

# KIEL INSTITUTE **ECONOMIC OUTLOOK**

## **German Economy** Spring 2018

Finalized April 19, 2018

(based on German original version of March 20, 2018)



**No. 41 (2018|Q1)**

*Martin Ademmer, Jens Boysen-Hogrefe,  
Salomon Fiedler, Dominik Groll,  
Philipp Hauber, Nils Jannsen,  
Stefan Kooths, and Galina Potjagailo*

## GERMAN ECONOMY CLOSER TO ITS LIMIT

*Martin Ademmer, Jens Boysen-Hogrefe, Salomon Fiedler, Dominik Groll, Philipp Hauber, Nils Jannsen, Stefan Kooths, and Galina Potjagailo*

*The air for the economic upswing in Germany is getting thinner. We expect German GDP to grow by 2.5 percent this year and by 2.3 percent in 2019 after an increase of 2.2 percent in 2017. With capacity utilization already above normal levels at the current juncture, our forecast implies that the German economy is entering a boom period. Capacity constraints already seem to limit production in the construction sector, in which capacity utilization is at historic highs according to survey data. Constraints are becoming also more and more apparent on the labour market where it becomes increasingly difficult for firms to fill vacancies. The tensions on the labour market will lead to stronger increases in gross wages and salaries. Moreover, several measures planned by the new German government will further stimulate disposable income of private households, in particular in 2019. In sum, we expect net wages and salaries to increase by 5.4 percent in 2019, the highest growth rate since 1992. Against this backdrop, private consumption will strongly expand by 1.7 percent in 2018 and by 2.3 percent in 2019. High and increasing capacity utilization will further stimulate business investment. Even though the measures planned by the new German government will structurally weigh on the budget balance, the overall budget surpluses are expected to increase in tendency further due to strong increases in government revenues caused by the economic boom. However, we expect the structural budget balance to enter negative territory again in 2019. Even the structural budget balance currently overestimates the scope for additional governmental expenditures as it only accounts for the stance of the business cycle but neither for the unusually low expenditures for debt services due to the low interest rate levels nor for additional budget burdens due to the demographic change, which will become visible in the next years.*

**Capacity constraints increasingly restrict the economic expansion.** According to our most recent medium-run projection ([in German](#)), the output gap approaches 2 percent in this year, a value that is typically observed in boom periods. This estimate is supported by several other measures. For example, capacity utilization is high and increasing according to survey data. Moreover, the share of firms indicating that low demand is limiting their production is close to historical lows. Looking ahead, we see financial conditions that remain very supportive, a labour market that is still in good shape, and an expansionary fiscal policy. Therefore, we expect GDP to grow faster than potential output, which we estimate to expand by 1.6 percent on average between 2018 and 2022. Hence, the output gap will increase further and reach levels that have only been observed in the years after the German reunification. As capacity restrictions will make it more and more difficult to further expand production, the German economy is getting closer to its limits.

**German foreign trade slightly loses pace.** German exports increased at an extraordinarily high rate at the end of the previous year; overall they grew by 4.7 percent in 2017 (2016: 2.6 percent), in line with the vivid expansion in German export markets. Exports are at a high level, but their expansion is set to lose momentum at the beginning of this year, as suggested by the decline of nominal exports of goods in January. Moreover, soft indicators such as export expectations of German firms and production expectations in German export markets deteriorated at the beginning of this year, albeit coming from very high levels. Despite the recent slowdown, German exports are forecast to expand at pronounced, but slightly decelerating rates over the forecast period, in line with the growth dynamics in German export markets. The worsening of the German price competitiveness this year is mostly due to the appreciation of the Euro in 2017; we expect slight improvements over the course of the forecast period, which will provide some tailwinds to exports. German imports grew strongly at the end of last year, overall expanding by 5.1 percent in 2017 (2016: 3.9 percent). They are expected to temporarily slow down at the beginning of this year, given that nominal goods imports fell in January. Over the forecast period, imports are set to grow markedly, in line with strong business investment and with demand for intermediary goods associated with the vivid export dynamics.

**Consumer price inflation sticks to its gradual upward path.** At the start of the year, the appreciation of the euro provided a counterweight to the oil price which had risen in dollar terms until the end of January. The recent profile of monthly inflation rates was also influenced by base effects. We continue to expect the CPI to rise by about 1.7 percent in the current and 2 percent in the next year. Price pressures should increase because, while production capacities in Germany will become increasingly strained in the forecast period, the ECB's exit from its extraordinary monetary policy will be only very gradual. Net asset purchases will continue at a monthly pace of € 30 billion at least until September 2018, reinvestment of maturing assets will take place for a considerable amount of time after that, and the "fixed rate, full allotment" policy for the standard refinancing operations will continue until the end of 2019. We also do not expect the ECB to increase its policy rates before late 2019. Interest rates on credit and capital markets should rise slowly over the forecast period but financing conditions should nevertheless remain favourable.

**New German government spurs private consumption.** Gross wages and salaries are expected to grow with high rates of about 5 percent in 2018 and 2019. As labour supply shortages become stronger, these growth rates will be more and more fuelled by increases in wages and salaries per employee rather than by increases in the number of employees. Moreover, the new German government plans to implement several measures that will further stimulate disposable income, such as increasing transfer payments in the pension system and lower social security contributions. We expect that most of these measures will be implemented in 2019. As a consequence, net wages and salaries will increase by 5.4 percent -- faster than gross wages and salaries. Against this background, private consumption will further expand lively by 1.7 percent in this year and by 2.3 percent in 2019.

**Construction activity is increasingly hampered by capacity constraints.** Capacity utilization in the construction sector has been rising for several years and is currently at historic highs. At the same time, construction investment in the past quarters has been lagging behind the growth rates that might have been expected given the positive business prospects in the construction sector. Compared to our winter forecast we expect a more moderate increase in the volume of construction investment this year and next but a stronger increase in construction prices. Business investment is expected to continue to accelerate and to grow by almost 6 percent in 2018. This growth rate, however, is considerably smaller than the rates observed in previous boom periods.

**Labour market tightness intensifies further as the economic upswing continues.** Employment has accelerated for four years in a row. In 2017, the number of employed persons increased by 650,000 (+1.5 percent), representing the highest gain since 2007. New jobs were created predominantly in the service sector, whose share in total employment has grown further. As a result of the by now exceptionally long-lasting upswing on the labour market, signs of overheating are becoming more and more visible. Both the number of posted vacancies per unemployed person and the number of days an open position remains vacant have been regularly hitting all-time highs (for unified Germany). The same is true for the number of firms that, according to business surveys, view the availability of labour as a limit to production or as the most important risk to their business activities. The higher labour market tightness has also been affecting wage developments. Both nominal and real gross wages and salaries per employee have been rising with above-average rates since 2010. At the same time, the growth rate of effective wages has been increasingly higher than the growth rate of collectively agreed wages. The positive and widening wage drift could be, for example, due to extra payments and bonuses. We expect effective wages and salaries per employee to accelerate further, with rates of 3.3 percent (2018) and 3.5 percent (2019) after 2.7 percent (2017). Employment is forecast to grow further. Leading indicators for labour demand have reached levels unseen for several decades or even all-time highs, and the economic upswing is set to continue over the entire forecast period. However, large employment gains become increasingly unlikely, as labour supply growth is set to decline due to the ageing population and smaller gains from migration. Against this background, we expect the overall unemployment rate to decline further until 2019, albeit by less than employment increases.

**The government budget surplus reached a new record high in 2017 and will remain roughly constant in the forecast period.** In the current year, government finances are still supported by the cyclical upswing of the economy. However, one-offs due to the resolution of the crisis of the HSH Nordbank, higher transfers to the EU, and a slightly expansionary fiscal policy prevent a further increase of the surplus during the year 2018. In 2019 fiscal policy is likely to be even more

expansionary due to the fiscal plans of the new coalition government. Besides various measures that will affect the budget of the federal government, social security contribution rates will be lowered, while pensions will increase. But since the business cycle upswing will continue and the aforementioned one-offs will only weigh on the budget in 2018, the budget surplus will increase slightly. However, the structural budget balance deteriorates sharply.

**Table 1:**  
**Key indicators, 2016–2019**

	2016	2017	2018	2019
Gross domestic product (GDP), price-adjusted	1.9	2.2	2.5	2.3
Gross domestic product, deflator	1.3	1.5	1.8	2.2
Consumer prices	0.5	1.7	1.7	2.0
Labor productivity (per hour worked)	1.3	1.1	1.1	1.3
Employment (1,000 persons)	43,638	44,291	44,915	45,437
Unemployment rate (percent)	6.1	5.7	5.2	4.8
in relation to nominal GDP				
Public sector net lending	0.8	1.1	1.1	1.2
Gross public debt	68.1	65.0	61.4	57.9
Current account balance	8.5	8.1	8.2	8.1

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.

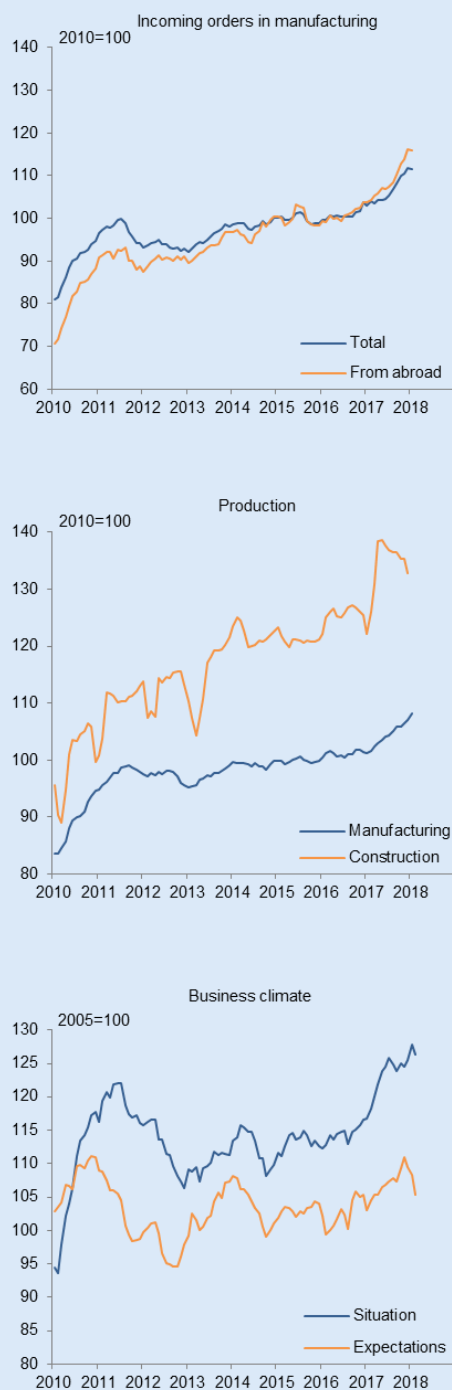
**Data annex**

# CONTENTS

1. Leading indicators .....	6
2. Monetary conditions and prices .....	7
3. External trade.....	9
4. Domestic expenditure.....	11
5. Industries.....	13
6. Wages.....	14
7. Employment.....	15
8. Public finances.....	16
9. GDP and its components .....	17
10. The German economy, 2015–2018 .....	18
11. National accounts .....	19

## 1. Leading indicators

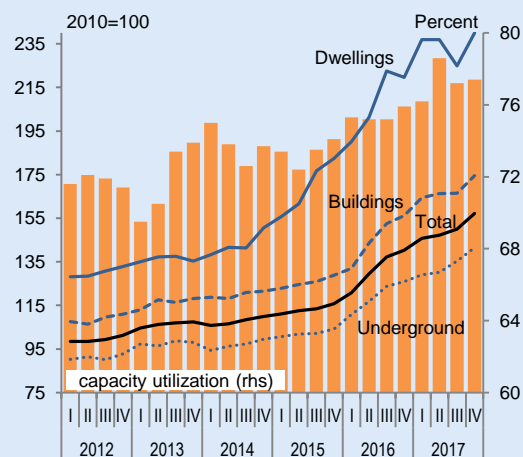
**Figure 1.1:**  
Leading indicators, 2010–2018



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

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

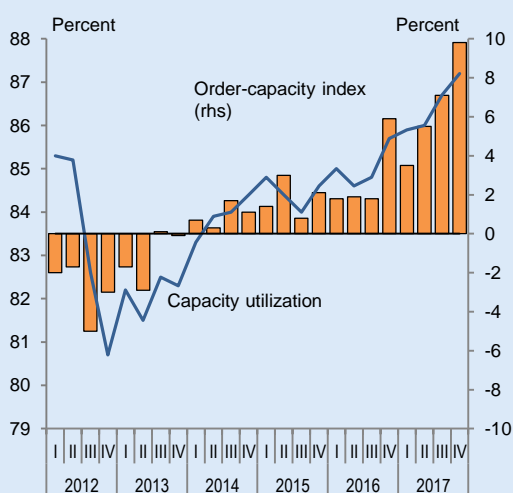
**Figure 1.2:**  
Order stocks and capacity utilization in construction industry, 2012–2017



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*.

**Figure 1.3:**  
Capacity utilization, 2012–2017

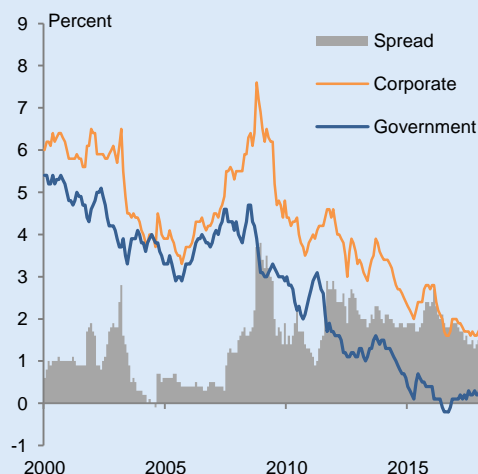


Quarterly data, seasonally adjusted; capacity utilization in manufacturing (axes cross at normal capacity utilization).

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

## 2. Monetary conditions and prices

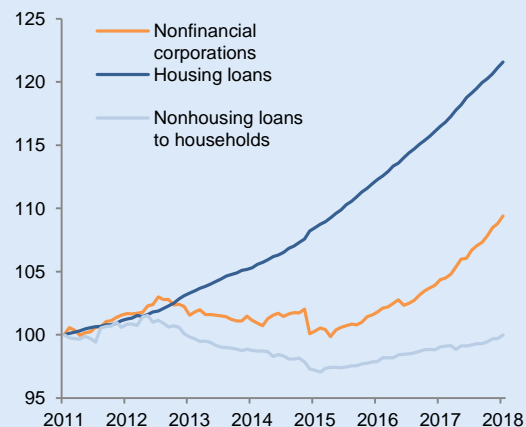
**Figure 2.1:**  
Bond yields, 2000–2017



Monthly data, average maturities above three years.

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

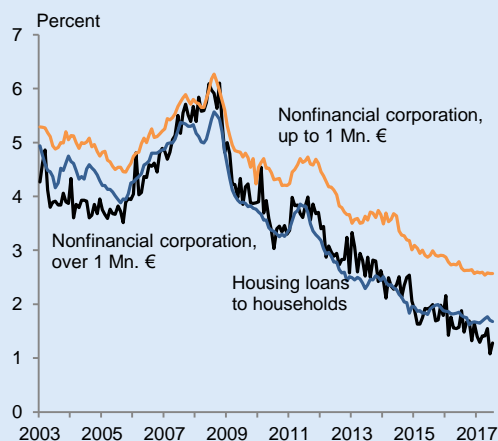
**Figure 2.3:**  
Sum of loans, 2011–2018



Index: Jan 2011=100; Monthly data.

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

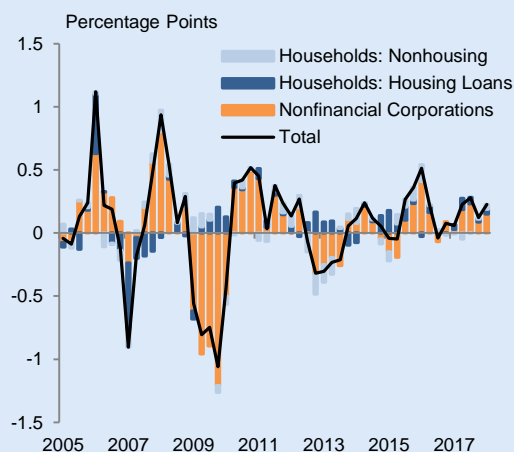
**Figure 2.2:**  
Loan interest, 2003–2017



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

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

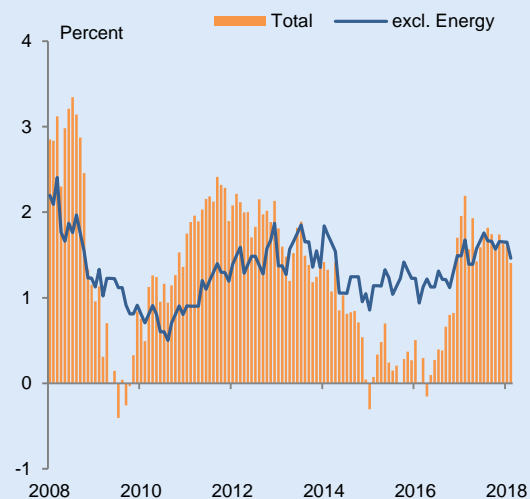
**Figure 2.4:**  
Credit impulse, 2005–2017



Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009). The credit impulse is the change of the credit growth relative to the growth in GDP.

Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Biggs et al. (2009), Credit and economic recovery, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam; own calculations.

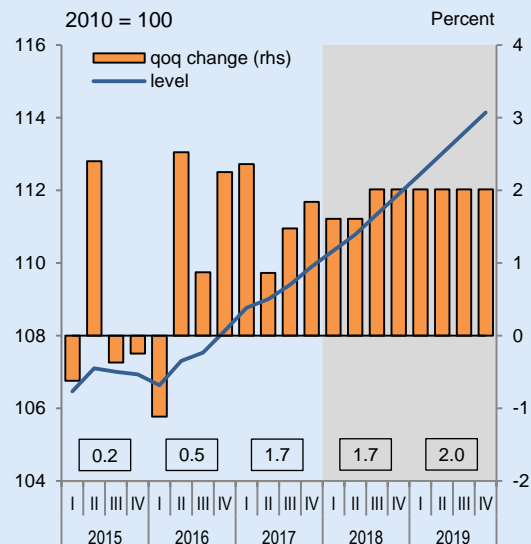
**Figure 2.5:**  
Consumer prices, 2008–2018



Monthly data; year-on-year change.

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

**Figure 2.6:**  
Consumer price index, 2015–2019



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, 2016–2019

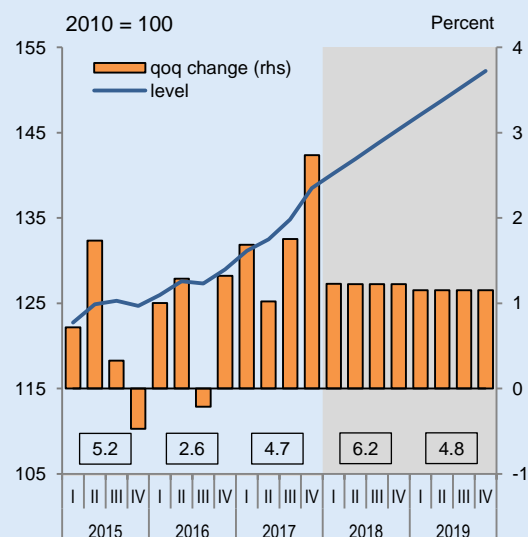
	2016				2017				2018				2019			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	
Long-term interest rate	0.1	0.0	-0.1	0.2	0.3	0.3	0.4	0.4	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2
US-dollar/euro exchange rate	1.10	1.13	1.12	1.07	1.07	1.10	1.18	1.18	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
Price competitiveness	86.80	87.2	87.0	86.8	86.3	86.9	89.0	89.1	89.5	89.3	89.2	89.1	89.0	88.9	88.8	88.7
Export markets	0.48	0.59	0.48	0.83	0.76	0.92	0.75	0.73	0.72	0.69	0.66	0.62	0.61	0.61	0.61	0.61
Oil price	35.3	46.8	47.0	49.5	53.6	49.6	52.1	61.4	66.6	66.9	67.3	67.6	67.9	68.3	68.6	69.0

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

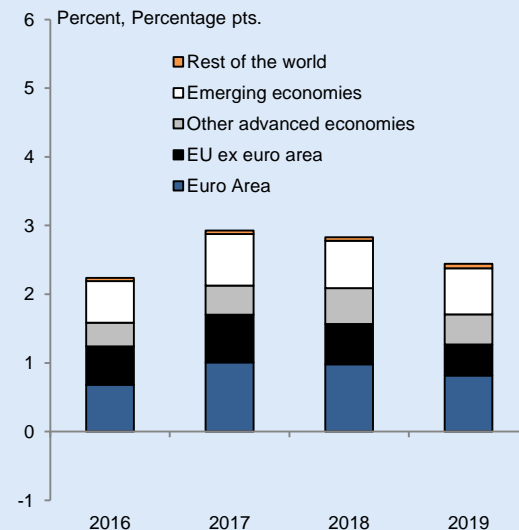
**Figure 3.1:**  
Exports, 2015–2019



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.

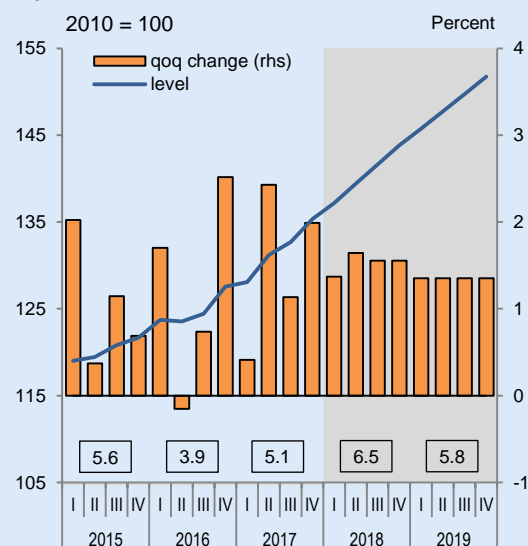
**Figure 3.3:**  
German export markets, 2016–2019



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; 2017–2019: IfW forecast.

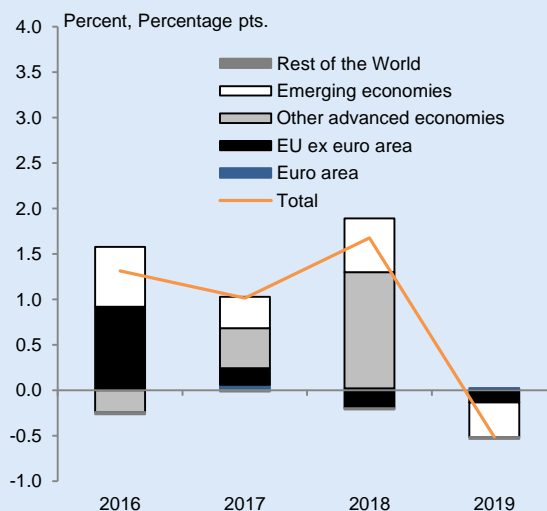
**Figure 3.2:**  
Imports, 2015–2019



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.

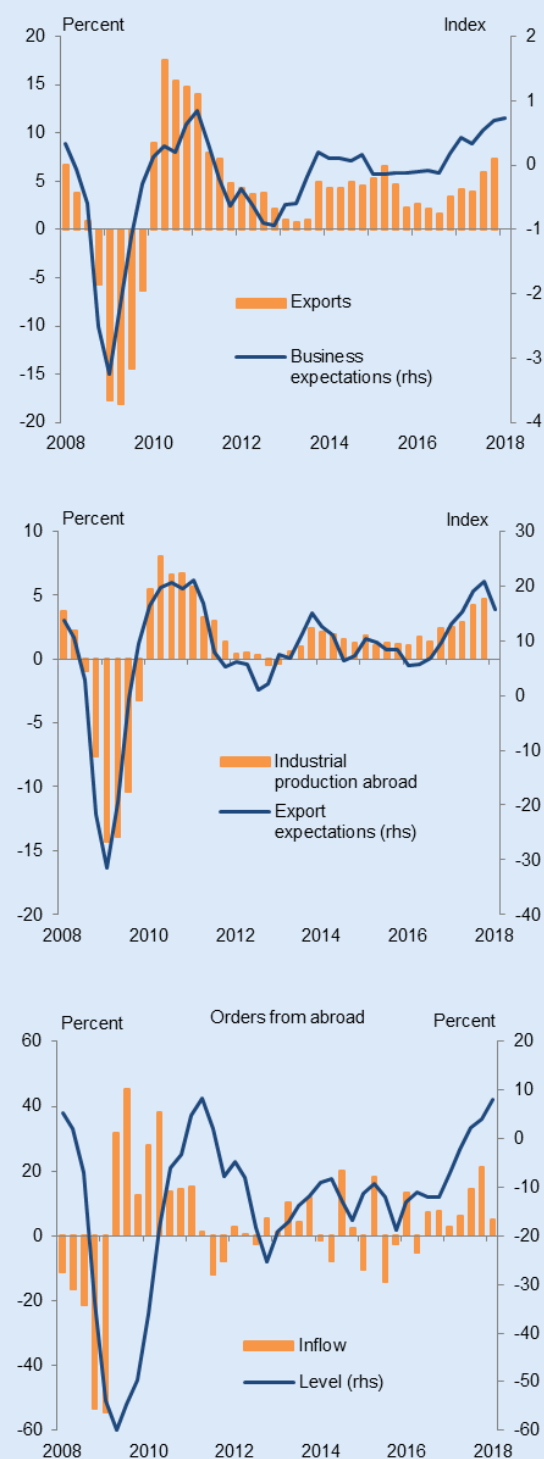
**Figure 3.4:**  
Germany's price competitiveness, 2016–2019



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; 2017–2019: IfW forecast.

**Figure 3.5:**  
Export indicators, 2008–2018

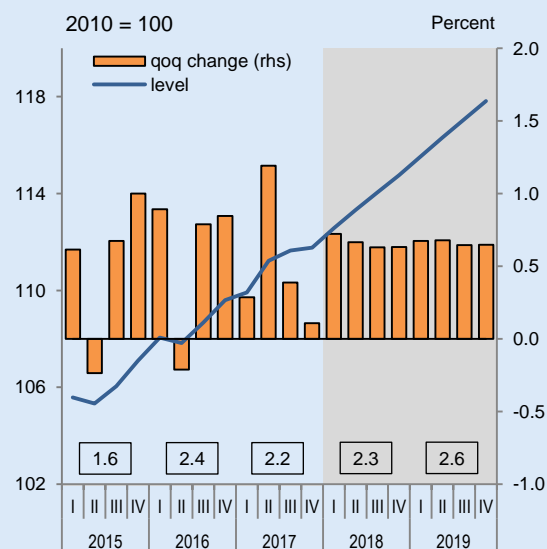


Quarterly data; exports, industrial production, order inflow: volumes, change on previous year; export expectations, foreign orders on hand: volumes; business expectations, industrial production: based on 42 countries weighted by shares of German exports.

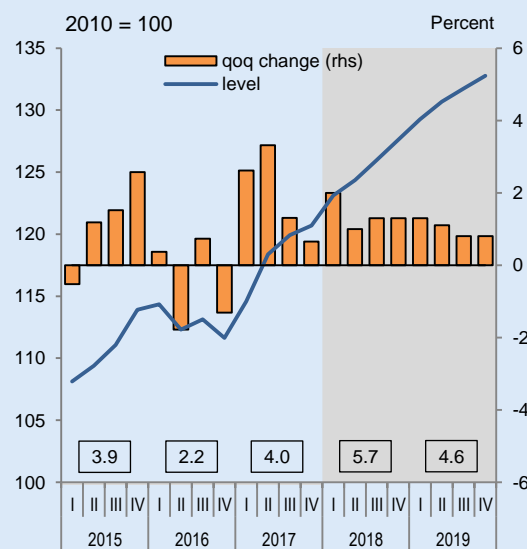
Source: Deutsche Bundesbank, *Saisonbereinigte Wirtschaftszahlen*; Thomson Financial Datastream; ifo, *Konjunkturperspektiven*; own calculations.

## 4. Domestic expenditure

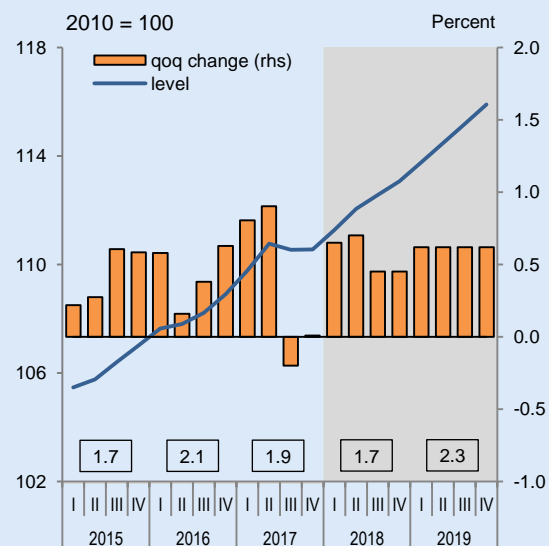
**Figure 4.1:**  
Domestic expenditure, 2015–2019



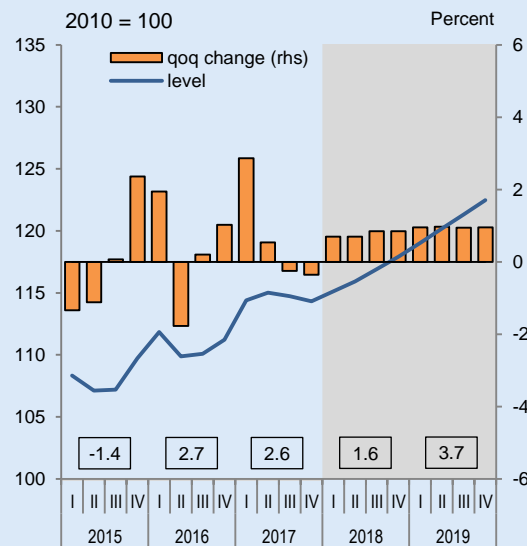
**Figure 4.3:**  
M&E investments, 2015–2019



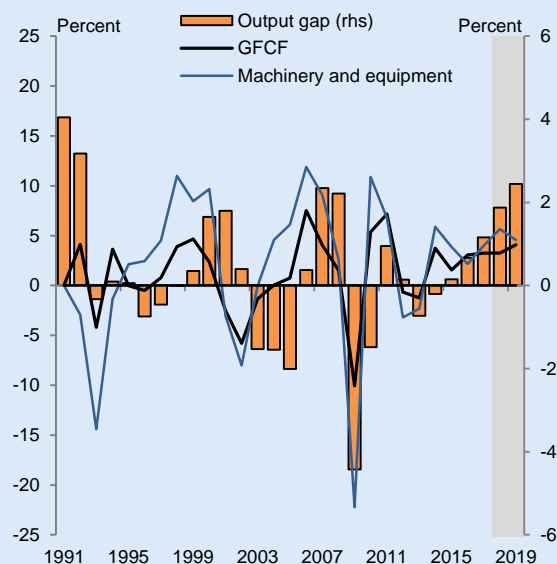
**Figure 4.2:**  
Private consumption, 2015–2019



**Figure 4.4:**  
Construction, 2015–2019



**Figure 4.5:**  
Investment cycles, 1991–2019



Annual data; GFCF, machinery and equipment: volumes, change on previous year; output gap: in percent of potential output, estimation taken from autumn 2017 projection.

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

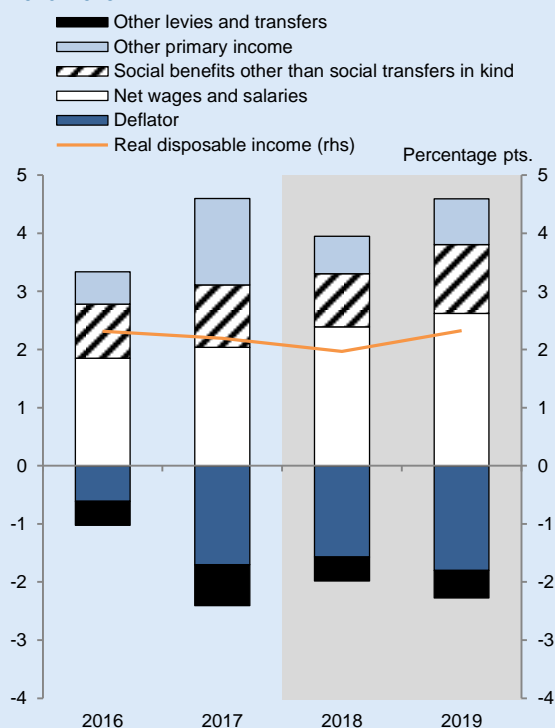
**Table 4.1:**  
Gross fixed capital formation, 2016–2019

	2016	2017	2018	2019
Total	3.1	3.2	3.3	4.1
Corporate investment	2.7	3.5	3.6	4.0
Machinery and equipment	2.2	4.0	5.7	4.6
Construction (non-dwellings)	0.0	2.3	-1.1	2.0
Other	5.5	3.5	3.5	4.4
Dwellings	4.0	2.7	2.1	4.5
Public (non-dwellings)	2.7	2.9	4.9	2.9
Memorandum item:	2.7	2.6	1.6	3.7
Construction	2.7	4.5	4.1	4.4

Volumes; change over previous year in percent.

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

**Figure 4.6:**  
Contributions to changes in real disposable income, 2016–2019



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.

## 5. Industries

**Table 5.1:**  
**Gross value added for industries, 2017–2018**

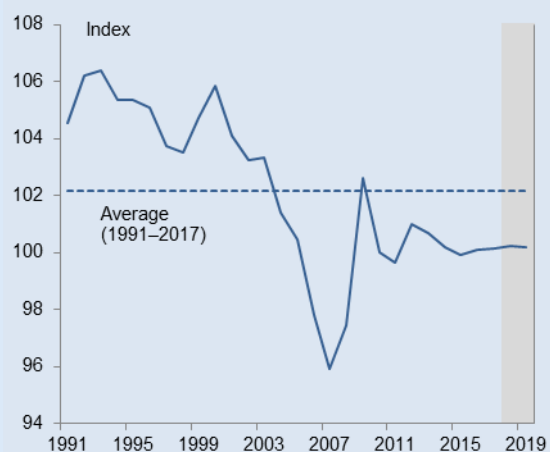
	2017		2018			
	III	IV	I	II	III	IV
<i>Seasonally and calendar-adjusted, quarter-on-quarter change in percent</i>						
Gross domestic product	0.7	0.6	0.7	0.5	0.5	0.5
Gross value added	0.9	0.6	0.7	0.5	0.5	0.5
Industry excluding construction	1.8	1.3	1.5	0.8	0.8	0.8
Manufacturing	2.2	1.3	1.5	0.8	0.8	0.8
Construction	-0.2	0.5	-0.2	0.3	0.5	0.5
Trade, transport, accommodation, and food services	-0.1	0.7	0.8	0.8	0.6	0.6
Information and communication	1.6	0.8	1.3	1.3	1.4	1.4
Financial and insurance services	0.3	0.4	-0.2	-0.2	-0.2	-0.1
Real estate activities	0.6	0.2	0.3	0.3	0.3	0.3
Business services	1.5	0.5	0.8	0.6	0.6	0.6
Public services, education, health	0.5	0.2	0.3	0.3	0.3	0.3
Other services	0.8	-0.1	0.2	0.2	0.2	0.2

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, 1991–2019



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, 2016–2019

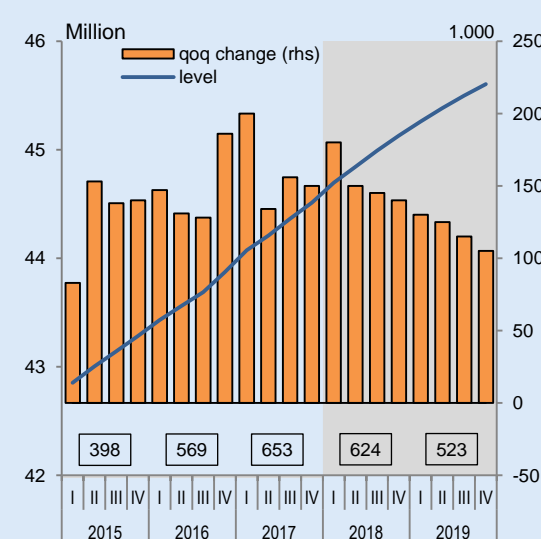
	2016	2017	2018	2019
<i>Per hour</i>				
Negotiated wages	2.1	2.1	2.6	2.6
Gross wages and salaries	3.1	2.9	3.3	3.5
Wage drift	1.0	0.8	0.6	0.9
Compensation of employees	2.9	2.8	2.9	3.5
Labor productivity	1.3	1.1	1.1	1.3
Unit labor costs	1.5	1.7	1.8	2.1
Unit labor costs (real)	0.2	0.1	0.1	0.0
<i>Per capita</i>				
Negotiated wages	2.1	2.1	2.6	2.6
Gross wages and salaries	2.4	2.7	3.3	3.5
Wage drift	0.3	0.6	0.7	0.9
Compensation of employees	2.2	2.6	3.1	3.4
Labor productivity	0.6	0.7	1.1	1.2
Unit labor costs	1.6	1.9	2.0	2.2
Unit labor costs (real)	0.2	0.3	0.2	0.1

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.

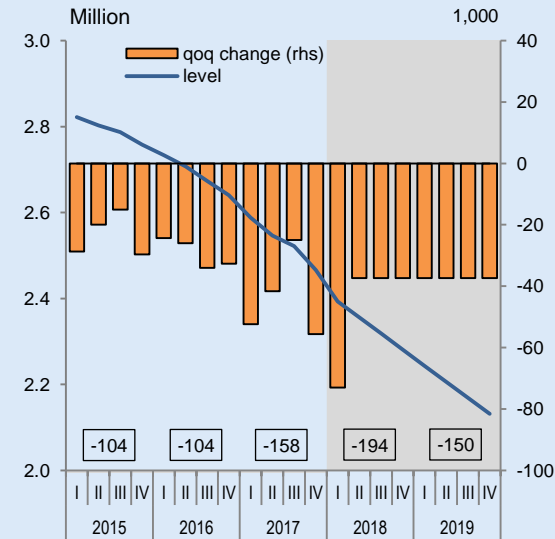
Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; Deutsche Bundesbank, *Negotiated Pay Rate Statistics*; shaded: IfW forecast.

## 7. Employment

**Figure 7.1:**  
Employment, 2015–2019



**Figure 7.2:**  
Unemployment, 2015–2019



**Table 7.1:**  
Employment, 2015–2019 (1,000 persons)

	2015	2016	2017	2018	2019
Hours worked (domestic concept, mn. hours)	58,924	59,285	59,964	60,800	61,432
Persons in employment (domestic concept)	43,069	43,638	44,291	44,915	45,437
Self-employed	4,360	4,333	4,308	4,281	4,261
Employees (domestic concept)	38,710	39,305	39,983	40,633	41,176
Employees subject to social security contributions	30,854	31,538	32,258	32,910	33,492
Minijobs	4,849	4,802	4,739	4,720	4,680
Net commuting	79	93	101	98	98
Persons in employment (national concept)	42,990	43,545	44,189	44,817	45,339
Employees (national concept)	38,631	39,211	39,882	40,536	41,078
Unemployed persons (registered)	2,795	2,691	2,533	2,339	2,190
Unemployment rate (registered; percent)	6.4	6.1	5.7	5.2	4.8
Unemployment rate (ILO; percent)	4.3	3.9	3.6	3.3	3.0

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, 2015–2019 (bn. euro)

	2015	2016	2017	2018	2019
<b>Revenues</b>	<b>1 354.3</b>	<b>1 414.2</b>	<b>1 474.6</b>	<b>1 532.9</b>	<b>1 592.1</b>
➤ relative to GDP	44.5	45.0	45.2	45.0	44.9
Taxes	698.0	732.0	767.2	797.5	831.7
➤ relative to GDP	22.9	23.3	23.5	23.4	23.4
Social contributions	500.8	523.8	548.1	571.0	592.0
➤ relative to GDP	16.5	16.7	16.8	16.8	16.7
Other revenues	155.4	158.5	159.3	164.4	168.5
➤ relative to GDP	5.1	5.0	4.9	4.8	4.7
<b>Expenditures</b>	<b>1 334.9</b>	<b>1 388.6</b>	<b>1 438.0</b>	<b>1 496.7</b>	<b>1 549.3</b>
➤ relative to GDP	43.9	44.2	44.1	44.0	43.7
Compensation of employees	229.2	236.5	246.5	255.3	265.5
Intermediate consumption	142.2	150.0	155.3	160.9	167.2
Social transfers in kind	252.4	268.6	277.9	287.8	300.1
Gross capital formation	64.2	66.8	70.3	74.7	79.8
Capital transfers	46.4	41.6	38.9	36.9	34.9
Social benefits	469.9	486.3	505.5	521.6	543.3
Subsidies	27.0	27.8	27.6	28.4	29.3
Other current transfers	74.8	75.7	75.3	85.3	93.5
Other capital transfers and investment grants	30.0	36.4	41.9	46.9	36.9
Other expenditures	-1.3	-1.3	-1.4	-1.4	-1.4
<b>Net lending/net borrowing</b>	<b>19.4</b>	<b>25.7</b>	<b>36.6</b>	<b>36.2</b>	<b>42.8</b>
➤ relative to GDP	0.6	0.8	1.1	1.1	1.2
<b>Revenues of central, state, and local governments</b>	<b>880.0</b>	<b>918.7</b>	<b>955.4</b>	<b>991.5</b>	<b>1 030.7</b>
Net of transfers from social security funds	879.0	917.7	954.3	990.4	1 029.6
Transfers from social security funds	1.1	1.1	1.1	1.1	1.1
<b>Expenditures of central, state, and local governments</b>	<b>863.3</b>	<b>901.3</b>	<b>929.3</b>	<b>969.9</b>	<b>998.0</b>
Net of transfers to social security funds	758.8	791.0	814.3	852.2	877.2
Transfers to social security funds	104.6	110.3	115.1	117.7	120.9
<b>Net lending/net borrowing central, state, and local government</b>	<b>16.7</b>	<b>17.4</b>	<b>26.1</b>	<b>21.7</b>	<b>32.7</b>
<b>Revenues of social security funds</b>	<b>579.9</b>	<b>606.9</b>	<b>635.4</b>	<b>660.2</b>	<b>683.4</b>
Net of transfers from central, state, and local governments	475.3	496.6	520.3	542.5	562.5
<b>Expenditures of social security funds</b>	<b>577.2</b>	<b>598.6</b>	<b>624.8</b>	<b>645.6</b>	<b>673.3</b>
Net of transfers to central, state, and local governments	576.1	597.6	623.7	644.5	672.2
<b>Net lending/net borrowing social security funds</b>	<b>2.7</b>	<b>8.2</b>	<b>10.5</b>	<b>14.6</b>	<b>10.1</b>

Sums may deviate due to rounding.

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

## 9. GDP and its components

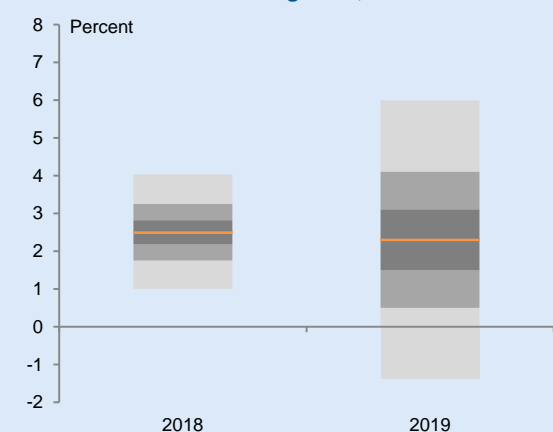
**Table 9.1:**  
Quarterly data, 2017–2019

	2017				2018				2019			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	0.9	0.6	0.7	0.6	0.7	0.5	0.5	0.5	0.6	0.6	0.6	0.6
Private consumption	0.8	0.9	-0.2	0.0	0.6	0.7	0.5	0.5	0.6	0.6	0.6	0.6
Government consumption	0.3	0.3	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Machinery and equipment	2.6	3.3	1.3	0.7	2.0	1.0	1.3	1.3	1.3	1.1	0.8	0.8
Constructions	2.9	0.5	-0.3	-0.4	0.7	0.7	0.8	0.8	1.0	1.0	0.9	1.0
Other investment	2.0	0.9	0.6	-0.1	1.2	1.2	1.2	1.2	1.0	1.0	1.0	1.0
Change in inventories	-0.7	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	0.3	1.2	0.4	0.1	0.7	0.7	0.6	0.6	0.7	0.7	0.6	0.6
Exports	1.7	1.0	1.8	2.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Imports	0.4	2.4	1.1	2.0	1.4	1.6	1.6	1.6	1.4	1.4	1.4	1.4
Net exports	0.6	-0.5	0.4	0.5	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Employment (domestic)	44,074	44,208	44,364	44,514	44,694	44,844	44,989	45,129	45,259	45,384	45,499	45,604
Unemployment (registered)	2,588	2,547	2,522	2,466	2,393	2,356	2,318	2,281	2,243	2,206	2,169	2,131

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.

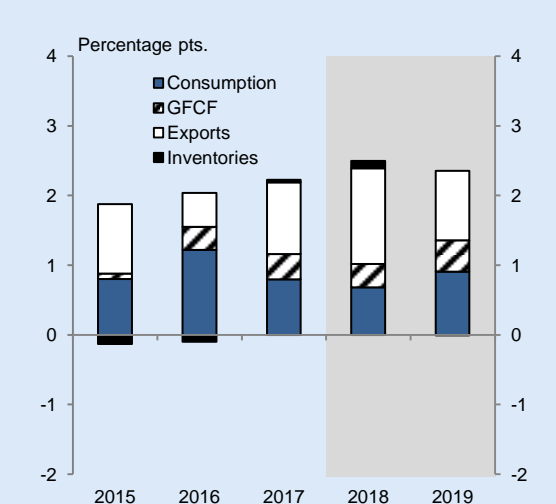
**Figure 9.1:**  
Forecast intervals for GDP growth, 2018–2019



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 first quarter 1994–2017.

Source: Own calculations.

**Figure 9.2:**  
Expenditure-side components to GDP growth, 2015–2019



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, 2016–2019

	2017	2016	2017	2018	2019
	€ bn.	Change over previous year in percent			
<b>GDP (constant prices)</b>		1.9	2.2	2.5	2.3
Private consumption expenditure		2.1	1.9	1.7	2.3
Public consumption expenditure		3.7	1.6	1.8	2.0
Total fixed investment		3.1	3.2	3.3	4.1
Machinery and equipment		2.2	4.0	5.7	4.6
Construction		2.7	2.6	1.6	3.7
Other equipment		5.5	3.5	3.5	4.4
Changes in stocks		-0.2	0.1	0.2	0.0
Domestic Demand		2.4	2.2	2.3	2.6
Exports		2.6	4.7	6.2	4.8
Imports		3.9	5.1	6.5	5.8
Net exports		-0.3	0.2	0.4	-0.1
<b>GDP (current prices)</b>	3,263.4	3.3	3.8	4.3	4.6
Private consumption expenditure	1,735.0	2.7	3.6	3.3	4.1
Public consumption expenditure	638.7	4.8	3.8	3.6	4.1
Total fixed investment	662.7	4.3	5.2	5.8	6.7
Machinery and equipment	214.6	2.5	4.3	6.3	5.2
Construction	322.7	4.6	6.0	5.7	7.9
Other equipment	125.4	6.4	4.8	5.4	6.4
Changes in stocks (€ bn.)		-26.4	-21.3	-15.2	-15.9
Domestic Demand	3,015.0	3.3	4.2	4.1	4.7
Exports	1,542.1	1.6	6.3	7.2	5.8
Imports	1,293.7	1.4	7.9	7.3	6.3
Net exports (€ bn.)		250.6	248.3	264.8	273.1
Gross national income	3,323.5	3.1	3.9	4.3	4.6
Deflator of GDP		1.3	1.5	1.8	2.2
Private consumption expenditure		0.6	1.7	1.6	1.8
Public consumption expenditure		1.1	2.2	1.7	2.0
Investment in machinery and equipment		0.4	0.3	0.6	0.5
Investment in construction		1.9	3.2	4.1	4.1
Investment in other equipment		0.8	1.3	1.8	1.9
Exports		-1.0	1.6	1.0	1.0
Imports		-2.5	2.6	0.8	0.4
<i>Addendum: Consumer prices</i>		0.5	1.7	1.7	2.0
<b>Income distribution</b>					
National income	2,434.4	3.2	4.1	4.7	4.9
Employment income	1,669.9	3.8	4.3	4.7	4.8
in percent of national income		68.4	68.6	68.6	68.5
Entrepreneurial and property income	764.5	2.1	3.6	4.8	5.2
Disposable income of private households	1,875.2	2.9	3.9	3.5	4.1
Savings rate		9.7	9.9	10.0	10.0
Wages and salaries	1,370.3	4.0	4.5	5.0	4.9
Wage per hour		3.1	2.9	3.3	3.5
Unit labor costs		1.5	1.7	1.8	2.1
Productivity per hour		1.3	1.1	1.1	1.3
Unemployment (1,000)		2,691.0	2,532.8	2,339.1	2,189.5
Rate of unemployment (percent)		6.1	5.7	5.2	4.8
Total employment (1,000)		43,637.8	44,290.5	44,914.5	45,437.0
Public sector budget balance (€ bn.)		25.7	36.6	36.2	42.8
Public sector budget balance (in percent of GDP)		0.8	1.1	1.1	1.2
Public debts (in percent)		68.1	65.0	61.4	57.9
Change in stocks, net exports: contribution to GDP growth.					
<i>Source: Federal Statistical Office, Fachserie 18, Series 1.2; shaded: IfW forecast.</i>					

## 11. National accounts

Forecast period: 2017 to 2019

	2017	2018	2019	2018		2019	
				H1	H2	H1	H2

### 1. Production

Change over the same period of the preceding year in %

Persons in employment	1.5	1.4	1.2	1.4	1.4	1.2	1.1
Hours worked	1.1	1.4	1.0	1.5	1.3	0.7	1.3
Hours worked by person in employment	- 0.3	0.0	- 0.1	0.0	- 0.1	- 0.5	0.2
Labor productivity <sup>1</sup>	1.1	1.1	1.3	1.0	1.2	1.3	1.3
<b>Gross domestic product, price-adjusted</b>	<b>2.2</b>	<b>2.5</b>	<b>2.3</b>	<b>2.5</b>	<b>2.5</b>	<b>2.1</b>	<b>2.6</b>

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

a) EUR bn.

Consumption expenditure	2 373.6	2 453.6	2 554.2	1 194.5	1 259.1	1 240.7	1 313.5
Private households <sup>2</sup>	1 735.0	1 792.0	1 865.5	872.9	919.1	906.0	959.5
Government	638.7	661.6	688.7	321.6	340.0	334.6	354.0
Gross fixed capital formation	662.7	701.3	748.3	336.2	365.1	357.9	390.4
Machinery and equipment	214.6	228.1	239.8	108.2	119.9	113.7	126.2
Construction	322.7	341.1	367.9	163.9	177.2	175.8	192.1
Other products	125.4	132.2	140.6	64.1	68.0	68.5	72.1
Changes in inventories <sup>3</sup>	- 21.3	- 15.2	- 15.9	0.5	- 15.7	1.4	- 17.3
Domestic expenditure	3 015.0	3 139.7	3 286.6	1 531.2	1 608.5	1 600.0	1 686.6
Net exports	248.3	264.8	273.1	141.3	123.4	143.4	129.7
Exports	1 542.1	1 653.5	1 749.2	817.5	836.1	862.2	887.0
Imports	1 293.7	1 388.8	1 476.1	676.1	712.6	718.8	757.3
<b>Gross domestic product</b>	<b>3 263.4</b>	<b>3 404.5</b>	<b>3 559.7</b>	<b>1 672.5</b>	<b>1 732.0</b>	<b>1 743.3</b>	<b>1 816.4</b>

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

Consumption expenditure	3.7	3.4	4.1	3.0	3.7	3.9	4.3
Private households <sup>2</sup>	3.6	3.3	4.1	2.7	3.9	3.8	4.4
Government	3.8	3.6	4.1	3.8	3.4	4.1	4.1
Gross fixed capital formation	5.2	5.8	6.7	5.1	6.5	6.4	6.9
Machinery and equipment	4.3	6.3	5.2	6.2	6.3	5.0	5.3
Construction	6.0	5.7	7.9	4.5	6.8	7.3	8.4
Other products	4.8	5.4	6.4	4.6	6.1	6.7	6.1
Domestic expenditure	4.2	4.1	4.7	3.8	4.5	4.5	4.9
Exports	6.3	7.2	5.8	7.4	7.1	5.5	6.1
Imports	7.9	7.3	6.3	6.7	8.0	6.3	6.3
<b>Gross domestic product</b>	<b>3.8</b>	<b>4.3</b>	<b>4.6</b>	<b>4.4</b>	<b>4.3</b>	<b>4.2</b>	<b>4.9</b>

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

a) EUR bn.

Consumption expenditure	2 157.4	2 194.6	2 242.8	1 076.3	1 118.4	1 097.6	1 145.1
Private households <sup>2</sup>	1 596.1	1 622.9	1 659.7	793.9	829.1	809.6	850.1
Government	561.0	571.3	582.7	282.1	289.2	287.7	295.0
Gross fixed capital formation	590.9	610.2	635.2	293.7	316.5	304.9	330.2
Machinery and equipment	207.6	219.3	229.4	103.7	115.6	108.2	121.1
Construction	270.9	275.1	285.2	133.4	141.7	137.5	147.6
Other products	113.2	117.2	122.3	57.2	60.1	59.8	62.5
Domestic expenditure	2 716.3	2 778.7	2 851.4	1 367.9	1 410.8	1 401.3	1 450.1
Exports	1 460.1	1 550.6	1 624.8	768.5	782.1	802.6	822.2
Imports	1 258.2	1 339.5	1 417.7	652.9	686.6	690.3	727.4
<b>Gross domestic product</b>	<b>2 918.8</b>	<b>2 991.7</b>	<b>3 062.0</b>	<b>1 483.6</b>	<b>1 508.1</b>	<b>1 514.5</b>	<b>1 547.5</b>

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

Consumption expenditure	1.8	1.7	2.2	1.4	2.1	2.0	2.4
Private households <sup>2</sup>	1.9	1.7	2.3	1.2	2.1	2.0	2.5
Government	1.6	1.8	2.0	1.8	1.9	2.0	2.0
Gross fixed capital formation	3.2	3.3	4.1	2.7	3.8	3.8	4.4
Machinery and equipment	4.0	5.7	4.6	5.7	5.6	4.4	4.8
Construction	2.6	1.6	3.7	0.6	2.5	3.1	4.2
Other products	3.5	3.5	4.4	2.9	4.2	4.6	4.1
Domestic expenditure	2.2	2.3	2.6	2.0	2.6	2.4	2.8
Exports	4.7	6.2	4.8	6.7	5.7	4.4	5.1
Imports	5.1	6.5	5.8	6.5	6.5	5.7	5.9
<b>Gross domestic product</b>	<b>2.2</b>	<b>2.5</b>	<b>2.3</b>	<b>2.5</b>	<b>2.5</b>	<b>2.1</b>	<b>2.6</b>

**National Accounts (cont.)**

Forecast period: 2017 to 2019

	2017	2018	2019	2018		2019	
				H1	H2	H1	H2

**4. Deflators (2010=100)**

Change on the same period of the preceding year in %

Private consumption <sup>2</sup>	1.7	1.6	1.8	1.5	1.7	1.8	1.8
Government consumption	2.2	1.7	2.0	2.0	1.5	2.0	2.1
Gross fixed capital formation	1.9	2.5	2.5	2.4	2.6	2.5	2.5
Machinery and equipment	0.3	0.6	0.5	0.5	0.7	0.6	0.5
Construction	3.2	4.1	4.1	4.0	4.2	4.0	4.1
Exports	1.6	1.0	1.0	0.7	1.2	1.0	0.9
Imports	2.6	0.8	0.4	0.2	1.4	0.6	0.3
<b>Gross domestic product</b>	<b>1.5</b>	<b>1.8</b>	<b>2.2</b>	<b>1.8</b>	<b>1.7</b>	<b>2.1</b>	<b>2.2</b>

**5. National income**

a) EUR bn.

Primary income of private households <sup>2</sup>	2 273.6	2 364.5	2 463.6	1 163.2	1 201.3	1 208.2	1 255.4
Employers social contributions	299.6	309.9	323.9	150.0	159.9	156.4	167.4
Gross wages and salaries	1 370.3	1 438.8	1 508.7	685.9	752.9	716.3	792.4
Other primary income <sup>4</sup>	603.6	615.7	631.1	327.3	288.4	335.5	295.6
Primary income of other sectors	477.9	509.8	545.3	236.0	273.8	251.3	294.0
<b>Net national income</b>	<b>2 751.5</b>	<b>2 874.3</b>	<b>3 009.0</b>	<b>1 399.2</b>	<b>1 475.1</b>	<b>1 459.5</b>	<b>1 549.5</b>
Consumption of fixed capital	572.0	593.2	616.3	294.2	299.0	305.6	310.7
<b>Gross national income</b>	<b>3 323.5</b>	<b>3 467.5</b>	<b>3 625.3</b>	<b>1 693.4</b>	<b>1 774.1</b>	<b>1 765.1</b>	<b>1 860.1</b>
memorandum item:							
Net national income (factor costs)	2 434.4	2 549.7	2 675.4	1 237.3	1 312.4	1 293.2	1 382.3
Property and entrepreneurial income	764.5	800.9	842.9	401.3	399.6	420.4	422.5
Compensation of employees	1 669.9	1 748.8	1 832.5	835.9	912.8	872.7	959.8

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

Primary income of private households <sup>2</sup>	4.4	4.0	4.2	3.9	4.0	3.9	4.5
Employers social contributions	3.7	3.5	4.5	3.5	3.5	4.3	4.7
Gross wages and salaries	4.5	5.0	4.9	5.0	5.0	4.4	5.2
... per employee	2.7	3.3	3.5	3.3	3.3	3.0	3.9
Other primary income <sup>4</sup>	4.6	2.0	2.5	2.0	2.0	2.5	2.5
Primary income of other sectors	2.2	6.7	7.0	7.5	6.0	6.5	7.4
<b>Net national income</b>	<b>4.0</b>	<b>4.5</b>	<b>4.7</b>	<b>4.5</b>	<b>4.4</b>	<b>4.3</b>	<b>5.0</b>
Consumption of fixed capital	3.6	3.7	3.9	3.7	3.7	3.9	3.9
<b>Gross national income</b>	<b>3.9</b>	<b>4.3</b>	<b>4.6</b>	<b>4.4</b>	<b>4.3</b>	<b>4.2</b>	<b>4.9</b>
memorandum item:							
Net national income (factor costs)	4.1	4.7	4.9	4.8	4.6	4.5	5.3
Property and entrepreneurial income	3.6	4.8	5.2	5.0	4.5	4.8	5.7
Compensation of employees	4.3	4.7	4.8	4.7	4.7	4.4	5.1

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

a) EUR bn.

Mass income	1 349.9	1 408.9	1 478.6	678.0	730.9	708.0	770.6
Net wages and salaries	905.9	950.7	1 001.7	449.0	501.7	470.5	531.2
Social benefits other than social transfers in kind	564.3	581.5	604.5	290.1	291.5	300.4	304.0
less: Levies on social benefits, taxes on consumption	120.3	123.3	127.6	61.0	62.3	62.9	64.7
Other primary income <sup>4</sup>	603.6	615.7	631.1	327.3	288.4	335.5	295.6
Other transfers received (net) <sup>5</sup>	- 78.4	- 83.1	- 88.0	- 40.6	- 42.4	- 43.1	- 45.0
<b>Disposable income</b>	<b>1 875.2</b>	<b>1 941.6</b>	<b>2 021.6</b>	<b>964.6</b>	<b>976.9</b>	<b>1 000.4</b>	<b>1 021.3</b>
Change in pension entitlements	49.6	50.2	50.8	24.8	25.4	25.1	25.7
Consumption expenditure	1 735.0	1 792.0	1 865.5	872.9	919.1	906.0	959.5
Saving	189.8	199.7	206.9	116.5	83.3	119.4	87.5
Saving ratio (%) <sup>6</sup>	9.9	10.0	10.0	11.8	8.3	11.6	8.4

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

Mass income	3.9	4.4	4.9	4.2	4.5	4.4	5.4
Net wages and salaries	4.2	4.9	5.4	5.0	4.9	4.8	5.9
Social benefits other than social transfers in kind	3.6	3.0	3.9	2.7	3.4	3.6	4.3
less: Levies on social benefits, taxes on consumption	4.8	2.5	3.4	2.1	2.9	3.1	3.8
Other primary income <sup>4</sup>	4.6	2.0	2.5	2.0	2.0	2.5	2.5
<b>Disposable income</b>	<b>3.9</b>	<b>3.5</b>	<b>4.1</b>	<b>3.4</b>	<b>3.7</b>	<b>3.7</b>	<b>4.5</b>
Consumption expenditure	3.6	3.3	4.1	2.7	3.9	3.8	4.4
Saving	5.6	5.2	3.6	8.5	0.9	2.5	5.1

**National Accounts (cont.)**

Forecast period: 2017 to 2019

	2017	2018	2019	2018		2019	
				H1	H2	H1	H2

**7. Revenue and expenditure by general government <sup>1</sup>**

a) EUR bn.

Revenue							
Taxes	767.2	797.5	831.7	397.8	399.6	414.8	416.9
Social contributions	548.1	571.0	592.0	276.6	294.4	286.0	306.0
Property income	16.9	18.4	18.4	10.4	7.9	10.5	7.9
Other current transfers	22.4	22.7	23.0	10.1	12.6	10.2	12.8
Capital transfers	10.8	10.6	10.6	5.3	5.3	5.2	5.3
Sales	108.9	112.6	116.3	53.4	59.2	55.7	60.6
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1
<b>Total</b>	<b>1 474.6</b>	<b>1 532.9</b>	<b>1 592.1</b>	<b>753.8</b>	<b>779.1</b>	<b>782.6</b>	<b>809.5</b>
Expenditure							
Intermediate consumption <sup>2</sup>	433.4	449.0	467.5	217.2	231.7	226.5	241.0
Compensation of employees	246.5	255.3	265.5	122.7	132.7	127.6	137.9
Property income (interest)	38.9	36.9	34.9	18.9	18.0	17.9	17.0
Subsidies	27.6	28.4	29.3	13.9	14.5	14.4	14.9
Social benefits	505.5	521.6	543.3	260.2	261.4	270.0	273.4
Other current transfers	75.3	85.3	93.5	44.9	40.5	49.0	44.6
Capital transfers	41.9	46.9	36.9	23.0	23.8	15.0	21.9
Gross capital formation	70.3	74.7	79.8	32.1	42.5	34.2	45.6
Net acquisitions of non-produced non-financial assets	- 1.4	- 1.4	- 1.4	- 0.6	- 0.8	- 0.6	- 0.8
<b>Total</b>	<b>1 438.0</b>	<b>1 496.7</b>	<b>1 549.3</b>	<b>732.3</b>	<b>764.4</b>	<b>753.8</b>	<b>795.5</b>
<b>Net lending</b>	<b>36.6</b>	<b>36.2</b>	<b>42.8</b>	<b>21.5</b>	<b>14.8</b>	<b>28.8</b>	<b>14.0</b>

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

Revenue							
Taxes	4.8	3.9	4.3	3.9	4.0	4.3	4.3
Social contributions	4.6	4.2	3.7	4.1	4.3	3.4	3.9
Property income	- 6.3	8.6	0.0	18.0	- 1.7	0.8	- 1.1
Other current transfers	12.7	1.1	1.6	0.4	1.7	1.6	1.6
Capital transfers	- 29.9	- 2.7	0.2	- 2.9	- 2.5	- 0.4	0.8
Sales	3.8	3.4	3.3	2.6	4.1	4.3	2.4
Other subsidies	1.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>4.3</b>	<b>4.0</b>	<b>3.9</b>	<b>3.9</b>	<b>4.0</b>	<b>3.8</b>	<b>3.9</b>
Expenditure							
Intermediate consumption <sup>2</sup>	3.5	3.6	4.1	3.6	3.6	4.3	4.0
Compensation of employees	4.2	3.6	4.0	3.6	3.6	4.0	4.0
Property income (interest)	- 6.4	- 5.1	- 5.4	- 5.0	- 5.3	- 5.3	- 5.5
Subsidies	- 0.7	2.9	2.9	2.9	2.9	2.9	2.9
Social benefits	4.0	3.2	4.2	2.7	3.6	3.8	4.6
Other current transfers	- 0.6	13.4	9.6	12.6	14.3	9.1	10.1
Capital transfers	15.0	12.0	- 21.2	7.6	16.6	- 34.8	- 8.0
Gross capital formation	5.1	6.3	6.9	6.3	6.2	6.5	7.1
Net acquisitions of non-produced non-financial assets	6.5	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>3.6</b>	<b>4.1</b>	<b>3.5</b>	<b>3.8</b>	<b>4.4</b>	<b>2.9</b>	<b>4.1</b>

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

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

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

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

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

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

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

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

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