

Ademmer, Martin et al.

Article

German Economy Autumn 2020 - Quick rebound, but Pandemic weighs on full recovery

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KIEL INSTITUTE **ECONOMIC OUTLOOK**

German Economy Autumn 2020

Finalized September 16, 2020



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No. 71 (2020 | Q3)

*Martin Ademmer, Jens Boysen-Hogrefe, Salomon Fiedler,
Dominik Groll, Nils Jannsen, Stefan Kooths, and Saskia Mösle*

QUICK REBOUND, BUT PANDEMIC WEIGHS ON FULL RECOVERY

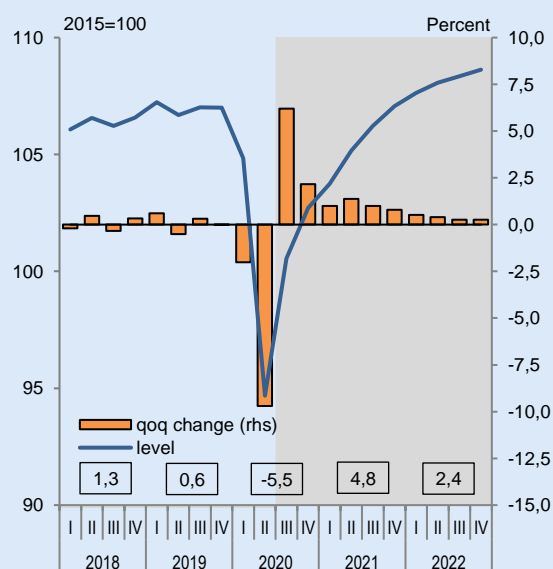
Martin Ademmer, Jens Boysen-Hogrefe, Salomon Fiedler, Dominik Groll, Nils Jannsen, Stefan Kooths, and Saskia Möhle

The German economy is recovering from the COVID-19 shock. With the successful containment of the coronavirus, output has quickly rebounded from its trough in April and has made up a good part of the losses within a few months. This strong momentum essentially reflects the normalization of economic activity after the lockdown. Further recovery is likely to be much more gradual. Some industries are still noticeably affected by the pandemic. Foreign business is also likely to suffer for some time, particularly as infections have recently threatened to flare up again in many places and important export destinations have been hit hard by the crisis. Against this backdrop, companies will be cautious with investments for the time being, especially because there is still uncertainty about how long the pandemic will weigh on business activity. By contrast, private consumer spending is likely to recover more rapidly as private households will normalize their savings rate, which had swollen to record levels during the lockdown, and as labor incomes will be stimulated by the recovery at the labor market. For the current year, we expect GDP to decline by 5.5 percent. The upward revision of 1.3 percentage points compared to our summer forecast is mainly due to the fact that the rebound began earlier than expected. Accordingly, we have reduced our forecast for GDP growth in 2021 to 4.8 percent (summer forecast: 6.3 percent). With a further increase in GDP of 2.4 percent in 2022, capacity utilization is by and large expected to return to normal levels. The fiscal balance will slide into a significant deficit of 5 percent in 2020. The debt-to-GDP ratio increases from almost 60 percent to more than 70 percent. Despite the economic recovery, public budgets will be in deficit throughout the entire forecast period.

Foreign trade faces a gradual recovery after partially bouncing back from the COVID-19 shock.

After already having decreased considerably in the first quarter, foreign trade literally collapsed in the second quarter due to global production and demand shortfalls as well as disruptions in cross-border supply chains. Imports fell somewhat less sharply than exports. Trade in capital goods was hit particularly hard – especially cars and car parts saw a steep decline – while trade in consumer goods was relatively robust. The decline was broad-based; only nominal goods trade with China saw an increase compared with the previous quarter as a result of China's earlier recovery. Services trade has also been heavily affected because of restrictions on cross-border tourism and business travel. While imports proved to be more robust than exports when it comes to merchandise trade, they are more heavily affected in services trade due to their greater reliance on travel (share of travel in service imports: 25 percent, in service exports: 12 percent as of 2019). In the second half of the year, exports will recover noticeably but will only make up for part of the decline. Even though they have been on the rise again

Figure 1:
Gross domestic product, 2018 - 2022



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.

since May, they were still around 10 percent lower in July than before the pandemic. Leading indicators now signal that the recovery will lose speed going forward. We expect exports to reach their pre-crisis level only in the course of 2022, as subdued global investment activity and a loss of price competitiveness due to the appreciation of the euro weigh on their recovery. All in all, we project exports to fall by 11.5 percent this year, followed by increases of 7.7 percent and 5.2 percent in 2021 and 2022, respectively. Imports are catching up somewhat faster than exports reflecting that several important trading partners are more heavily affected by the pandemic than Germany. However, they will likely be hampered by travel restrictions for some time to come. We expect imports to rise by 7.7 percent and 6.2 percent in 2021 and 2022, respectively, after decreasing by 8.4 percent this year. As a result of the sharp drop in oil prices, the terms of trade improve significantly this year but will deteriorate in the course of the economic recovery due to the associated increase in prices for raw materials.

Private consumption is set to rebound as the pandemic has levelled off. Private households cut consumption by 10.9 percent in the second quarter. The main reasons were the lockdown measures taken by the government as well as voluntary measures taken by private households to avoid infections. While the savings rate surged to above 20 percent – about 10 percentage points higher than half a year ago – disposable income remained roughly constant. Stable disposable income was a result of the marked increase in social benefits (e.g., due to short-time work allowance) that compensated for the decline in wages and salaries. With the easing of the lockdown measures and declining infection rates private households will normalize their savings rate; we expect the savings rate to reach its pre-crisis levels in the second half of 2021. Moreover, disposable income will increase strongly due to the recovery of the labor market. Against this backdrop, private consumption will recover in the upcoming quarters. Monthly indicators, such as retail sales, show that a strong recovery has started already in May, which will lead to a particular strong increase in private consumption in the third quarter. The recovery is supported by the temporary reduction of the value-added tax in the second half of the year which increases purchasing power. Moreover, we expect the tax cut to lead to a shift of consumption from the first half of 2021 into the second half of this year. Overall, private consumption will decline by 7.1 percent this year and increase by 5.5 percent in 2021.

The recovery of business investment takes time. Business investment slumped by more than 10 percent in the second quarter. Investment in machinery and equipment fell particularly strongly by about 20 percent. Monthly indicators, such as domestic new orders as well as imports of investment goods, show that a rebound started in May. We expect business investment to increase by about 5 percent in the third quarter. However, going forward the recovery will lose pace, as economic uncertainty will remain high for the time being. Moreover, the slump in sales has negatively affected the equity basis of many firms making it more difficult for them to finance investment projects. Overall, we expect business investment to decline by 8.6 percent this year and to increase by 6 percent in 2021. Construction investment will remain by and large robust as the direct negative impact of the pandemic seems to be limited. The decline in the second quarter was also the result of the strong increase in the first quarter of the year, when particularly favorable weather conditions stimulated production. Leading indicators point to another decline in the third quarter. However, construction investment is set to increase again in the fourth quarter as public investment will continue to expand with high rates and residential investment to be stimulated by the very favorable financing conditions. Against this background, construction investment will grow by 2.1 percent this year and by 2.9 percent in 2022.

Both energy prices and the temporary value-added tax (VAT) cut suggest that consumer price inflation will be low this year but make up for it in 2021. In July and August, year-on-year consumer price inflation came to a standstill. The main reason for this likely is the temporary reduction of the VAT. We estimate an effect of -1.3 percentage points on inflation rates in the second half of 2020, which means inflation for the whole year would be 0.7 percentage points lower. This effect corresponds to a pass-through of about three-quarters of the tax cut to consumers. The energy component was also still weak despite the recent increase in the oil price. However, core inflation without the volatile energy component still came in at 0.7 percent despite the VAT cut. One reason for price increases could be

additional costs due to measures to protect against infections. At the beginning of next year, the reverse VAT effect will increase inflation. In addition, the climate package should then exert noticeable upward pressure on energy prices; we expect an effect of around 0.5 percentage points on the inflation rate in 2021. Overall, we expect consumer prices to increase by 0.6 percent this year before inflation increases noticeably to 2.6 percent next year. In 2022, inflation should normalize and come in at around 1.5 percent.

Monthly earnings will fall for the first time in 50 years. Negotiated earnings are slowing down noticeably. This year's negotiations were dominated by the outbreak of the COVID-19 pandemic. However, many collective agreements are still valid from the period before the crisis, so that overall negotiated wages and salaries are expected to increase at a rate of 2.0 percent in the current year, compared with 2.9 percent last year. The deep recession is likely to dominate the collective bargaining negotiations for some time to come. We therefore expect a further decline in the increase in collective earnings to 1.6 percent in the coming year, followed by a slightly higher increase (1.9 percent) in 2022. Actual monthly earnings will fall for the first time in 50 years. In the second quarter, effectively-paid gross wages and salaries per employee fell by 5.1 percent compared with the previous quarter (seasonally adjusted), the sharpest fall since the Federal Statistical Office began compiling quarterly national accounts in 1970. This reflects the record increase in short-time work and the resulting loss of earnings for employees. With the reduction of short-time work as a result of the economic recovery, effective earnings will rise again from the current quarter onwards. Nonetheless, the deep slump in the second quarter will result in a decline for the year as a whole (-1.4 percent). The recovery in effective earnings will not be visible in the annual results until next year, when they will rise by 3.9 percent. For 2022, when the recovery in earnings will be well advanced, we expect a lower increase of 2.5 percent. Real unit labor costs are rising sharply in the current year. Since labor productivity per employee has fallen more than labor costs per employee, as is common in recessions, unit labor costs are rising sharply in the current year, and also significantly faster than domestic prices (measured by the GDP deflator). After already above-average increases in the previous two years, real unit labor costs will reach a level last recorded in the early 2000s. In the coming year, however, they will quickly decline as labor productivity recovers and will probably be close to their historical average. As a result, and in contrast to the past 15 years, labor costs will no longer have a positive impact on the demand for labor by firms.

Employment has probably reached its lowest point. Total employment recorded a record decline in the second quarter. The number of people in employment fell by 609,000 (1.4 percent) from the first to the second quarter. As with actual earnings, this is the highest seasonally-adjusted quarterly decline since the start of quarterly national accounts in 1970. In July (the latest available figure), the number of people in employment was an estimated 810,000 (1.8 percent) below the level that would have been expected without the recession. The group of employees most affected by this development were those in Minijobs, who are not entitled to short-time work benefits due to the lack of social security contributions. In April, their number was estimated to be 280,000 (6.1 percent) below the hypothetical level without the recession. In May and June, however, the number increased again somewhat. So far, almost 550,000 jobs (1.6 percent) subject to social security contributions have been lost. Although no significant recovery has taken place by June, the nadir has probably already been reached. Although short-time work was still at an exceptionally high level recently, it has already been significantly reduced. According to preliminary, projected figures from the Federal Employment Agency, 6 million employees, i.e. almost 18 percent of all employees subject to social security, received short-time work benefits in April. Neither in absolute nor in relative terms have higher figures ever been recorded. The number of short-time workers fell to 5.4 million in June. At the same time, the average loss of working hours per short-time worker fell from 49 to 39 percent. Calculated in full-time equivalents, short-time work has thus already been reduced by almost 30 percent. According to estimates by the ifo Institute based on company surveys, the number of short-time workers continued to fall noticeably in July (-16.4 percent) and August (-17.9 percent). Assuming that the loss of working hours has not risen again, short-time work until August would thus have been cut at least by half compared to its record level in April. We therefore expect the average working time per employee to rise sharply in the current quarter by 4.4 percent (seasonally

and calendar-adjusted), following the slump in the first and second quarters by 8.7 percent overall. We expect the number of short-time workers to fall from an annual average of 3.1 million in 2020 to 460,000 in 2021. Employment has probably reached its lowest point. Contrary to our summer forecast, the number of employed persons did not decline any further, with the number of those employed in Minijobs even increasing slightly. Employment should rise in the coming months and quarters in the course of the economic recovery. Towards the end of the forecast period, however, the rise in employment is likely to come to a standstill, as the potential labor force is growing at an increasingly slower pace and will in the medium term start its decline set in motion by aging. Unemployment will fall again as the recovery progresses. However, we do not expect unemployment to fully return to its pre-crisis level, as the low level of unemployment was, to a certain extent, due to the high capacity utilization in the overall economy in recent years. All in all, we expect the official unemployment rate to fall from 5.9 percent (2020) to 5.8 percent (2021) and 5.6 percent (2022), compared with 5.0 percent last year.

Fiscal policy takes a very expansionary stance during the crisis. Early on in the crisis, fiscal policy set expansionary impulses by handing out subsidies and grants to small companies, as well as by extending the short-time work scheme. In June, a stimulus package including a temporary cut in VAT rates was announced together with various measures aimed at a transformation of the economy in the coming years. In sum, we estimate that the fiscal stimulus in 2020 will total about 100 bn Euros. In 2021 several of the measures will no longer apply. However, relative to 2019 there will still be a substantial impulse of roughly 80 bn Euros. Finally, for 2022 we expect additional restrictive measures in response to the high deficits in the previous years, but compared to 2019 the fiscal stance will still be expansionary.

Fiscal policy and automatic stabilizers drive the deficit. In 2020, expenditures for short-time work, for public health care, and subsidies for companies increase rapidly, while tax revenues plunge mainly due to the severe drop in economic activity but also because of temporary tax code changes. However, social security contributions do not decrease since the short-time work scheme includes payments from the federal employment agency to the social insurance institutions. In sum, we expect a deficit of nearly 170 bn Euros (5.1 percent relative to GDP).

Public budgets stay in deficit for a while. The business cycle upswing is accompanied by increasing revenues. Expenditure for short-time work drops sharply. However, several measures of the stimulus packages will lead to additional expenditures in 2021 and 2022. Further, the upswing will be insufficient to reach the former growth path. Deficits will continue to be substantial, at 3.1 percent of GDP in 2021 and 2.1 percent in 2022, respectively.

Table 1:
Key indicators, 2019–2022

	2019	2020	2021	2022
Gross domestic product (GDP), price-adjusted	0.6	-5.5	4.8	2.4
Gross domestic product, deflator	2.2	2.1	1.4	1.1
Consumer prices	1.4	0.6	2.6	1.5
Labor productivity (per hour worked)	-0.0	-0.6	0.2	1.7
Employment (1,000 persons)	45,268	44,899	45,165	45,409
Unemployment rate (percent)	5.0	5.9	5.8	5.6
in relation to nominal GDP				
Public sector net lending	1.5	-5.1	-3.1	-2.1
Gross public debt	59.7	71.2	69.6	69.1
Current account balance	7.1	6.1	5.6	5.3

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.

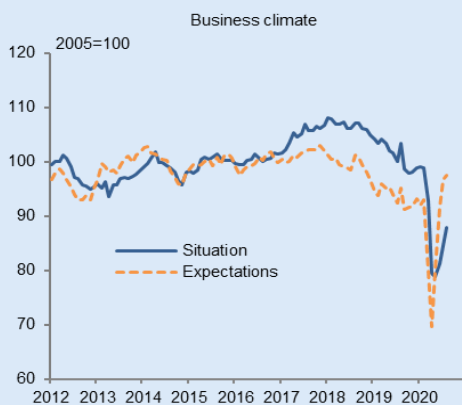
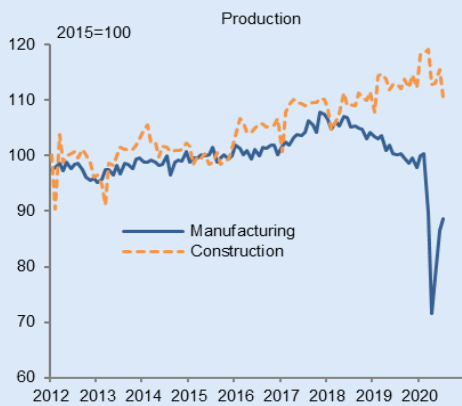
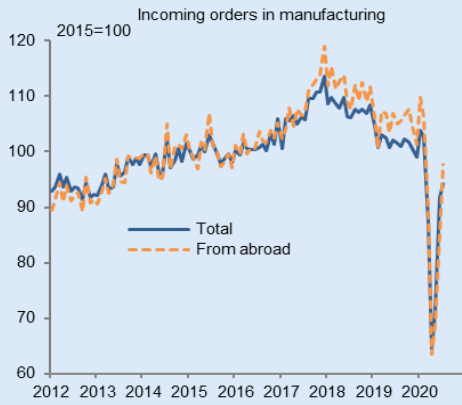
Data annex

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1. Leading indicators

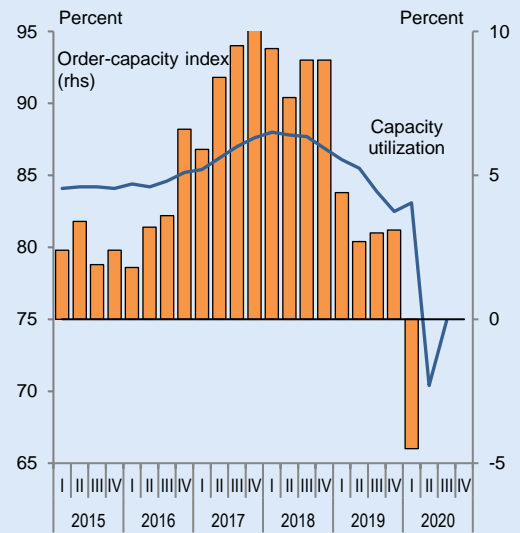
Figure 1.1:
Leading indicators, 2012–2020



Monthly data, seasonally adjusted.

Source: Deutsche Bundesbank, *Saisonbereinigte Wirtschaftszahlen*; ifo, *Konjunkturperspektiven*; Kiel Institute calculations.

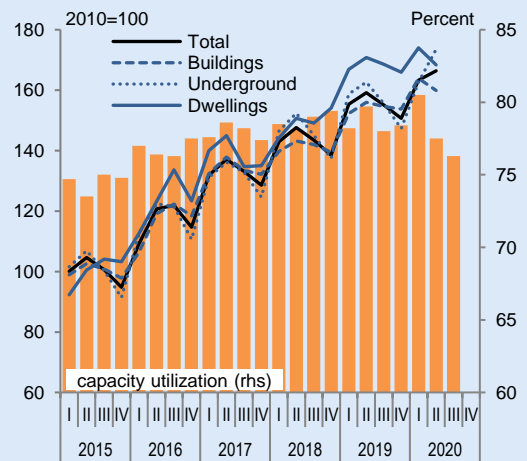
Figure 1.2:
Capacity utilization, 2015–2020



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, 2015 - 2020

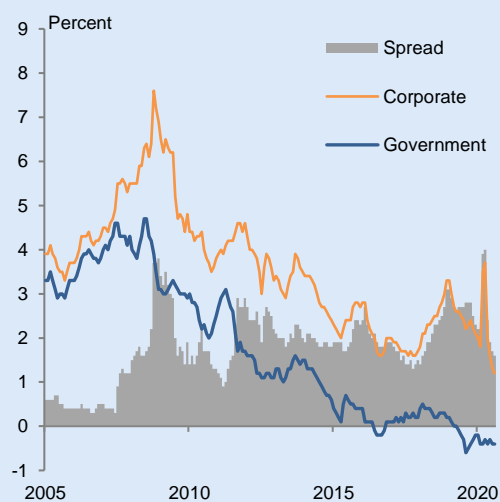


Quarterly data. Capacity utilization (deviation from normal level): seasonally adjusted; order stocks: price, seasonally and working-day adjusted.

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

2. Monetary conditions and prices

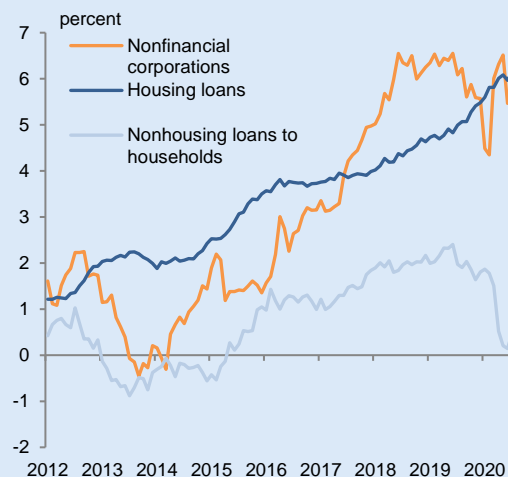
Figure 2.1:
Bond yields, 2005–2020



Monthly data, average maturities above three years.

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

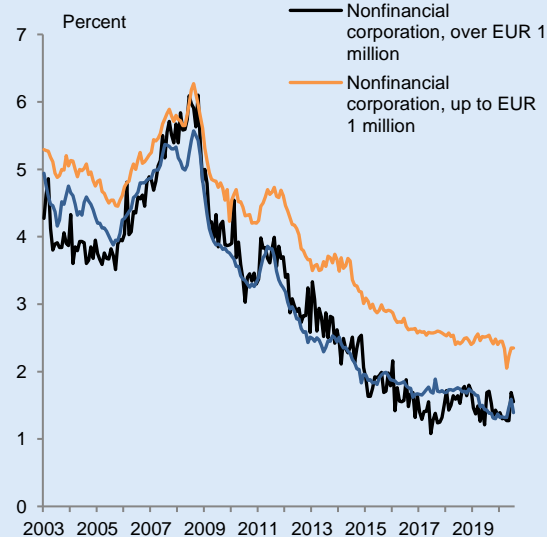
Figure 2.3:
Credit growth, 2012–2020



Change compared to one year ago; Monthly data.

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

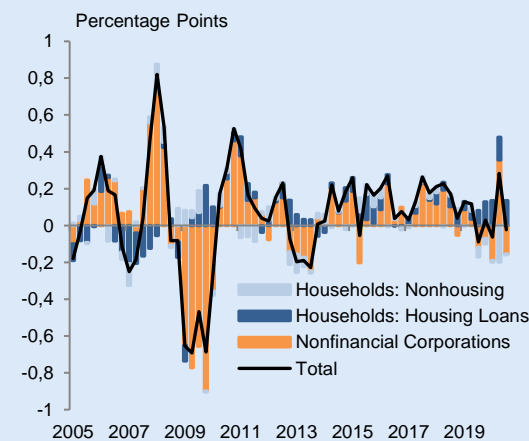
Figure 2.2:
Loan interest, 2003–2020



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

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

Figure 2.4:
Credit impulse, 2005–2020

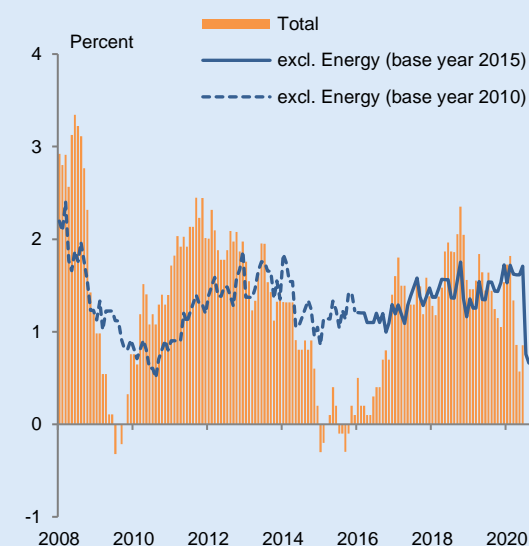


Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009), *Credit and economic recovery*, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam.

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.

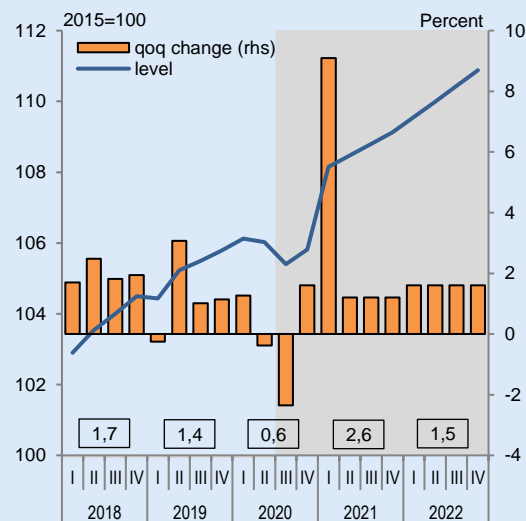
Figure 2.5:
Consumer prices, 2008–2020



Monthly data; year-on-year change. After the introduction of the new base year 2015, the Statistisches Bundesamt has not yet published all new time series for the period before 2015. We therefore fall back on the old data for that period of time.

Source: Deutsche Bundesbank, *Time series databases*; Kiel Institute calculations.

Figure 2.6:
Consumer price index, 2018–2022



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

Source: Federal Statistical Office, *Fachserie 17, Reihe 7*; German Federal Bank, *seasonally adjusted economic data*; shaded: Kiel Institute forecast.

Table 2.1:
Projections and assumptions on the international environment, 2019–2022

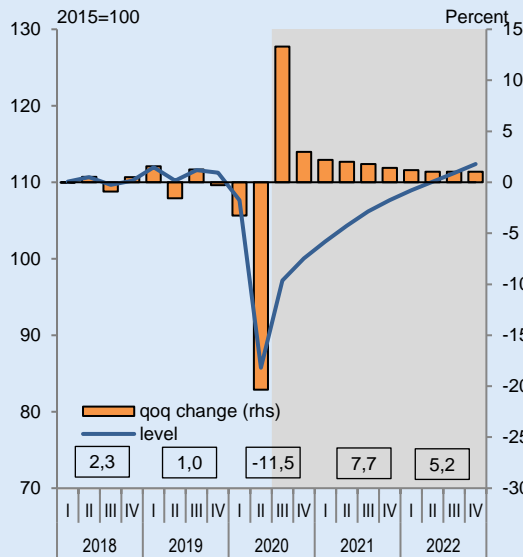
	2019				2020				2021				2022			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long-term interest rate	0.10	-0.10	-0.50	-0.40	-0.40	-0.40	-0.50	-0.50	-0.50	-0.40	-0.40	-0.40	-0.40	-0.40	-0.30	-0.30
US-dollar/euro exchange rate	1.14	1.12	1.11	1.11	1.10	1.10	1.18	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Price competitiveness	89.7	89.7	89.5	88.9	88.9	90.5	91.7	92.5	92.4	92.2	92.0	91.8	91.7	91.5	91.4	91.3
Export markets	0.8	0.5	0.5	0.4	-2.8	-9.2	6.8	2.5	1.3	1.1	0.9	0.8	0.7	0.7	0.6	0.6
Oil price	63.2	68.9	61.9	63.4	50.5	29.4	44.9	47.9	50.1	52.4	54.5	55.0	55.3	55.6	55.9	56.1

ECB key interest rate: main refinancing operations; long-term interest rate on 9–10 year bonds; price competitiveness: against 60 trading partners, based on the deflators of total sales, 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*; own calculations; shaded: Kiel Institute forecast or assumption.

3. External trade

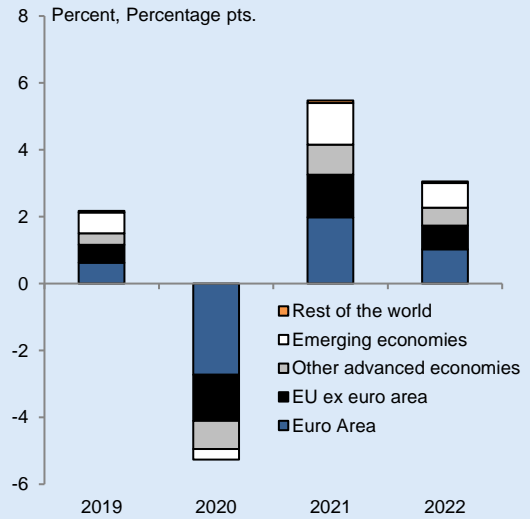
Figure 3.1:
Exports, 2018–2022



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

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

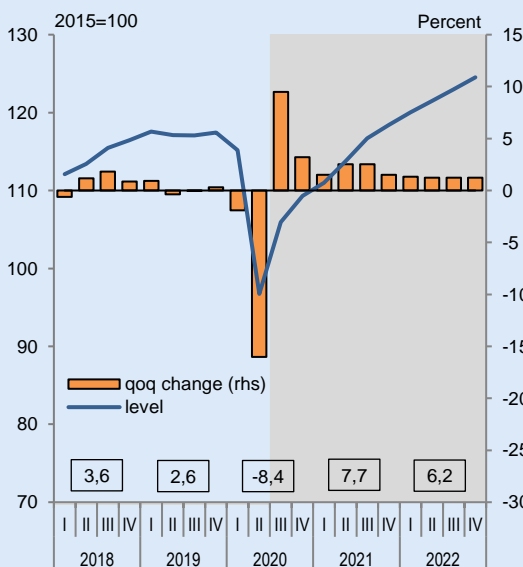
Figure 3.3:
German export markets, 2019–2022



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.

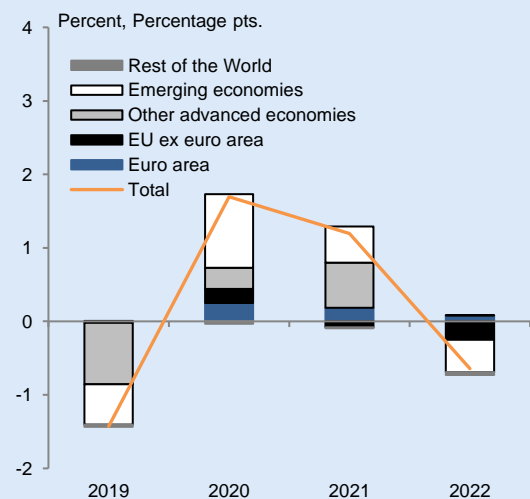
Figure 3.2:
Imports, 2018–2022



Quarterly data; price, seasonally and calendar adjusted, qoqchange (rhs). Annual data: price adjusted, yoy change in percent (boxes).

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

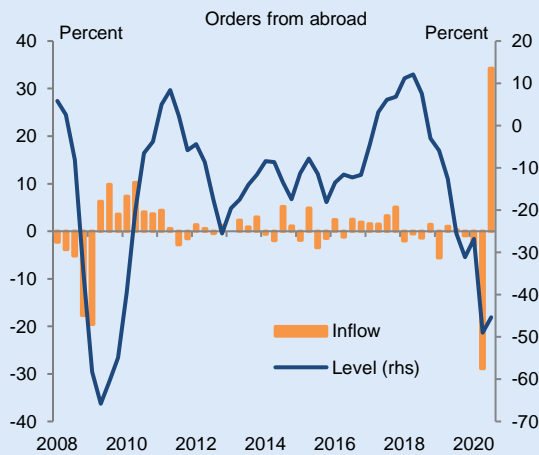
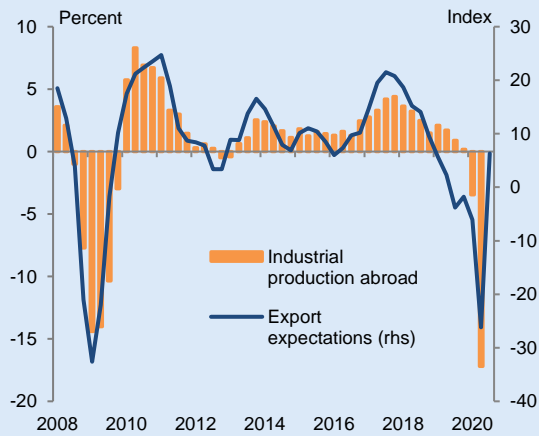
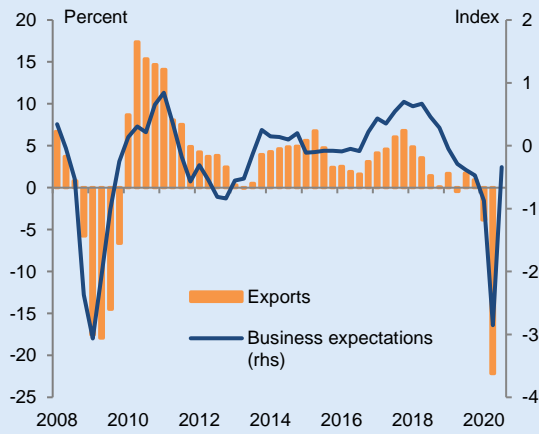
Figure 3.4:
Germany's price competitiveness, 2019–2022



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.

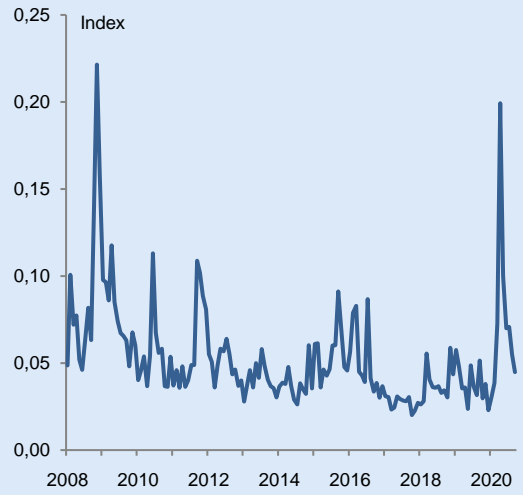
Figure 3.5:
Export indicators, 2008–2020



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, Saisonbereinigte Wirtschaftszahlen; Thomson Reuters Datastream; ifo, Konjunkturperspektiven; Kiel Institute calculations.

Figure 3.6:
Uncertainty in German export markets, 2008–2020

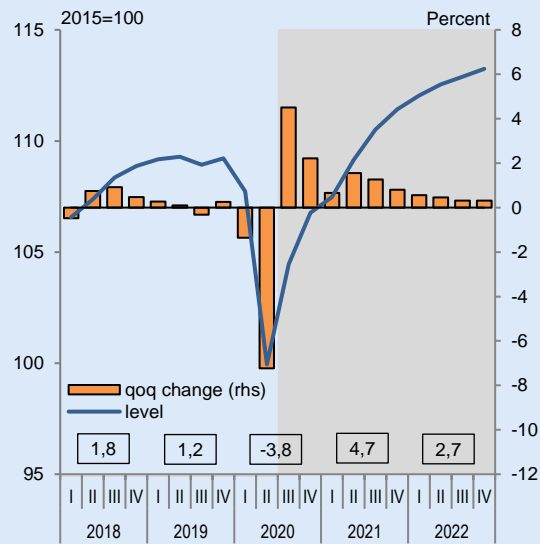


Monthly data; realized stock market volatilities based on daily stock price indices in 46 countries, weighted by shares of German exports. Last value: 14.09.2020

Source: National sources; Kiel Institute calculations.

4. Domestic expenditure

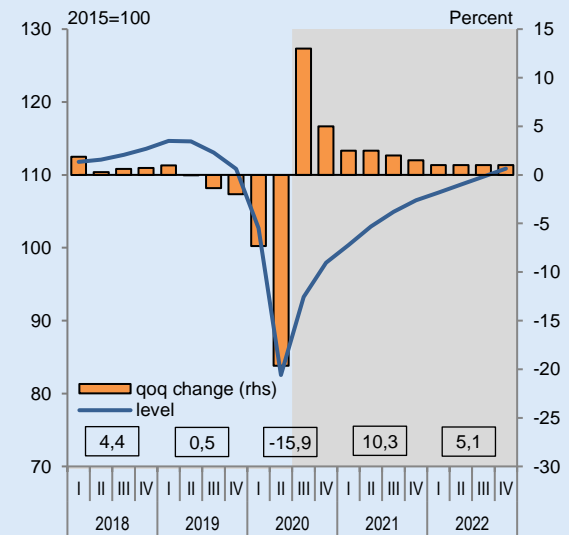
Figure 4.1:
Domestic expenditure, 2018–2022



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

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

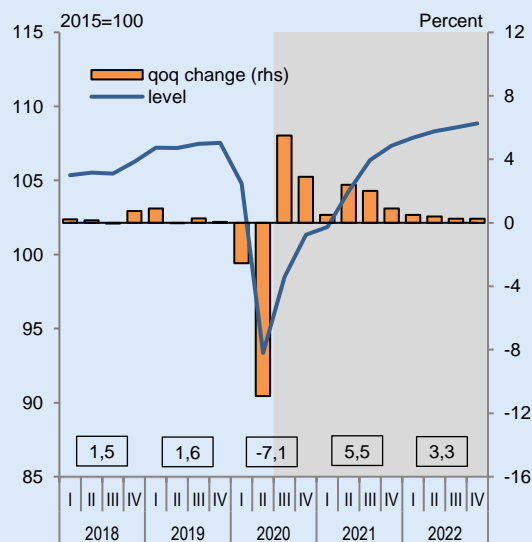
Figure 4.3:
M&E investments, 2018–2022



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

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

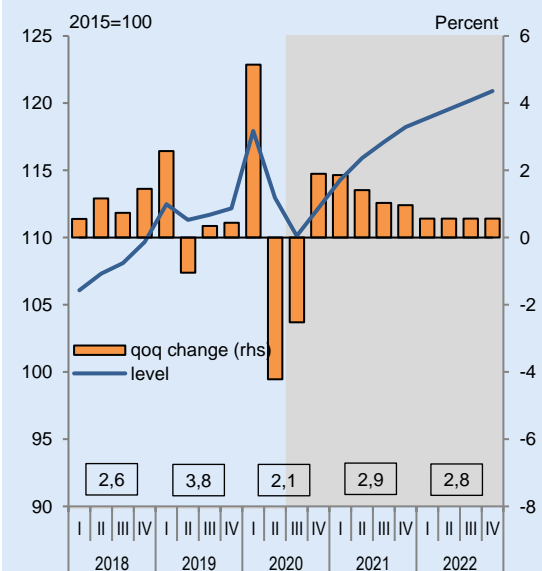
Figure 4.2:
Private consumption, 2018–2022



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.

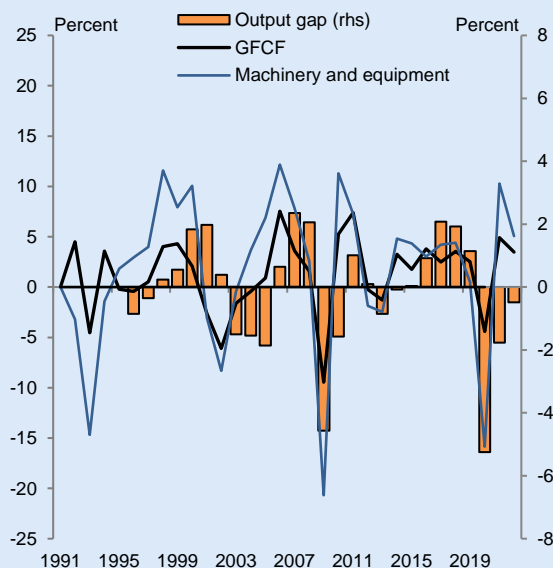
Figure 4.4:
Construction, 2018–2022



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

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

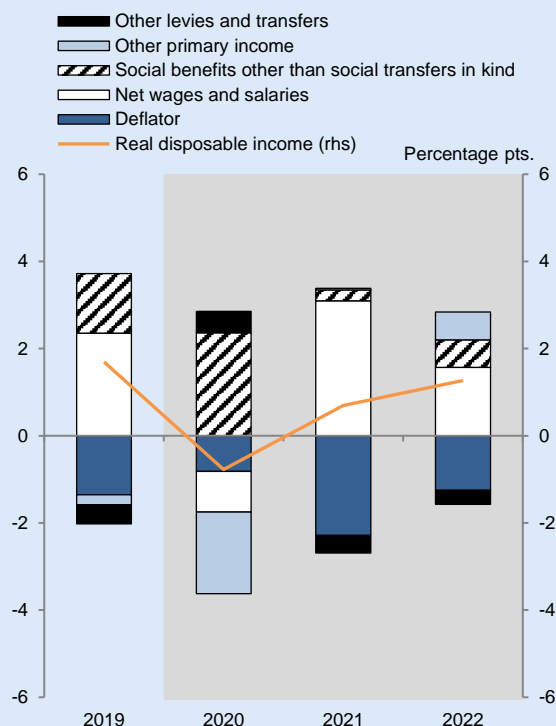
Figure 4.5:
Investment cycles, 1991–2022



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

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

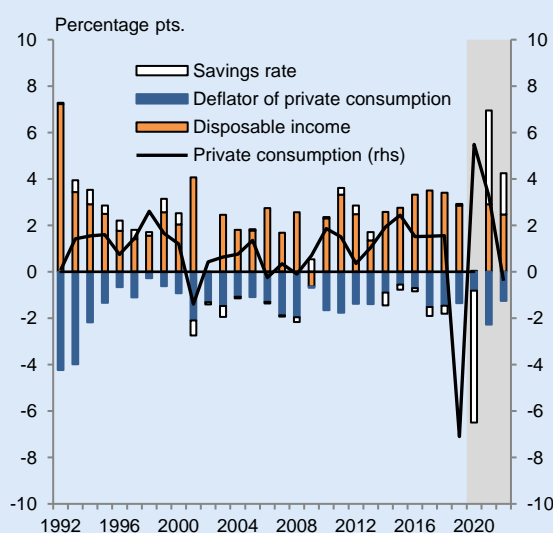
Figure 4.7:
Contributions to changes in real disposable income, 2018–2021



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

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

Figure 4.6:
Contributions to change in private consumption, 1992–2020



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

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

Table 4.1:
Gross fixed capital formation, 2019–2022

	2019	2020	2021	2022
Total	2.5	-4.4	4.9	3.5
Corporate investment	1.5	-8.6	6.0	3.7
Machinery and equipment	0.5	-15.9	10.3	5.1
Construction (non-dwellings)	2.4	0.2	1.7	2.0
Other	2.7	-2.2	2.7	2.8
Dwellings	4.0	2.0	2.6	3.4
Public (non-dwellings)	6.0	7.0	6.6	2.1
<i>Memorandum item:</i>				
Construction	3.8	2.1	2.9	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, 2020–2021

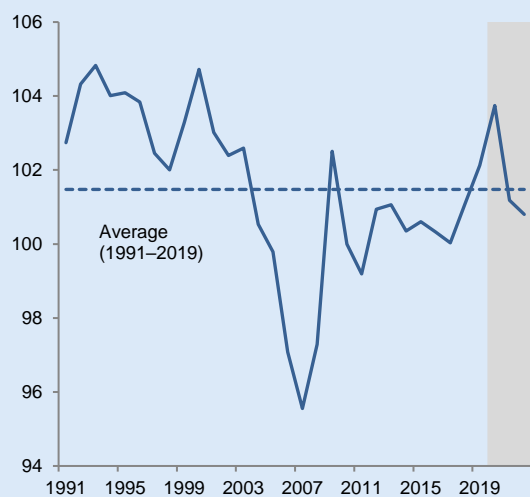
	2020				2021	
	I	II	III	IV	I	II
	<i>Seasonally and calendar adjusted, quarter-on-quarter change in percent</i>					
Gross domestic product	-2.0	-9.7	6.2	2.2	1.0	1.4
Gross value added	-1.7	-10.0	6.2	2.2	1.0	1.4
Industry excluding construction	-4.1	-14.8	11.7	3.4	1.8	1.9
Manufacturing	-4.0	-16.1	11.9	3.5	1.8	1.9
Construction	4.6	-3.8	-0.6	2.2	0.9	0.8
Trade, transport, accommodation, and food services	-1.4	-12.4	7.6	3.3	0.8	1.5
Information and communication	-2.2	-2.7	2.0	0.7	0.6	0.8
Financial and insurance services	-0.4	0.0	0.2	0.1	0.1	0.1
Real estate activities	-0.2	-1.0	0.9	0.7	0.4	0.5
Business services	-2.2	-14.3	6.9	2.8	1.7	2.1
Public services, education, health	-1.2	-8.8	5.2	1.1	0.3	1.2
Other services	-2.9	-17.6	5.8	3.0	1.9	2.4

Quarterly data, volumes.

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

6. Wages

Figure 6.1:
Real unit labor costs, 1991–2022



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, 2019–2022

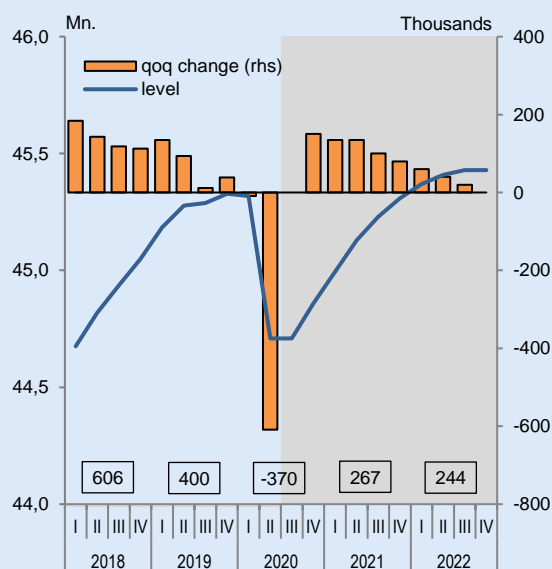
	2019	2020	2021	2022
<i>Per hour</i>				
Negotiated wages	3.0	2.0	1.6	1.9
Gross wages and salaries	3.2	2.9	-0.6	2.3
Wage drift	0.2	0.9	-2.2	0.4
Compensation of employees	3.3	3.3	-1.0	2.2
Labor productivity	0.0	-0.6	0.2	1.7
Unit labor costs	3.3	4.0	-1.2	0.5
Unit labor costs (real)	1.1	1.8	-2.5	-0.6
<i>Per capita</i>				
Negotiated wages	2.9	2.0	1.6	1.9
Gross wages and salaries	2.9	-1.4	3.9	2.5
Wage drift	0.0	-3.4	2.3	0.6
Compensation of employees	3.0	-0.8	3.3	2.5
Labor productivity	-0.3	-4.7	4.2	1.8
Unit labor costs	3.4	4.1	-0.9	0.6
Unit labor costs (real)	1.1	2.0	-2.3	-0.5

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: IfW forecast.

7. Employment

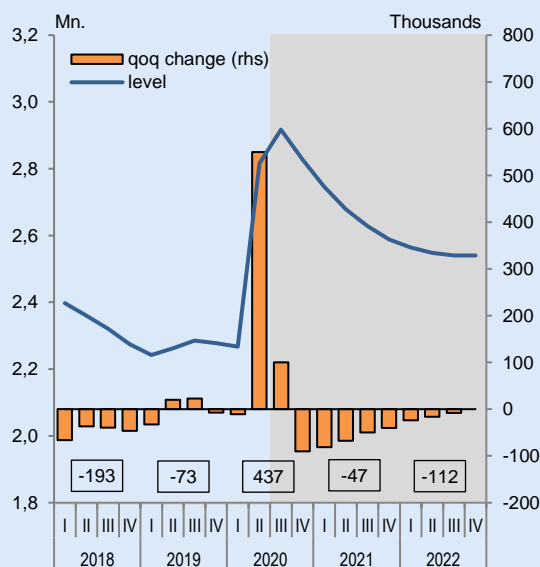
Figure 7.1:
Employment, 2018–2022



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

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

Figure 7.2:
Unemployment, 2018–2022



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

Source: Federal Employment Agency, *Monthly Bulletin*; shaded: Kiel Institute forecast.

Table 7.1:
Employment, 2018–2022 (1,000 persons)

	2018	2019	2020	2021	2022
Hours worked (domestic concept, mn. hours)	62,229	62,596	59,515	62,291	62,723
Persons in employment (domestic concept)	44,868	45,268	44,899	45,165	45,409
Self-employed	4,224	4,152	4,020	3,944	3,921
Employees (domestic concept)	40,645	41,117	40,879	41,222	41,488
Employees subject to social security contributions	32,992	33,537	33,606	34,024	34,293
Minijobs	4,668	4,575	4,274	4,193	4,190
Net commuting	141	146	126	145	145
Persons in employment (national concept)	44,727	45,123	44,773	45,020	45,264
Employees (national concept)	40,503	40,971	40,753	41,076	41,342
Unemployed persons (registered)	2,340	2,267	2,704	2,658	2,546
Unemployment rate (registered; percent)	5.2	5.0	5.9	5.8	5.6
Unemployment rate (ILO; percent)	3.2	2.9	3.9	3.8	3.5

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 Institute forecast.

8. Public finances

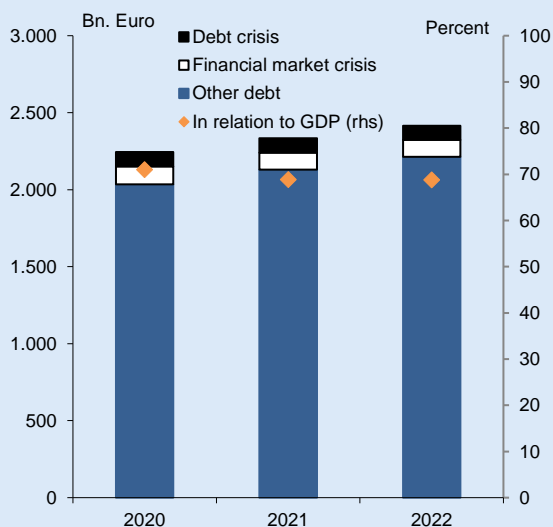
Table 8.1:
Revenues and expenditures of the general government, 2018–2022 (bn. euro)

	2018	2019	2020	2021	2022
Revenues	1,553.8	1,610.6	1,542.4	1,616.1	1,692.0
→relative to GDP	46.3	46.7	46.3	45.4	45.9
Taxes	801.2	827.1	756.3	809.2	856.2
→relative to GDP	23.9	24.0	22.7	22.7	23.2
Social contributions	572.6	597.5	600.8	619.4	642.9
→relative to GDP	17.1	17.3	18.0	17.4	17.4
Other revenues	180.1	186.0	185.3	187.4	192.9
→relative to GDP	5.4	5.4	5.6	5.3	5.2
Expenditures	1,492.2	1,558.1	1,710.7	1,726.8	1,770.4
→relative to GDP	44.5	45.2	51.3	48.5	48.0
Compensation of employees	259.6	271.5	283.0	290.4	296.1
Intermediate consumption	173.4	181.9	208.9	205.9	208.2
Social transfers in kind	285.7	300.4	305.9	323.4	334.5
Gross capital formation	78.7	86.2	91.7	98.8	103.5
Capital transfers	31.1	27.5	23.4	20.6	17.8
Social benefits	520.3	545.4	591.7	596.2	608.5
Subsidies	29.5	30.8	76.6	50.6	56.0
Other current transfers	70.8	74.2	83.1	92.6	95.7
Other capital transfers and investment grants	44.1	41.0	47.2	49.0	50.8
Other expenditures	-1.3	-1.2	-1.1	-1.1	-1.1
Net lending/ net borrowing	61.6	52.5	-168.3	-110.7	-78.4
→relative to GDP	1.8	1.5	-5.1	-3.1	-2.1
Revenues of central, state, and local governments	1,011.4	1,044.5	973.8	1,029.5	1,082.9
Net of transfers from social security funds	1,010.3	1,043.4	972.6	1,028.4	1,081.7
Transfers from social security funds	1.1	1.1	1.1	1.2	1.2
Expenditures of central, state, and local governments	965.8	1,000.7	1,108.7	1,111.9	1,147.3
Net of transfers to social security funds	847.5	878.0	966.1	978.3	1,009.3
Transfers to social security funds	118.3	122.7	142.6	133.6	138.0
Net lending/ net borrowing central, state, and local governments	45.6	43.8	-134.9	-82.4	-64.4
Revenues of social security funds	661.9	690.0	712.4	721.3	748.4
Net of transfers from central, state, and local governments	543.6	567.2	569.8	587.7	610.4
Expenditures of social security funds	645.9	681.3	745.8	749.6	762.3
Net of transfers to central, state, and local governments	644.7	680.2	744.6	748.5	761.2
Net lending/ net borrowing social security funds	16.0	8.7	-33.4	-28.3	-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, 2020–2022

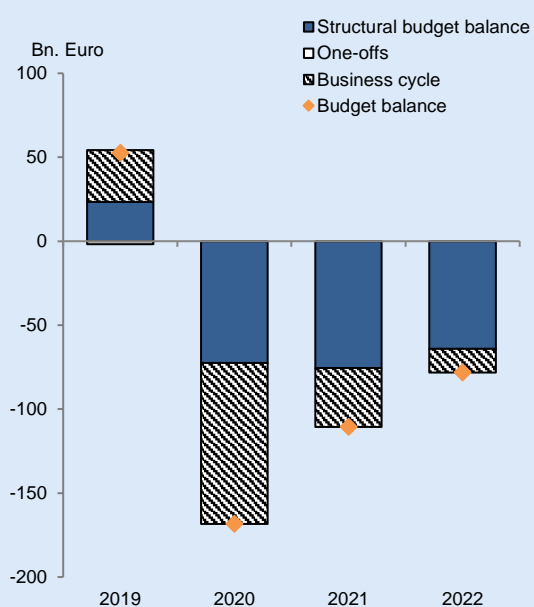


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

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, 2019–2022



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

9. GDP and its components

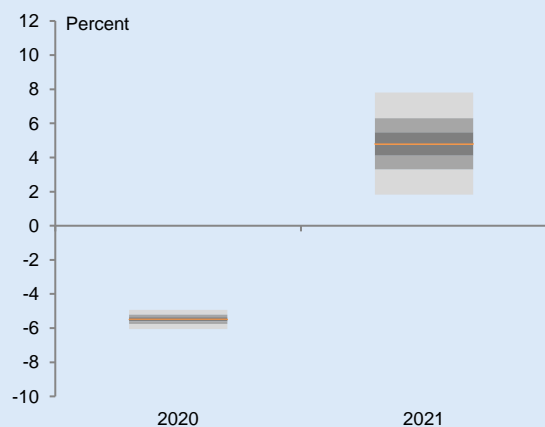
Table 9.1:
Quarterly data, 2019–2021

	2020				2021				2022			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	-2.0	-9.7	6.2	2.2	1.0	1.4	1.0	0.8	0.5	0.4	0.3	0.3
Private consumption	-2.5	-10.9	5.5	2.9	0.5	2.4	2.0	0.9	0.5	0.4	0.3	0.3
Government consumption	0.6	1.5	1.8	0.0	0.0	-0.3	-0.3	0.4	0.4	0.3	0.2	0.1
Machinery and equipment	-7.3	-19.6	13.0	5.0	2.5	2.5	2.0	1.5	1.0	1.0	1.0	1.0
Constructions	5.1	-4.2	-2.5	1.9	1.9	1.4	1.0	1.0	0.6	0.6	0.6	0.6
Other investment	-4.1	0.6	0.0	0.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5
Change in inventories	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	-1.4	-7.2	4.5	2.2	0.7	1.6	1.3	0.8	0.6	0.5	0.3	0.3
Exports	-3.3	-20.3	13.3	3.0	2.2	2.0	1.8	1.4	1.2	1.0	1.0	1.0
Imports	-1.9	-16.0	9.5	3.2	1.5	2.5	2.5	1.5	1.3	1.2	1.2	1.2
Net exports	-0.7	-2.9	2.0	0.1	0.4	-0.1	-0.2	0.0	0.0	0.0	0.0	0.0
Employment (domestic)	45,318	44,709	44,709	44,859	44,994	45,129	45,229	45,309	45,369	45,409	45,429	45,429
Unemployment (registered)	2,267	2,817	2,917	2,827	2,746	2,679	2,629	2,589	2,565	2,549	2,541	2,541

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.

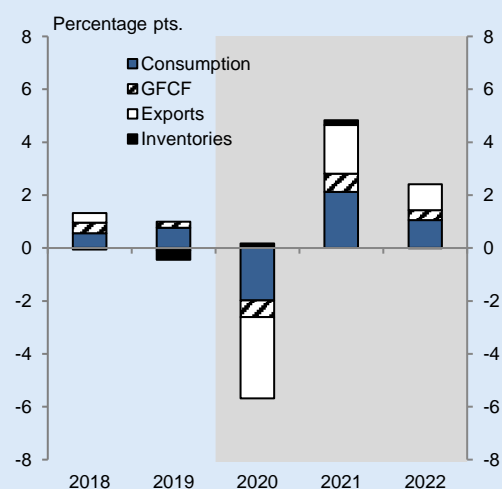
Figure 9.1:
Forecast intervals for GDP growth, 2020–2021



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 1994–2019.

Source: Own calculations.

Figure 9.2:
Import adjusted expenditure-side contributions to GDP growth, 2018–2022



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, 2019–2022

	2019	2019	2020	2021	2022
	Bn. Euro	Change over previous year in percent			
Use of gross domestic product, price-adjusted					
GDP		0.6	-5.5	4.8	2.4
Private consumption expenditure		1.6	-7.1	5.5	3.3
Public consumption expenditure		2.7	3.7	0.9	0.8
Total fixed investment		2.5	-4.4	4.9	3.5
Machinery and equipment		0.5	-15.9	10.3	5.1
Construction		3.8	2.1	2.9	2.8
Other equipment		2.7	-2.2	2.7	2.8
Changes in stocks		-0.7	0.3	0.4	0.0
Domestic Demand		1.2	-3.8	4.7	2.7
Exports		1.0	-11.5	7.7	5.2
Imports		2.6	-8.4	7.7	6.2
Net exports		-0.6	-1.9	0.4	-0.2
Use of gross domestic product at current prices					
GDP	3,449.1	2.8	-3.5	6.3	3.5
Private consumption expenditure	1,806.9	2.9	-6.3	7.9	4.6
Public consumption expenditure	704.5	5.1	6.4	2.6	2.1
Total fixed investment	748.0	5.5	-2.8	6.3	5.0
Machinery and equipment	240.1	1.9	-15.2	10.4	5.8
Construction	373.7	8.4	4.6	5.1	5.0
Other equipment	134.2	4.2	-1.1	3.4	3.6
Changes in stocks (€ bn.)		-10.3	-5.1	7.4	6.3
Domestic Demand	3,249.1	3.1	-2.6	6.7	4.1
Exports	1,617.4	1.7	-11.8	8.7	6.3
Imports	1,417.4	2.4	-10.8	10.0	8.0
Net exports (€ bn.)		199.9	163.1	161.1	148.7
Gross national income	3,542.8	2.8	-3.7	6.1	3.6
Deflators					
GDP		2.2	2.1	1.4	1.1
Private consumption expenditure		1.4	0.8	2.3	1.3
Public consumption expenditure		2.3	2.6	1.6	1.3
Investment in machinery and equipment		1.4	0.7	0.1	0.7
Investment in construction		4.4	2.5	2.2	2.1
Investment in other equipment		1.4	1.1	0.6	0.8
Exports		0.8	-0.4	0.9	1.1
Imports		-0.1	-2.7	2.1	1.6
<i>Addendum: Consumer prices</i>		1.4	0.6	2.6	1.5
Income distribution					
Net national income (factor costs)	2,564.1	2.2	-3.1	4.8	3.6
Compensation of employees	1,845.9	4.2	-1.4	4.1	3.2
in percent of national income		72.0	73.2	72.8	72.5
Property and entrepreneurial income	718.2	-2.7	-7.4	6.7	4.6
Disposable income	1,969.8	3.0	0.0	3.0	2.5
Savings rate		10.9	16.6	12.5	10.7
Wages and salaries	1,521.6	4.1	-2.0	4.8	3.1
Wage per hour		3.2	2.9	-0.6	2.3
Unit labor costs		3.3	4.0	-1.2	0.5
Productivity per hour		0.0	-0.6	0.2	1.7
Unemployment (1,000)		2,266.7	2,704.1	2,657.5	2,545.6
Rate of unemployment (percent)		5.0	5.9	5.8	5.6
Total employment (1,000)		45,268.3	44,898.8	45,165.3	45,409.0
Public sector budget balance					
Public sector budget balance (€ bn.)		52.5	-168.3	-110.7	-78.4
Public sector budget balance (in percent of GDP)		1.5	-5.1	-3.1	-2.1
Public debts (in percent)		59.7	71.2	69.6	69.1

Change in stocks, net exports: Lundberg-component (contribution to GDP growth); employment, unemployment: as defined by the Federal Employment Agency (BA); public debts: in relation to GDP.

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

11. National accounts

National Accounts

Forecast period: 2020 to 2022

	2020	2021	2022	2020		2021	
				H1	H2	H1	H2

1. Production

Change over the same period of the preceding year in %

Persons in employment	- 0.8	0.6	0.5	- 0.5	- 1.2	0.1	1.1
Hours worked	- 4.9	4.7	0.7	- 5.8	- 4.1	4.6	4.7
Hours worked by person in employment	- 4.1	4.0	0.2	- 5.4	- 3.0	4.5	3.6
Labor productivity ¹	- 0.6	0.2	1.7	- 0.8	- 0.4	0.1	0.2
Gross domestic product, price-adjusted	- 5.5	4.8	2.4	- 6.5	- 4.5	4.7	4.9

2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 441.8	2 594.6	2 694.2	1 193.9	1 247.9	1 255.5	1 339.0
Private households ²	1 692.3	1 825.9	1 909.1	831.9	860.3	879.2	946.7
Government	749.5	768.7	785.1	362.0	387.5	376.4	392.3
Gross fixed capital formation	727.2	772.7	811.0	352.0	375.2	366.5	406.2
Machinery and equipment	203.5	224.6	237.6	95.1	108.4	104.7	120.0
Construction	391.0	410.9	431.3	193.2	197.7	196.8	214.1
Other products	132.7	137.2	142.1	63.6	69.1	65.1	72.1
Changes in inventories ³	- 5.1	7.4	6.3	- 9.0	3.9	8.5	- 1.1
Domestic expenditure	3 163.9	3 374.7	3 511.6	1 536.9	1 627.0	1 630.5	1 744.2
Net exports	163.1	161.1	148.7	85.3	77.8	92.0	69.1
Exports	1 427.1	1 551.2	1 649.4	703.9	723.3	755.7	795.5
Imports	1 264.1	1 390.1	1 500.7	618.6	645.5	663.7	726.4
Gross domestic product	3 327.0	3 535.8	3 660.3	1 622.2	1 704.8	1 722.5	1 813.3

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

Consumption expenditure	- 2.8	6.3	3.8	- 2.5	- 3.0	5.2	7.3
Private households ²	- 6.3	7.9	4.6	- 6.0	- 6.7	5.7	10.0
Government	6.4	2.6	2.1	6.3	6.4	4.0	1.2
Gross fixed capital formation	- 2.8	6.3	5.0	- 2.3	- 3.2	4.1	8.3
Machinery and equipment	- 15.2	10.4	5.8	- 17.9	- 12.8	10.0	10.7
Construction	4.6	5.1	5.0	6.8	2.6	1.8	8.3
Other products	- 1.1	3.4	3.6	0.1	- 2.2	2.3	4.3
Domestic expenditure	- 2.6	6.7	4.1	- 3.3	- 2.0	6.1	7.2
Exports	- 11.8	8.7	6.3	- 12.6	- 10.9	7.4	10.0
Imports	- 10.8	10.0	8.0	- 11.9	- 9.8	7.3	12.5
Gross domestic product	- 3.5	6.3	3.5	- 4.2	- 2.9	6.2	6.4

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

a) EUR bn.

Consumption expenditure	2 277.1	2 370.3	2 430.3	1 117.3	1 159.8	1 155.6	1 214.7
Private households ²	1 596.9	1 684.6	1 739.6	783.7	813.3	814.2	870.4
Government	679.0	685.4	690.8	333.1	345.9	341.0	344.4
Gross fixed capital formation	653.9	685.9	709.8	316.3	337.6	326.0	359.9
Machinery and equipment	196.2	216.3	227.2	91.3	104.9	100.7	115.6
Construction	331.5	340.9	350.6	164.0	167.5	163.9	177.1
Other products	123.5	126.9	130.4	59.3	64.2	60.3	66.5
Domestic expenditure	2 933.2	3 070.4	3 153.6	1 432.1	1 501.1	1 493.1	1 577.3
Exports	1 393.4	1 500.4	1 577.7	686.8	706.7	734.0	766.4
Imports	1 275.6	1 373.3	1 458.9	623.0	652.7	660.4	712.9
Gross domestic product	3 054.1	3 201.7	3 278.5	1 497.1	1 556.9	1 567.8	1 633.9

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

Consumption expenditure	- 4.1	4.1	2.5	- 4.4	- 3.8	3.4	4.7
Private households ²	- 7.1	5.5	3.3	- 7.4	- 6.8	3.9	7.0
Government	3.7	0.9	0.8	3.2	4.1	2.4	- 0.4
Gross fixed capital formation	- 4.4	4.9	3.5	- 4.5	- 4.4	3.1	6.6
Machinery and equipment	- 15.9	10.3	5.1	- 19.1	- 12.9	10.3	10.3
Construction	2.1	2.9	2.8	3.6	0.7	- 0.1	5.7
Other products	- 2.2	2.7	2.8	- 1.2	- 3.0	1.8	3.6
Domestic expenditure	- 3.8	4.7	2.7	- 4.7	- 2.9	4.3	5.1
Exports	- 11.5	7.7	5.2	- 12.6	- 10.3	6.9	8.5
Imports	- 8.4	7.7	6.2	- 9.4	- 7.3	6.0	9.2
Gross domestic product	- 5.5	4.8	2.4	- 6.5	- 4.5	4.7	4.9

National Accounts (cont.)

Forecast period: 2020 to 2022

	2020	2021	2022	2020		2021	
				H1	H2	H1	H2

4. Deflators (2010=100)

Change on the same period of the preceding year in %

Private consumption ²	0.8	2.3	1.3	1.5	0.1	1.7	2.8
Government consumption	2.6	1.6	1.3	3.0	2.3	1.5	1.7
Gross fixed capital formation	1.7	1.3	1.4	2.3	1.2	1.0	1.5
Machinery and equipment	0.7	0.1	0.7	1.4	0.1	- 0.2	0.4
Construction	2.5	2.2	2.1	3.0	1.9	1.9	2.4
Exports	- 0.4	0.9	1.1	0.0	- 0.7	0.5	1.4
Imports	- 2.7	2.1	1.6	- 2.7	- 2.7	1.2	3.0
Gross domestic product	2.1	1.4	1.1	2.5	1.7	1.4	1.4

5. National income

a) EUR bn.

Primary income of private households ²	2 361.7	2 437.6	2 510.4	1 184.2	1 177.4	1 207.4	1 230.2
Employers social contributions	328.8	333.2	343.9	160.9	167.9	160.9	172.3
Gross wages and salaries	1 491.3	1 562.2	1 611.3	719.3	772.0	747.5	814.6
Other primary income ⁴	541.5	542.2	555.2	304.0	237.5	299.0	243.2
Primary income of other sectors	390.2	500.7	533.8	151.0	239.2	213.7	286.9
Net national income	2 751.8	2 938.3	3 044.2	1 335.2	1 416.6	1 421.1	1 517.1
Consumption of fixed capital	660.8	683.2	708.5	329.0	331.8	339.5	343.7
Gross national income	3 412.6	3 621.5	3 752.7	1 664.3	1 748.3	1 760.7	1 860.8
memorandum item:							
Net national income (factor costs)	2 485.2	2 605.0	2 697.8	1 201.7	1 283.4	1 256.2	1 348.8
Property and entrepreneurial income	665.0	709.6	742.6	321.5	343.5	347.7	361.8
Compensation of employees	1 820.1	1 895.4	1 955.2	880.3	939.9	908.4	987.0

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

Primary income of private households ²	- 2.6	3.2	3.0	- 1.2	- 3.9	2.0	4.5
Employers social contributions	1.4	1.3	3.2	2.4	0.4	0.0	2.7
Gross wages and salaries	- 2.0	4.8	3.1	- 1.0	- 2.9	3.9	5.5
... per employee	- 1.4	3.9	2.5	- 0.9	- 1.9	3.6	4.1
Other primary income ⁴	- 6.4	0.1	2.4	- 3.3	- 10.0	- 1.6	2.4
Primary income of other sectors	- 18.5	28.3	6.6	- 29.3	- 9.8	41.5	20.0
Net national income	- 5.2	6.8	3.6	- 5.4	- 5.0	6.4	7.1
Consumption of fixed capital	3.3	3.4	3.7	3.6	3.0	3.2	3.6
Gross national income	- 3.7	6.1	3.6	- 3.8	- 3.6	5.8	6.4
memorandum item:							
Net national income (factor costs)	- 3.1	4.8	3.6	- 3.3	- 2.8	4.5	5.1
Property and entrepreneurial income	- 7.4	6.7	4.6	- 10.5	- 4.3	8.2	5.3
Compensation of employees	- 1.4	4.1	3.2	- 0.4	- 2.3	3.2	5.0

6. Disposable income of private households ²

a) EUR bn.

Mass income	1 514.6	1 575.3	1 616.3	729.3	785.2	762.8	812.4
Net wages and salaries	1 001.8	1 062.8	1 094.7	479.6	522.2	505.7	557.1
Social benefits other than social transfers in kind	652.7	657.7	670.5	319.2	333.6	329.5	328.2
less: Levies on social benefits, taxes on consumption	140.0	145.3	148.9	69.5	70.5	72.4	72.9
Other primary income ⁴	541.5	542.2	555.2	304.0	237.5	299.0	243.2
Other transfers received (net) ⁵	- 85.5	- 88.2	- 91.2	- 43.6	- 41.8	- 44.9	- 43.3
Disposable income	1 970.6	2 029.3	2 080.4	989.7	980.9	1 017.0	1 012.3
Change in pension entitlements	57.4	57.6	58.2	27.9	29.5	28.0	29.6
Consumption expenditure	1 692.3	1 825.9	1 909.1	831.9	860.3	879.2	946.7
Saving	335.7	261.1	229.5	185.7	150.1	165.8	95.2
Saving ratio (%) ⁶	16.6	12.5	10.7	18.2	14.9	15.9	9.1

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

Mass income	1.6	4.0	2.6	1.7	1.4	4.6	3.5
Net wages and salaries	- 1.8	6.1	3.0	- 0.6	- 2.9	5.4	6.7
Social benefits other than social transfers in kind	7.7	0.8	1.9	6.0	9.3	3.2	- 1.6
less: Levies on social benefits, taxes on consumption	3.4	3.8	2.5	4.0	2.9	4.3	3.3
Other primary income ⁴	- 6.4	0.1	2.4	- 3.3	- 10.0	- 1.6	2.4
Disposable income	0.0	3.0	2.5	0.9	- 0.8	2.8	3.2
Consumption expenditure	- 6.3	7.9	4.6	- 6.0	- 6.7	5.7	10.0
Saving	52.4	- 22.2	- 12.1	49.7	55.9	- 10.7	- 36.5

National Accounts (cont.)

Forecast period: 2020 to 2022

	2020	2021	2022	2020		2021	
				H1	H2	H1	H2

7. Revenue and expenditure by general government ⁷

a) EUR bn.

Revenue							
Taxes	756.3	809.2	856.2	382.2	374.2	404.7	404.5
Social contributions	600.8	619.4	642.9	295.2	305.6	301.2	318.2
Property income	20.2	16.2	15.6	12.4	7.8	8.5	7.7
Other current transfers	24.6	25.0	25.4	11.8	12.9	11.9	13.1
Capital transfers	14.9	15.2	15.5	7.0	7.9	7.2	8.0
Sales	125.4	130.8	136.2	58.1	67.3	61.2	69.6
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Total	1 542.4	1 616.1	1 692.0	766.7	775.7	794.9	821.2
Expenditure							
Intermediate consumption ⁸	515.1	529.6	543.0	246.1	269.1	257.8	271.9
Compensation of employees	283.0	290.4	296.1	135.8	147.2	140.1	150.4
Property income (interest)	23.4	20.6	17.8	11.7	11.7	10.3	10.3
Subsidies	76.6	50.6	56.0	39.9	36.6	25.6	25.0
Social benefits	591.7	596.2	608.5	288.9	302.8	299.0	297.1
Other current transfers	83.1	92.6	95.7	40.5	42.6	45.4	47.2
Capital transfers	47.2	49.0	50.8	16.5	30.7	17.9	31.1
Gross capital formation	91.7	98.8	103.5	39.4	52.3	42.1	56.7
Net acquisitions of non-produced non-financial assets	- 1.1	- 1.1	- 1.1	- 0.4	- 0.6	- 0.4	- 0.6
Total	1 710.7	1 726.8	1 770.4	818.3	892.4	837.6	889.1
Net lending	- 168.3	- 110.7	- 78.4	- 51.6	- 116.7	- 42.8	- 67.9

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

Revenue							
Taxes	- 8.6	7.0	5.8	- 8.1	- 9.0	5.9	8.1
Social contributions	0.5	3.1	3.8	1.8	- 0.6	2.0	4.1
Property income	- 7.9	- 19.9	- 4.0	- 5.8	- 11.1	- 31.2	- 1.8
Other current transfers	- 2.1	1.6	1.6	3.8	- 7.0	1.6	1.6
Capital transfers	8.1	2.2	2.2	16.1	1.9	2.4	1.9
Sales	0.4	4.3	4.1	- 0.9	1.6	5.2	3.5
Other subsidies	- 4.1	0.0	0.0	- 11.1	0.0	0.0	0.0
Total	- 4.2	4.8	4.7	- 3.6	- 4.9	3.7	5.9
Expenditure							
Intermediate consumption ⁸	6.7	2.8	2.5	6.5	6.9	4.8	1.0
Compensation of employees	4.2	2.6	1.9	4.1	4.3	3.1	2.1
Property income (interest)	- 14.6	- 11.9	- 13.6	- 18.3	- 10.7	- 12.0	- 11.9
Subsidies	148.5	- 33.9	10.7	177.5	123.1	- 35.8	- 31.9
Social benefits	8.5	0.8	2.1	6.7	10.2	3.5	- 1.9
Other current transfers	12.1	11.4	3.4	10.5	13.6	11.9	10.9
Capital transfers	15.0	4.0	3.6	17.8	13.6	8.6	1.5
Gross capital formation	6.4	7.7	4.9	4.6	7.8	6.7	8.5
Net acquisitions of non-produced non-financial assets	- 8.5	0.0	0.0	- 18.5	0.0	0.0	0.0
Total	9.8	0.9	2.5	9.3	10.2	2.4	- 0.4

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.