

KIEL INSTITUTE **ECONOMIC OUTLOOK**

German Economy Winter 2021

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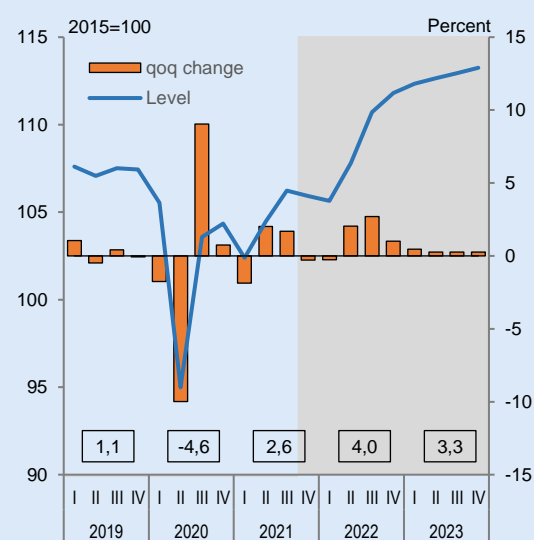
GERMAN ECONOMY WINTER 2021: RECOVERY TEMPORARILY ON HOLD

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

The recovery of the German economy is interrupted once again. In the cold season, the new Covid-19 wave will hit economic activity particularly in contact-intensive service sectors as in previous waves resulting in a setback in private consumer spending and small declines in GDP. To the extent that the burdens of the pandemic ease in the spring, the economy recovers echoing the pattern observed earlier this year. Further momentum comes from decreasing supply bottlenecks, which currently massively weigh on industrial production. While the renewed slowdown in the recovery process will be larger than we had expected in our economic outlook three months ago, the setback will be much less severe than last winter. In 2022, GDP will increase by 4 percent and thus less strongly than we had previously expected (5.1 percent). For 2023, we revise GDP growth upwards to 3.3 percent (previously: 2.3 percent). This year, GDP will increase by 2.6 percent. Inflation remains high for the time being, also because supply bottlenecks continue to increase manufacturing costs and tighten the supply of consumer goods. At the same time, private households have accumulated additional savings of around 200 billion euros since the beginning of the pandemic and therefore have a rather high willingness to pay. Consumer price inflation will probably be around 3 percent both this and next year, before easing again in 2023. The fiscal deficit will fall noticeably from 3.8 percent in relation to GDP in 2021 to 1.8 percent in 2022 due to the reduced burden of the pandemic. However, the budget is still expected to close with a significant deficit of 1.4 percent in 2023.

The pandemic puts the recovery on hold. After economic activity picked up strongly over the summer, it is likely to decline slightly in the final quarter of this year and the first quarter of 2022 (Figure 1). The main reason is the dampening effect of the pandemic. As in previous infection waves, particularly contact-intensive service industries are hit due to pandemic-related measures (e.g. regional business closures or more restrictive access) and voluntary behavioral adjustments. Nevertheless, the impact of the pandemic will be much less severe than last winter as measures are less strict due to the vaccination progress. While the negative economic consequences of the pandemic are still significant, they decrease from wave to wave. From spring onwards, we expect the recovery to pick up again. This forecast is based on the assumption that the pandemic will be medically controlled by then (e.g. through vaccination or medication) in such a way that it no longer threatens to overburden the health system and therefore economic activity does no longer have to be significantly restricted. In addition to the renewed wave of infections, supply bottlenecks continue to dampen industrial production for

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.

the time being. We are sticking to our previous assumption that the bottlenecks will only gradually disappear in the course of 2022. The latest business surveys support this assessment. Although value added in the manufacturing sector is likely to pick up again in the final quarter of 2021 for the first time since the beginning of the year, it remains dramatically below the level that would be expected in view of the order situation. Overall, we expect GDP to increase by 2.6 percent in the current year, followed by 4 percent and 3.3 percent in 2022 and 2023, respectively (Table 1).

Supply bottlenecks and renewed travel restrictions temporarily hamper foreign trade. After already having lost momentum since the beginning of the year, exports suffered a setback in the third quarter amid increased supply bottlenecks particularly affecting the car industry. Services exports expanded strongly, also because pandemic-related restrictions on travel were relaxed over the summer, and prevented a sharper decline in exports overall. In the fourth quarter, supply-side bottlenecks remained a burdening factor, and export expectations deteriorated. Nevertheless, monthly data on special trade in October point towards a subdued increase. Next year the supply bottlenecks are expected to gradually ease and the backlog of orders from abroad, which remains high despite a marked decline in new orders in October, will be gradually worked off. New business will likely also increase export demand, as global economic activity recovers ([Gern et al. 2021](#)). Services exports will grow strongly from spring onwards, when the impact of the pandemic will fade according to our assumptions. All in all, we expect exports to increase by 7.5 percent this year, followed by 6.0 and 5.6 percent in 2022 and 2023, respectively. Similarly, the recovery in imports will pick up pace next year. In the third quarter of this year, they declined slightly; the decrease in goods imports and the increase in services imports were even more pronounced than on the export side. In the current quarter, import growth probably also remained modest as suggested by special trade figures for October and the Kiel Trade Indicator based on shipping data. In addition, the recovery in travel is likely to be temporarily interrupted in view of higher uncertainty and stricter regulation due to the new coronavirus variant Omicron. Provided the pandemic is overcome from spring onwards, imports will initially rise strongly. Overall, we expect imports to increase by 7.8 percent this year, followed by 6.3 and 6.0 percent in 2022 and 2023, respectively. Prices of imports and – to a lesser extent – exports have been rising strongly due to an increase in the prices of commodities and intermediate goods. We expect the terms of trade to deteriorate by 2.1 percent this year, followed by 2.6 percent in 2022. In 2023, they will remain largely unchanged.

Table 1:

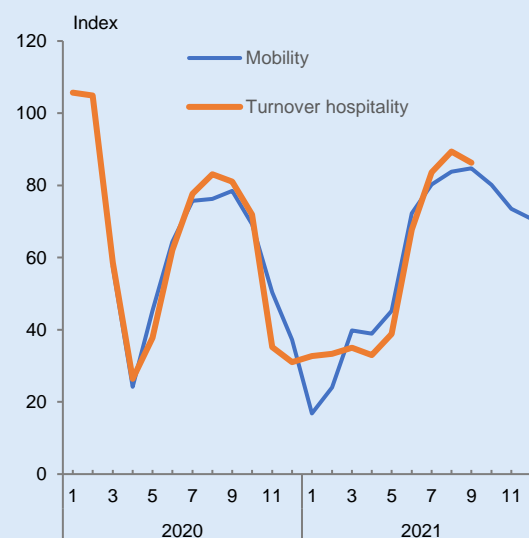
Key indicators

	2020	2021	2022	2023
Gross domestic product (GDP), price-adjusted	-4,6	2,6	4,0	3,3
Gross domestic product, deflator	1,6	2,8	1,8	1,7
Consumer prices	0,5	3,1	3,1	2,0
Labor productivity (per hour worked)	0,4	0,6	2,3	2,5
Employment (1000 persons)	44.898	44.878	45.264	45.499
Unemployment rate (percent)	5,9	5,7	5,2	5,0
<i>in relation to nominal GDP</i>				
Public sector net lending	-4,3	-3,8	-1,8	-1,4
Gross public debt	69,1	69,3	66,7	64,3
Current account balance	7,1	6,7	5,8	5,5
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.

After a renewed slump, private consumption will increase strongly again. The pandemic causes another setback in private consumer spending in the winter. As in previous infection waves, the losses will be particularly large in contact-intensive services. Mobility data – which have shown a fairly high synchronization with sales in the hospitality industry during the pandemic – point to noticeable declines in consumer spending in accommodation and restaurant services (Figure 2). Compared with the winter 2020/2021, however, the setback is likely to be less severe and the level of consumption is likely to remain significantly above the trough of last year since protective measures are less severe due to vaccinations. In the retail industry, the losses will likely be considerably lower than in contact-intensive services, as there will probably be no country-wide closures and because the declines in stationary trade can be at least partially offset by higher online trade. However, retail sales in October – before the full impact of the fourth Covid-19-wave took place – were already about 1 percent below the level of the third quarter indicating a decline in private consumption. In the first quarter of 2022, the decline will probably be somewhat larger than in the fourth quarter, because the pandemic-related restrictions are assumed to dampen consumption for almost the entire first quarter. In the spring 2022, when the negative effects of the pandemic subside again, a strong recovery will set in. All in all, private consumer spending is likely to increase strongly in the next two years by 5.7 percent (2022) and 3.7 percent (2023), after having stagnated in the current year.

Figure 2:
Turnover in hospitality industry and mobility



Monthly data; hospitality: seasonally adjusted; mobility: retail trade & recreation, deviation from the same day of the week in the period January to February 2020, scaled using a linear regression, values until 13 December taken into account.

Source: Google Covid-19 Mobility Report; German National Statistical Office; Kiel Institute calculations.

Supply bottlenecks delay the recovery of business investment. Business investment fell by 2.6 percent in the third quarter of 2021, thereby reaching an even slightly lower level than in the third quarter of the previous year. The main reason for this were supply bottlenecks at capital goods producers, which significantly worsened over the course of the summer. In the current quarter, the supply bottlenecks are likely to continue to weigh on business investment. According to surveys, three out of four firms in the manufacturing sector still complain about a lack of supply. However, the most recent production figures as well as domestic sales of capital goods manufacturers at least point to a slight upturn of investment activity in the fourth quarter. Given that the supply bottlenecks are gradually overcome, business investment is expected to pick up noticeably in the course of next year with the economic recovery at home and abroad gaining momentum. We forecast business investment to increase by 2.1 percent in the current year and by 6.0 and 6.2 percent in 2022 and 2023, respectively.

Prices picked up strongly throughout the year and inflationary pressures will ease only gradually. Departing from an already high level, inflation has risen further in recent months and equaled 5.2 percent in November, the highest level since the reunification boom. The core rate (excluding energy) amounted to 3.4 percent in November, compared with 3 percent three months before. The increase in the value-added tax in January 2021 – after its temporary reduction – had a significant impact on the core rate, adding around 1 percentage point. But even without this effect the rate reached a level noticeably above its long-term average of 1.6 percent. A major cause for high inflation is the strong rise in commodity prices. Overall, the pandemic has created a very inflation-friendly environment. Massive

supply bottlenecks have increased production costs. Government support worldwide stabilized household incomes, while total production sharply decreased. As a result, consumers are currently endowed with excessive pent-up purchasing power strengthening their willingness to pay. We therefore expect inflationary pressures to ease only gradually. Monthly data indicate consumer prices to continue to rise sharply in the fourth quarter, by more than 1 percent compared to the previous quarter. A significant drop in inflation in the short term could only be expected if supply bottlenecks were to ease rapidly or raw material prices were to fall significantly. However, there are currently no indications of this ([Gern et al. 2021](#)). Against this background, inflation is likely to remain at a fairly high level for some time. In 2022, consumer price inflation is likely to end up at around 3 percent as in the current year. In 2023, when supply bottlenecks will have eased and commodity prices no longer have a price-driving effect, inflation is likely to fall to around 2 percent.

Wage momentum is picking up after the slowdown caused by the crisis. With the latest agreements in the public sector and in the private transport sector, negotiated wages and salaries have now been set for the coming year for almost all major collective bargaining sectors. In light of these agreements, negotiated wages and salaries are set to increase by 2.5 percent in 2022, significantly more than in 2021 when wage growth was comparatively low at 1.5 percent due to the crisis. For 2023, we expect a further acceleration to 2.9 percent against the backdrop of the continued economic recovery. Effectively-paid earnings (gross wages and salaries per employee) will grow noticeably faster than collectively agreed earnings. The reason for the discrepancy is short-time work, which was massively expanded at the outbreak of the crisis and has since been falling significantly. Irrespective of short-time work, the fact that labor shortages have already become much more important according to company surveys also speaks in favor of dynamic wage increases. The proportion of companies complaining about labor shortages as a limit to production has reached historic highs in manufacturing, services, and construction. Furthermore, we assume the planned increase in the statutory minimum wage to 12 euros per hour to take effect on July 1, 2022. The degree of intervention is probably much higher than when the minimum wage was introduced in 2015, so it is likely to be visible in overall average earnings. However, as observed after the introduction of the minimum wage, we expect the working hours of the affected employees to fall as a result of the minimum wage increase, so that average per capita earnings will rise much less than hourly earnings. All in all, we expect earnings per employee to rise by 3.1 percent (2021), 3.6 percent (2022) and 3.6 percent (2023).

The recovery in employment will continue to lose pace during the winter. After the number of short-time workers fell sharply from 3.4 million to 800,000 between February and August, the pace slowed markedly in the fall. We expect short-time work to increase again in the winter, although the extent is likely to be much smaller than a year ago. As the economic recovery resumes next spring, short-time work will decrease again. The recovery in employment, which had just begun last summer, also lost momentum in the fall and will slow further in view of the subdued economic recovery. As soon as economic activity picks up again in the course of the coming year, the recovery in employment will regain momentum as well. We expect the planned increase in the statutory minimum wage to 12 euros per hour to take effect as of July 1, 2022. In view of the high degree of intervention into the lower parts of the wage distribution, we expect employment losses, particularly among the marginally employed (“mini-jobs”), which will gradually materialize over the remaining forecast period and thus dampen the rise in overall employment. In addition, the labor force is likely to reach its peak due to aging in 2023. As a result, the number of people in employment is likely to start declining towards the forecast horizon. The unemployment rate as defined by the German Federal Employment Agency will decrease to an annual average of 5.2 percent (2022) and 5.0 percent (2023), down from 5.7 percent in the current year. Unemployment is unlikely to be affected much by the minimum wage increase, as the marginally employed are not entitled to unemployment benefits from unemployment insurance and the vast majority is unlikely

to be entitled to the means-tested basic income support, as many live in households with incomes above the threshold.

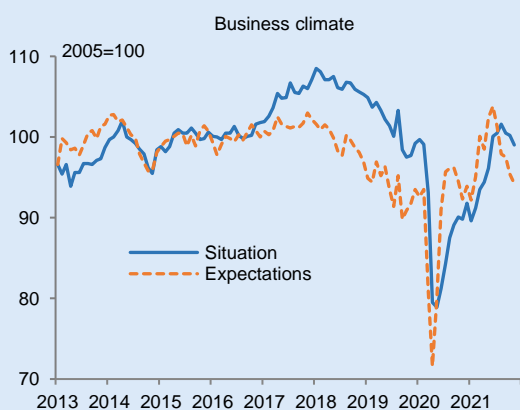
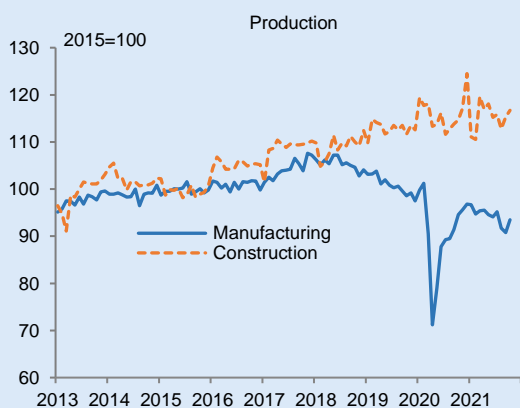
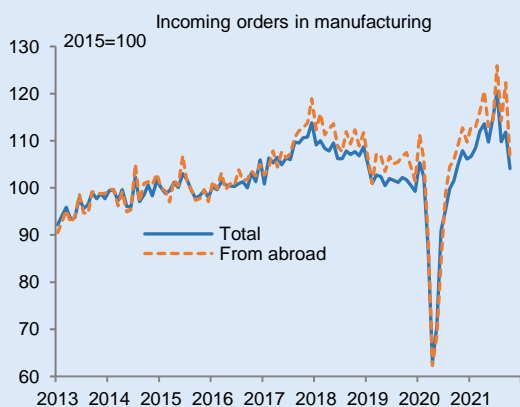
The fiscal deficit decreases but remains elevated. Expenditures for company grants as well as for vaccinations and tests increased further this year. Public consumption has seen a substantial rise. However, revenues increased surprisingly strongly and outpaced expenditures. Overall, we expect a fiscal deficit of 3.8 percent relative to GDP this year. The deficit will decrease substantially in 2022 as the recovery stimulates government revenues. Expenditure for short-time work and company grants will drop sharply and so will direct spending for fighting the pandemic. However, several measures of the stimulus packages will lead to extra expenditures also in 2022, especially those related to the decarbonization of the economy. Thus, a substantial deficit of 1.8 percent relative to GDP remains. 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 a mildly expansionary fiscal policy stance leading to higher expenditures for subsidies and investments. Overall, the fiscal deficit of the general government will decline only modestly to 1.4 percent relative to GDP. However, the structural budget balance will deteriorate.

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1. Leading indicators

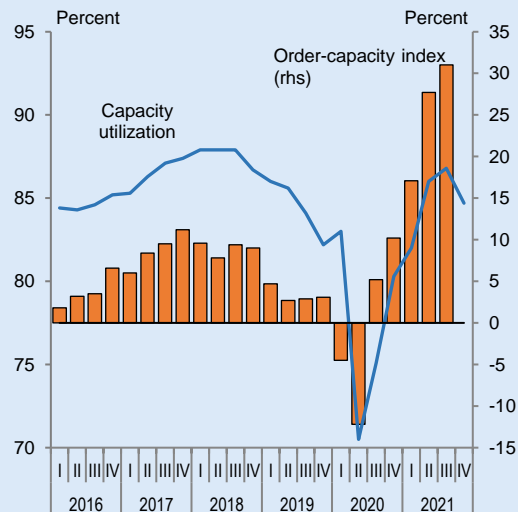
Figure 1.1:
Leading indicators



Monthly data, seasonally adjusted.

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

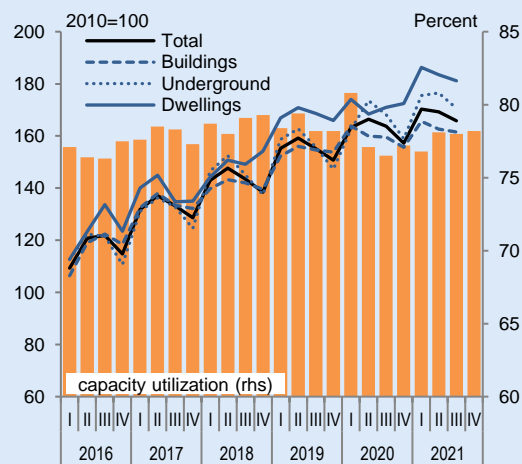
Figure 1.2:
Capacity utilization



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

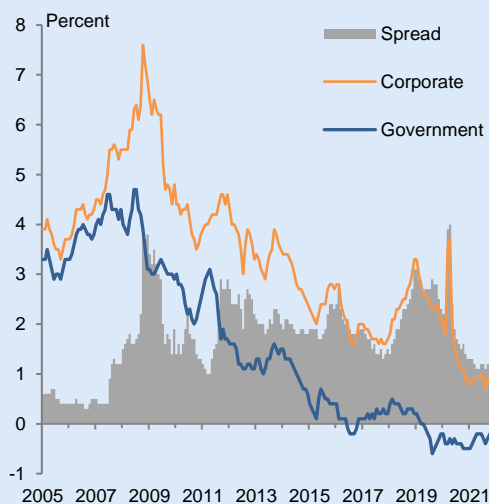


Quarterly data. Capacity utilization (deviation from normal level): seasonally adjusted; order stocks: price, seasonally and working-day adjusted.

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

2. Monetary conditions and prices

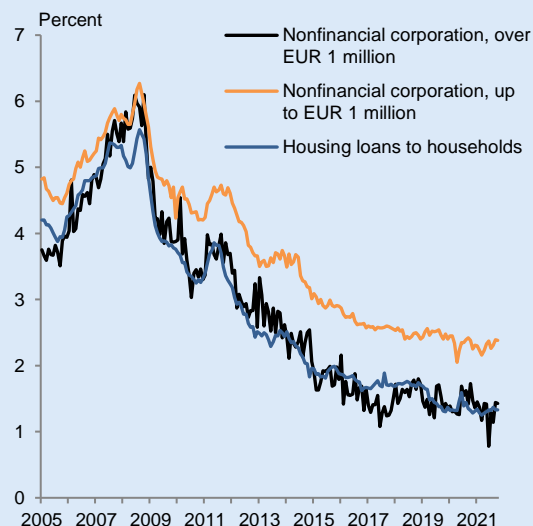
Figure 2.1:
Bond yields



Monthly data, average maturities above three years.

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

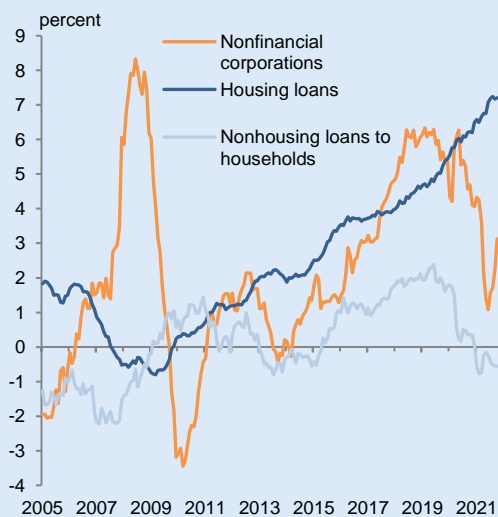
Figure 2.2:
Loan interest



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

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

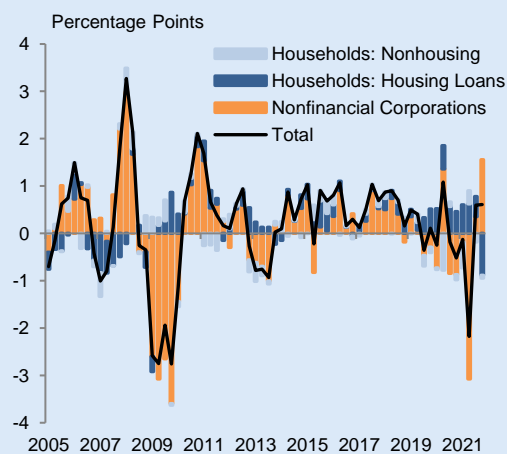
Figure 2.3:
Credit growth



Change compared to one year ago; Monthly data.

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

Figure 2.4:
Credit impulse

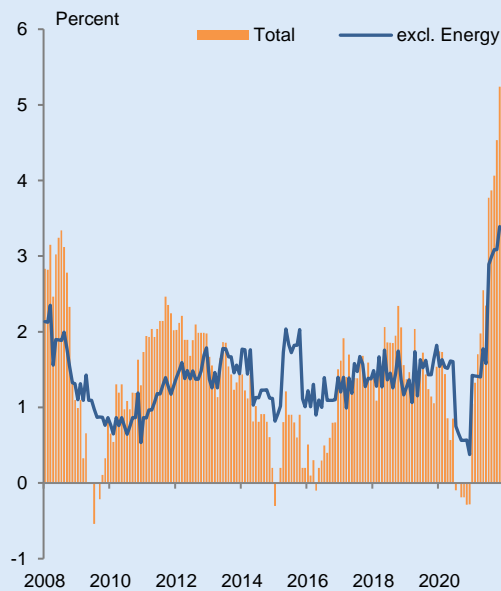


Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009), *Credit and economic recovery*, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam.

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

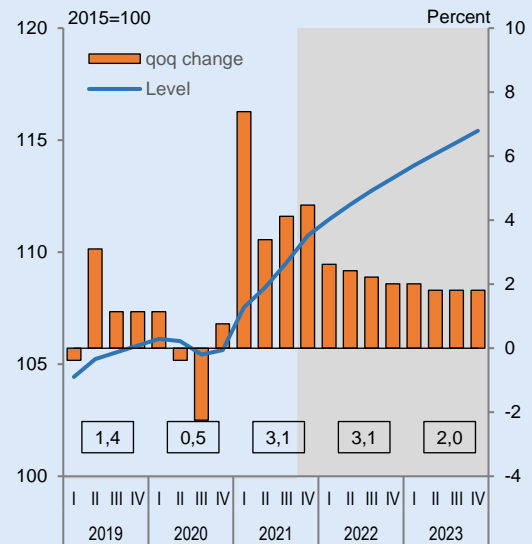
Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Kiel Institute calculations.

Figure 2.6:
Consumer prices



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

Figure 2.7:
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 2020–2023

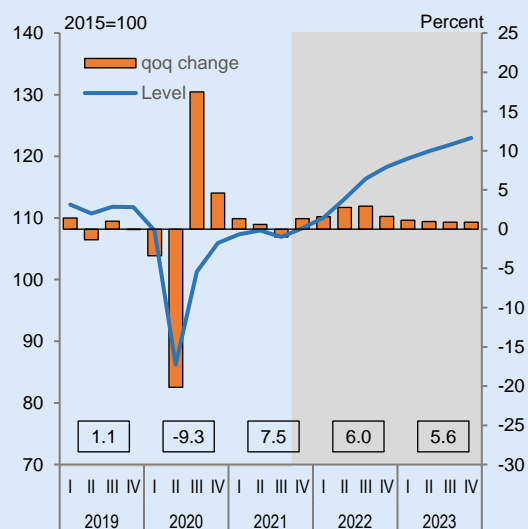
	2020				2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long-term interest rate	-0.4	-0.5	-0.4	-0.6	-0.5	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
US-dollar/euro exchange rate	1.10	1.10	1.17	1.19	1.21	1.20	1.18	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Price competitiveness	88.9	90.5	91.0	90.9	91.6	91.7	91.2	90.6	90.4	90.3	90.2	90.1	90.0	89.9	89.9	89.9
Export markets	-2.8	-9.1	9.8	0.6	0.4	2.0	1.6	0.6	0.6	1.1	1.0	0.8	0.7	0.7	0.6	0.6
Oil price	50.5	29.4	43.0	44.3	60.8	68.1	71.2	77.2	71.0	73.0	75.0	74.0	73.0	72.0	72.0	72.0

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

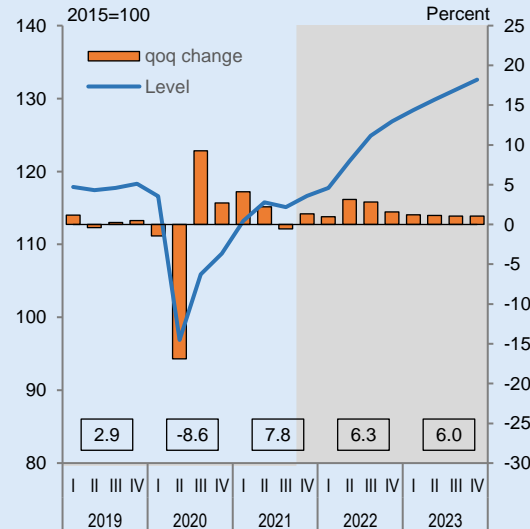
Figure 3.1:
Exports



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.

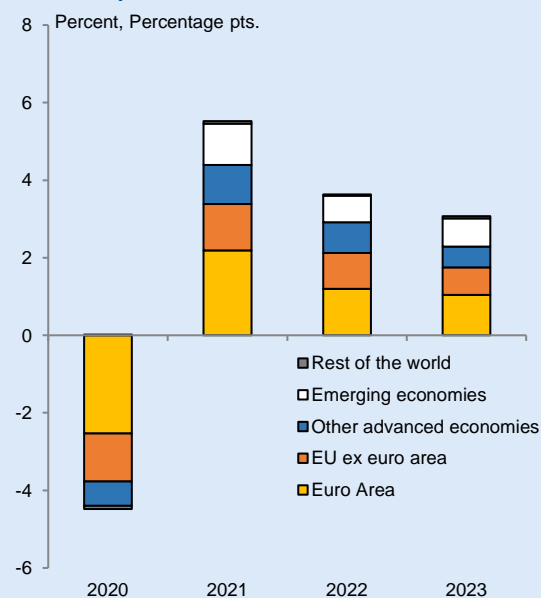
Figure 3.2:
Imports



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.

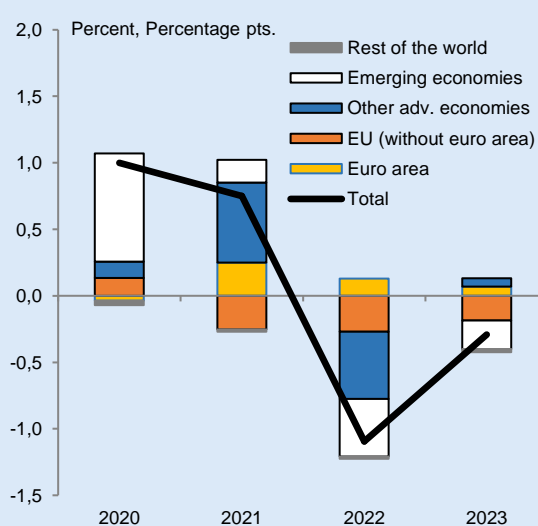
Figure 3.3:
German export markets



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.

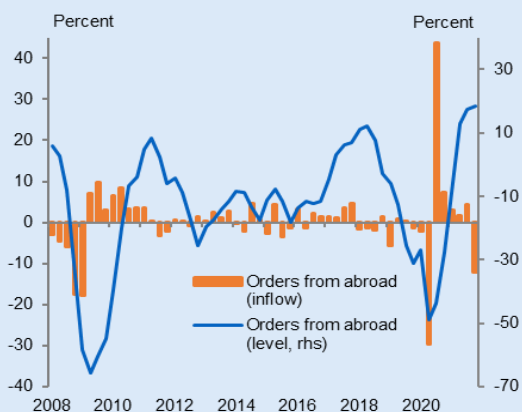
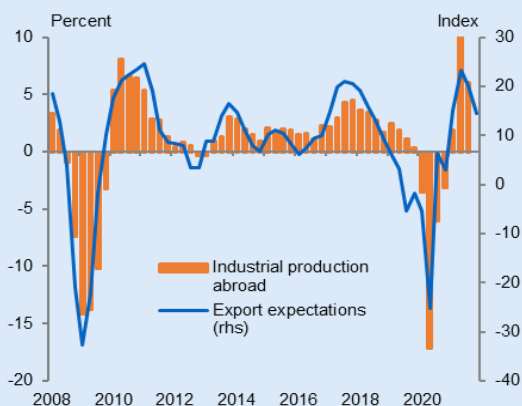
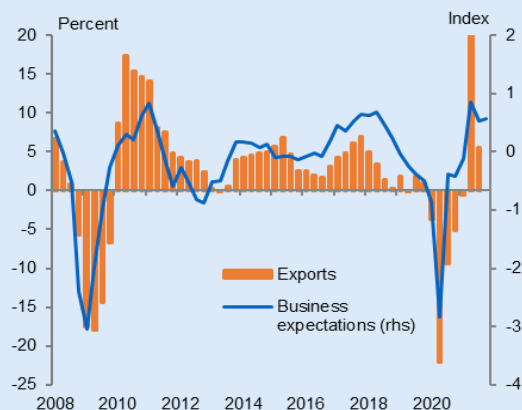
Figure 3.4:
Germany's price competitiveness



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.

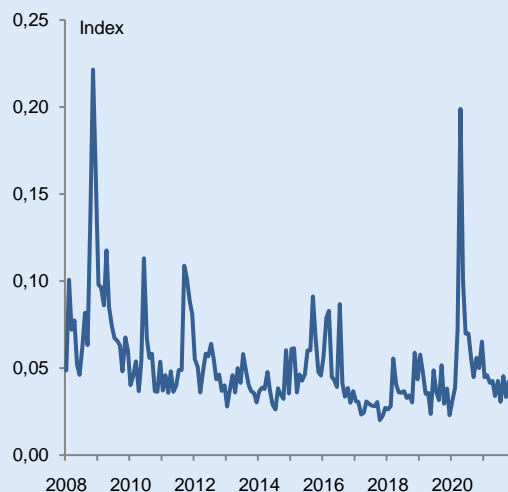
Figure 3.5:
Export indicators



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 3.5:
Uncertainty in German export markets

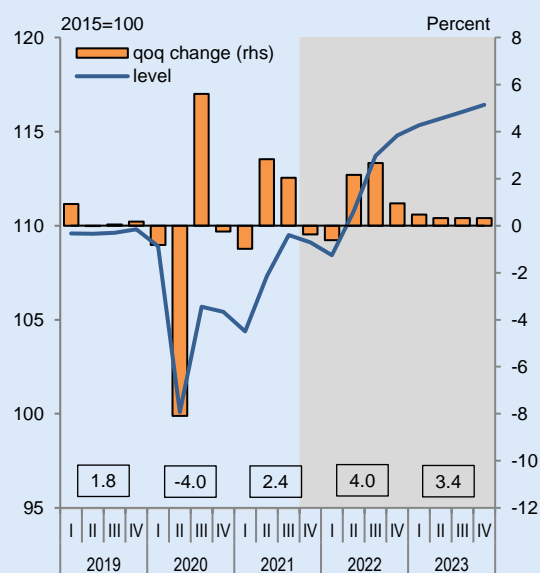


Monthly data; realized stock market volatilities based on daily stock price indices in 46 countries, weighted by shares of German exports. Last value: 10.12.2021.

Source: National sources; Kiel Institute calculations.

4. Domestic expenditure

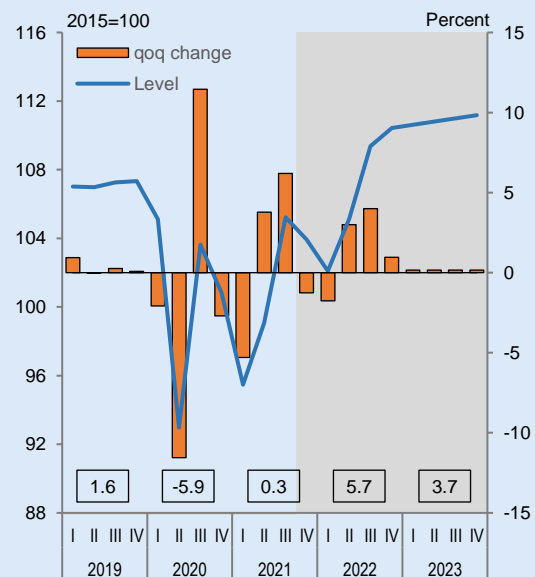
Figure 4.1:
Domestic expenditure



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.

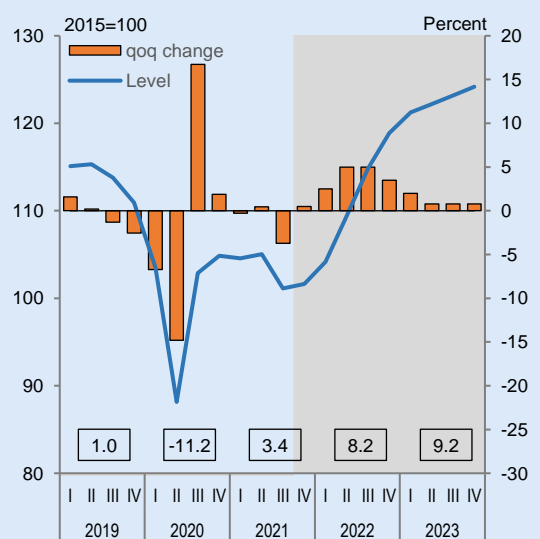
Figure 4.2:
Private consumption



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.

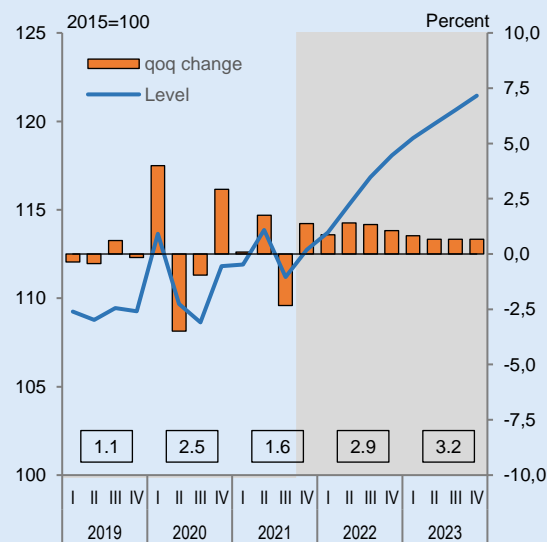
Figure 4.3:
M&E investments



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.

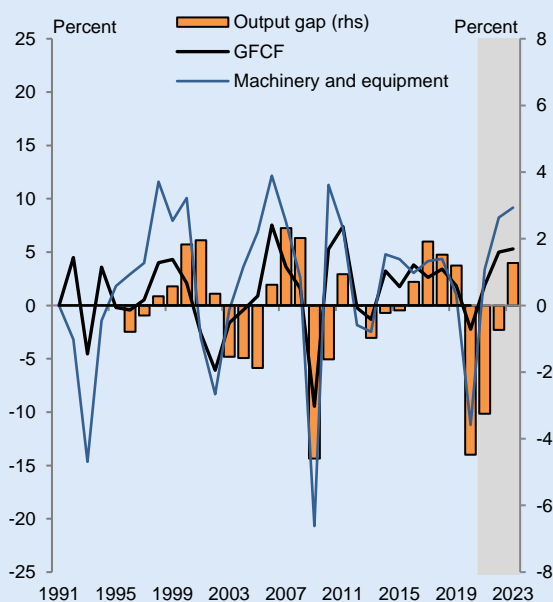
Figure 4.4:
Construction



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.

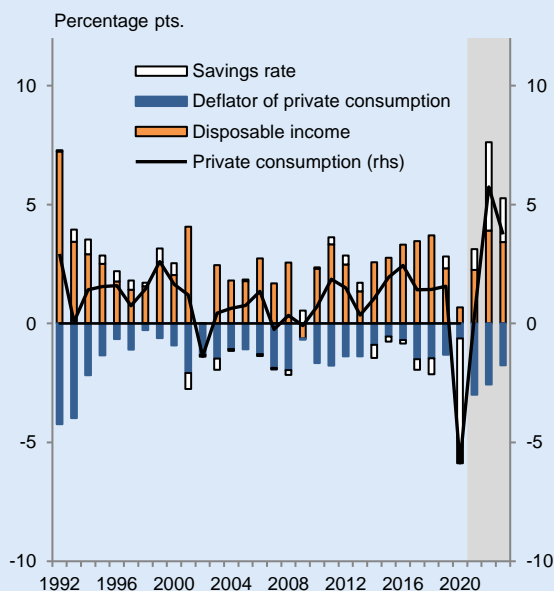
Figure 4.5:
Investment cycles



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.

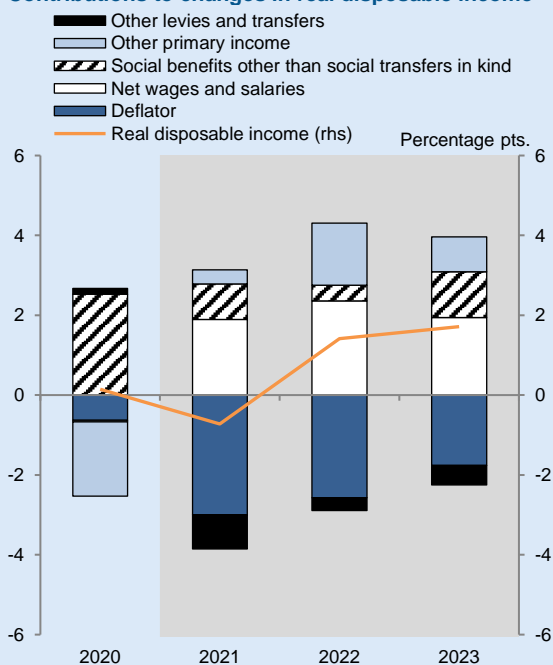
Figure 4.6:
Contributions to change in private consumption



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	1.9	5.0	5.3
Corporate investment	-5.5	2.1	6.0	6.2
Machinery and equipment	-11.2	3.4	8.2	9.2
Construction (nondwellings)	-0.7	1.6	1.2	0.9
Other	1.0	0.3	6.0	5.2
Dwellings	3.4	2.5	3.6	3.7
Public (nondwellings)	4.9	-3.2	2.9	5.2
Memorandum item:				
Construction	2.5	1.6	2.9	3.2

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

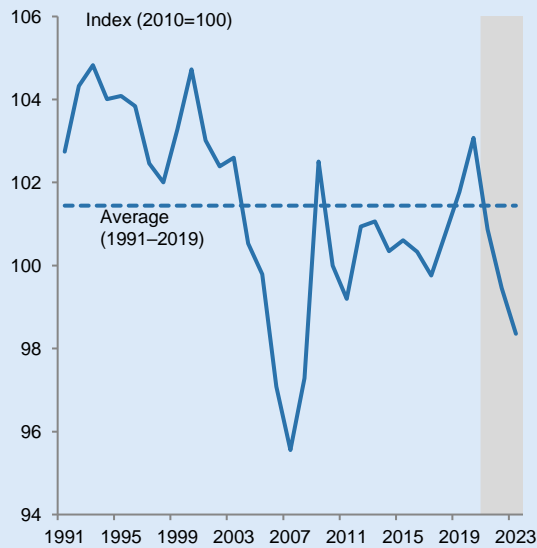
	2021				2022				2023			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
	Seasonally and calendar-adjusted, q-o-q change in percent											
Gross domestic product	-1.9	2.0	1.7	-0.3	-0.3	2.0	2.7	1.0	0.5	0.3	0.3	0.3
Gross value added	-1.1	1.4	1.9	-0.3	-0.3	2.0	2.7	1.0	0.5	0.3	0.3	0.3
Industry excl. construction	-1.2	-0.7	-2.2	0.9	1.6	3.3	3.9	2.7	1.2	0.4	0.4	0.4
Manufacturing	-1.0	-1.0	-2.2	1.0	1.8	3.5	4.0	3.0	1.3	0.4	0.4	0.4
Energy, Water etc.	-2.6	1.0	-1.7	0.5	0.8	2.0	3.0	0.9	0.5	0.2	0.2	0.2
Construction	-4.8	2.3	-1.2	1.0	0.5	0.6	0.5	0.3	0.3	0.3	0.3	0.3
Trade, transport, accomodation, food services	-2.5	2.3	5.3	-2.4	-2.9	3.2	4.5	0.8	0.5	0.4	0.4	0.4
Information and communication	-0.3	0.5	1.0	0.4	0.4	2.5	4.0	1.0	0.8	0.8	0.8	0.8
Financial and insurance services	-0.5	0.8	2.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Real estate activities	0.1	0.0	0.5	0.1	0.1	0.4	0.4	0.1	0.1	0.1	0.1	0.1
Business services	-0.4	2.2	3.4	0.2	0.4	2.0	3.5	0.7	0.5	0.5	0.5	0.5
Public services, education, health	-0.3	4.1	3.1	0.0	0.0	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Other services	2.8	-0.1	13.5	-5.5	-8.0	6.5	9.0	0.5	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

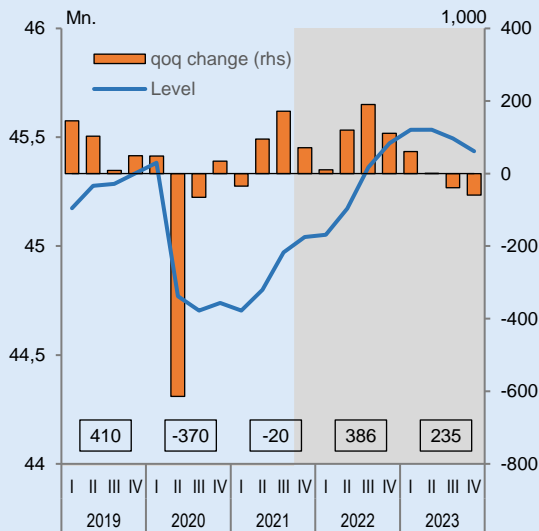
	2020	2021	2022	2023
<i>Per hour</i>				
Negotiated wages	2.2	1.5	2.5	2.9
Gross wages and salaries	3.4	1.1	2.9	3.4
Wage drift	1.2	-0.3	0.4	0.5
Compensation of employees	4.0	0.9	2.5	3.3
Labor productivity	0.4	0.6	2.3	2.5
Unit labor costs	3.4	0.5	0.2	0.8
Unit labor costs (real)	1.8	-2.2	-1.6	-0.9
<i>Per capita</i>				
Negotiated wages	2.2	1.5	2.5	2.9
Gross wages and salaries	-0.1	3.1	3.6	3.6
Wage drift	-2.3	1.6	1.0	0.7
Compensation of employees	0.4	3.0	3.2	3.6
Labor productivity	-3.8	2.6	3.1	2.8
Unit labor costs	4.3	0.3	0.1	0.8
Unit labor costs (real)	2.7	-2.4	-1.7	-0.9

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

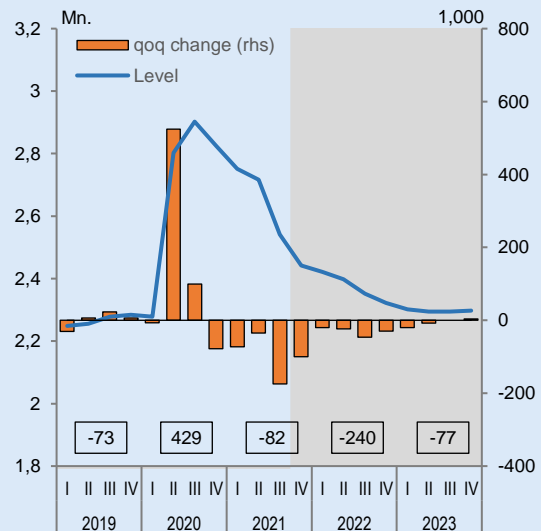
Figure 7.1:
Employment



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.

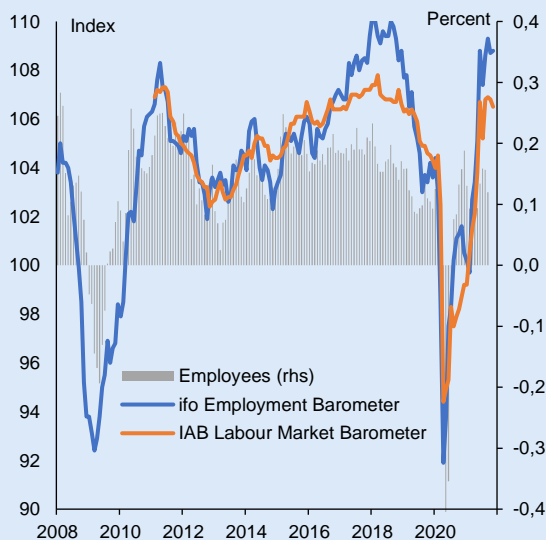
Figure 7.2:
Unemployment,



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.

Abbildung 7.3:
Labor market indicators



Monthly data; employees subject to social security: m-o-m change (three-month average), seasonally adjusted. ifo Employment Barometer: rebased to 2015=105. IAB Labour Market Barometer: 90=very bad outlook, 110=very good outlook.

Source: Federal Employment Agency, *Seasonally-Adjusted Time Series*; ifo Institute; Institute for Employment Research (IAB); Kiel Institute calculations.

Table 7.1:
Employment (1,000 persons)

	2019	2020	2021	2022	2023
Hours worked (domestic concept, mn. hours)	62,539	59,454	60,638	61,633	62,132
Persons in employment (domestic concept)	45,268	44,898	44,878	45,264	45,499
Self-employed	4,151	4,038	3,930	3,939	3,972
Employees (domestic concept)	41,117	40,860	40,948	41,325	41,527
Employees subject to social security contributions	33,518	33,579	33,890	34,265	34,505
Minijobs	4,579	4,290	4,108	4,132	4,094
Net commuting	143	95	114	131	145
Persons in employment (national concept)	45,126	44,803	44,764	45,133	45,355
Employees (national concept)	40,974	40,765	40,834	41,194	41,382
Unemployed persons (registered)	2,267	2,695	2,613	2,374	2,297
Unemployment rate (registered; percent)	5.0	5.9	5.7	5.2	5.0
Unemployment rate (ILO; percent)	3.0	3.6	3.2	2.9	2.7

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

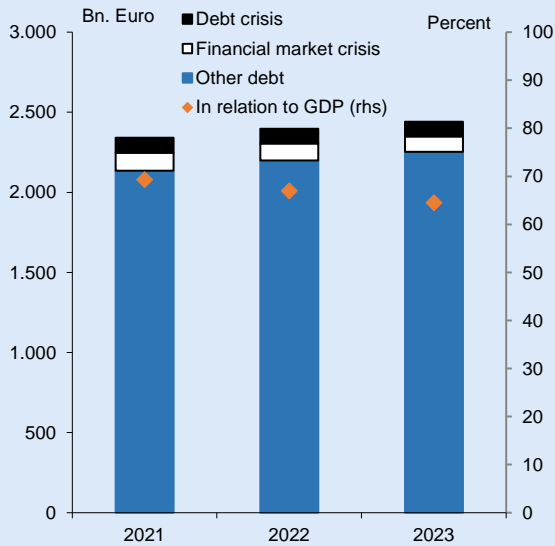
Revenues and expenditures of the general government (bn. Euro)

	2019	2020	2021	2022	2023
Revenues	1,613.8	1,566.9	1,682.7	1,761.8	1,845.2
→relative to GDP	46.5	46.5	47.4	47.0	46.8
Taxes	827.4	773.4	858.4	903.7	948.2
→relative to GDP	23.8	23.0	24.2	24.1	24.1
Social contributions	598.2	607.9	629.1	653.6	685.8
→relative to GDP	17.2	18.1	17.7	17.4	17.4
Other revenues	188.2	185.5	195.2	204.4	211.2
→relative to GDP	5.4	5.5	5.5	5.5	5.4
Expenditures	1,562.7	1,712.1	1,817.5	1,829.6	1,899.6
→relative to GDP	45.0	50.8	51.2	48.8	48.2
Compensation of employees	272.7	284.1	291.8	301.9	309.2
Intermediate consumption	184.2	209.8	233.9	230.7	232.5
Social transfers in kind	299.9	310.1	329.2	342.9	356.2
Gross capital formation	83.7	90.9	89.1	95.5	104.1
Capital transfers	27.3	21.0	20.8	20.0	19.2
Social benefits	546.6	595.1	611.8	619.4	642.9
Subsidies	30.9	71.3	97.4	59.7	65.3
Other current transfers	74.7	82.5	89.3	94.0	96.8
Other capital transfers and investment grants	43.5	48.0	54.9	66.2	74.2
Other expenditures	-1.3	-1.2	-1.3	-1.3	-1.3
Net lending/ net borrowing	51.1	-145.2	-134.8	-67.9	-54.3
→relative to GDP	1.5	-4.3	-3.8	-1.8	-1.4
Revenues of central, state, and local governments	1,047.0	1,001.9	1,092.6	1,142.6	1,194.8
Net of transfers from social security funds	1,045.9	1,000.7	1,091.4	1,141.5	1,193.6
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	1,197.8	1,198.3	1,237.8
Net of transfers to social security funds	882.3	970.7	1,040.6	1,043.9	1,087.4
Transfers to social security funds	122.8	141.4	157.2	154.4	150.4
Net lending/ net borrowing central, state, and local governments	42.0	-110.2	-105.2	-55.7	-43.0
Revenues of social security funds	690.7	717.8	754.2	774.9	802.0
Net of transfers from central, state, and local governments	568.0	576.3	597.0	620.5	651.6
Expenditures of social security funds	681.6	752.8	783.3	787.2	813.3
Net of transfers to central, state, and local governments	680.5	751.6	782.2	786.0	812.2
Net lending/ net borrowing social security funds	9.1	-35.0	-29.1	-12.2	-11.3

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

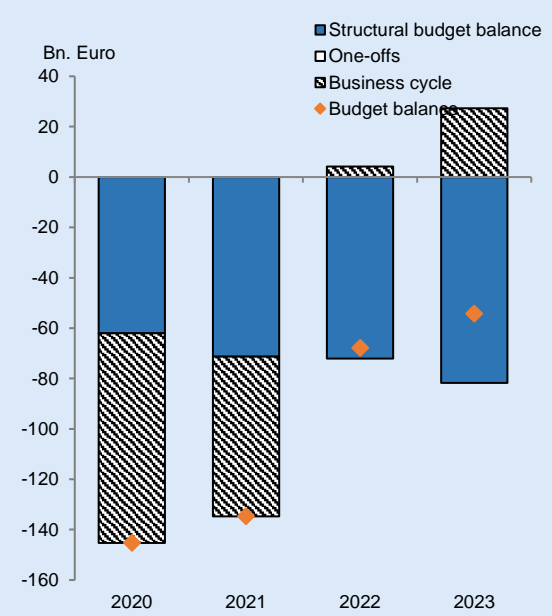


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

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

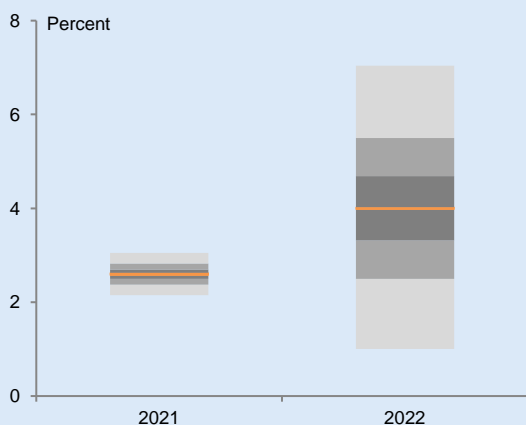
Table 9.1:
Quarterly data

	2020				2021				2022			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	-1.9	2.0	1.7	-0.3	-0.3	2.0	2.7	1.0	0.5	0.3	0.3	0.3
Private consumption	-5.3	3.8	6.2	-1.2	-1.8	3.0	4.0	1.0	0.2	0.2	0.2	0.2
Government consumption	-1.0	4.6	-2.2	0.1	-0.1	-0.1	-0.2	0.1	0.3	0.4	0.3	0.4
Machinery and equipment	-0.3	0.4	-3.7	0.5	2.5	5.0	5.0	3.5	2.0	0.8	0.8	0.8
Constructions	0.1	1.8	-2.3	1.4	0.9	1.4	1.3	1.1	0.8	0.7	0.7	0.7
Other investment	-2.7	1.0	0.9	1.0	1.5	2.0	2.0	1.5	1.0	1.0	1.0	1.0
Change in inventories	2.0	-0.5	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	-1.0	2.8	2.0	-0.4	-0.6	2.2	2.7	0.9	0.5	0.3	0.3	0.3
Exports	1.3	0.6	-1.0	1.3	1.6	2.8	2.9	1.6	1.1	1.0	0.9	0.9
Imports	4.1	2.2	-0.6	1.3	1.0	3.1	2.8	1.6	1.2	1.1	1.0	1.0
Net exports	-1.0	-0.6	-0.2	0.1	0.3	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Employment (domestic)	44,704	44,799	44,971	45,042	45,052	45,172	45,363	45,473	45,534	45,535	45,495	45,436
Unemployment (registered)	2,752	2,717	2,542	2,442	2,422	2,398	2,352	2,322	2,302	2,294	2,294	2,298

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.

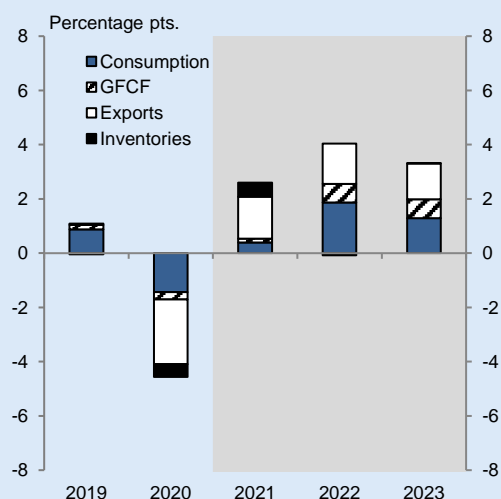
Figure 9.1:
Forecast intervals for GDP growth



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 fourth 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 2020–2023

	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	4.0	3.3
Private consumption expenditure		-5.9	0.3	5.7	3.7
Public consumption expenditure		3.5	3.0	-0.2	0.8
Total fixed investment		-2.2	1.9	5.0	5.3
Machinery and equipment		-11.2	3.4	8.2	9.2
Construction		2.5	1.6	2.9	3.2
Other equipment		1.0	0.3	6.0	5.2
Changes in stocks		-0.9	1.0	-0.2	0.0
Domestic Demand		-4.0	2.4	4.0	3.4
Exports		-9.3	7.5	6.0	5.6
Imports		-8.6	7.8	6.3	6.0
Net exports		-0.8	0.3	0.2	0.0
Use of gross domestic product at current prices					
GDP	3,367.6	-3.0	5.5	5.9	5.1
Private consumption expenditure	1,708.0	-5.3	3.3	8.5	5.6
Public consumption expenditure	754.6	7.0	6.5	2.3	2.4
Total fixed investment	735.9	-0.9	6.8	8.8	7.7
Machinery and equipment	216.9	-10.0	5.2	10.0	10.1
Construction	380.1	4.4	9.6	8.4	6.6
Other equipment	138.9	1.4	1.5	7.9	7.3
Changes in stocks (€ bn.)		-23.7	13.9	9.4	9.6
Domestic Demand	3,174.8	-3.1	6.1	6.9	5.4
Exports	1,462.1	-9.7	13.4	12.1	6.9
Imports	1,269.3	-10.8	16.1	15.2	7.6
Net exports (€ bn.)		192.8	183.6	160.2	158.9
Gross national income	3,461.3	-3.5	5.6	5.8	5.1
Deflators					
GDP		1.6	2.8	1.8	1.7
Private consumption expenditure		0.6	3.0	2.6	1.8
Public consumption expenditure		3.3	3.4	2.4	1.6
Investment in machinery and equipment		1.3	1.7	1.7	0.8
Investment in construction		1.9	7.9	5.3	3.3
Investment in other equipment		0.3	1.2	1.8	2.0
Exports		-0.4	5.4	5.8	1.2
Imports		-2.4	7.7	8.4	1.5
<i>Addendum: Consumer prices</i>		0.5	3.1	3.1	2.0
Income distribution					
Net national income (factor costs)	2,528.2	-3.1	5.5	4.3	5.1
Compensation of employees	1,852.1	-0.2	3.1	4.1	4.1
in percent of national income		73.3	71.6	71.5	70.8
Property and entrepreneurial income	676.1	-10.2	11.9	4.8	7.8
Disposable income	1,975.2	0.8	2.3	4.0	3.5
Savings rate		16.1	15.2	11.5	9.7
Wages and salaries	1,514.1	-0.7	3.2	4.4	4.1
Wage per hour		3.4	1.1	2.9	3.4
Unit labor costs		3.4	0.5	0.2	0.8
Productivity per hour		0.4	0.6	2.3	2.5
Unemployment (1,000)		2,695.4	2,613.0	2,373.5	2,297.0
Rate of unemployment (percent)		5.9	5.7	5.2	5.0
Total employment (1,000)		44,898.1	44,878.4	45,264.3	45,499.3
Public sector budget balance					
Public sector budget balance (€ bn.)		-145.2	-134.8	-67.9	-54.3
Public sector budget balance (in percent of GDP)		-4.3	-3.8	-1.8	-1.4
Public debts (in percent)		69.1	69.3	66.7	64.3
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.					
<i>Source: Federal Statistical Office, Fachserie 18, Series 1.2; shaded: Kiel Institute forecast.</i>					

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	0.9	0.5	0.8	0.9	0.9	0.1
Hours worked	2.0	1.6	0.8	3.2	0.2	2.0	-0.3
Hours worked by person in employment	2.1	0.8	0.3	2.3	-0.7	1.1	-0.5
Labor productivity ¹	0.6	2.3	2.5	0.2	4.3	3.3	1.7
Gross domestic product, price-adjusted	2.6	4.0	3.3	3.4	4.5	5.4	1.3

2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 568.3	2 735.9	2 862.3	1 313.9	1 422.0	1 400.4	1 461.9
Private households ²	1 764.7	1 914.0	2 020.5	909.9	1 004.1	990.7	1 029.8
Government	803.6	821.9	841.9	404.0	417.9	409.7	432.2
Gross fixed capital formation	785.7	854.7	920.7	403.3	451.4	442.3	478.4
Machinery and equipment	228.1	251.0	276.3	114.4	136.6	131.8	144.5
Construction	416.6	451.6	481.2	217.7	233.9	233.5	247.8
Other products	141.0	152.1	163.2	71.2	80.9	77.1	86.1
Changes in inventories ¹	13.9	9.4	9.6	6.9	2.5	6.3	3.3
Domestic expenditure	3 367.9	3 600.0	3 792.7	1 724.1	1 875.9	1 849.1	1 943.6
Net exports	183.6	160.2	158.9	92.5	67.7	94.2	64.7
Exports	1 657.3	1 858.6	1 986.3	905.0	953.6	987.2	999.1
Imports	1 473.7	1 698.4	1 827.5	812.5	885.9	893.1	934.4
Gross domestic product	3 551.5	3 760.2	3 951.6	1 816.6	1 943.6	1 943.3	2 008.3

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

Consumption expenditure	4.3	6.5	4.6	7.9	5.3	6.6	2.8
Private households ²	3.3	8.5	5.6	9.6	7.5	8.9	2.6
Government	6.5	2.3	2.4	4.3	0.4	1.4	3.4
Gross fixed capital formation	6.8	8.8	7.7	8.0	9.5	9.7	6.0
Machinery and equipment	5.2	10.0	10.1	4.2	15.5	15.2	5.8
Construction	9.6	8.4	6.6	10.6	6.4	7.2	5.9
Other products	1.5	7.9	7.3	6.6	9.1	8.3	6.5
Domestic expenditure	6.1	6.9	5.4	7.7	6.2	7.3	3.6
Exports	13.4	12.1	6.9	12.3	12.0	9.1	4.8
Imports	16.1	15.2	7.6	16.7	14.0	9.9	5.5
Gross domestic product	5.5	5.9	5.1	6.2	5.6	7.0	3.3

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

a) EUR bn.

Consumption expenditure	2 320.7	2 411.0	2 479.7	1 166.5	1 244.5	1 223.0	1 256.6
Private households ²	1 620.2	1 713.2	1 777.2	819.9	893.3	876.3	900.9
Government	698.7	697.6	703.0	346.0	351.5	347.0	356.0
Gross fixed capital formation	676.8	710.7	748.3	336.2	374.4	361.4	386.8
Machinery and equipment	214.9	232.6	254.0	106.0	126.6	121.1	132.9
Construction	329.6	339.2	349.9	164.1	175.1	171.2	178.7
Other products	130.7	138.6	145.8	65.3	73.3	69.3	76.5
Domestic expenditure	3 012.5	3 132.1	3 239.6	1 511.8	1 620.3	1 593.7	1 645.9
Exports	1 538.9	1 631.6	1 722.4	796.8	834.8	858.9	863.5
Imports	1 377.9	1 464.8	1 553.1	704.4	760.5	761.5	791.6
Gross domestic product	3 177.3	3 303.0	3 412.7	1 605.8	1 697.3	1 693.0	1 719.7

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

Consumption expenditure	1.1	3.9	2.8	4.5	3.3	4.8	1.0
Private households ²	0.3	5.7	3.7	6.6	4.9	6.9	0.9
Government	3.0	-0.2	0.8	-0.1	-0.3	0.3	1.3
Gross fixed capital formation	1.9	5.0	5.3	2.4	7.4	7.5	3.3
Machinery and equipment	3.4	8.2	9.2	2.1	14.0	14.2	4.9
Construction	1.6	2.9	3.2	1.7	4.0	4.3	2.1
Other products	0.3	6.0	5.2	4.9	7.0	6.2	4.4
Domestic expenditure	2.4	4.0	3.4	3.7	4.3	5.4	1.6
Exports	7.5	6.0	5.6	3.7	8.4	7.8	3.4
Imports	7.8	6.3	6.0	4.4	8.1	8.1	4.1
Gross domestic product	2.6	4.0	3.3	3.4	4.5	5.4	1.3

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	3.0	2.6	1.8	2.8	2.4	1.9	1.7
Government consumption	3.4	2.4	1.6	4.3	0.7	1.1	2.1
Gross fixed capital formation	4.8	3.6	2.3	5.5	1.9	2.0	2.6
Machinery and equipment	1.7	1.7	0.8	2.1	1.3	0.8	0.8
Construction	7.9	5.3	3.3	8.8	2.3	2.8	3.8
Exports	5.4	5.8	1.2	8.4	3.3	1.2	1.3
Imports	7.7	8.4	1.5	11.7	5.4	1.7	1.3
Gross domestic product	2.8	1.8	1.7	2.8	1.0	1.5	2.0

5. National income

a) EUR bn.

Primary income of private households ²	2 444.1	2 553.8	2 653.0	1 247.2	1 306.6	1 306.8	1 346.2
Employers social contributions	347.1	356.3	370.8	172.6	183.7	181.1	189.7
Gross wages and salaries	1 563.0	1 632.1	1 698.5	773.4	858.7	814.7	883.8
Other primary income ⁴	534.0	565.4	583.8	301.2	264.2	311.1	272.7
Primary income of other sectors	517.4	587.2	646.3	252.4	334.8	302.9	343.4
Net national income	2 961.5	3 141.0	3 299.3	1 499.7	1 641.4	1 609.7	1 689.6
Consumption of fixed capital	692.2	723.6	760.5	358.5	365.1	376.0	384.5
Gross national income	3 653.7	3 864.6	4 059.8	1 858.1	2 006.5	1 985.8	2 074.1
memorandum item:							
Net national income (factor costs)	2 666.5	2 781.1	2 923.8	1 329.6	1 451.6	1 431.0	1 492.8
Property and entrepreneurial income	756.4	792.7	854.6	383.6	409.2	435.3	419.3
Compensation of employees	1 910.1	1 988.4	2 069.3	946.0	1 042.4	995.7	1 073.5

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

Primary income of private households ²	2.7	4.5	3.9	5.1	3.9	4.8	3.0
Employers social contributions	2.7	2.6	4.1	2.0	3.3	4.9	3.3
Gross wages and salaries	3.2	4.4	4.1	4.7	4.2	5.3	2.9
... per employee	3.1	3.6	3.6	3.9	3.3	4.4	2.9
Other primary income ⁴	1.3	5.9	3.3	8.0	3.5	3.3	3.2
Primary income of other sectors	22.2	13.5	10.1	11.7	14.9	20.0	2.6
Net national income	5.7	6.1	5.0	6.1	6.0	7.3	2.9
Consumption of fixed capital	5.1	4.5	5.1	5.6	3.5	4.9	5.3
Gross national income	5.6	5.8	5.1	6.0	5.5	6.9	3.4
memorandum item:							
Net national income (factor costs)	5.5	4.3	5.1	3.7	4.9	7.6	2.8
Property and entrepreneurial income	11.9	4.8	7.8	2.5	7.1	13.5	2.5
Compensation of employees	3.1	4.1	4.1	4.2	4.1	5.3	3.0

6. Disposable income of private households ²

a) EUR bn.

Mass income	1 593.8	1 645.8	1 705.6	786.7	859.1	823.4	882.2
Net wages and salaries	1 058.8	1 106.4	1 147.2	519.5	586.8	547.1	600.2
Social benefits other than social transfers in kind	676.6	684.7	708.7	339.3	345.4	351.0	357.8
less: Levies on social benefits, taxes on consumption	141.7	145.3	150.4	72.1	73.1	74.6	75.8
Other primary income ⁴	534.0	565.4	583.8	301.2	264.2	311.1	272.7
Other transfers received (net) ⁵	- 107.7	- 110.6	- 115.7	- 49.9	- 60.7	- 52.4	- 63.3
Disposable income	2 020.1	2 100.6	2 173.6	1 038.0	1 062.6	1 082.0	1 091.6
Change in pension entitlements	60.8	61.7	62.6	30.0	31.8	30.4	32.2
Consumption expenditure	1 764.7	1 914.0	2 020.5	909.9	1 004.1	990.7	1 029.8
Saving	316.2	248.3	215.8	158.1	90.2	121.8	94.0
Saving ratio (%) ⁶	15.2	11.5	9.7	14.8	8.2	10.9	8.4

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

Mass income	3.5	3.3	3.6	2.5	3.9	4.7	2.7
Net wages and salaries	3.7	4.5	3.7	4.8	4.2	5.3	2.3
Social benefits other than social transfers in kind	2.7	1.2	3.5	- 1.0	3.4	3.4	3.6
less: Levies on social benefits, taxes on consumption	1.0	2.5	3.5	1.1	4.0	3.4	3.6
Other primary income ⁴	1.3	5.9	3.3	8.0	3.5	3.3	3.2
Disposable income	2.3	4.0	3.5	4.0	3.9	4.2	2.7
Consumption expenditure	3.3	8.5	5.6	9.6	7.5	8.9	2.6
Saving	- 3.3	- 21.5	- 13.1	- 19.7	- 24.4	- 23.0	4.2

National Accounts (cont.)

Forecast period: 2021 to 2023

	2021	2022	2023	2022		2023	
				H1	H2	H1	H2

7. Revenue and expenditure by general government ¹

a) EUR bn.

Revenue							
Taxes	858.4	903.7	948.2	438.8	464.9	460.3	487.9
Social contributions	629.1	653.6	685.8	316.2	337.5	334.9	350.9
Property income	14.7	14.3	13.8	7.9	6.4	7.6	6.2
Other current transfers	31.7	33.2	34.6	16.7	16.5	17.4	17.3
Capital transfers	16.8	17.9	19.1	8.1	9.8	8.7	10.4
Sales	131.9	138.8	143.5	64.9	73.9	67.2	76.3
Other subsidies	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	1 682.7	1 761.8	1 845.2	852.6	909.1	896.1	949.1
Expenditure							
Intermediate consumption ²	563.7	574.2	589.2	278.6	295.6	283.3	305.9
Compensation of employees	291.8	301.9	309.2	147.8	154.2	149.8	159.4
Property income (interest)	20.8	20.0	19.2	11.2	8.8	10.8	8.4
Subsidies	97.4	59.7	65.3	31.6	28.1	33.2	32.1
Social benefits	611.8	619.4	642.9	306.8	312.6	318.2	324.7
Other current transfers	89.3	94.0	96.8	45.5	48.5	46.8	49.9
Capital transfers	54.9	66.2	74.2	26.1	40.1	30.0	44.2
Gross capital formation	89.1	95.5	104.1	40.4	55.1	44.3	59.8
Net acquisitions of non-produced non-financial assets	- 1.3	- 1.3	- 1.3	- 0.7	- 0.6	- 0.7	- 0.6
Total	1 817.5	1 829.6	1 899.6	887.3	942.4	915.7	983.9
Net lending	- 134.8	- 67.9	- 54.3	- 34.7	- 33.2	- 19.6	- 34.8

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

Revenue							
Taxes	11.0	5.3	4.9	6.4	4.3	4.9	4.9
Social contributions	3.5	3.9	4.9	3.3	4.4	5.9	4.0
Property income	- 25.5	- 2.8	- 3.5	- 3.0	- 2.6	- 3.7	- 3.4
Other current transfers	30.8	4.7	4.3	4.6	4.9	4.2	4.4
Capital transfers	8.0	6.8	6.6	7.4	6.4	7.2	6.2
Sales	4.8	5.3	3.4	6.4	4.3	3.5	3.3
Other subsidies	6.2	0.0	0.0	0.0	0.0	0.0	0.0
Total	7.4	4.7	4.7	5.1	4.3	5.1	4.4
Expenditure							
Intermediate consumption ²	8.3	1.9	2.6	3.9	0.0	1.7	3.5
Compensation of employees	2.7	3.5	2.4	4.7	2.3	1.4	3.4
Property income (interest)	- 0.5	- 3.8	- 4.0	- 3.4	- 4.3	- 3.6	- 4.5
Subsidies	36.7	- 38.7	9.4	- 41.4	- 35.4	5.1	14.2
Social benefits	2.8	1.2	3.8	- 1.2	3.7	3.7	3.9
Other current transfers	8.2	5.2	3.0	5.3	5.2	3.0	3.0
Capital transfers	14.5	20.6	12.0	29.5	15.5	15.0	10.1
Gross capital formation	- 2.1	7.2	9.0	3.2	10.4	9.6	8.5
Net acquisitions of non-produced non-financial assets	12.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	6.2	0.7	3.8	0.0	1.3	3.2	4.4

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 payed 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.