

KIEL INSTITUTE **ECONOMIC OUTLOOK**

German Economy Winter 2018

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UPSWING STRETCHED TO ITS LIMITS – ACCELERATION ONLY TEMPORARY

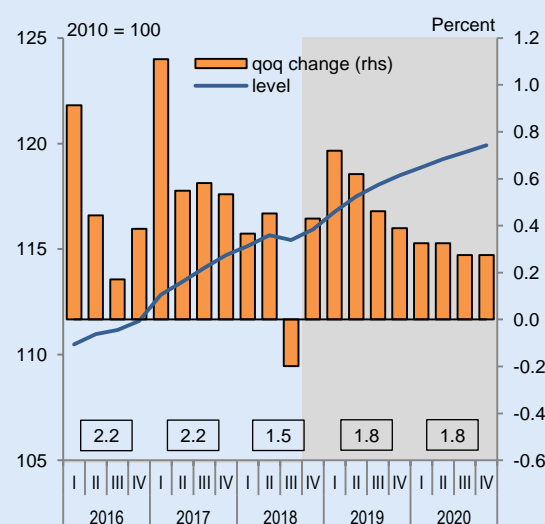
*Martin Ademmer, Jens Boysen-Hogrefe, Salomon Fiedler, Dominik Groll,
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The upswing in Germany is starting to falter. In the third quarter, the economy shrank for the first time in three years. This decline was primarily due to special factors. In particular, problems with the new vehicle certification standard (WLTP) affected the automotive industry. In addition, low water levels in the Rhine river impaired production. As these temporary factors expire, the economic expansion will pick up again. However, even so the upswing will increasingly face its limits. In the face of very high capacity utilizations, companies are having appreciable difficulties to keep expanding production at a quick pace. This is especially apparent in the construction sector, where production probably has reached its limit already, such that further increases will only be possible insofar as firms are able to expand their capacities. The palpable tightness of the labor market will continue. This will restrict employment growth and lead to strong wage increases. Household disposable incomes should continue to rise markedly. Next year, extensive tax reductions and transfer increases will provide an additional boost. Therefore, private consumption will probably increase substantially. Exports will quickly move on from their current weakness, which was to a large extent due to the recent troubles in the car sector. But the gradual cooling down of the global economic expansion will also reduce the dynamism of exports in the future. Against this backdrop, we have reduced our forecast for German GDP by 0.4 percentage points since autumn, such that we now expect growth of 1.5 percent in 2018. In 2019, we see the economy growing by 1.8 percent (autumn: 2.0 percent). A similar rate is expected for 2020: while economic dynamism will slow down markedly, the high number of working days will give a boost to GDP in that year.

Temporary factors caused the drop in GDP in the third quarter. In the third quarter, GDP declined by 0.2 percent (Figure 1). One important factor behind was that car producers faced problems with the new vehicle certification standard (WLTP). When it became apparent that many car types would not receive the new certificate by the time WLTP became binding in September, car production was reduced. Overall, this decline in production probably had a negative impact on GDP growth of about 0.4 percentage points in the third quarter. However, WLTP will only have a temporary effect on car production which already has started to recover. Moreover, low precipitation led to falling water levels in rivers, in particular the Rhine, which restrained inland water transport and thereby production. According to our estimates, this dampened GDP growth by 0.1 percentage points each in the third and the fourth quarter.¹

The upswing approaches its end. With the temporary dampening factors running out, GDP growth will accelerate again. We expect GDP growth to peak at the beginning of next year when,

Figure 1:
Gross domestic product, 2016–2020



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

Source: Federal Statistical Office, Fachserie 18, Series 1.3; shaded: IFW forecast.

¹ For a detailed analysis of the economic impact of the low water level in the Rhine river, see the [Box "Zum Einfluss des Niedrigwassers auf die Konjunktur"](#) (available in German language only)

on top of catch-up effects, several fiscal measures will stimulate disposable income growth for private households and, thus, private consumption. However, this acceleration is of temporary nature, as the German economy is already in a boom period and capacity constraints are increasingly weighing on GDP growth. According to survey data, capacity utilization is close to record-high levels in many industries. Moreover, according to survey data, labor supply shortages and—in the manufacturing sector—shortages in material and goods are limiting the production of a high share of firms. Against this backdrop, we expect that the upswing in Germany will approach its end within the forecast period.

We continue to expect consumer price inflation of around two percent throughout the forecast period. The most recent reading of German headline inflation came in at 2.3 percent in November. Energy, whose prices increased by 9.3 percent year-on-year, remained a main driver, despite a marked decline in oil prices in recent months, from roughly 80 to 60 US dollars per barrel of Brent. Low water levels in the Rhine increased transport costs and thereby put upward pressure on fuel prices, especially in southern, inland regions. These effects are expected to subside early next year. At the same time, the overutilization of production capacities should become increasingly visible in the form of rising price pressures. After 1.9 percent in 2018, we therefore expect CPI inflation rates of 2.1 and 2.0 percent in 2019 and 2020.

The ECB will exit only very gradually from its extraordinary monetary policy measures. While net asset purchases are set to end by the end of this year, returns from maturing assets will be reinvested for the foreseeable future.² Policy rates should also remain at their present low levels at least until autumn 2019, and the main refinancing rate is likely not to exceed 0.5 percent until the end of the forecast period. From June 2020 onwards, the tranches of TLTRO II (targeted longer-term refinancing operations) will start to come due. Because liabilities with a remaining maturity of less than one year cannot be fully counted towards fulfilment of the NSFR (net stable funding ratio) this could already have some effects on bank funding in summer 2019. However, the banking system in aggregate currently exceeds the regulatory requirements with respect to the NSFR and should not find itself in undue trouble.³

German foreign trade expands at a solid pace after a slow-down due to temporary headwinds. German exports declined in the third quarter, mostly due to production downtimes in the car industry related to the introduction of new vehicle certification standards (WLTP). At the end of the year, they are set to pick up again at a moderate rate. Goods exports showed a pronounced increase in October. In addition, soft indicators increased at the current edge and remain clearly above their historical means, after having shown repeated declines over the year from previously extraordinarily high levels. However, ongoing obstacles in the car industry continue to weigh on the exports' momentum: German car producers surveyed over the autumn months did not expect their exports to pick up. We thus expect catch-up effects in automobile exports to mostly materialize at the beginning of next year. At the same time, a marked increase in uncertainty in German export markets should weigh on exports in the near term. Over the forecast horizon, we expect business cycle dynamics in export markets to become a more prominent factor for exports again, with exports growing at pronounced, slightly decelerating rates. Additional tailwinds are set to come from a gradual improvement in price competitiveness. German imports expanded strongly over the summer semester, but are set for a temporary slow-down at the end of the year, as goods imports in October increased rather modestly in real terms. Over the forecast horizon, we expect imports to grow at a fast, slightly decreasing pace, in line with the dynamics of business investment, private consumption, and exporters' demand for intermediate goods.

Expansionary fiscal policy boosts private consumption while growth in gross fixed capital formation remains moderate. In 2019, several fiscal measures (e.g., adjustments of the income tax, lower social security contributions, and increasing transfer payments in the pension system) will stimulate income of private households. As gross wages and salaries are expected to further increase at high rates, disposable income and as a consequence also private consumption will gain momentum. In the construction sector, capacity constraints seem to restrain production. Capacity utilization is at record-high levels. Therefore, we expect construction investment growth to be determined by the pace at which construction firms are able to increase their capacities. We expect firms can increase their capacities by about 3 percent per year in line with the rate observed in the

² We do not expect that the adjustment of the ECB's capital key on 1 January 2019 will have an immediate impact.

³ Take-up of TLTRO was quite uneven across countries. About a third of the total amount can be found in Italian and more than 20 percent in Spanish banks.

recent past. As demand will remain high due to the very stimulating environment (e.g., favorable financing conditions, high increases in disposable income, and high demand for housing), prices of construction investment are expected to increase by annual rates of about 5 percent.

Employment growth weakens, wage growth remains high. Employers and employees in manufacturing, construction, and public services have agreed on stronger wage increases for this year. Total negotiated wages and salaries will probably have risen by 2.9 percent on average in 2018 after 2.1 percent in 2017. The rise in negotiated wages and salaries will remain high over the next two years, albeit with a slightly smaller rate in 2019 (2.6 percent). One reason for the decline are the already agreed contracts in manufacturing and construction. Furthermore, going forward we expect the negotiations in other sectors to respond to the hike in labor costs caused by the shift of health care contributions from employees to employers, which will become effective in January. Due to the growing tightness on the labor market, effectively paid gross wages and salaries continue to rise faster than negotiated wages and salaries over the entire forecast horizon, with 3.2 percent in 2019 and 3.4 percent in 2020. As labor productivity has faltered this year due to the deceleration in economic growth, unit labor costs have increased noticeably, and will continue to do so next year. As a result, unit labor costs rise faster than prices, dampening the demand for labor. In line with leading indicators, employment growth is expected to remain broadly stable until the middle of next year. However, the rise in employment is likely to weaken thereafter, as labor-supply growth is set to decline due to the ageing population and smaller gains from migration. All in all, we expect unemployment to shrink further until 2020, albeit at decreasing rates.

Government surplus will reach a new record high in 2018. Government revenues follow a strong upward trajectory, mainly due to the ongoing labor market upswing pushing social security contributions and wage taxes. Intakes from corporate taxes increased particularly strongly, not least due changes in the tax code. At the same time, government expenditure is less dynamic than we assumed before. Government consumption in particular was weak in the first half of the year. This may reflect lower expenses in the field of refugee migration and the circumstance that because of the prolonged coalition formation talks the federal government operated under a preliminary budget for an extended period of time.

In 2019, fiscal policy is much more expansionary due to the plans of the new coalition government. Besides various measures that will affect the budget of the federal government, pensions will increase substantially, and income tax rates will be reduced. Furthermore, payments to the EU will go up markedly. In sum, the surplus will shrink, but will remain at a high level. However, the structural balance will deteriorate sharply. In 2020, on the one hand fiscal policy will become less expansionary; on the other hand the upswing will almost come to an end and revenues will rise less quickly. Thus, the budget balance will slightly deteriorate.

Table 1:
Key indicators, 2017–2020

	2017	2018	2019	2020
Gross domestic product (GDP), price-adjusted	2.2	1.5	1.8	1.8
Gross domestic product, deflator	1.5	1.8	2.2	2.2
Consumer prices	1.8	1.9	2.1	2.0
Labor productivity (per hour worked)	0.9	0.1	0.8	0.7
Employment (1,000 persons)	44,269	44,846	45,290	45,617
Unemployment rate (percent)	5.7	5.2	4.8	4.6
<i>in relation to nominal GDP</i>				
Public sector net lending	1.0	1.7	1.3	0.9
Gross public debt	63.9	59.8	56.2	53.4
Current account balance	8.0	7.7	7.2	7.1

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: IfW forecast.

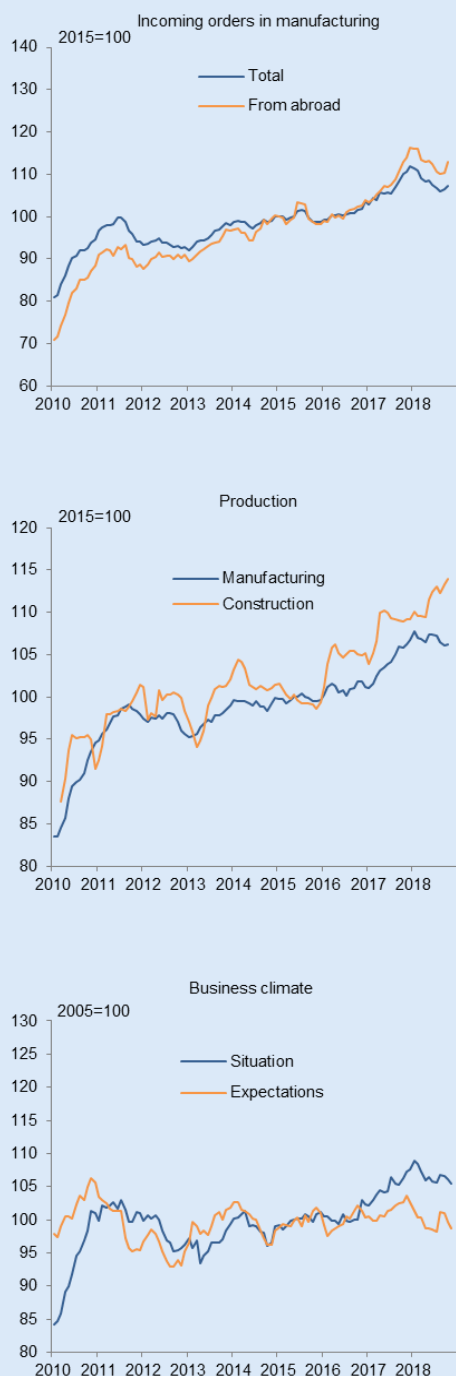
Data annex

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1. Leading indicators

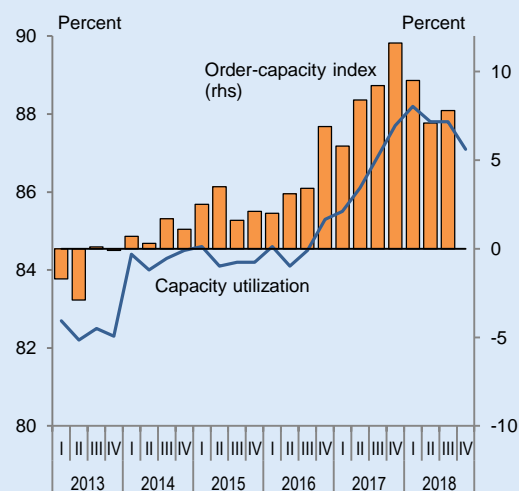
Figure 1.1:
Leading indicators, 2010–2018



Monthly data, seasonally adjusted; incoming orders in manufacturing and production: 3-month moving average.

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

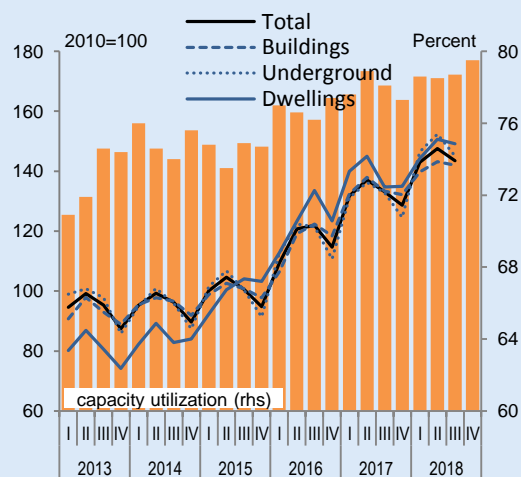
Figure 1.2:
Capacity utilization, 2013–2018



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, 2012–2017

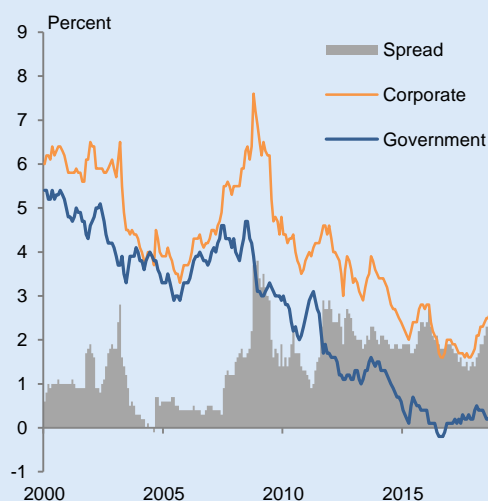


Quarterly data. Capacity utilization: seasonally adjusted (2014-Q4: October/November); order stocks: price, seasonally and working-day adjusted.

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

2. Monetary conditions and prices

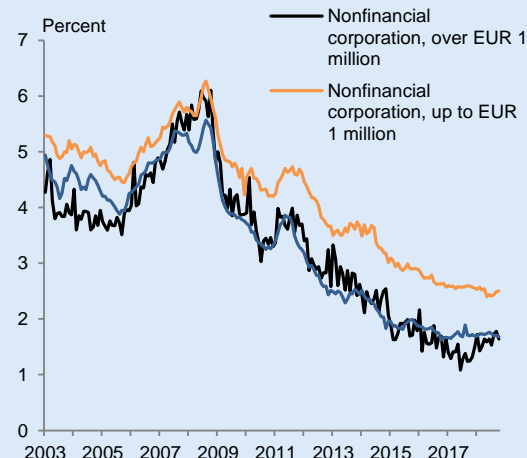
Figure 2.1:
Bond yields, 2000–2018



Monthly data, average maturities above three years.

Source: Deutsche Bundesbank, *Monthly Reports*; own calculations.

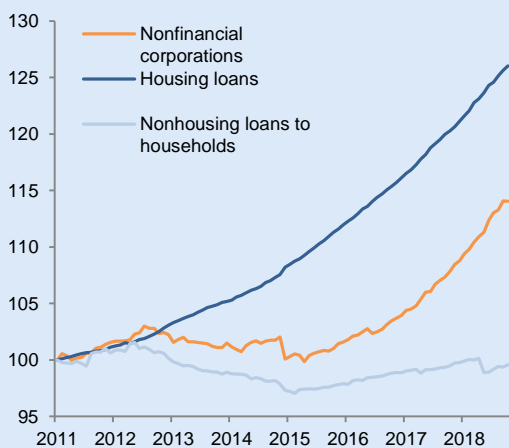
Figure 2.2:
Loan interest, 2003–2018



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

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

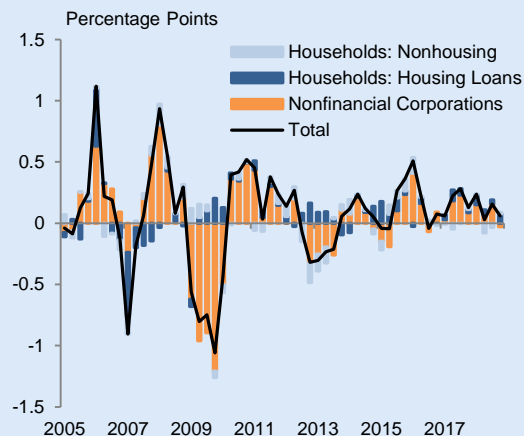
Figure 2.3:
Sum of loans, 2011–2018



Index: Jan 2011=100; Monthly data.

Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*.

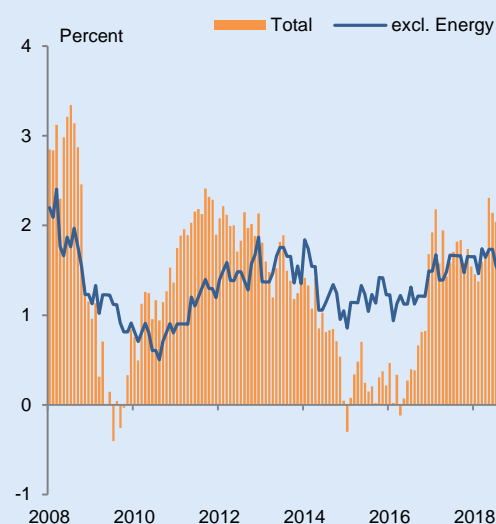
Figure 2.4:
Credit impulse, 2005–2018



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*; own calculations.

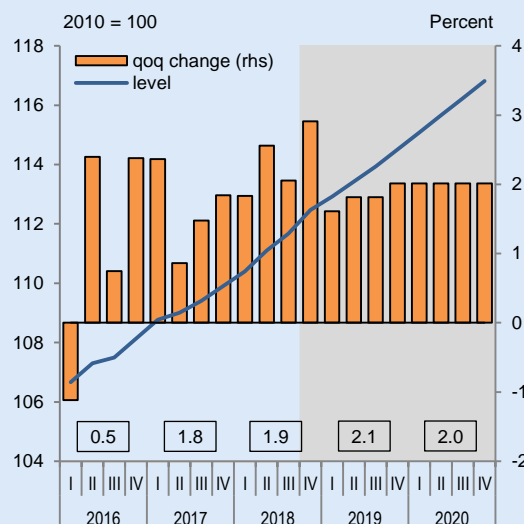
Figure 2.6:
Consumer prices, 2008–2018



Monthly data; year-on-year change.

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

Figure 2.7:
Consumer price index, 2016–2020



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

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

Table 2.1:
Projections and assumptions on the international environment, 2017–2020

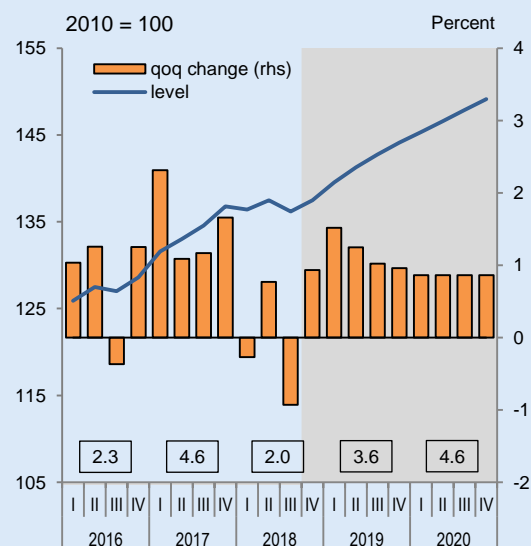
	2017				2018				2019				2020			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.5	0.5
Long-term interest rate	0.3	0.3	0.4	0.4	0.6	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
US-dollar/euro exchange rate	1.07	1.10	1.18	1.18	1.23	1.19	1.16	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Price competitiveness	86.3	86.9	89.0	89.1	89.5	89.5	90.3	90.0	89.8	89.6	89.5	89.4	89.4	89.4	89.5	89.5
Export markets	0.83	0.87	0.77	0.78	0.68	0.73	0.69	0.63	0.59	0.58	0.57	0.56	0.55	0.55	0.55	0.56
Oil price	53.6	49.6	52.1	61.4	66.9	74.5	75.1	69.8	61.2	61.5	61.8	62.1	62.4	62.7	63	63.4

ECB key interest rate: main refinancing operations; long-term interest rate on 9–10 year bonds; price competitiveness: against 36 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: IfW forecast or assumption.

3. External trade

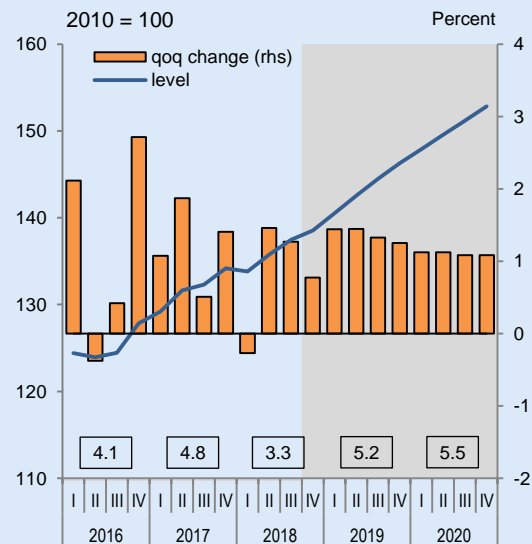
Figure 3.1:
Exports, 2016–2020



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

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

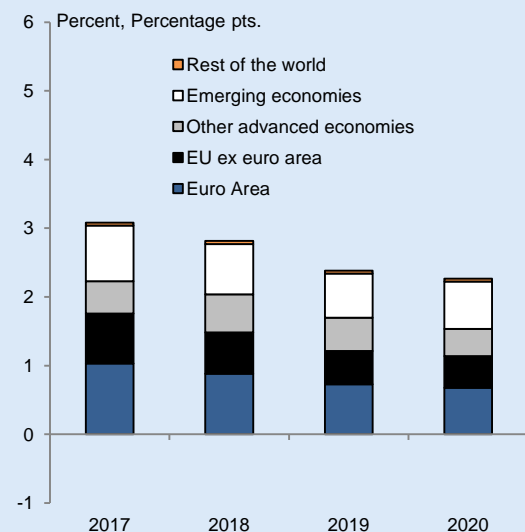
Figure 3.2:
Imports, 2016–2020



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

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

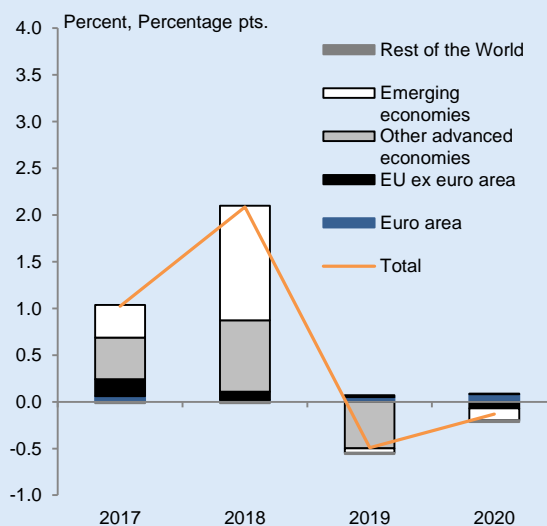
Figure 3.3:
German export markets, 2017–2020



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

Source: Federal Statistical Office, *Fachserie 7 Series 1*; national sources; own calculations; 2018–2019: IfW forecast.

Figure 3.4:
Germany's price competitiveness, 2017–2020



Annual data; against 51 countries based on consumer prices; weights according to Germany's price competitiveness indicator against 56 trading partners based on consumer price indices from the Deutsche Bundesbank. Increase implies worsening of price competitiveness.

Source: Bundesbank, *Monthly Report 8.2017*; national sources; own calculations; 2018–2019: IfW forecast.

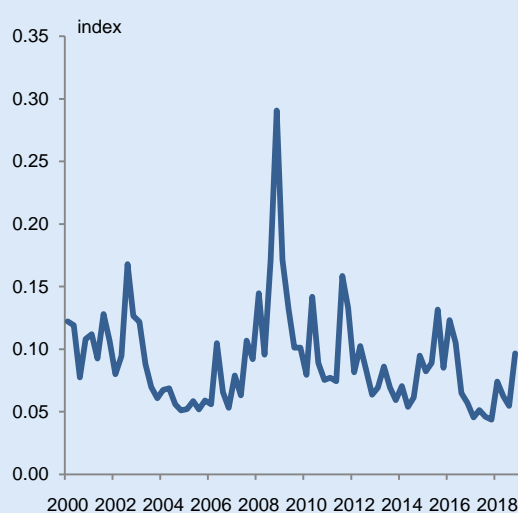
Figure 3.5:
Export indicators, 2008–2018



Quarterly data; exports, industrial production, order inflow: volumes, change on previous year; 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 Financial Datastream; ifo, *Konjunkturperspektiven*; own calculations.

Figure 3.5:
Uncertainty in German export markets, 2000–2018

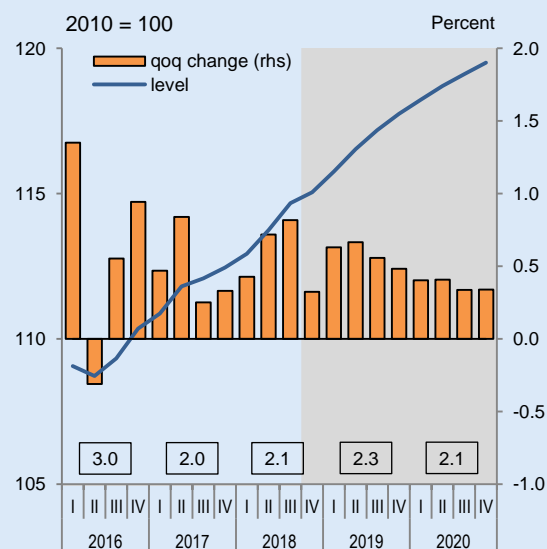


Quarterly data; uncertainty index based on stock market volatilities in 46 countries, weighted by shares of German exports.

Source: National sources; own calculations.

4. Domestic expenditure

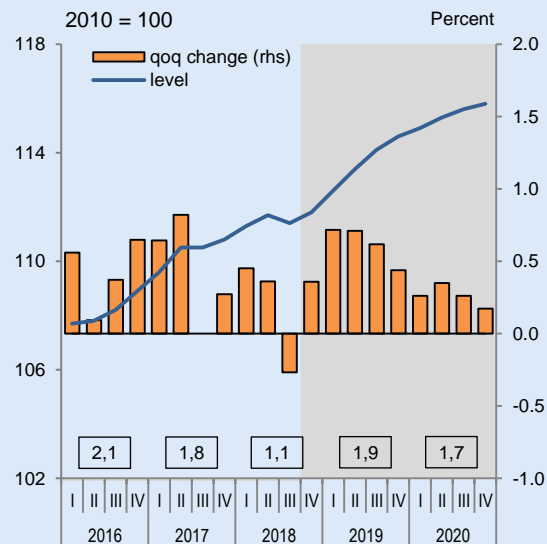
Figure 4.1:
Domestic expenditure, 2016–2020



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

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

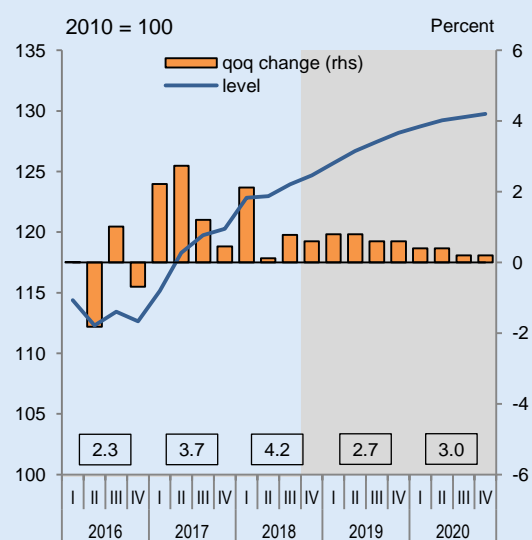
Figure 4.2:
Private consumption, 2016–2020



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

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

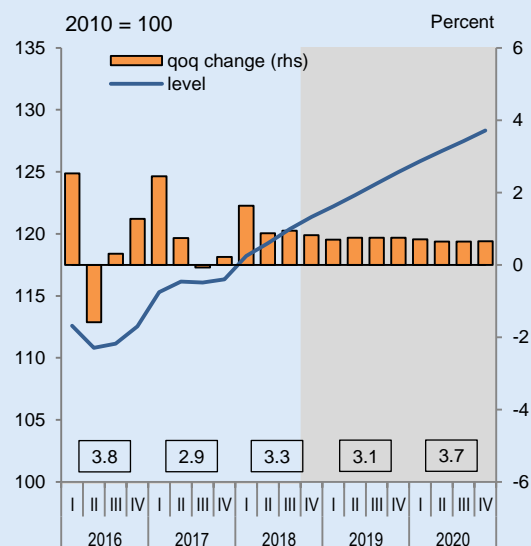
Figure 4.3:
M&E investments, 2016–2020



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

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

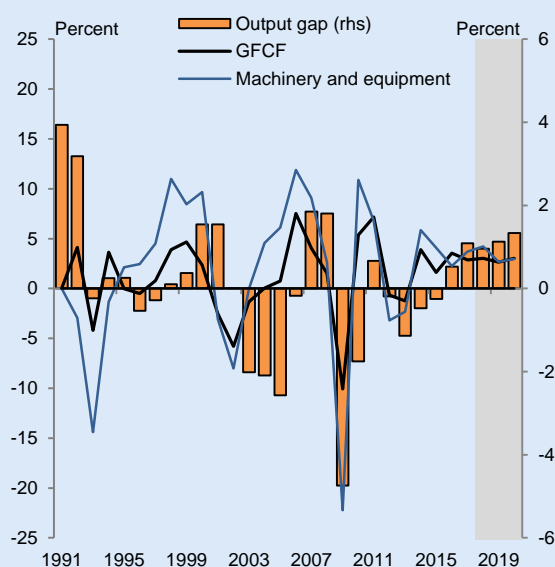
Figure 4.4:
Construction, 2016–2020



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

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

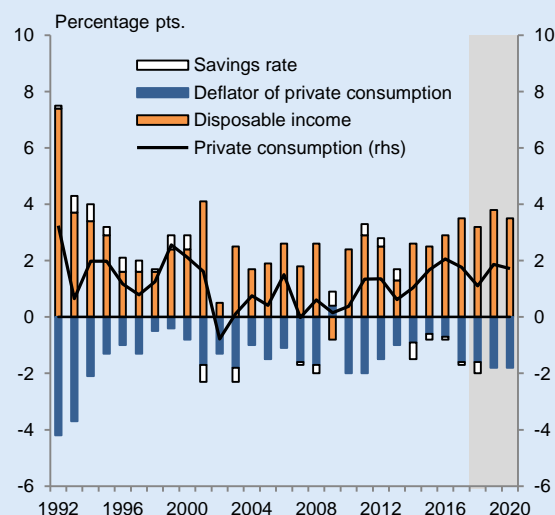
Figure 4.5:
Investment cycles, 1991–2020



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: IfW forecast.

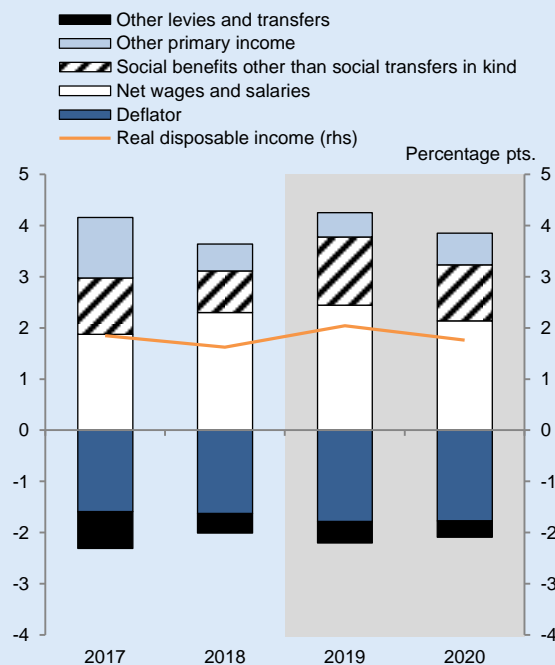
Figure 4.6:
Contributions to change in private consumption, 1992–2020



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

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

Figure 4.7:
Contributions to changes in real disposable income, 2017–2020



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*; own calculations; shaded: IfW forecast.

Table 4.1:
Gross fixed capital formation, 2017–2020

	2017	2018	2019	2020
Total	2.9	3.0	2.7	3.0
Corporate investment	2.9	2.3	1.9	2.3
Machinery and equipment	3.7	4.2	2.7	3.0
Construction (nondwellings)	3.1	0.4	0.8	1.9
Other	1.3	0.4	1.3	1.2
Dwellings	3.0	4.3	4.0	4.1
Public (nondwellings)	2.4	4.8	3.8	5.4
Memorandum item: Construction	2.9	3.3	3.1	3.7

Volumes; change over previous year in percent.

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

5. Industries

Table 5.1:
Gross value added for industries, 2018–2019

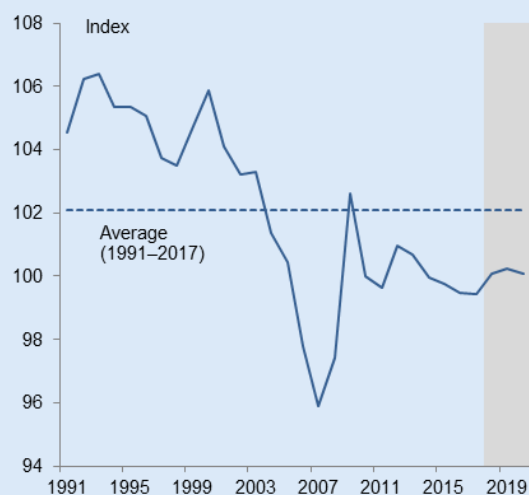
	2018			2019		
	II	III	IV	I	II	III
<i>Seasonally and calendar adjusted, quarter-on-quarter change in percent</i>						
Gross domestic product	0.5	-0.2	0.4	0.7	0.6	0.5
Gross value added	0.3	-0.2	0.4	0.7	0.6	0.5
Industry excluding construction	0.2	-0.6	0.2	0.9	0.8	0.5
Manufacturing	0.4	-1.0	0.2	0.9	0.8	0.5
Construction	1.4	1.2	1.1	0.8	0.8	0.8
Trade, transport, accommodation, and food services	0.2	-0.5	0.6	1.0	0.9	0.7
Information and communication	0.3	0.8	0.5	0.7	0.6	0.4
Financial and insurance services	0.5	0.3	0.0	0.0	0.0	0.1
Real estate activities	-0.3	0.2	0.6	0.5	0.4	0.4
Business services	0.8	-0.5	0.4	0.8	0.6	0.5
Public services, education, health	0.1	0.2	0.4	0.3	0.4	0.4
Other services	0.6	-0.1	0.1	0.2	0.2	0.1

Quarterly data, volumes.

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

6. Wages

Figure 6.1:
Real unit labor costs, 1991–2020



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: IfW forecast.

Table 6.1:
Wages and productivity, 2017–2020

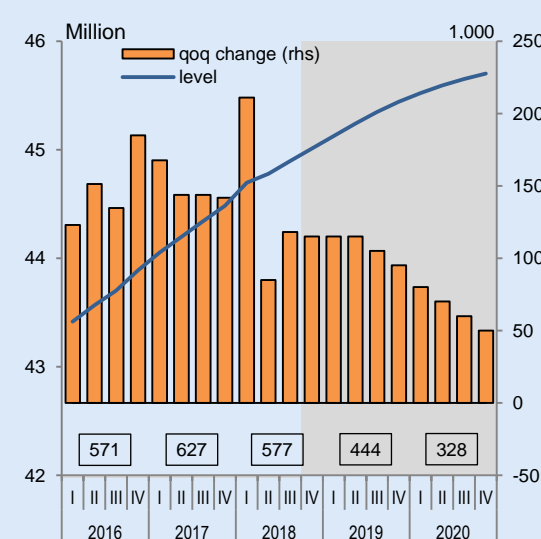
	2017	2018	2019	2020
<i>Per hour</i>				
Negotiated wages	2.2	2.8	2.6	2.9
Gross wages and salaries	2.4	2.8	3.1	2.9
Wage drift	0.3	0.0	0.4	0.0
Compensation of employees	2.5	2.5	3.1	2.8
Labor productivity	0.9	0.1	0.6	0.7
Unit labor costs	1.6	2.5	2.4	2.1
Unit labor costs (real)	0.1	0.6	0.3	-0.2
<i>Per capita</i>				
Negotiated wages	2.1	2.9	2.6	2.9
Gross wages and salaries	2.5	3.2	3.2	3.4
Wage drift	0.4	0.3	0.5	0.5
Compensation of employees	2.6	3.0	3.2	3.3
Labor productivity	0.7	0.2	0.7	1.1
Unit labor costs	1.8	2.8	2.5	2.2
Unit labor costs (real)	0.3	1.0	0.3	0.0

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

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

7. Employment

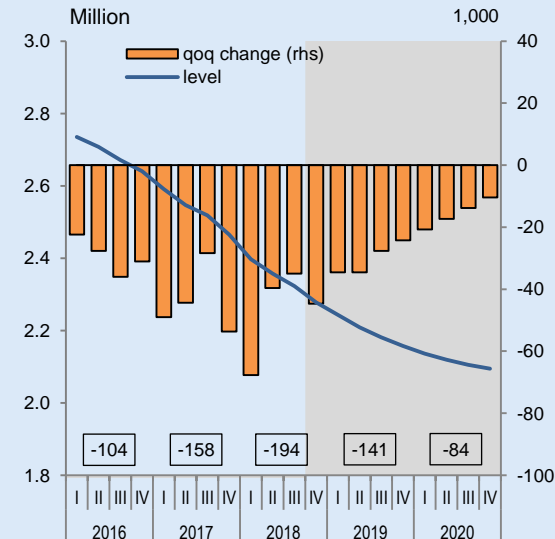
Figure 7.1:
Employment, 2016–2020



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

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

Figure 7.2:
Unemployment, 2016–2020



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

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

Table 7.1:
Employment, 2016–2020 (1,000 persons)

	2016	2017	2018	2019	2020
Hours worked (domestic concept, million hours)	59,476	60,222	61,089	61,722	62,422
Persons in employment (domestic concept)	43,642	44,269	44,846	45,290	45,617
Self-employed	4,334	4,294	4,229	4,187	4,160
Employees (domestic concept)	39,308	39,975	40,616	41,102	41,457
Employees subject to social security contributions	31,508	32,234	32,972	33,507	33,902
Minijobs	4,804	4,742	4,676	4,627	4,587
Net commuting	92	114	125	124	124
Persons in employment (national concept)	43,550	44,155	44,720	45,165	45,493
Employees (national concept)	39,216	39,862	40,491	40,978	41,333
Unemployed persons (registered)	2,691	2,533	2,339	2,197	2,114
Unemployment rate (registered; percent)	6.1	5.7	5.2	4.8	4.6
Unemployment rate (ILO; percent)	3.9	3.5	3.2	2.9	2.8

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

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

8. Public finances

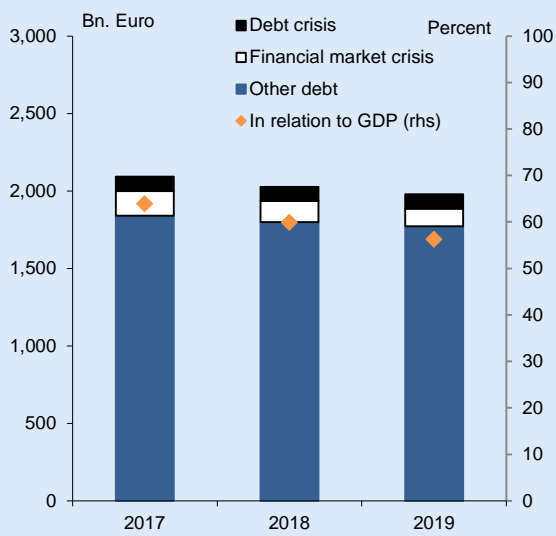
Table 8.1:
Revenues and expenditures of the general government, 2016–2020 (€ bn)

	2016	2017	2018	2019	2020
Revenues	1,415.5	1,473.8	1,543.8	1,596.8	1,653.6
➤ relative to GDP	44.8	45.0	45.6	45.4	45.2
Taxes	731.7	766.4	801.7	828.4	858.0
➤ relative to GDP	23.2	23.4	23.7	23.5	23.4
Social contributions	523.9	548.6	571.1	595.4	619.2
➤ relative to GDP	16.6	16.7	16.9	16.9	16.9
Other revenues	159.9	158.9	171.0	173.1	176.4
➤ relative to GDP	5.1	4.8	5.0	4.9	4.8
Expenditures	1,386.8	1,439.8	1,485.3	1,552.0	1,618.8
➤ relative to GDP	43.9	43.9	43.8	44.1	44.2
Compensation of employees	237.8	246.7	255.2	264.7	274.1
Intermediate consumption	150.1	156.3	162.9	170.2	177.9
Social transfers in kind	268.4	278.4	286.7	300.2	314.8
Gross capital formation	68.2	72.4	79.7	86.1	93.4
Capital transfers	37.4	33.8	31.6	30.4	30.0
Social benefits	486.8	506.1	520.8	546.0	567.5
Subsidies	28.0	28.4	27.9	28.4	29.1
Other current transfers	75.5	75.2	82.7	91.0	95.1
Other capital transfers and investment grants	35.6	43.9	39.2	36.2	38.4
Other expenditures	-1.3	-1.6	-1.6	-1.6	-1.6
Net lending/net borrowing	28.7	34.0	58.5	44.8	34.8
➤ relative to GDP	0.9	1.0	1.7	1.3	0.9
Revenues of central, state, and local governments	919.8	954.2	1002.5	1032.1	1040.2
Net of transfers from social security funds	918.7	953.1	1,001.4	1,031.0	1,039.1
Transfers from social security funds	1.1	1.1	1.1	1.1	1.1
Expenditures of central, state, and local governments	899.2	930.3	957.1	995.2	1,005.3
Net of transfers to social security funds	789.0	815.1	838.2	872.4	881.4
Transfers to social security funds	110.3	115.1	118.8	122.8	123.8
Net lending/net borrowing central, state, and local government	20.5	23.9	45.4	36.9	35.0
Revenues of social security funds	607.1	635.9	661.3	688.7	695.1
Net of transfers from central, state, and local governments	496.8	520.8	542.5	565.9	571.2
Expenditures of social security funds	598.9	625.8	648.2	680.7	687.6
Net of transfers to central, state, and local governments	597.8	624.7	647.1	679.6	686.5
Net lending/net borrowing social security funds	8.2	10.1	13.1	8.0	7.4

Sums may deviate due to rounding.

Source: Federal Statistical Office, *internal worksheet*; shaded: IfW forecast.

Figure 8.1:
Government gross debt, 2017–2019

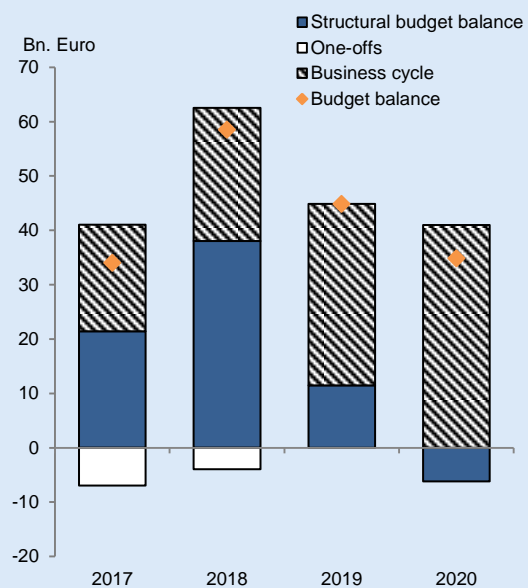


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

Financial market crisis: Liabilities due to bank rescue packages.

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

Figure 8.2:
Structural budget balance, 2017–2020



Source: Europäische Kommission, AMECO; own calculations.

9. GDP and its components

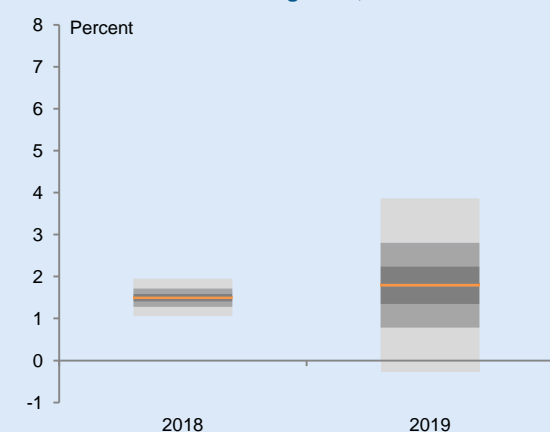
Table 9.1:
Quarterly data, 2018–2020

	2018				2019				2020			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	0.4	0.5	-0.2	0.4	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.3
Private consumption	0.5	0.3	-0.3	0.3	0.7	0.7	0.6	0.4	0.3	0.3	0.3	0.3
Government consumption	-0.5	0.8	0.2	0.6	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5
Machinery and equipment	2.1	0.1	0.8	0.6	0.8	0.8	0.6	0.6	0.4	0.4	0.2	0.2
Constructions	1.6	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Other investment	-0.5	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Change in inventories	-0.1	0.2	0.7	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	0.4	0.7	0.8	0.3	0.6	0.7	0.6	0.5	0.4	0.4	0.3	0.3
Exports	-0.3	0.8	-0.9	0.9	1.5	1.2	1.0	1.0	0.9	0.9	0.9	0.9
Imports	-0.3	1.5	1.3	0.8	1.4	1.4	1.3	1.2	1.1	1.1	1.1	1.1
Net exports	0.0	-0.2	-1.0	0.1	0.1	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0
Employment (domestic)	44,694	44,779	44,897	45,012	45,127	45,242	45,347	45,442	45,522	45,592	45,652	45,702
Unemployment (registered)	2,397	2,358	2,323	2,278	2,243	2,209	2,181	2,157	2,136	2,119	2,105	2,095

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: IfW forecast.

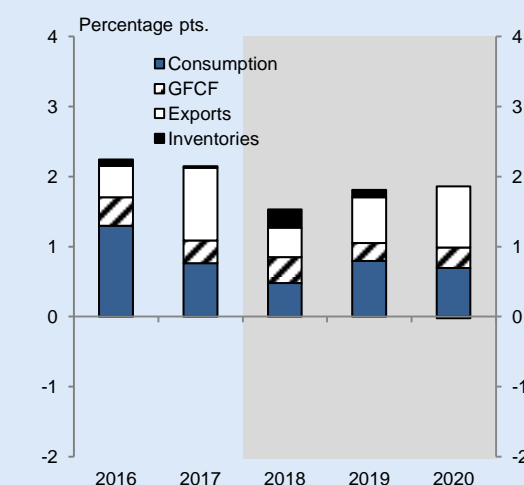
Figure 9.1:
Forecast intervals for GDP growth, 2018–2019



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 fourth quarter 1994–2017.

Source: Own calculations.

Figure 9.2:
Import adjusted expenditure-side contributions to GDP growth, 2016–2020



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: IfW forecast.

10. The German economy, 2017–2020

	2017	2017	2018	2019	2020
	€ bn	Change over previous year in percent			
GDP (constant prices)		2.2	1.5	1.8	1.8
Private consumption expenditure		1.8	1.1	1.9	1.7
Public consumption expenditure		1.6	1.0	2.2	2.2
Total fixed investment		2.9	3.0	2.7	3.0
Machinery and equipment		3.7	4.2	2.7	3.0
Construction		2.9	3.3	3.1	3.7
Other equipment		1.3	0.4	1.3	1.2
Changes in stocks		0.0	0.5	0.2	0.0
Domestic Demand		2.0	2.1	2.3	2.1
Exports		4.6	2.0	3.6	4.6
Imports		4.8	3.3	5.2	5.5
Net exports		0.3	-0.4	-0.4	-0.1
GDP (current prices)	3,277.3	3.7	3.4	4.0	4.1
Private consumption expenditure	1,732.2	3.4	2.8	3.7	3.5
Public consumption expenditure	638.9	3.8	3.5	4.5	4.6
Total fixed investment	665.7	5.0	6.1	5.9	6.1
Machinery and equipment	215.2	4.2	4.8	3.3	3.5
Construction	326.6	6.4	8.3	8.4	8.7
Other equipment	123.9	2.9	2.6	3.4	3.0
Changes in stocks (€ bn)		-7.2	12.9	20.4	19.5
Domestic Demand	3,029.5	4.0	4.3	4.6	4.3
Exports	1,541.9	6.3	3.1	4.6	5.4
Imports	1,294.1	7.6	5.2	6.0	5.9
Net exports (€ bn)		247.8	227.4	219.4	222.7
Gross national income	3,346.3	3.8	3.4	4.1	4.1
Deflator of GDP		1.5	1.8	2.2	2.2
Private consumption expenditure		1.6	1.6	1.8	1.8
Public consumption expenditure		2.2	2.5	2.2	2.4
Investment in machinery and equipment		0.5	0.6	0.6	0.5
Investment in construction		3.3	4.8	5.2	4.9
Investment in other equipment		1.5	2.2	2.0	1.8
Exports		1.6	1.1	0.9	0.7
Imports		2.6	1.9	0.8	0.4
<i>Addendum: Consumer prices</i>		1.8	1.9	2.1	2.0
Income distribution					
National income	2,456.4	3.9	3.1	4.1	4.2
Employment income	1,668.8	4.2	4.6	4.5	4.2
in percent of national income		67.9	68.9	69.2	69.2
Entrepreneurial and property income	787.6	3.3	-0.1	3.2	4.2
Disposable income of private households	1,869.9	3.4	3.3	3.8	3.5
Savings rate		9.9	10.3	10.3	10.3
Wages and salaries	1,366.6	4.2	4.8	4.4	4.3
Wage per hour		2.4	2.8	3.1	2.9
Unit labor costs		1.6	2.5	2.3	2.1
Productivity per hour		0.9	0.1	0.8	0.7
Unemployment (1,000)		2,532.8	2,338.5	2,197.3	2,113.5
Rate of unemployment (percent)		5.7	5.2	4.8	4.6
Total employment (1,000)		44,268.8	44,845.5	45,289.5	45,617.0
Public sector budget balance (€ bn)		34.0	58.5	44.8	34.8
Public sector budget balance (in percent of GDP)		1.0	1.7	1.3	0.9
Public debts (in percent)		63.9	59.8	56.2	53.4

Change in stocks, net exports: contribution to GDP growth.

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

11. National accounts

Forecast period: 2018 to 2019

Forecast period: 2018 to 2019							
	2018	2019	2020	2018		2019	
				H1	H2	H1	H2
1. Production							
Change over the same period of the preceding year in %							
Persons in employment	1.3	1.0	0.7	1.4	1.2	1.0	1.0
Hours worked	1.4	1.0	1.1	1.3	1.5	0.9	1.1
Hours worked by person in employment	0.1	0.0	0.4	- 0.1	0.3	- 0.1	0.2
Labor productivity ¹	0.1	0.8	0.7	0.5	- 0.3	0.3	1.2
Gross domestic product, price-adjusted	1.5	1.8	1.8	1.9	1.2	1.2	2.4

2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 441.1	2 536.6	2 633.7	1 193.2	1 247.9	1 233.1	1 303.5
Private households ²	1 780.0	1 845.5	1 910.6	872.8	907.1	899.0	946.6
Government	661.2	691.1	723.1	320.4	340.8	334.2	356.9
Gross fixed capital formation	706.3	747.9	793.5	339.4	366.9	358.3	389.7
Machinery and equipment	225.6	233.1	241.4	107.9	117.7	110.7	122.5
Construction	353.6	383.4	416.8	169.5	184.1	183.6	199.8
Other products	127.1	131.4	135.3	62.0	65.1	64.0	67.4
Changes in inventories ³	12.9	20.4	19.5	8.6	4.4	20.8	- 0.3
Domestic expenditure	3 160.4	3 305.0	3 446.6	1 541.2	1 619.3	1 612.1	1 692.8
Net exports	227.4	219.4	222.7	130.7	96.7	116.3	103.2
Exports	1 589.3	1 662.6	1 751.7	791.5	797.8	817.9	844.7
Imports	1 361.9	1 443.2	1 529.0	660.8	701.1	701.7	741.5
Gross domestic product	3 387.8	3 524.4	3 669.3	1 671.8	1 716.0	1 728.4	1 796.0

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

Consumption expenditure	3.0	3.9	3.8	3.0	2.9	3.3	4.5
Private households ²	2.8	3.7	3.5	2.8	2.7	3.0	4.3
Government	3.5	4.5	4.6	3.4	3.5	4.3	4.7
Gross fixed capital formation	6.1	5.9	6.1	5.7	6.5	5.6	6.2
Machinery and equipment	4.8	3.3	3.5	5.6	4.2	2.5	4.1
Construction	8.3	8.4	8.7	7.0	9.5	8.3	8.5
Other products	2.6	3.4	3.0	2.6	2.6	3.3	3.5
Domestic expenditure	4.3	4.6	4.3	3.7	4.9	4.6	4.5
Exports	3.1	4.6	5.4	3.8	2.4	3.3	5.9
Imports	5.2	6.0	5.9	3.9	6.6	6.2	5.8
Gross domestic product	3.4	4.0	4.1	3.7	3.0	3.4	4.7

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

a) EUR bn.

Consumption expenditure	2 181.1	2 224.1	2 265.1	1 074.5	1 106.6	1 089.4	1 134.6
Private households ²	1 612.4	1 642.5	1 670.8	794.0	818.4	803.0	839.4
Government	568.3	581.0	593.7	280.3	288.0	286.1	295.0
Gross fixed capital formation	610.7	626.9	645.9	295.2	315.6	302.1	324.9
Machinery and equipment	216.3	222.1	228.7	103.1	113.2	105.2	116.9
Construction	283.1	291.9	302.5	137.4	145.7	141.4	150.5
Other products	112.1	113.6	115.0	54.9	57.2	55.5	58.0
Domestic expenditure	2 788.8	2 854.0	2 912.7	1 375.1	1 413.7	1 406.5	1 447.5
Exports	1 486.5	1 540.7	1 611.6	744.2	742.4	759.1	781.5
Imports	1 300.0	1 367.2	1 442.6	635.4	664.6	664.5	702.7
Gross domestic product	2 977.3	3 031.2	3 087.1	1 483.8	1 493.5	1 502.2	1 529.0

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

Consumption expenditure	1.1	2.0	1.8	1.2	1.0	1.4	2.5
Private households ²	1.1	1.9	1.7	1.3	1.0	1.1	2.6
Government	1.0	2.2	2.2	0.8	1.1	2.0	2.4
Gross fixed capital formation	3.0	2.7	3.0	2.8	3.2	2.3	3.0
Machinery and equipment	4.2	2.7	3.0	4.8	3.7	2.1	3.2
Construction	3.3	3.1	3.7	2.5	4.0	2.9	3.3
Other products	0.4	1.3	1.2	0.4	0.3	1.2	1.5
Domestic expenditure	2.1	2.3	2.1	1.7	2.4	2.3	2.4
Exports	2.0	3.6	4.6	3.2	0.8	2.0	5.3
Imports	3.3	5.2	5.5	3.2	3.5	4.6	5.7
Gross domestic product	1.5	1.8	1.8	1.9	1.2	1.2	2.4

National Accounts (cont.)

Forecast period: 2018 to 2019

	2018	2019	2020	2018		2019	
				H1	H2	H1	H2

4. Deflators (2010=100)

Change on the same period of the preceding year in %

Private consumption ²	1.6	1.8	1.8	1.5	1.7	1.8	1.7
Government consumption	2.5	2.2	2.4	2.6	2.4	2.2	2.2
Gross fixed capital formation	3.0	3.2	3.0	2.8	3.2	3.2	3.2
Machinery and equipment	0.6	0.6	0.5	0.7	0.5	0.5	0.8
Construction	4.8	5.2	4.9	4.4	5.3	5.3	5.0
Exports	1.1	0.9	0.7	0.5	1.6	1.3	0.6
Imports	1.9	0.8	0.4	0.7	3.0	1.5	0.0
Gross domestic product	1.8	2.2	2.2	1.8	1.8	2.1	2.2

5. National income

a) EUR bn.

Primary income of private households ²	2 356.5	2 443.6	2 532.8	1 165.5	1 191.0	1 207.4	1 236.2
Employers social contributions	313.0	327.9	339.8	151.6	161.4	158.7	169.1
Gross wages and salaries	1 432.5	1 495.6	1 560.5	682.6	750.0	712.4	783.2
Other primary income ⁴	611.0	620.2	632.6	331.4	279.7	336.3	283.9
Primary income of other sectors	503.6	529.3	560.6	234.8	268.8	237.4	291.9
Net national income	2 860.1	2 972.9	3 093.5	1 400.3	1 459.8	1 444.8	1 528.1
Consumption of fixed capital	599.5	627.7	656.6	296.8	302.7	310.8	316.9
Gross national income	3 459.6	3 600.6	3 750.0	1 697.1	1 762.5	1 755.6	1 845.0
memorandum item:							
Net national income (factor costs)	2 532.2	2 635.4	2 746.2	1 236.6	1 295.6	1 276.3	1 359.0
Property and entrepreneurial income	786.8	811.9	846.0	402.5	384.3	405.2	406.7
Compensation of employees	1 745.5	1 823.4	1 900.2	834.1	911.4	871.1	952.3

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

Primary income of private households ²	3.8	3.7	3.7	4.2	3.4	3.6	3.8
Employers social contributions	3.6	4.8	3.6	3.6	3.5	4.7	4.8
Gross wages and salaries	4.8	4.4	4.3	4.7	4.9	4.4	4.4
... per employee	3.2	3.2	3.4	3.0	3.3	3.1	3.2
Other primary income ⁴	1.6	1.5	2.0	3.3	- 0.3	1.5	1.5
Primary income of other sectors	0.1	5.1	5.9	0.3	- 0.1	1.1	8.6
Net national income	3.1	3.9	4.1	3.5	2.8	3.2	4.7
Consumption of fixed capital	4.6	4.7	4.6	4.5	4.7	4.7	4.7
Gross national income	3.4	4.1	4.1	3.7	3.1	3.4	4.7
memorandum item:							
Net national income (factor costs)	3.1	4.1	4.2	3.5	2.7	3.2	4.9
Property and entrepreneurial income	- 0.1	3.2	4.2	1.6	- 1.8	0.7	5.8
Compensation of employees	4.6	4.5	4.2	4.5	4.6	4.4	4.5

6. Disposable income of private households ²

a) EUR bn.

Mass income	1 402.4	1 470.5	1 531.9	673.2	729.2	705.7	764.8
Net wages and salaries	945.9	993.0	1 035.9	445.6	500.2	467.7	525.4
Social benefits other than social transfers in kind	580.4	606.1	628.0	289.3	291.1	302.2	303.9
less: Levies on social benefits, taxes on consumption	123.8	128.7	132.0	61.7	62.2	64.1	64.6
Other primary income ⁴	611.0	620.2	632.6	331.4	279.7	336.3	283.9
Other transfers received (net) ⁵	- 82.7	- 86.0	- 89.1	- 42.2	- 40.4	- 43.2	- 42.8
Disposable income	1 930.8	2 004.7	2 075.5	962.3	968.4	998.8	1 005.8
Change in pension entitlements	52.9	53.7	54.5	26.1	26.8	26.5	27.2
Consumption expenditure	1 780.0	1 845.5	1 910.6	872.8	907.1	899.0	946.6
Saving	203.7	212.8	219.3	115.6	88.1	126.4	86.5
Saving ratio (%) ⁶	10.3	10.3	10.3	11.7	8.9	12.3	8.4

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

Mass income	4.1	4.9	4.2	3.8	4.3	4.8	4.9
Net wages and salaries	4.8	5.0	4.3	4.6	4.9	4.9	5.0
Social benefits other than social transfers in kind	2.7	4.4	3.6	2.3	3.1	4.5	4.4
less: Levies on social benefits, taxes on consumption	2.8	3.9	2.6	3.0	2.7	3.9	3.9
Other primary income ⁴	1.6	1.5	2.0	3.3	- 0.3	1.5	1.5
Disposable income	3.3	3.8	3.5	3.3	3.2	3.8	3.9
Consumption expenditure	2.8	3.7	3.5	2.8	2.7	3.0	4.3
Saving	7.3	4.5	3.0	7.1	7.5	9.3	- 1.9

National Accounts (cont.)

Forecast period: 2018 to 2019

	2018	2019	2020	2018		2019	
				H1	H2	H1	H2

7. Revenue and expenditure by general government ⁷

a) EUR bn.

Revenue							
Taxes	801.7	828.4	858.0	404.3	397.4	415.9	412.4
Social contributions	571.1	595.4	619.2	276.7	294.4	288.6	306.8
Property income	18.6	18.9	18.7	11.4	7.2	11.8	7.1
Other current transfers	24.9	23.5	23.9	11.6	13.3	10.8	12.7
Capital transfers	12.0	11.0	11.0	5.5	6.5	5.5	5.5
Sales	115.2	119.5	122.6	54.2	61.1	56.8	62.8
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Total	1 543.8	1 596.8	1 653.6	763.9	779.9	789.4	807.4
Expenditure							
Intermediate consumption ⁸	449.8	470.6	492.8	216.1	233.7	225.9	244.7
Compensation of employees	255.2	264.7	274.1	122.8	132.4	127.3	137.4
Property income (interest)	31.6	30.4	30.0	15.9	15.7	15.3	15.1
Subsidies	27.9	28.4	29.1	13.4	14.5	13.6	14.8
Social benefits	520.8	546.0	567.5	259.6	261.2	272.3	273.8
Other current transfers	82.7	91.0	95.1	40.6	42.0	44.8	46.2
Capital transfers	39.2	36.2	38.4	13.2	26.0	14.2	22.0
Gross capital formation	79.7	86.1	93.4	34.8	44.9	36.8	49.3
Net acquisitions of non-produced non-financial assets	- 1.6	- 1.6	- 1.6	- 0.6	- 1.0	- 0.6	- 1.0
Total	1 485.3	1 552.0	1 618.8	715.8	769.5	749.5	802.5
Net lending	58.5	44.8	34.8	48.1	10.4	39.9	4.9

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

Revenue							
Taxes	4.6	3.3	3.6	5.4	3.8	2.9	3.8
Social contributions	4.1	4.2	4.0	4.1	4.1	4.3	4.2
Property income	17.3	1.4	- 1.2	31.7	0.2	3.3	- 1.5
Other current transfers	14.4	- 5.5	1.7	18.6	10.9	- 6.9	- 4.3
Capital transfers	17.4	- 8.4	0.0	13.8	20.6	0.0	- 15.4
Sales	4.0	3.7	2.6	3.3	4.6	4.7	2.8
Other subsidies	- 1.5	0.0	0.0	1.1	- 3.6	0.0	0.0
Total	4.7	3.4	3.6	5.3	4.2	3.3	3.5
Expenditure							
Intermediate consumption ⁸	3.4	4.6	4.7	3.0	3.9	4.5	4.7
Compensation of employees	3.4	3.7	3.5	3.8	3.1	3.7	3.8
Property income (interest)	- 6.4	- 3.8	- 1.3	- 10.1	- 2.3	- 3.8	- 3.8
Subsidies	- 1.8	2.1	2.3	- 3.6	0.0	1.9	2.3
Social benefits	2.9	4.8	3.9	2.5	3.3	4.9	4.8
Other current transfers	9.9	10.1	4.5	2.1	18.7	10.2	10.0
Capital transfers	- 10.8	- 7.6	6.1	- 40.6	19.7	7.4	- 15.3
Gross capital formation	10.0	8.0	8.5	11.8	8.7	5.7	9.9
Net acquisitions of non-produced non-financial assets	0.3	0.0	0.0	- 9.9	7.3	0.0	0.0
Total	3.2	4.5	4.3	1.5	4.8	4.7	4.3

¹ Price-adjusted gross domestic product per hour worked.

² Incl. nonprofit institutions serving households.

³ Incl. acquisitions less disposals of valuables.

⁴ Operating surplus/mixed income, net property income

⁵ Received less paid other current transfers.

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

⁷ Central, regional, local and social security funds.

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

Source: Federal Statistical Office, *Fachserie 18: National Accounts*; own calculations.