	5.3
Gross capital formation	0.7	5.3	5.1	3.8	6.4	5.9	4.5
Net acquisitions of non-produced non-financial assets	10.9	0.0	0.0	0.0	0.0	0.0	0.0
Total	6.2	- 0.9	3.4	- 1.9	- 0.1	3.4	3.3

¹ Price-adjusted gross domestic product per hour worked.

² Incl. nonprofit institutions serving households.

³ Incl. acquisitions less disposals of valuables.

⁴ Operating surplus/mixed income, net property income

⁵ Received less paid other current transfers.

⁶ Savings in percent of disposable income (incl. change in pension entitlements).

⁷ Central, regional, local and social security funds.

⁸ Incl. social transfers in kind and other production taxes.

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