

KIEL INSTITUTE **ECONOMIC OUTLOOK**

German Economy Autumn 2017

Finalized September 6, 2017

No. 35 (2017|Q3)

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GERMAN ECONOMY APPROACHES BOOM PERIOD

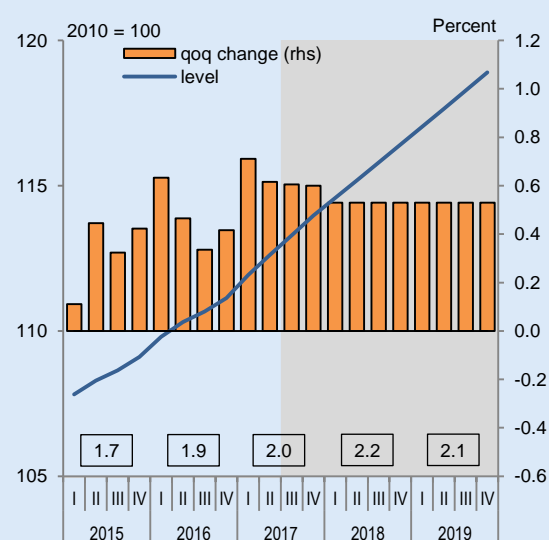
Martin Ademmer, Jens Boysen-Hogrefe, Salomon Fiedler, Dominik Groll, Nils Jannsen, Stefan Kooths, Galina Potjagailo, and Maik Wolters

The pronounced expansion of the German economy accelerates further. Compared to our summer forecast, we adjust our forecast for the current and the next year upwards, and we expect gross domestic product to grow by 2 percent in the current year and 2.2 percent in the next year (summer forecast: 1.7 percent and 2.0 percent). Also in the year 2019, gross domestic product is expected to grow markedly by 2.1 percent. In the forecasting period, gross domestic product will expand faster than potential output growth, a measure of the long-term sustainable economic development. With capacity utilization already above normal levels, the German economy is approaching a boom period. The expansion is becoming increasingly broad-based: alongside consumption, exports and investment are gaining weight as important pillars of the expansion. Exports are set to grow at stronger rates, stimulated by the upswing of the global economy. Business investment will further gain momentum due to the favorable business outlook and growing needs to expand capacity. Construction activity also continues to increase at high rates due to very favorable financing conditions. Private consumption, however, is likely to slow down somewhat compared to previous years, as markedly higher inflation will dampen the purchasing power of households. With production capacities being highly utilized, domestic price pressure is set to increase, such that we expect inflation to come in at 2 percent by 2019. Employment continues to rise, even though a gradual slowdown of labor-supply will set a limit on the extent of employment gains. Wages are expected to grow more dynamically. Germany's general budget surplus is set to increase further. However, the surplus is a temporary phenomenon owing to high cyclical dynamics and low interest rates, such that the scope for expansionary fiscal policies remains limited.

Business survey indicators and indicators for capacity utilization suggest that the German economy is approaching a boom period. We expect GDP to grow by 2.0 percent this year and 2.2 in 2018 (Figure 1). Compared to our summer forecast, this is an upward revision of 0.3 percentage points for this year and 0.2 percentage points for 2018. Overall, GDP is expected to grow faster than potential output, so that capacity utilization is set to increase further. Given that capacity utilization is already above normal levels, we expect that the output gap, a standard measure of capacity utilization, will reach values that have not been observed since the run-up to the Global Financial Crisis.

German foreign trade continues to grow at a solid pace. After having increased markedly over the winter half year and at a somewhat lower rate over the last quarter, German exports are expected to grow at a pronounced rate over the current quarter. Export expectations of German firms reached their highest level since 2011 in July and declined only slightly in August. Also production expectations in German export markets are at high

Figure 1:
Gross domestic product, 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.

levels and have increased most recently. We expect exports to continue their expansion over the forecast horizon. Positive impulses will stem from the upturn in the Euro area, as well as from the solid expansion in the United States and the economic rebound in emerging markets. To a lesser extent, a worsening of German price competitiveness due to the recent appreciation of the Euro will provide headwinds. German imports grew vividly over the last quarter and are expected to keep up the momentum over the current quarter. We forecast imports to expand at pronounced rates over the entire forecast horizon, backed by solid export growth and by business investment gaining pace. Even though in arithmetical terms the contributions of export and import growth to the expansion of GDP will nearly cancel out over the forecast horizon, export growth will constitute one of the pillars of the expansion.

The inflation of consumer prices is gaining strength. After some erratic behavior at the beginning of the year, which was driven by oil price changes and calendar effects, year-on-year inflation rates have recently followed a sustained upward trend. In August, consumer prices were 1.8 percent higher than they had been one year earlier. But as oil prices have lost their momentum since the beginning of the year and are not expected to rise markedly over the forecast horizon, inflationary pressure should moderate somewhat over the coming winter. At the same time, the overutilization of production capacities is set to increase further over the coming years. This should progressively become visible in a broad-based increase in prices, such that we expect CPI inflation to come in at 1.8 percent in the current year, 1.7 percent in 2018, and 2.0 percent in 2019. These increases surpass the average inflation rate since the introduction of the euro, which stands at roughly 1.4 percent.

Private consumption will remain a pillar of the upswing in Germany. Disposable income is set to increase at high growth rates, mainly due to the good shape of the labor market that comes along with increasing employment numbers and accelerating wage growth. In addition social benefits will increase with a particularly high rate this year due to increases in pension payments. Overall, disposable income is expected to increase by 3.4 percent this year, the highest increase since 2001. Over the next two years disposable income will continue to expand at pronounced rates. However, due to the strong increase in inflation, the growth in real disposable income is expected to slow down somewhat compared to 2016. Overall, we expect private consumption to grow at annual rates of above 1.5 percent between 2017 and 2019. These rates are somewhat lower compared to 2016 (increase by 2.1 percent), but still relatively high in historical terms.

Investment expands strongly. Following an increase by just below 3 percent in 2016, construction investment is expected to rise by more than 4 percent in the current year as well as in 2018 and 2019, owing to the persistently very favorable financing conditions and better income perspectives of private households. Since capacity utilization in the construction industry is already at a record high, the upswing is likely to cause a considerable increase in construction prices. Investment in machinery and equipment is forecast to increase by 2.3 percent in the current year and by around 5 percent in 2018, as the needs to increase capacity become more pressing. Accordingly, after having fallen by more than 20 percent in the course of the crisis, investment in machinery and equipment is about to reach its pre-crisis level in 2017.

The upswing in the labor market is expected to continue throughout the forecasting period. After exceptionally strong hikes around the turn of the year, employment growth slowed down somewhat in the second quarter. Job growth continues to be driven predominantly by the rise in the number of jobs that are subject to social security contributions, while the number of self-employed persons stagnated and the number of so-called minijobs (earning no more than 450 Euro per month) declined further. Persons with a foreign nationality are currently responsible for one-half of the overall increase in employment, and refugees for an estimated one-tenth. Nevertheless, the vast majority of refugees are still without a job. The general labor market conditions will remain very favorable until 2019. Leading indicators have reached levels unseen for several decades or even all-time highs. The economic upswing is set to continue over the entire forecasting horizon. Labor costs are expected to accelerate, as labor market tightness increases further, but they remain favorable from the labor-demand perspective, because labor productivity and especially domestic prices (as measured by the GDP deflator) accelerate as well. However, large employment gains become increasingly unlikely, as

labor-supply is set to slow down due to demographic reasons and smaller gains from migration. While the number of refugees without a job has risen significantly, most of them are not registered as unemployed, since they are participating in integration courses and in active labor market measures, during which they are not counted as unemployed. Against this background, we expect the overall unemployment rate to decline further until 2019, albeit to a smaller extent compared to the increase in employment.

Government budget surplus remains high, while structural budget balance deteriorates. In 2016, government surplus was at a record high despite additional spending related to the refugee inflow. For 2017, revenues are expected to increase at a slightly lower rate, mainly because the extraordinarily strong rise in earnings taxes of the previous year is unlikely to be repeated. Further, tax cuts will weigh on revenues. Expenditures will increase somewhat faster compared to the previous year, mainly because revenues from the tax on nuclear fuel have to be refunded after a decision of the federal constitutional court, and due to expansionary fiscal policy that includes tax cuts and additional social spending. The budget surplus is expected to remain almost constant and the structural budget surplus to be reduced by roughly 10 bill. euro. In 2018, revenues will increase at a higher pace in accordance with the ongoing business cycle upswing. The budget surplus is set to rise again despite higher transfers to the EU, the structural budget balance, however, will remain more or less unchanged. Due to the favorable business cycle conditions, surplus is set to increase further in 2019; the structural budget balance will remain almost unchanged and close to zero.

Table 1:
Key indicators, 2016–2019

	2016	2017	2018	2019
Gross domestic product (GDP), price-adjusted	1.9	2.0	2.2	2.1
Gross domestic product, deflator	1.3	1.5	2.0	2.0
Consumer prices	0.5	1.8	1.7	2.0
Labor productivity (per hour worked)	1.3	0.8	1.0	1.1
Employment (1,000 persons)	43,638	44,293	44,847	45,342
Unemployment rate (percent)	6.1	5.7	5.4	5.1
in relation to nominal GDP				
Public sector net lending	0.8	0.8	1.0	1.2
Gross public debt	68.1	65.1	61.4	57.5
Current account balance	8.3	7.8	7.9	7.9

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.

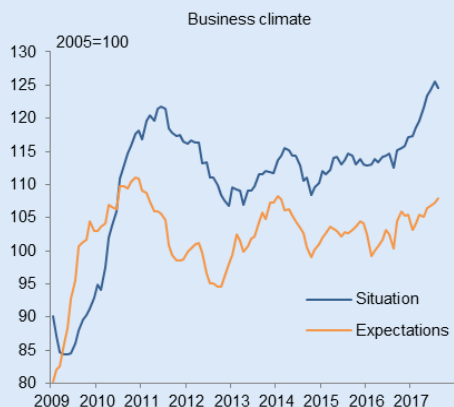
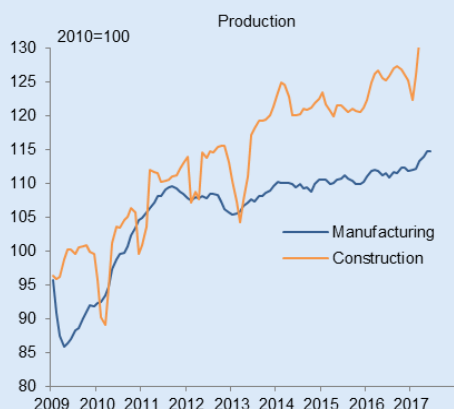
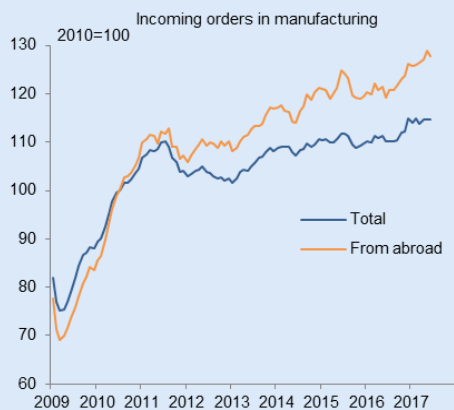
Data annex

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1. Leading indicators

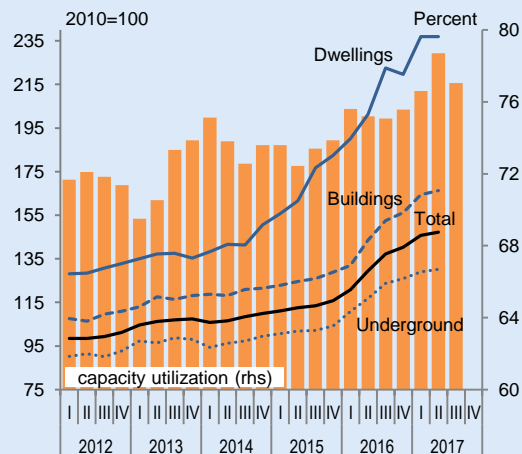
Figure 1.1:
Leading indicators, 2009–2017



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

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

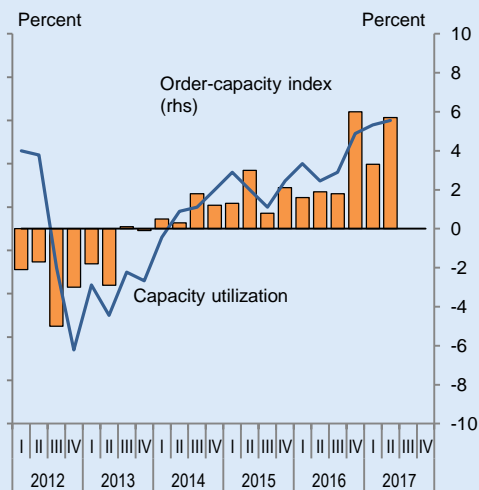
Figure 1.2:
Order stocks and capacity utilization in construction industry, 2012–2017



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

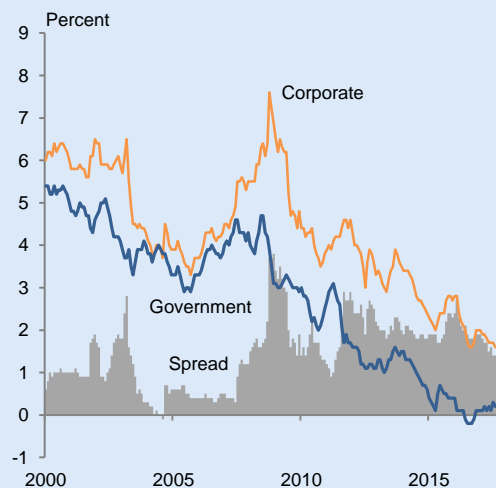


Quarterly data, seasonally adjusted; capacity utilization in manufacturing (axes cross at normal capacity utilization).

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

2. Monetary conditions and prices

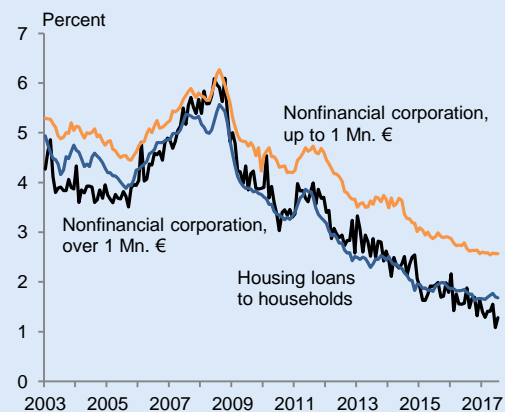
Figure 2.1:
Bond yields, 2000–2017



Monthly data, average maturities above three years.

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

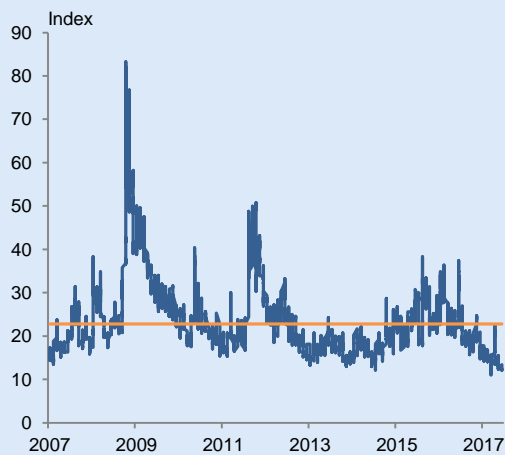
Figure 2.2:
Loan interest, 2003–2017



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

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

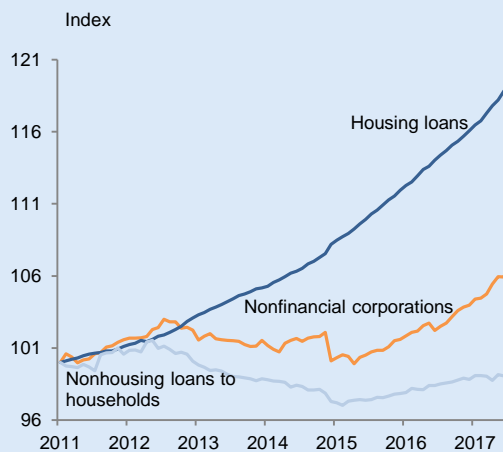
Figure 2.3:
VDAX 2007–2017



Daily data; orange line: average since 01-01-1992.

Source: Deutsche Börse, *VDAX-NEW*.

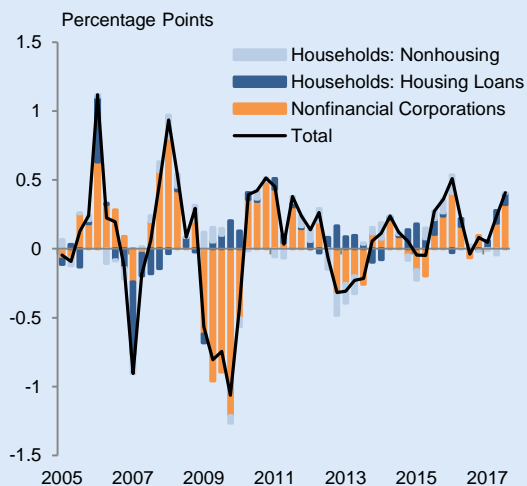
Figure 2.4:
Sum of loans, 2011–2017



Index: Jan 2011=100; Monthly data.

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

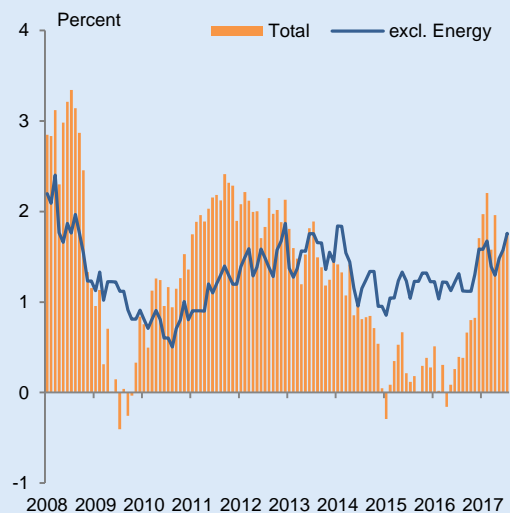
Figure 2.5:
Credit impulse, 2005–2017



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*; own calculations.

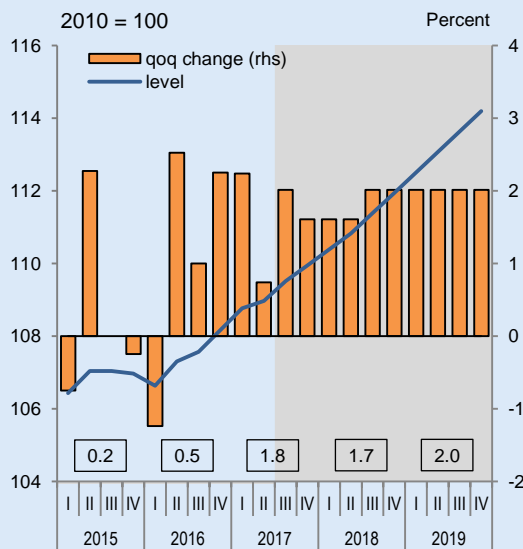
Figure 2.6:
Consumer prices, 2008–2017



Monthly data; year-on-year change.

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

Figure 2.7:
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

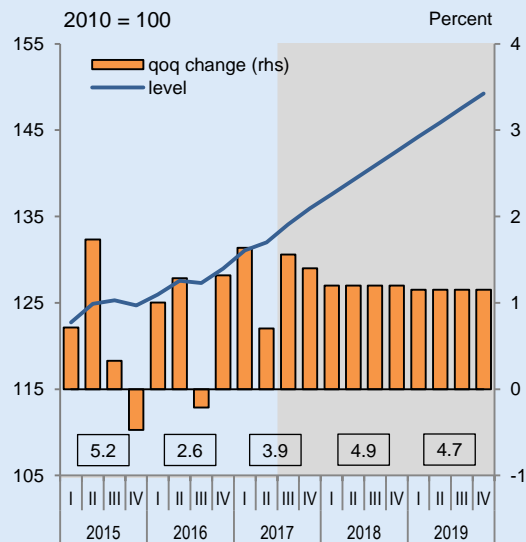
	2016				2017				2018				2019			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25
Long-term interest rate	0.1	0.0	-0.1	0.2	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9
US-dollar/euro exchange rate	1.10	1.13	1.12	1.07	1.07	1.10	1.17	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Price competitiveness	86.8	87.2	87.1	86.8	86.2	86.9	89.0	88.7	88.6	88.5	88.5	88.4	88.4	88.3	88.3	88.2
Export markets	0.43	0.60	0.54	0.81	0.68	0.90	0.77	0.72	0.66	0.66	0.66	0.64	0.64	0.62	0.62	0.62
Oil price	35.3	46.8	47.0	49.5	54.7	50.8	50.9	52.2	52.4	52.6	52.8	53.0	53.2	53.4	53.6	53.8

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

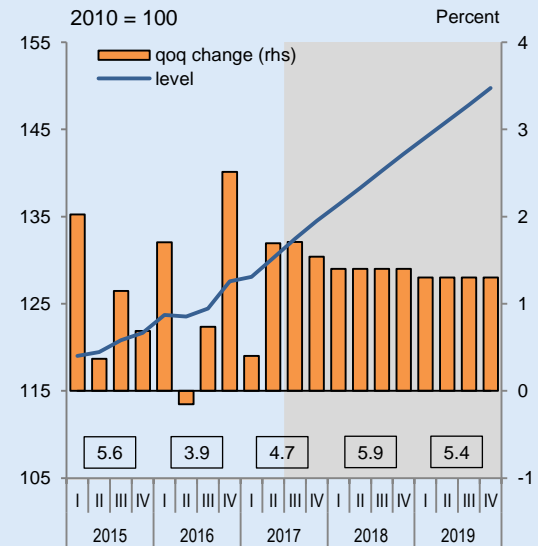
Figure 3.1:
Exports, 2015–2019



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.

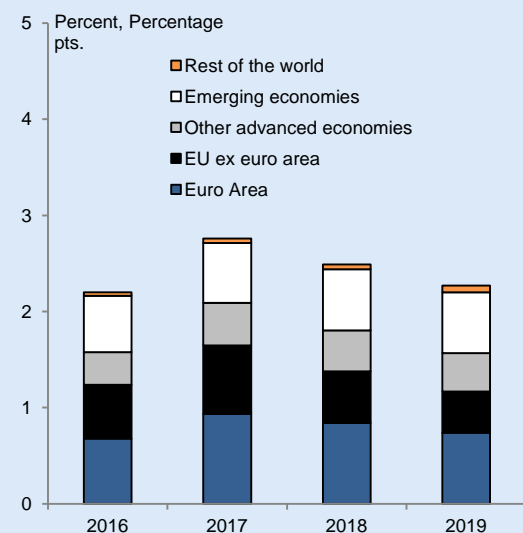
Figure 3.2:
Imports, 2015–2019



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.

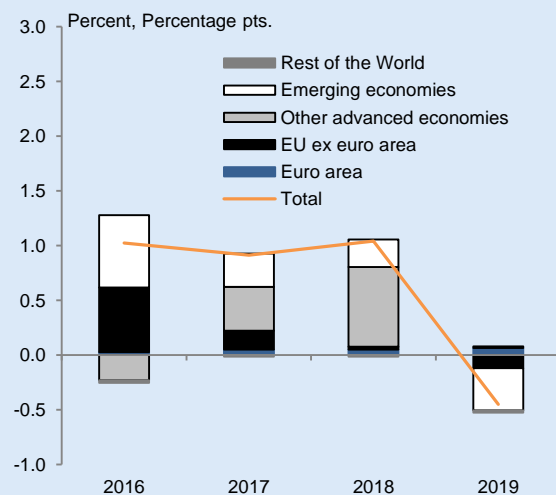
Figure 3.3:
German export markets, 2016–2019



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.

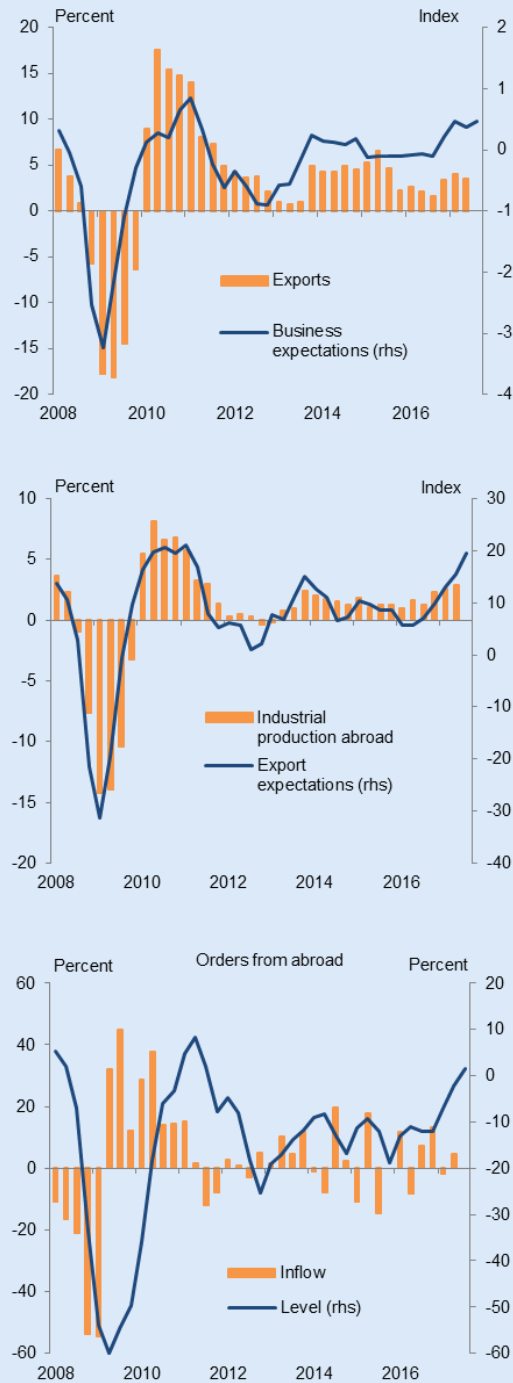
Figure 3.4:
Germany's price competitiveness, 2016–2019



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, 2008–2017

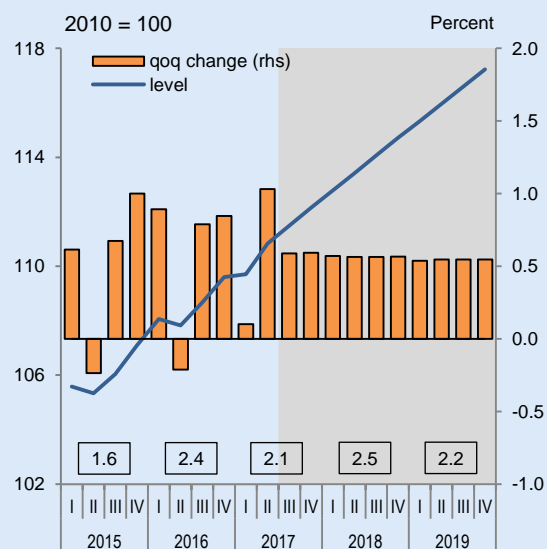


Quarterly data; exports, industrial production, order inflow: volumes, change on previous year; export expectations, foreign orders on hand: volumes; business expectations, industrial production: based on 42 countries weighted by shares of German exports.

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

4. Domestic expenditure

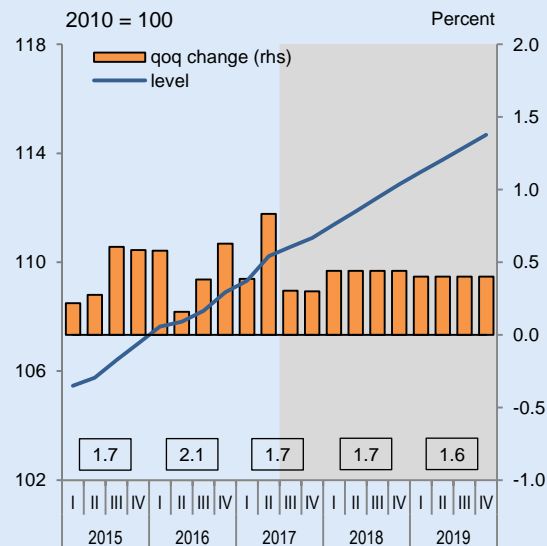
Figure 4.1:
Domestic expenditure, 2015–2019



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.

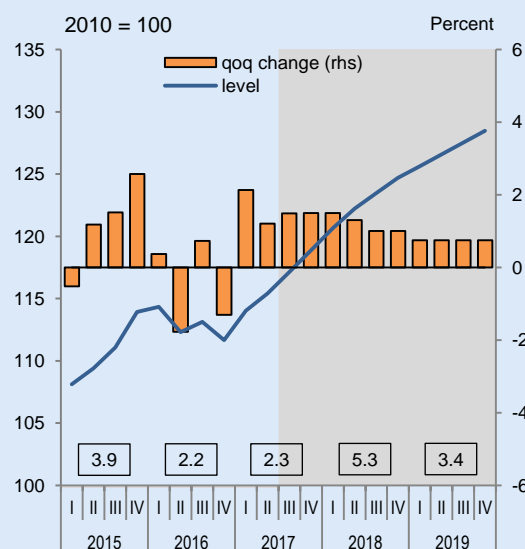
Figure 4.2:
Private consumption, 2015–2019



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.

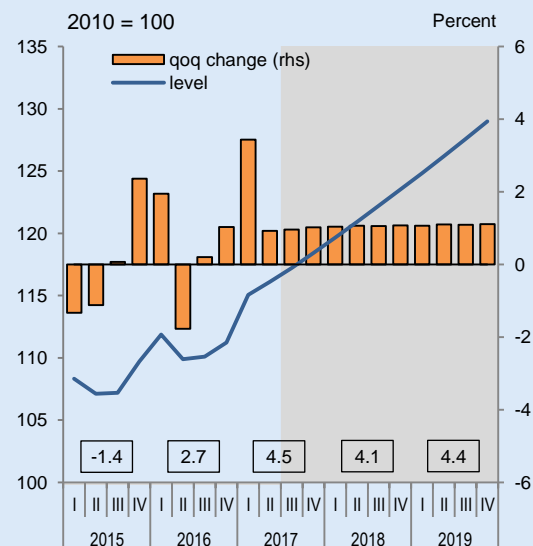
Figure 4.3:
M&E investments, 2015–2019



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.

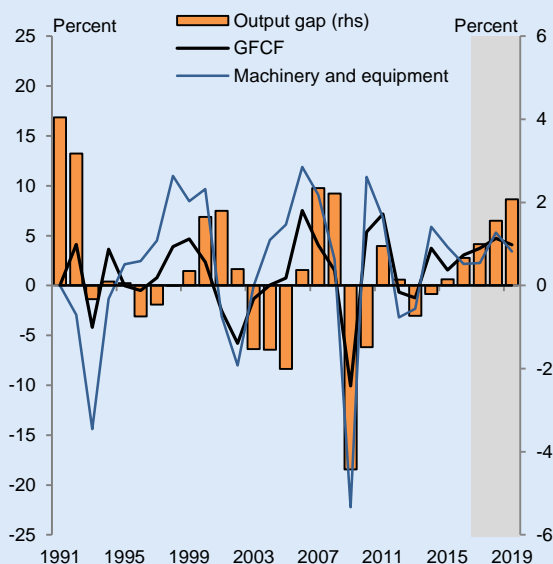
Figure 4.4:
Construction, 2015–2019



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 4.5:
Investment cycles, 1991–2019



Annual data; GFCF, machinery and equipment: volumes, change on previous year; output gap: in percent of potential output.

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

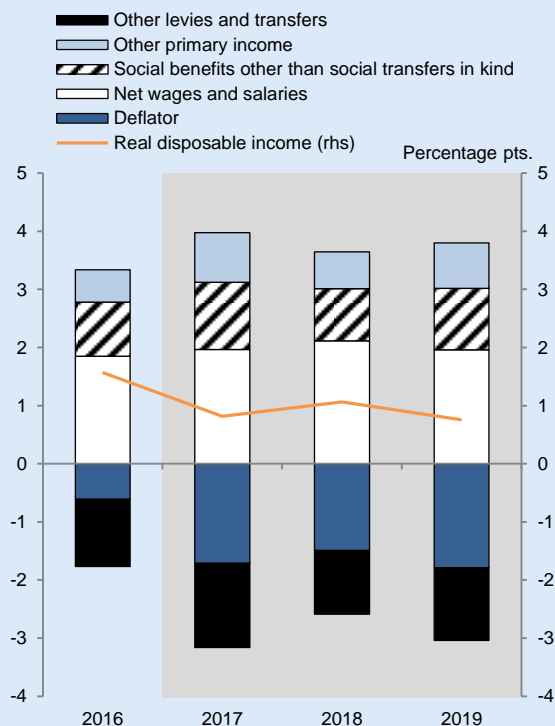
Table 4.1:
Gross fixed capital formation, 2016–2019

	2016	2017	2018	2019
Total	3.1	3.7	4.7	4.1
Corporate investment	2.7	3.1	4.4	3.4
Machinery and equipment	2.2	2.3	5.3	3.4
Construction (non-dwellings)	0.0	3.2	1.1	2.0
Other	5.5	4.3	5.3	4.4
Dwellings	4.0	5.4	5.9	5.7
Public (non-dwellings)	2.7	2.8	1.9	2.4
<i>Memorandum item:</i>				
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, Reihe 1.2*; own calculations; shaded: IfW forecast.

5. Industries

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

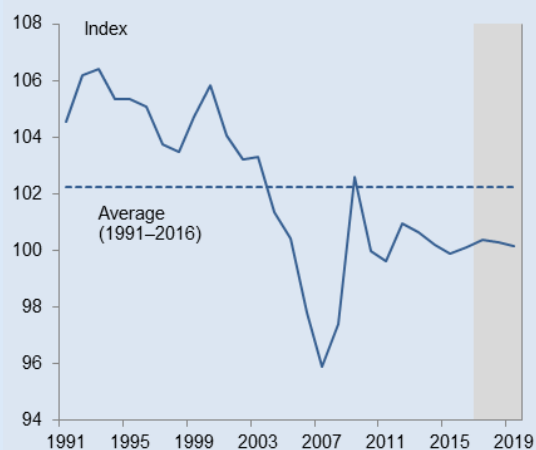
	2017				2018	
	I	II	III	IV	I	II
	<i>Seasonally and calendar adjusted, quarter-on-quarter change in percent</i>					
Gross domestic product	0.7	0.6	0.6	0.6	0.5	0.5
Gross value added	0.8	0.7	0.6	0.6	0.5	0.5
Industry excluding construction	0.7	1.4	0.8	0.8	0.6	0.6
Manufacturing	1.0	1.3	0.8	0.8	0.6	0.6
Construction	2.9	1.7	0.4	0.7	0.7	0.7
Trade, transport, accommodation, and food services	0.8	0.8	0.7	0.7	0.7	0.7
Information and communication	1.2	1.0	1.8	1.8	1.6	1.6
Financial and insurance services	-0.3	0.1	-0.1	-0.1	-0.2	-0.2
Real estate activities	0.9	0.0	0.4	0.4	0.4	0.4
Business services	1.0	0.2	0.6	0.6	0.5	0.5
Public services, education, health	0.3	0.2	0.3	0.3	0.3	0.3
Other services	0.1	0.1	0.3	0.3	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 Employment Agency, *Fachserie 18, Series 1.2*; shaded: IfW forecast.

Table 6.1:
Wages and productivity, 2016–2019

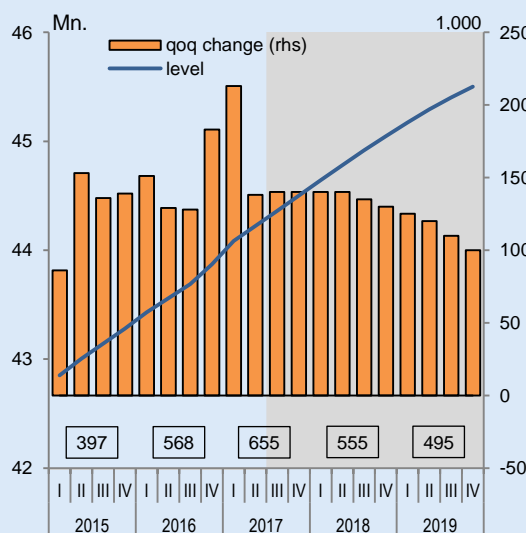
	2016	2017	2018	2019
<i>Per hour</i>				
Negotiated wages	2.1	2.1	2.4	2.6
Gross wages and salaries	3.2	2.8	3.1	3.2
Wage drift	1.0	0.7	0.7	0.6
Compensation of employees	2.9	2.6	2.9	3.0
Labor productivity	1.3	0.8	1.0	1.1
Unit labor costs	1.6	1.8	1.8	1.9
Unit labor costs (real)	0.2	0.3	-0.1	-0.1
<i>Per capita</i>				
Negotiated wages	2.1	2.1	2.4	2.6
Gross wages and salaries	2.4	2.5	3.1	3.1
Wage drift	0.3	0.5	0.7	0.5
Compensation of employees	2.2	2.5	2.9	2.9
Labor productivity	0.6	0.4	1.0	1.0
Unit labor costs	1.6	2.0	1.9	1.9
Unit labor costs (real)	0.2	0.5	-0.1	-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

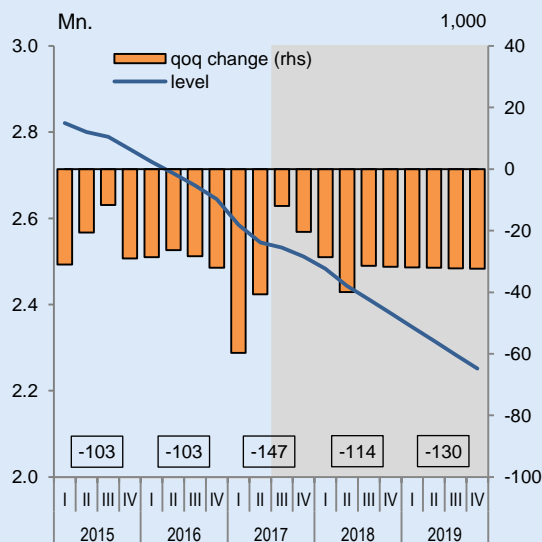
Figure 7.1:
Employment, 2015–2019



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, 2015–2019



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

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

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

	2015	2016	2017	2018	2019
Hours worked (domestic concept, mn. hours)	58,905	59,244	59,966	60,677	61,272
Persons in employment (domestic concept)	43,070	43,638	44,293	44,847	45,342
Self-employed	4,360	4,333	4,313	4,313	4,313
Employees (domestic concept)	38,710	39,305	39,980	40,534	41,029
Employees subject to social security contributions	30,853	31,514	32,254	32,832	33,327
Minijobs	4,848	4,803	4,726	4,700	4,700
Net commuting	79	93	105	105	105
Persons in employment (national concept)	42,990	43,545	44,188	44,742	45,237
Employees (national concept)	38,631	39,211	39,875	40,429	40,924
Unemployed persons (registered)	2,792	2,689	2,542	2,428	2,299
Unemployment rate (registered; percent)	6.4	6.1	5.7	5.4	5.1
Unemployment rate (ILO; percent)	4.3	3.9	3.5	3.2	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, 2015–2019 (bn. euro)

	2015	2016	2017	2018	2019
Revenues	1,354.3	1,414.2	1,466.4	1,521.7	1,581.5
➤ relative to GDP	44.5	45.0	45.1	44.9	44.7
Taxes	698.0	732.0	763.7	793.6	826.5
➤ relative to GDP	22.9	23.3	23.5	23.4	23.4
Social contributions	500.8	523.8	547.0	568.9	591.8
➤ relative to GDP	16.5	16.7	16.8	16.8	16.7
Other revenues	155.4	158.5	155.7	159.3	163.3
➤ relative to GDP	5.1	5.0	4.8	4.7	4.6
Expenditures	1,334.9	1,388.6	1,440.4	1,487.2	1,539.7
➤ relative to GDP	43.9	44.2	44.3	43.8	43.6
Compensation of employees	229.2	236.5	244.0	250.6	258.7
Intermediate consumption	142.2	150.0	155.3	160.9	167.0
Social transfers in kind	252.4	268.6	280.2	290.6	302.6
Gross capital formation	64.2	66.8	70.1	74.2	78.6
Capital transfers	46.4	41.6	39.1	37.7	37.6
Social benefits	469.9	486.3	506.6	522.2	541.3
Subsidies	27.0	27.8	28.8	30.2	31.7
Other current transfers	74.8	75.7	76.1	86.6	87.7
Other capital transfers and investment grants	30.0	36.4	41.4	35.3	35.7
Other expenditures	-1.3	-1.3	-1.4	-1.4	-1.4
Net lending/net borrowing	19.4	25.7	26.0	34.6	41.8
➤ relative to GDP	0.6	0.8	0.8	1.0	1.2
Revenues of central, state, and local governments	880.0	918.7	948.3	982.5	991.3
Net of transfers from social security funds	879.0	917.7	947.3	981.4	990.3
Transfers from social security funds	1.1	1.1	1.1	1.1	1.1
Expenditures of central, state, and local governments	863.3	901.3	931.5	960.9	963.7
Net of transfers to social security funds	758.8	791.0	815.8	842.4	844.3
Transfers to social security funds	104.6	110.3	115.7	118.5	119.4
Net lending/net borrowing central, state, and local government	16.7	17.4	16.9	21.6	27.6
Revenues of social security funds	579.9	606.9	634.8	658.8	664.5
Net of transfers from central, state, and local governments	475.3	496.6	519.2	540.3	545.1
Expenditures of social security funds	577.2	598.6	625.7	645.9	651.6
Net of transfers to central, state, and local governments	576.1	597.6	624.6	644.8	650.5
Net lending/net borrowing social security funds	2.7	8.2	9.1	12.9	12.9

Sums may deviate due to rounding.

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

9. GDP and its components

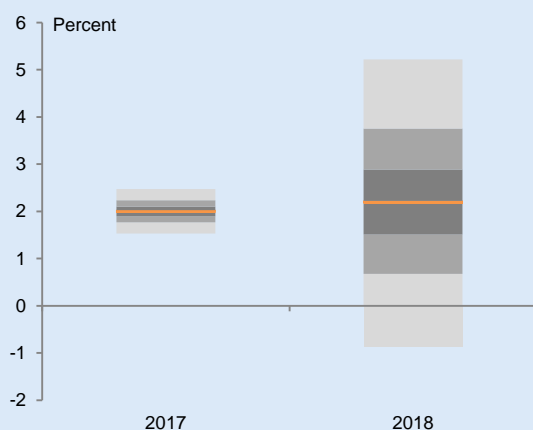
Table 9.1:
Quarterly data, 2017–2019

	2017				2018				2019			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Private consumption	0.4	0.8	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Government consumption	0.2	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.4
Machinery and equipment	2.1	1.2	1.5	1.5	1.5	1.3	1.0	1.0	0.8	0.7	0.8	0.7
Constructions	3.4	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Other investment	2.0	0.9	1.5	1.5	1.3	1.3	1.2	1.2	1.0	1.0	1.0	1.0
Change in inventories	-0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	0.1	1.0	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
Exports	1.6	0.7	1.6	1.4	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.2
Imports	0.4	1.7	1.7	1.5	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3
Net exports	0.6	-0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Employment (domestic)	44,084	44,222	44,362	44,502	44,642	44,782	44,917	45,047	45,172	45,292	45,402	45,502
Unemployment (registered)	2,585	2,544	2,532	2,512	2,483	2,443	2,412	2,380	2,348	2,316	2,284	2,251

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.

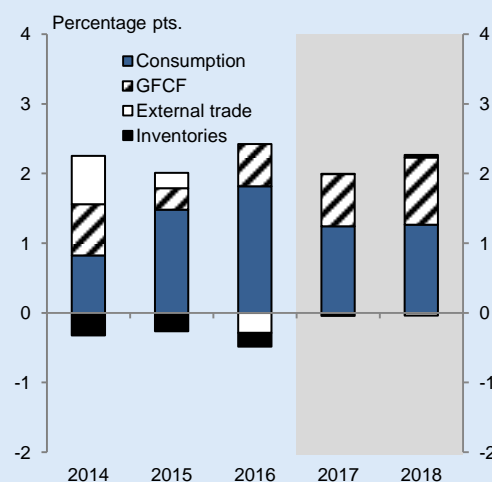
Figure 9.1:
Forecast intervals for GDP growth, 2017–2018



GDP: volumes, change over previous year. Point forecasts: orange lines. Forecast intervals grey shaded areas with confidence levels of 33, 66, and 95 percent. Confidence levels calculated based on historical forecast errors of the Kiel Institute in the third quarter 1994–2016.

Source: Own calculations.

Figure 9.2:
Expenditure-side components to GDP growth, 2014–2018



Annual data; price-adjusted, Lundberg components.

Source: 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			
GDP (constant prices)		1.9	2.0	2.2	2.1
Private consumption expenditure		2.1	1.7	1.7	1.6
Public consumption expenditure		3.7	1.6	1.7	1.8
Total fixed investment		3.1	3.7	4.7	4.1
Machinery and equipment		2.2	2.3	5.3	3.4
Construction		2.7	4.5	4.1	4.4
Other equipment		5.5	4.3	5.3	4.4
Changes in stocks		-0.2	0.0	0.0	0.0
Domestic Demand		2.4	2.1	2.5	2.2
Exports		2.6	3.9	4.9	4.7
Imports		3.9	4.7	5.9	5.4
Net exports		-0.3	0.0	0.0	0.1
GDP (current prices)	3,254.0	3.3	3.5	4.2	4.1
Private consumption expenditure	1,732.5	2.7	3.5	3.2	3.4
Public consumption expenditure	638.8	4.8	3.8	3.4	3.6
Total fixed investment	665.8	4.3	5.7	6.9	6.2
Machinery and equipment	211.1	2.5	2.5	6.1	4.0
Construction	328.4	4.6	7.8	7.5	7.6
Other equipment	126.4	6.4	5.6	7.0	6.1
Changes in stocks (€ bn.)		-26.4	-27.7	-26.9	-28.6
Domestic Demand	3,009.5	3.3	4.0	4.1	4.1
Exports	1,529.6	1.6	5.5	5.2	5.7
Imports	1,285.1	1.4	7.1	5.2	5.8
Net exports (€ bn.)		250.6	244.5	257.7	270.3
Gross national income	3,309.1	3.1	3.5	4.2	4.1
Deflator of GDP		,	,	,	,
Private consumption expenditure		1.3	1.5	2.0	2.0
Public consumption expenditure		0.6	1.7	1.5	1.8
Investment in machinery and equipment		1.1	2.1	1.6	1.8
Investment in construction		0.4	0.3	0.7	0.5
Investment in other equipment		1.9	3.2	3.2	3.1
Exports		0.8	1.3	1.6	1.6
Imports		-1.0	1.5	0.3	0.9
<i>Addendum: Consumer prices</i>		-2.5	2.3	-0.7	0.4
Income distribution		0.5	1.8	1.7	2.0
National income	2,422.3	3.2	3.6	4.6	4.4
Employment income	1,666.8	3.8	4.2	4.3	4.2
in percent of national income		68.4	68.8	68.6	68.4
Entrepreneurial and property income	755.5	2.1	2.4	5.3	5.0
Disposable income of private households	1,866.6	2.9	3.4	3.3	3.4
Savings rate		9.7	9.6	9.6	9.5
Wages and salaries	1,367.7	4.0	4.3	4.5	4.4
Wage per hour		3.2	2.8	3.1	3.2
Unit labor costs		1.6	1.8	1.8	1.9
Productivity per hour		1.3	0.8	1.0	1.1
Unemployment (1,000)		2,689	2,542	2,428	2,299
Rate of unemployment (percent)		6.1	5.7	5.4	5.1
Total employment (1,000)		43,638	44,293	44,847	45,342
Public sector budget balance (€ bn.)		25.7	26.0	34.6	41.8
Public sector budget balance (in percent of GDP)		0.8	0.8	1.0	1.2
Public debts (in percent)		68.1	65.1	61.4	57.5
Change in stocks, net exports: contribution to GDP growth.					

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

11. National accounts

National Accounts

Forecast period: 2016 to 2018

	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	1.3	1.1	1.3	1.2	1.2	1.0
Hours worked	1.2	1.2	1.0	1.1	1.2	0.7	1.3
Hours worked by person in employment	- 0.3	- 0.1	- 0.1	- 0.1	0.0	- 0.5	0.2
Labor productivity ¹	0.8	1.0	1.1	1.0	1.1	1.2	1.0
Gross domestic product, price-adjusted	2.0	2.2	2.1	2.2	2.3	1.9	2.3

2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 371.3	2 449.0	2 534.5	1 193.3	1 255.7	1 233.5	1 301.0
Private households ²	1 732.5	1 788.7	1 850.2	872.0	916.7	900.6	949.6
Government	638.8	660.3	684.3	321.3	339.0	332.9	351.4
Gross fixed capital formation	665.8	712.0	756.1	341.8	370.3	362.2	393.9
Machinery and equipment	211.1	223.8	232.7	106.4	117.5	110.4	122.3
Construction	328.4	352.9	379.9	169.7	183.2	181.9	198.0
Other products	126.4	135.3	143.6	65.7	69.6	69.9	73.6
Changes in inventories ³	- 27.7	- 26.9	- 28.6	- 4.7	- 22.2	- 5.4	- 23.3
Domestic expenditure	3 009.5	3 134.2	3 262.1	1 530.4	1 603.8	1 590.4	1 671.7
Net exports	244.5	257.7	270.3	136.3	121.4	141.9	128.4
Exports	1 529.6	1 609.5	1 700.7	796.3	813.1	838.2	862.5
Imports	1 285.1	1 351.8	1 430.4	660.1	691.7	696.3	734.1
Gross domestic product	3 254.0	3 391.8	3 532.3	1 666.6	1 725.2	1 732.2	1 800.1

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

Consumption expenditure	3.6	3.3	3.5	3.2	3.4	3.4	3.6
Private households ²	3.5	3.2	3.4	3.1	3.4	3.3	3.6
Government	3.8	3.4	3.6	3.5	3.2	3.6	3.6
Gross fixed capital formation	5.7	6.9	6.2	6.9	7.0	6.0	6.4
Machinery and equipment	2.5	6.1	4.0	5.8	6.3	3.8	4.1
Construction	7.8	7.5	7.6	7.4	7.5	7.2	8.1
Other products	5.6	7.0	6.1	7.1	6.9	6.4	5.8
Domestic expenditure	4.0	4.1	4.1	4.0	4.2	3.9	4.2
Exports	5.5	5.2	5.7	4.8	5.6	5.3	6.1
Imports	7.1	5.2	5.8	4.5	5.8	5.5	6.1
Gross domestic product	3.5	4.2	4.1	4.2	4.2	3.9	4.3

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

a) EUR bn.

Consumption expenditure	2 155.4	2 192.8	2 229.2	1 076.1	1 116.6	1 092.9	1 136.3
Private households ²	1 593.7	1 621.2	1 647.5	793.6	827.6	805.5	842.1
Government	561.3	571.1	581.3	282.2	288.9	287.1	294.1
Gross fixed capital formation	593.7	621.8	647.1	299.3	322.5	310.9	336.3
Machinery and equipment	204.1	215.0	222.3	101.8	113.2	105.0	117.3
Construction	275.8	287.1	299.7	139.0	148.1	144.5	155.2
Other products	114.2	120.2	125.6	58.6	61.6	61.4	64.2
Domestic expenditure	2 713.9	2 780.4	2 841.3	1 369.9	1 410.5	1 397.9	1 443.4
Exports	1 449.8	1 521.1	1 593.2	754.0	767.1	786.9	806.3
Imports	1 253.4	1 327.9	1 400.2	648.3	679.5	681.9	718.3
Gross domestic product	2 911.1	2 976.1	3 038.7	1 476.0	1 500.1	1 504.1	1 534.5

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

Consumption expenditure	1.7	1.7	1.7	1.7	1.8	1.6	1.8
Private households ²	1.7	1.7	1.6	1.6	1.8	1.5	1.7
Government	1.6	1.7	1.8	1.8	1.7	1.7	1.8
Gross fixed capital formation	3.7	4.7	4.1	4.7	4.8	3.9	4.3
Machinery and equipment	2.3	5.3	3.4	5.2	5.4	3.2	3.6
Construction	4.5	4.1	4.4	4.0	4.2	3.9	4.8
Other products	4.3	5.3	4.4	5.4	5.2	4.7	4.2
Domestic expenditure	2.1	2.5	2.2	2.4	2.5	2.0	2.3
Exports	3.9	4.9	4.7	4.9	5.0	4.4	5.1
Imports	4.7	5.9	5.4	6.1	5.8	5.2	5.7
Gross domestic product	2.0	2.2	2.1	2.2	2.3	1.9	2.3

National Accounts (cont.)
Forecast period: 2016 to 2018

	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 ²	1.7	1.5	1.8	1.4	1.6	1.8	1.8
Government consumption	2.1	1.6	1.8	1.7	1.5	1.8	1.8
Gross fixed capital formation	1.9	2.1	2.0	2.1	2.1	2.1	2.0
Machinery and equipment	0.3	0.7	0.5	0.6	0.8	0.6	0.5
Construction	3.2	3.2	3.1	3.3	3.1	3.1	3.1
Exports	1.5	0.3	0.9	0.0	0.6	0.9	0.9
Imports	2.3	-0.7	0.4	-1.5	0.0	0.3	0.4
Gross domestic product	1.5	2.0	2.0	2.0	1.9	2.0	2.0

5. National income

a) EUR bn.

Primary income of private households ²	2 259.0	2 342.9	2 431.1	1 156.2	1 186.7	1 196.8	1 234.4
Employers social contributions	299.1	309.2	319.5	149.8	159.3	154.5	165.0
Gross wages and salaries	1 367.7	1 429.6	1 492.5	682.4	747.3	710.2	782.3
Other primary income ⁴	592.2	604.1	619.2	324.0	280.1	332.1	287.1
Primary income of other sectors	479.7	515.2	548.0	237.2	278.0	252.5	295.4
Net national income	2 738.7	2 858.1	2 979.1	1 393.4	1 464.7	1 449.3	1 529.8
Consumption of fixed capital	570.4	589.3	609.3	292.8	296.5	302.8	306.5
Gross national income	3 309.1	3 447.4	3 588.4	1 686.2	1 761.2	1 752.1	1 836.3
memorandum item:							
Net national income (factor costs)	2 422.3	2 534.6	2 647.3	1 232.0	1 302.6	1 283.9	1 363.4
Property and entrepreneurial income	755.5	795.8	835.3	399.8	395.9	419.2	416.1
Compensation of employees	1 666.8	1 738.8	1 811.9	832.2	906.6	864.7	947.3

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

Primary income of private households ²	3.8	3.7	3.8	3.7	3.7	3.5	4.0
Employers social contributions	3.5	3.4	3.3	3.4	3.3	3.1	3.6
Gross wages and salaries	4.3	4.5	4.4	4.6	4.5	4.1	4.7
... per employee	2.5	3.1	3.1	3.1	3.1	2.8	3.5
Other primary income ⁴	2.7	2.0	2.5	2.0	2.0	2.5	2.5
Primary income of other sectors	2.5	7.4	6.4	7.9	7.0	6.5	6.3
Net national income	3.5	4.4	4.2	4.4	4.3	4.0	4.4
Consumption of fixed capital	3.3	3.3	3.4	3.3	3.3	3.4	3.4
Gross national income	3.5	4.2	4.1	4.2	4.2	3.9	4.3
memorandum item:							
Net national income (factor costs)	3.6	4.6	4.4	4.7	4.6	4.2	4.7
Property and entrepreneurial income	2.4	5.3	5.0	5.3	5.3	4.9	5.1
Compensation of employees	4.2	4.3	4.2	4.4	4.3	3.9	4.5

6. Disposable income of private households ²

a) EUR bn.

Mass income	1 350.7	1 404.9	1 459.9	675.7	729.3	700.2	759.7
Net wages and salaries	904.5	944.9	983.2	446.3	498.6	462.9	520.3
Social benefits other than social transfers in kind	565.9	582.6	602.9	290.4	292.2	300.1	302.8
less: Levies on social benefits, taxes on consumption	119.6	122.5	126.2	61.0	61.5	62.7	63.4
Other primary income ⁴	592.2	604.1	619.2	324.0	280.1	332.1	287.1
Other transfers received (net) ⁵	- 76.3	- 80.1	- 83.9	- 40.4	- 39.7	- 42.6	- 41.3
Disposable income	1 866.6	1 928.9	1 995.1	959.2	969.7	989.6	1 005.5
Change in pension entitlements	49.4	49.7	49.9	24.6	25.1	24.7	25.2
Consumption expenditure	1 732.5	1 788.7	1 850.2	872.0	916.7	900.6	949.6
Saving	183.5	189.9	194.8	111.8	78.1	113.7	81.1
Saving ratio (%) ⁶	9.6	9.6	9.5	11.4	7.9	11.2	7.9

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

Mass income	4.0	4.0	3.9	4.0	4.0	3.6	4.2
Net wages and salaries	4.1	4.5	4.1	4.5	4.4	3.7	4.3
Social benefits other than social transfers in kind	3.8	3.0	3.5	2.8	3.1	3.3	3.6
less: Levies on social benefits, taxes on consumption	4.2	2.4	3.0	2.3	2.6	2.8	3.1
Other primary income ⁴	2.7	2.0	2.5	2.0	2.0	2.5	2.5
Disposable income	3.4	3.3	3.4	3.3	3.4	3.2	3.7
Consumption expenditure	3.5	3.2	3.4	3.1	3.4	3.3	3.6
Saving	2.1	3.5	2.6	4.3	2.4	1.7	3.8

National Accounts (cont.)

Forecast period: 2016 to 2018

	2017	2018	2019	2018		2019	
				H1	H2	H1	H2

7. Revenue and expenditure by general government ⁷

a) EUR bn.

Revenue							
Taxes	763.7	793.6	826.5	398.7	394.8	414.8	411.7
Social contributions	547.0	568.9	591.8	276.0	292.9	286.3	305.5
Property income	16.0	16.7	16.5	8.6	8.2	8.5	8.0
Other current transfers	21.3	21.6	22.1	10.1	11.5	10.4	11.7
Capital transfers	10.3	9.7	9.2	4.3	5.4	4.0	5.2
Sales	107.9	111.0	115.3	52.7	58.4	54.7	60.5
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Total	1 466.4	1 521.7	1 581.5	750.5	771.2	778.7	802.8
Expenditure							
Intermediate consumption ⁸	435.6	451.7	469.8	218.8	232.9	227.5	242.3
Compensation of employees	244.0	250.6	258.7	120.3	130.3	124.0	134.6
Property income (interest)	39.1	37.7	37.6	18.8	18.8	18.7	18.8
Subsidies	28.8	30.2	31.7	14.6	15.7	15.3	16.4
Social benefits	506.6	522.2	541.3	260.6	261.6	269.6	271.7
Other current transfers	76.1	86.6	87.7	45.5	41.1	41.3	46.4
Capital transfers	41.4	35.3	35.7	14.2	21.1	14.4	21.3
Gross capital formation	70.1	74.2	78.6	32.0	42.3	33.6	45.1
Net acquisitions of non-produced non-financial assets	- 1.4	- 1.4	- 1.4	- 0.6	- 0.8	- 0.6	- 0.8
Total	1 440.4	1 487.2	1 539.7	724.1	763.1	743.9	795.8
Net lending	26.0	34.6	41.8	26.4	8.1	34.8	7.0

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

Revenue							
Taxes	4.3	3.9	4.2	3.8	4.0	4.0	4.3
Social contributions	4.4	4.0	4.0	4.0	4.0	3.7	4.3
Property income	- 11.3	4.6	- 1.5	11.4	- 1.6	- 1.4	- 1.6
Other current transfers	7.1	1.3	2.5	0.0	2.5	2.5	2.5
Capital transfers	- 33.4	- 5.8	- 5.5	- 6.9	- 4.8	- 6.6	- 4.6
Sales	2.8	3.0	3.8	2.0	3.8	3.9	3.7
Other subsidies	5.6	0.0	0.0	0.0	0.0	0.0	0.0
Total	3.7	3.8	3.9	3.7	3.8	3.8	4.1
Expenditure							
Intermediate consumption ⁸	4.0	3.7	4.0	3.6	3.7	4.0	4.0
Compensation of employees	3.2	2.7	3.2	2.6	2.8	3.2	3.3
Property income (interest)	- 6.1	- 3.6	- 0.3	- 4.1	- 3.1	- 0.5	0.0
Subsidies	3.7	4.9	4.9	4.8	4.9	4.8	4.9
Social benefits	4.2	3.1	3.7	2.9	3.3	3.5	3.8
Other current transfers	0.5	13.8	1.3	10.9	17.1	- 9.1	12.8
Capital transfers	13.9	- 14.7	1.1	- 29.7	- 0.5	1.4	0.9
Gross capital formation	4.9	5.9	5.9	7.5	4.7	4.9	6.6
Net acquisitions of non-produced non-financial assets	4.3	0.0	0.0	0.0	0.0	0.0	0.0
Total	3.7	3.2	3.5	2.6	3.8	2.7	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 payed other current transfers.

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

⁷ Central, regional, local and social security funds.

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

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