

KIEL INSTITUTE **ECONOMIC OUTLOOK**

German Economy Summer 2018

Finalized June 20, 2018



No. 44 (2018|Q2)

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GERMAN ECONOMY: TEMPORARY SLOWDOWN, BOOM NOT OVER YET

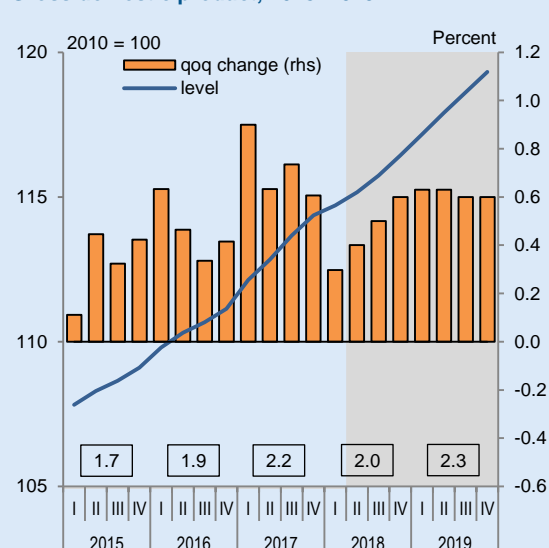
Martin Ademmer, Jens Boysen-Hogrefe, Salomon Fiedler, Dominik Groll, Philipp Hauber, Nils Jannsen, Stefan Kooths, Galina Potjagailo, and Maik Wolters

The strong economic upswing in Germany has taken a break. For the current year, we revise our GDP growth forecast down by 0.5 percentage points to 2.0 percent. However, the slowdown in economic activity at the beginning of the year is mainly due to temporary factors. We therefore expect growth to regain momentum during the course of the year. For 2019, we expect German GDP to increase by 2.3 percent. Thus, production continues to increase faster than potential output. With capacity utilization already at very high levels, the German economy will get closer to its limit.

The slowdown in economic activity was mainly due to temporary factors. Several leading indicators have deteriorated since the beginning of the year, in particular business expectations. Moreover, incoming orders have considerably decreased in the last months. Against this backdrop, GDP growth of 0.3 percent in the first quarter was much lower than what leading indicators had signaled some months ago, and forecasting models are indicating a similar growth rate for the second quarter (Figure 1). Several temporary factors (holidays, strike, and sick leave) contributed to this slowdown. Also the fragile international environment may have dampened GDP growth, as exports even declined in the first quarter. With the temporary factors fading out, we expect GDP growth to pick up again as the supportive factors, such as low financing costs and strong income growth, are still in place.

Foreign trade returns to pronounced expansion after temporary weakness. German exports declined markedly at the start of the year, after having grown strongly at the end of last year. In the current quarter, exports are set to expand at a modest rate. Although production expectations in German export markets have increased coming from a high level, export expectations of German firms have returned to somewhat lower levels, incoming orders have seen downward corrections after extraordinary increases at the end of last year, and nominal exports of goods slightly declined in April. However, the slowdown is expected to remain temporary. Over the remaining forecast horizon, German exports are forecast to expand at pronounced, but slightly declining rates, in line with the growth dynamics in German export markets and with gradual improvements in price competitiveness. German imports declined at the beginning of the year as well, but are set to return to their vivid expansionary track in the current quarter, in view of a notable increase of nominal imports of goods in April. Over the forecast horizon, imports are set to grow markedly, supported in particular by strong private consumption.

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.

Business investment is expected to rise moderately. Despite the favorable business situation and high capacity utilization, firms' investment enthusiasm seems to be more and more dampened by the fragile international political environment. In contrast, after having even declined in the second half of 2017, construction investment is likely to regain momentum in the current year stimulated inter alia by high income growth of private households and the good cash position of German municipalities. Capacity bottlenecks in the construction sector, however, will result in significantly rising construction prices.

Strong income growth stimulates private consumption. Gross wages and salaries are set to grow with high rates of about 5 percent in 2018 and 2019 due to the good shape of the labor market. Moreover, several measures of the new German government will support disposable income of private households. These measures include adjustments of the income tax, lower social security contributions and increasing transfer payments in the pension system. All in all, we expect disposable income to increase by 4.4 percent in 2019, the highest growth rate in 15 years, after an increase by 3.8 percent in the current year.

The recent increase in consumer price inflation was driven primarily by the oil price, but core inflation is expected to trend upwards as well during the forecast period. In May, the CPI rose by slightly more than 2 percent, driven mainly by the oil price. The price of Brent oil recently approached 80 US-dollars per barrel—almost 50 percent more than a year ago. Due to factors including the sanctions against Iran and the economic chaos in Venezuela, we expect oil prices to keep buoyant for some time. However, the OPEC will probably not extend its current supply restrictions, which it instituted in the face of much lower oil prices, beyond autumn, so that oil prices should recede somewhat towards the end of this year. As production capacities in Germany will come under increasing strain and since the ECB has announced to exit only gradually from its extraordinary monetary policy, core inflation should increase over the forecast period. We expect headline inflation to come in at about 2 percent in both 2018 and 2019 (Table 1). Financing conditions offered by banks remain very favorable and interest rates on credit and bonds should rise only slowly over the forecast period. Thus, the current credit expansion continues to support the economic upswing.

Table 1:
Key indicators, 2016–2019

	2016	2017	2018	2019
Gross domestic product (GDP), price-adjusted	1.9	2.2	2.0	2.3
Gross domestic product, deflator	1.3	1.5	1.8	2.1
Consumer prices	0.5	1.7	2.0	2.0
Labor productivity (per hour worked)	1.3	0.9	0.9	1.1
Employment (1,000 persons)	43,638	44,271	44,861	45,369
Unemployment rate (percent)	6.1	5.7	5.2	4.9
<i>in relation to nominal GDP</i>				
Public sector net lending	1.0	1.2	1.6	1.4
Gross public debt	68.2	64.1	60.3	56.8
Current account balance	8.5	8.1	8.0	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.

Employment growth remains robust, while wages accelerate markedly. Employers and employees in manufacturing, construction, and public services have agreed on strong wage increases in the first half of this year. Total negotiated wages and salaries will rise by 2.9 percent in 2018 after 2.1 percent in 2017. Due to the growing tightness of the labor market, effectively paid gross wages and salaries continue to rise faster (3.5 percent). As labor productivity falters due to the recent dent in

economic growth, unit labor costs increase noticeably. While the relationship between unit labor costs and prices will deteriorate subsequently, it remains favorable compared to historical standards. As a result, and due to the projected rebound in economic growth, employment will continue to rise throughout this and next year. While leading indicators for labor demand have recently deteriorated to some extent, they remained near levels unseen for several decades or even all-time highs. Nevertheless, large employment gains will become increasingly unlikely, 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 decline further until 2019, albeit by less than employment increases.

In 2018 the government surplus will reach a new record high. Government revenues are on a strong upward trend mainly due to the ongoing upswing on the labor market. Furthermore, government consumption decreased in the first quarter. Since part of this may reflect lower refugee-related expenses, it is likely that government consumption increases at a lower rate in the current year. In 2019, fiscal policy is 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. However, since the economic upswing continues to boost revenues, the budget surplus will remain almost unchanged. In the meantime, the structural budget balance deteriorates sharply.

The air for economic growth is getting thinner. In our forecast, GDP is growing faster than potential output. Even though economic downturns are notoriously difficult to predict, the likelihood of an economic downturn tends to rise with increasing capacity utilization. That is particularly true as there is broad evidence that the German economy is already operating far above normal levels of capacity utilization. First, our estimates suggest that the output gap last year was clearly in positive territory with about 1 percent. While real-time output gap estimates can be subject to large revisions, with the German economy entering a boom period it is more likely that our estimate will be subsequently revised upwards rather than downwards. Second, survey data indicate that capacity utilization of firms is far above long-run averages. This is particularly true for firms in the manufacturing and the construction sector. Third, the share of firms indicating that their production is limited by demand is close to historical lows. Fourth, the share of firms reporting that it is difficult to find qualified employees is at very high levels.

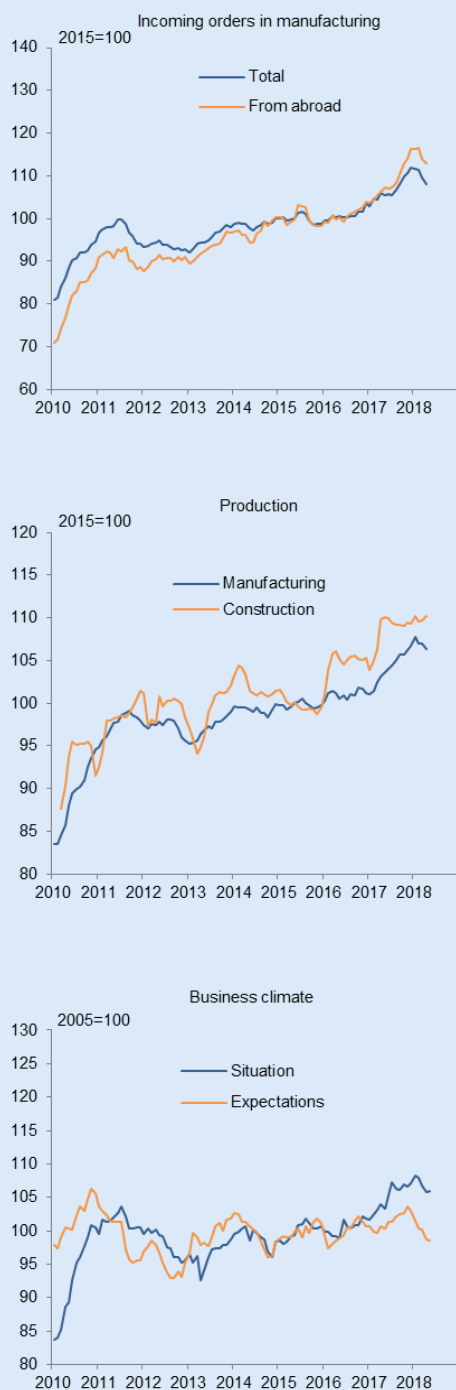
Data annex

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1. Leading indicators

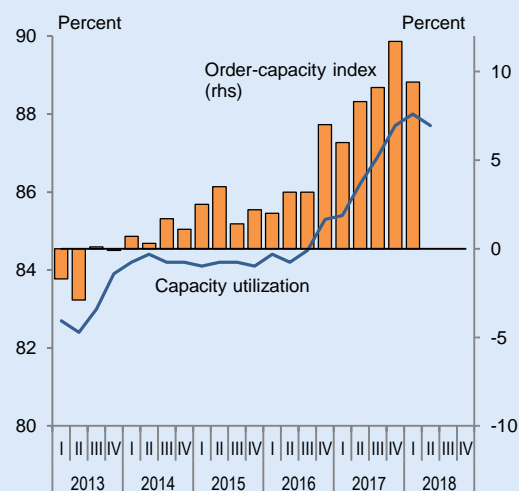
Figure 1.1:
Leading indicators, 2010–2018



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

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

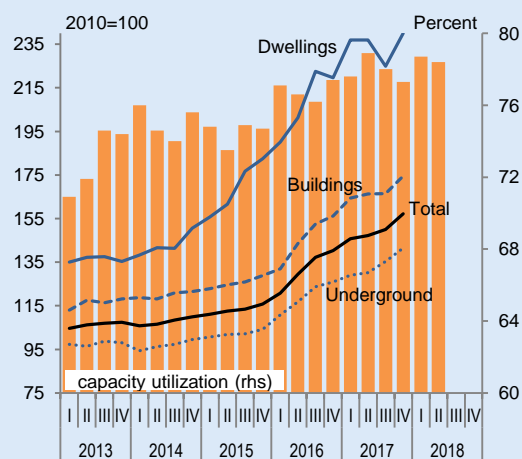
Figure 1.2:
Capacity utilization, 2013–2018



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, 2013–2018

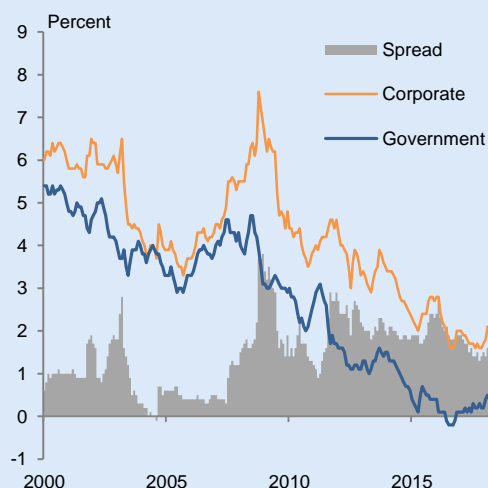


Quarterly data. Capacity utilization: seasonally adjusted (2014-Q4: October/November); order stocks: price, seasonally and working-day adjusted.

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

2. Monetary conditions and prices

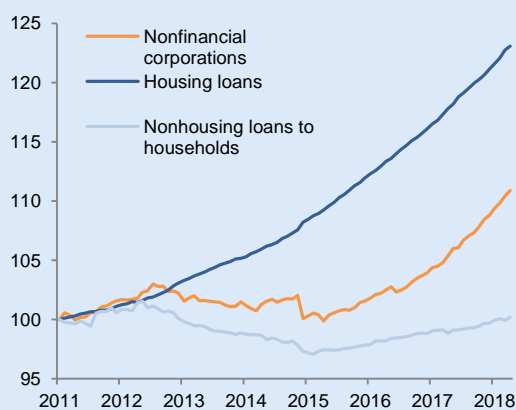
Figure 2.1:
Bond yields, 2000–2018



Monthly data, average maturities above three years.

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

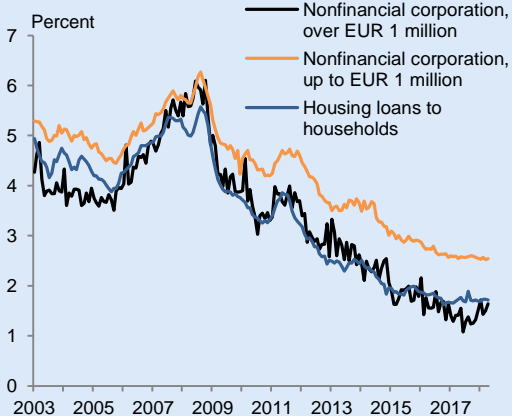
Figure 2.3:
Sum of loans, 2011–2018



Index: Jan 2011=100; Monthly data.

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

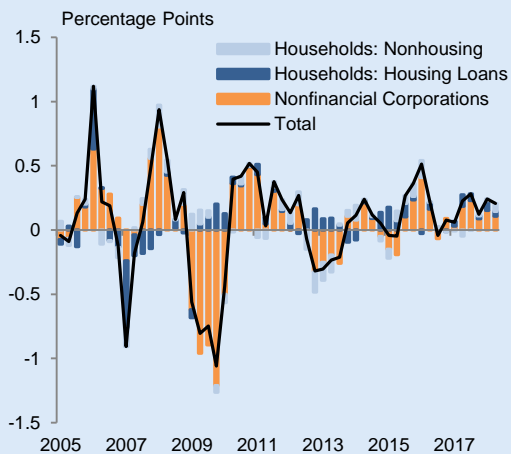
Figure 2.2:
Loan interest, 2003–2018



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

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

Figure 2.4:
Credit impulse, 2005–2018

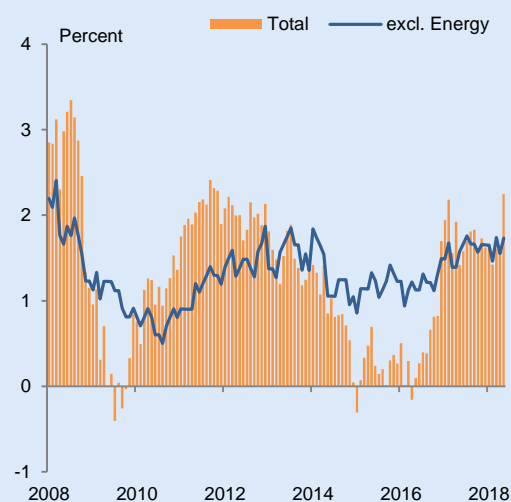


Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009).

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.

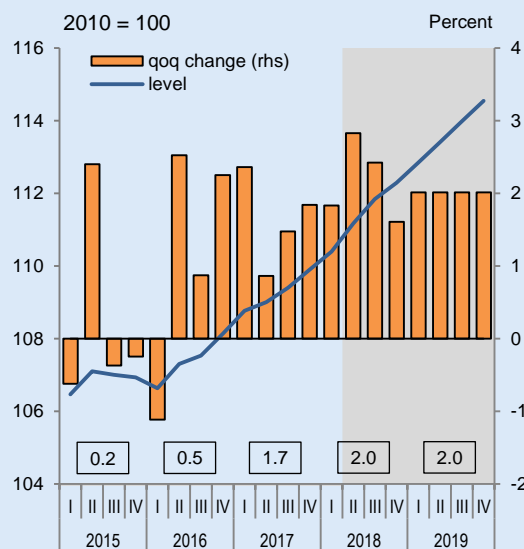
Figure 2.5:
Consumer prices, 2008–2018



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

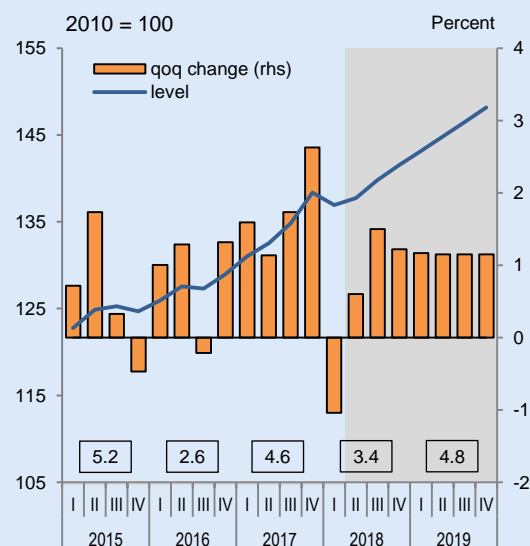
	2016				2017				2018				2019			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	
Long-term interest rate	0.1	0.0	-0.1	0.2	0.3	0.3	0.4	0.4	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8
US-dollar/euro exchange rate	1.10	1.13	1.12	1.07	1.07	1.10	1.18	1.18	1.23	1.19	1.17	1.17	1.17	1.17	1.17	1.17
Price competitiveness	86.80	87.2	87.0	86.8	86.3	86.9	89.0	89.1	89.5	89.1	89.0	88.9	88.7	88.6	88.4	88.3
Export markets	0.5	0.6	0.5	0.8	0.8	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Oil price	35.3	46.8	47.0	49.5	53.6	49.6	52.1	61.4	66.9	75.4	79.0	75.6	75.4	75.7	76.1	76.5

ECB key interest rate: main refinancing operations; long-term interest rate on 9–10 year bonds; price competitiveness: against 37 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

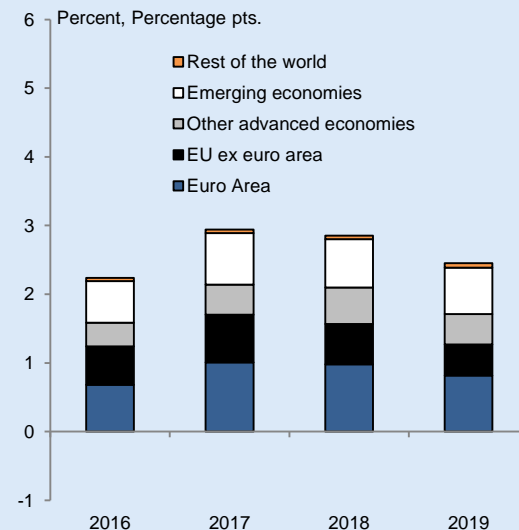
Figure 3.1:
Exports, 2015–2019



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.

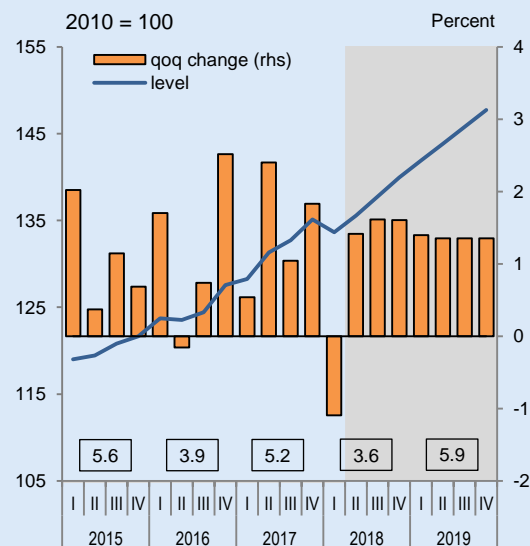
Figure 3.3:
German export markets, 2016–2019



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.

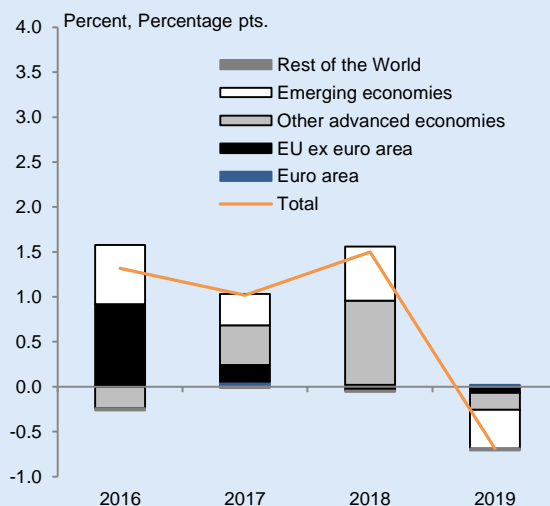
Figure 3.2:
Imports, 2015–2019



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.

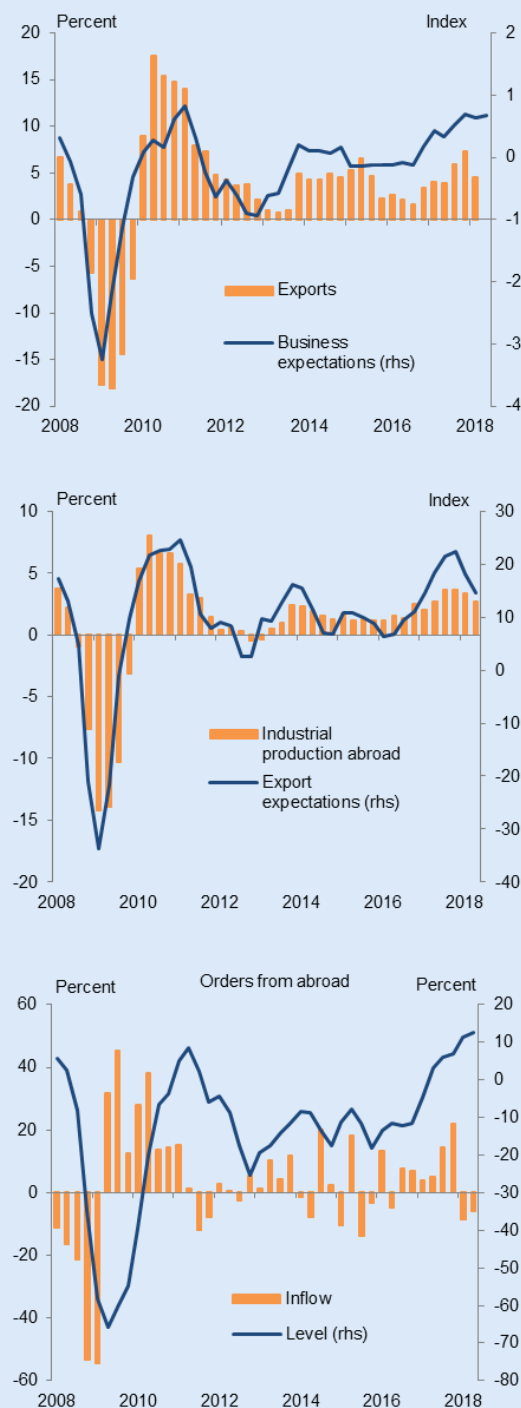
Figure 3.4:
Germany's price competitiveness, 2016–2019



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.

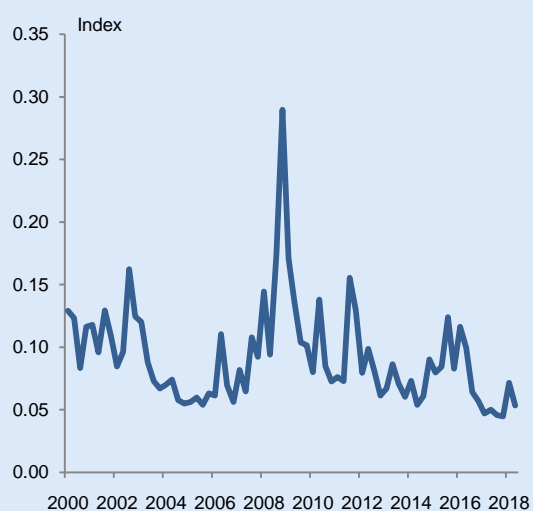
Figure 3.5:
Export indicators, 2008–2018



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.

Figure 3.6:
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, 2015–2019

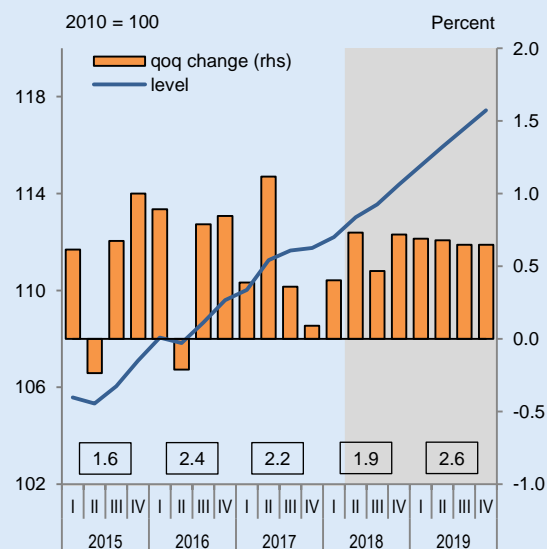


Figure 4.3:
M&E investments, 2015–2019

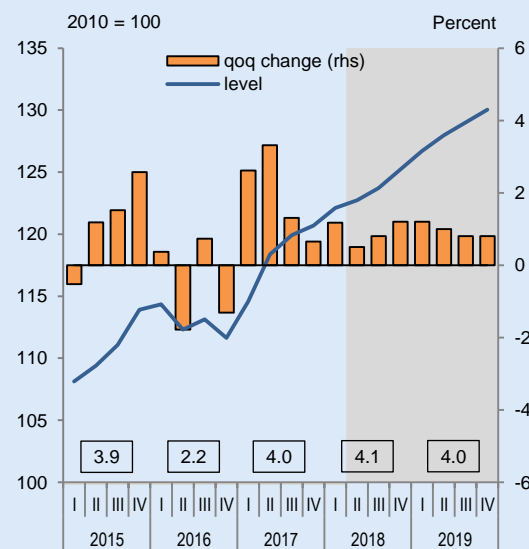


Figure 4.2:
Private consumption, 2015–2019

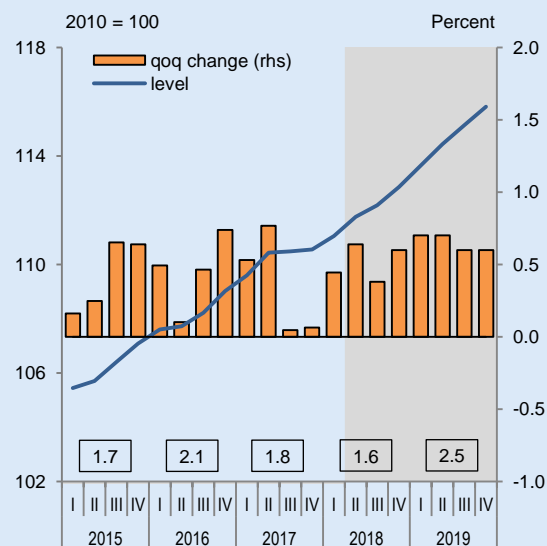


Figure 4.4:
Construction, 2015–2019

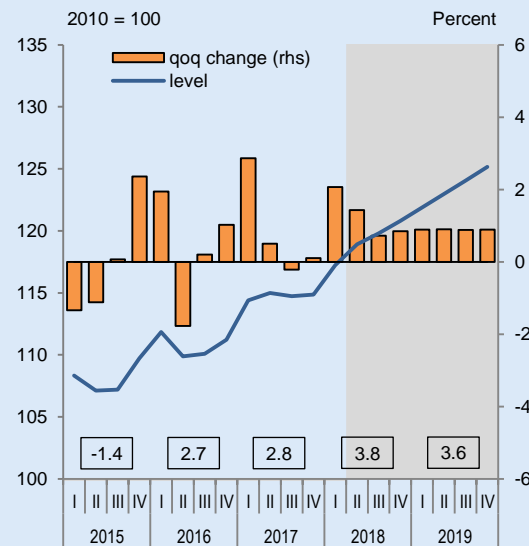
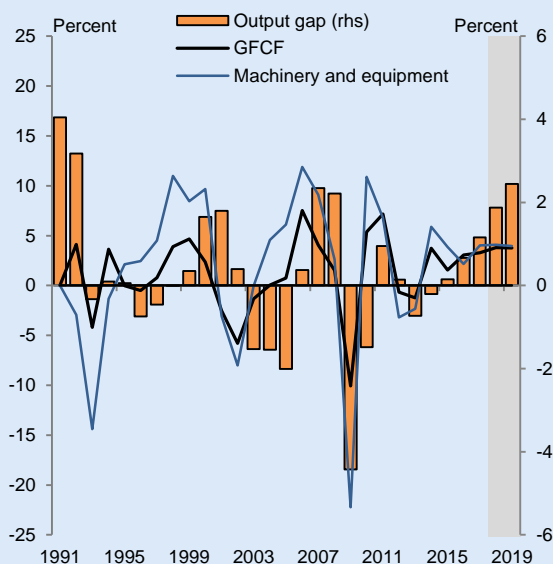


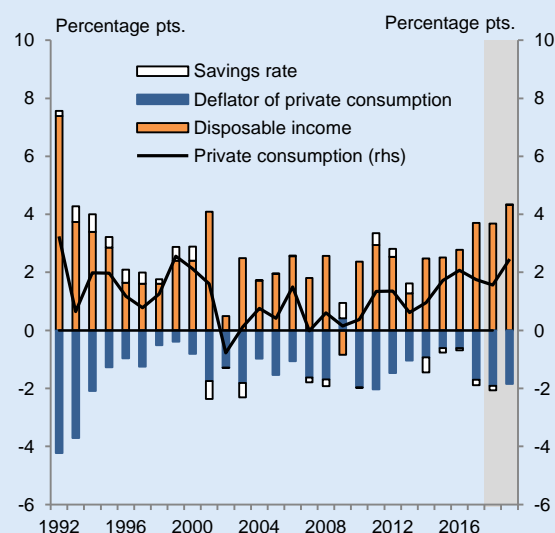
Figure 4.5:
Investment cycles, 1991–2019



Annual data; GFCF, machinery and equipment: volumes, change on previous year; output gap: in percent of potential output, estimation taken from spring 2018 projection.

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

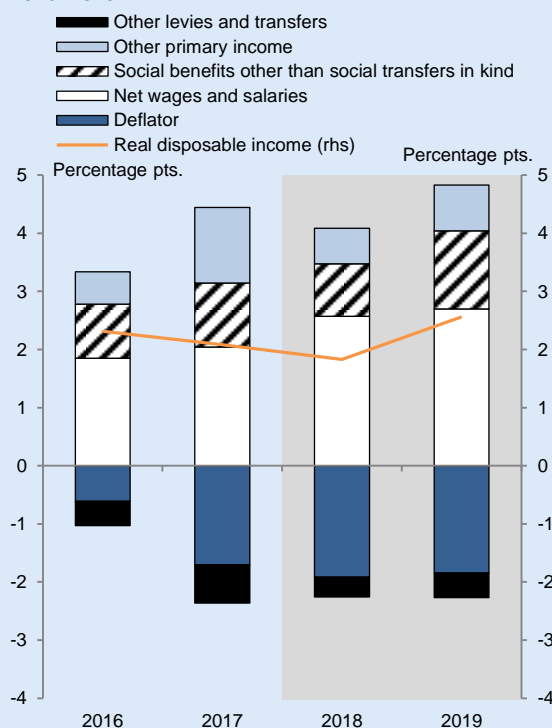
Figure 4.6:
Contributions to change in private consumption, 1992–2019



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, 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.

Table 4.1:
Gross fixed capital formation, 2016–2019

	2016	2017	2018	2019
Total	3.1	3.3	3.8	3.8
Corporate investment	2.7	3.6	3.6	3.5
Machinery and equipment	2.2	4.0	4.1	4.0
Construction (non-dwellings)	0.0	3.0	3.3	1.9
Other	5.5	3.5	3.2	3.8
Dwellings	4.0	2.8	4.5	4.5
Public (non-dwellings)	2.7	2.0	1.6	2.9
Memorandum item:				
Construction	2.7	2.8	3.8	3.6

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, 2017–2019

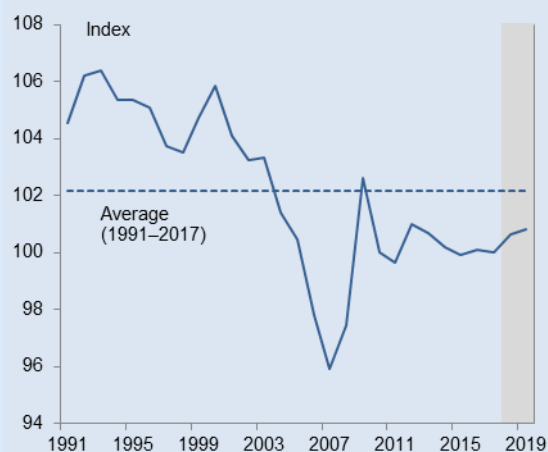
	2017	2018				2019
	IV	I	II	III	IV	I
Seasonally and calendar adjusted, quarter-on-quarter change in percent						
Gross domestic product	0.6	0.3	0.4	0.5	0.6	0.6
Gross value added	0.6	0.2	0.4	0.5	0.6	0.6
Industry excluding construction	1.5	-0.6	0.0	0.6	0.7	0.7
Manufacturing	1.5	-0.4	0.0	0.6	0.7	0.7
Construction	1.0	0.4	1.9	0.8	0.8	0.8
Trade, transport, accommodation, and food services	0.6	1.3	0.7	0.7	0.8	0.9
Information and communication	0.5	0.6	1.0	1.2	1.2	1.2
Financial and insurance services	0.3	0.3	-0.1	-0.1	-0.1	-0.1
Real estate activities	0.1	0.5	0.4	0.4	0.4	0.4
Business services	0.1	0.5	0.4	0.5	0.7	0.7
Public services, education, health	0.1	0.1	0.3	0.4	0.4	0.4
Other services	-0.5	-0.2	0.1	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

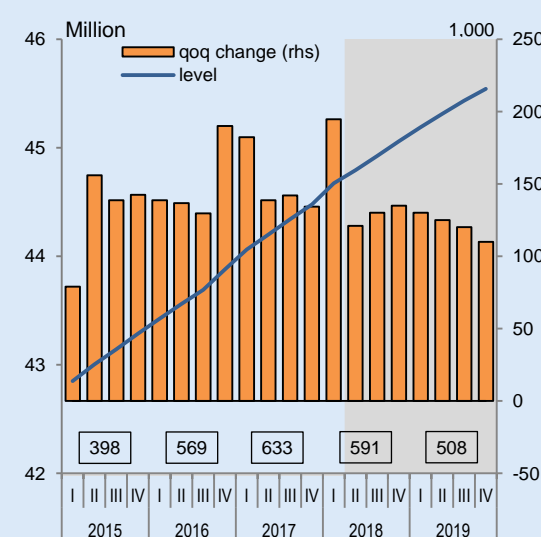
	2016	2017	2018	2019
<i>Per hour</i>				
Negotiated wages	2.1	2.1	2.9	2.7
Gross wages and salaries	3.1	2.7	3.6	3.4
Wage drift	1.0	0.5	0.8	0.7
Compensation of employees	2.9	2.5	3.3	3.4
Labor productivity	1.3	0.9	0.9	1.1
Unit labor costs	1.5	1.6	2.4	2.3
Unit labor costs (real)	0.2	0.0	0.6	0.2
<i>Per capita</i>				
Negotiated wages	2.1	2.1	2.9	2.7
Gross wages and salaries	2.4	2.7	3.5	3.5
Wage drift	0.3	0.6	0.7	0.9
Compensation of employees	2.2	2.5	3.3	3.6
Labor productivity	0.6	0.8	0.6	1.2
Unit labor costs	1.6	1.8	2.7	2.3
Unit labor costs (real)	0.2	0.2	0.8	0.3

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

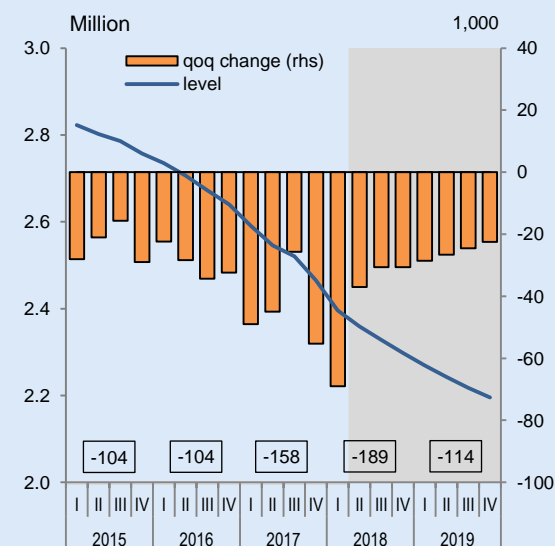
Figure 7.1:
Employment, 2015–2019



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)	58,924	59,285	60,043	60,705	61,453
Persons in employment (domestic concept)	43,069	43,638	44,271	44,861	45,369
Self-employed	4,360	4,333	4,297	4,240	4,220
Employees (domestic concept)	38,710	39,305	39,974	40,622	41,150
Employees subject to social security contributions	30,823	31,508	32,234	32,972	33,539
Minijobs	4,856	4,804	4,742	4,687	4,647
Net commuting	79	93	101	98	98
Persons in employment (national concept)	42,990	43,545	44,170	44,763	45,271
Employees (national concept)	38,631	39,211	39,873	40,524	41,051
Unemployed persons (registered)	2,795	2,691	2,533	2,344	2,230
Unemployment rate (registered; percent)	6.4	6.1	5.7	5.2	4.9
Unemployment rate (ILO; percent)	4.3	3.9	3.5	3.1	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

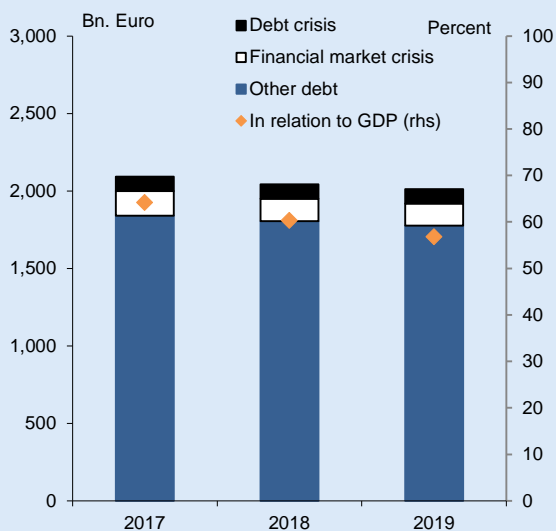
Table 8.1:
Revenues and expenditures of the general government, 2015–2018 (bn. euro)

	2015	2016	2017	2018	2019
Revenues	1,354.3	1,414.2	1,473.3	1,534.5	1,593.2
➤ relative to GDP	44.5	45.0	45.1	45.3	45.0
Taxes	698.0	732.0	765.9	795.3	826.4
➤ relative to GDP	22.9	23.3	23.5	23.5	23.3
Social contributions	500.8	523.8	548.0	571.9	597.3
➤ relative to GDP	16.5	16.7	16.8	16.9	16.9
Other revenues	155.4	158.5	159.5	167.3	169.5
➤ relative to GDP	5.1	5.0	4.9	4.9	4.8
Expenditures	1,328.8	1,382.4	1,435.1	1,479.8	1,545.3
➤ relative to GDP	43.7	44.0	44.0	43.7	43.6
Compensation of employees	229.2	236.5	246.1	254.5	264.1
Intermediate consumption	142.2	150.0	155.7	159.7	165.9
Social transfers in kind	252.4	268.6	278.0	287.5	299.4
Gross capital formation	64.2	66.8	70.3	76.0	80.6
Capital transfers	40.4	35.4	33.8	31.7	29.7
Social benefits	469.9	486.3	506.0	522.0	547.0
Subsidies	27.0	27.8	27.8	28.4	29.2
Other current transfers	74.8	75.7	75.3	81.4	93.6
Other capital transfers and investment grants	30.0	36.4	43.5	40.2	37.2
Other expenditures	-1.3	-1.3	-1.6	-1.5	-1.5
Net lending/net borrowing	25.4	31.9	38.2	54.7	47.9
➤ relative to GDP	0.8	1.0	1.2	1.6	1.4
Revenues of central, state, and local governments	880.0	918.7	954.0	992.2	1,026.3
Net of transfers from social security funds	879.0	917.7	952.9	991.1	1,025.2
Transfers from social security funds	1.1	1.1	1.1	1.1	1.1
Expenditures of central, state, and local governments	857.3	895.1	926.3	952.4	991.2
Net of transfers to social security funds	752.7	784.8	811.2	834.4	870.0
Transfers to social security funds	104.6	110.3	115.1	118.1	121.3
Net lending/net borrowing central, state, and local government	22.7	23.6	27.7	39.7	35.0
Revenues of social security funds	579.9	606.9	635.5	661.5	689.3
Net of transfers from central, state, and local governments	475.3	496.6	520.4	543.5	568.0
Expenditures of social security funds	577.2	598.6	625.1	646.6	676.5
Net of transfers to central, state, and local governments	576.1	597.6	624.0	645.5	675.4
Net lending/net borrowing social security funds	2.7	8.2	10.5	15.0	12.8

Sums may deviate due to rounding. Relative to GDP: in percent.

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

Figure 8.1:
Government gross debt, 2017–2019

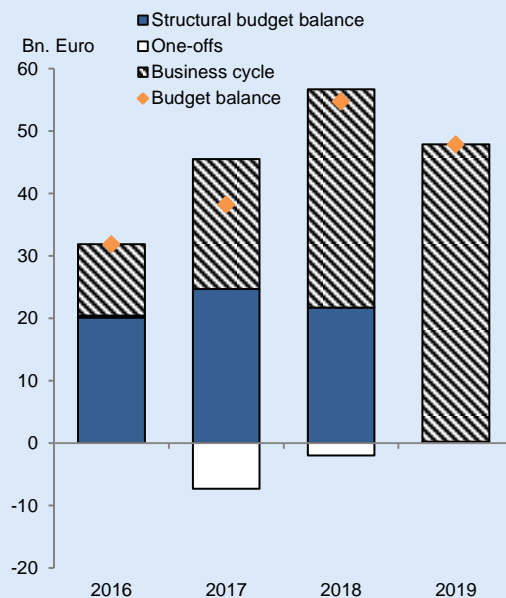


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

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, 2016–2019



Source: Europäische Kommission, AMECO; own calculations.

9. GDP and its components

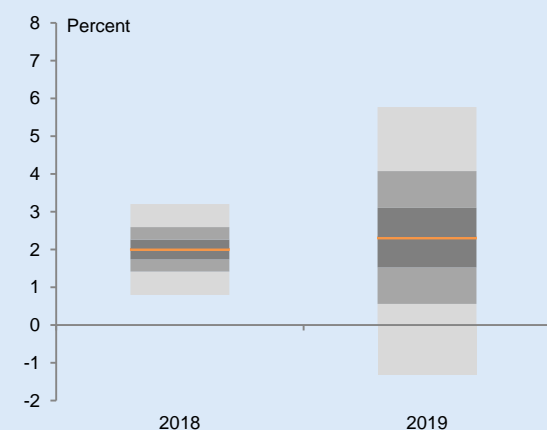
Table 9.1:
Quarterly data, 2017–2019

	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	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
Private consumption	0.5	0.8	0.0	0.1	0.4	0.6	0.4	0.6	0.7	0.7	0.6	0.6
Government consumption	0.1	0.5	0.5	0.4	-0.5	0.7	0.6	0.6	0.5	0.5	0.5	0.5
Machinery and equipment	2.6	3.3	1.3	0.7	1.2	0.5	0.8	1.2	1.2	1.0	0.8	0.8
Constructions	2.9	0.5	-0.2	0.1	2.1	1.4	0.7	0.8	0.9	0.9	0.9	0.9
Other investment	2.0	0.9	0.6	-0.1	1.5	0.6	0.8	1.0	1.0	1.0	0.9	0.9
Change in inventories	-0.5	0.2	0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	0.4	1.1	0.4	0.1	0.4	0.7	0.5	0.7	0.7	0.7	0.6	0.6
Exports	1.6	1.1	1.7	2.6	-1.0	0.6	1.5	1.2	1.2	1.2	1.2	1.2
Imports	0.5	2.4	1.0	1.8	-1.1	1.4	1.6	1.6	1.4	1.4	1.4	1.4
Net exports	0.5	-0.4	0.4	0.5	-0.1	-0.3	0.1	-0.1	0.0	0.0	0.0	0.0
Employment (domestic)	44,062	44,201	44,343	44,477	44,672	44,793	44,923	45,058	45,188	45,313	45,433	45,543
Unemployment (registered)	2,591	2,546	2,520	2,465	2,396	2,359	2,328	2,298	2,269	2,243	2,218	2,196

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.

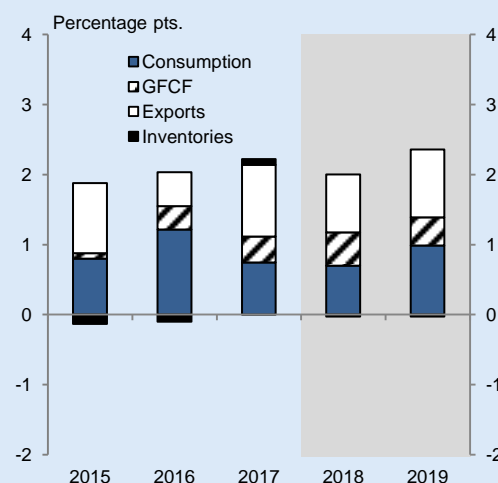
Figure 9.1:
Forecast intervals for GDP growth, 2018–2019



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 second quarter 1994–2017.

Source: Own calculations.

Figure 9.2:
Import adjusted expenditure-side contributions 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			
GDP (constant prices)		1.9	2.2	2.0	2.3
Private consumption expenditure		2.1	1.8	1.6	2.5
Public consumption expenditure		3.7	1.5	1.2	2.1
Total fixed investment		3.1	3.3	3.8	3.8
Machinery and equipment		2.2	4.0	4.1	4.0
Construction		2.7	2.8	3.8	3.6
Other equipment		5.5	3.5	3.2	3.8
Changes in stocks		-0.2	0.2	-0.1	0.0
Domestic Demand		2.4	2.2	1.9	2.6
Exports		2.6	4.6	3.4	4.8
Imports		3.9	5.2	3.6	5.9
Net exports		-0.3	0.2	0.2	-0.1
GDP (current prices)	3,263.4	3.3	3.8	3.8	4.5
Private consumption expenditure	1,732.8	2.7	3.5	3.5	4.3
Public consumption expenditure	637.9	4.8	3.6	3.2	3.8
Total fixed investment	663.1	4.3	5.2	6.6	6.6
Machinery and equipment	214.6	2.5	4.3	4.5	4.6
Construction	323.0	4.6	6.1	8.6	8.2
Other equipment	125.4	6.4	4.8	5.1	5.8
Changes in stocks (€ bn.)		-26.4	-17.5	-21.0	-22.9
Domestic Demand	3,016.2	3.3	4.2	4.0	4.7
Exports	1,541.5	1.6	6.3	4.2	5.6
Imports	1,294.3	1.4	7.9	4.7	6.4
Net exports (€ bn.)		250.6	247.2	250.9	254.6
Gross national income	3,323.6	3.1	4.0	4.0	4.5
Deflator of GDP		1.3	1.5	1.8	2.1
Private consumption expenditure		0.6	1.7	1.9	1.8
Public consumption expenditure		1.1	2.1	2.0	1.7
Investment in machinery and equipment		0.4	0.3	0.4	0.6
Investment in construction		1.9	3.2	4.6	4.4
Investment in other equipment		0.8	1.3	1.9	1.9
Exports		-1.0	1.6	0.8	0.8
Imports		-2.5	2.6	1.1	0.4
<i>Addendum: Consumer prices</i>		0.5	1.7	2.0	2.0
Income distribution					
National income	2,434.7	3.2	4.1	4.2	4.9
Employment income	1,668.9	3.8	4.3	4.9	4.9
in percent of national income		68.4	68.5	69.0	69.1
Entrepreneurial and property income	765.8	2.1	3.8	2.5	4.7
Disposable income of private households	1,873.3	2.9	3.8	3.7	4.4
Savings rate		9.7	9.9	10.0	10.0
Wages and salaries	1,369.5	4.0	4.4	5.2	4.9
Wage per hour		3.1	2.7	3.6	3.4
Unit labor costs		1.5	1.6	2.4	2.3
Productivity per hour		1.3	0.9	0.9	1.1
Unemployment (1,000)		2,691.0	2,532.8	2,344.0	2,230.0
Rate of unemployment (percent)		6.1	5.7	5.2	4.9
Total employment (1,000)		43,637.8	44,270.8	44,861.4	45,369.2
Public sector budget balance (€ bn.)		31.9	38.2	54.7	47.9
Public sector budget balance (in percent of GDP)		1.0	1.2	1.6	1.4
Public debts (in percent)		68.2	64.1	60.3	56.8

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: 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	1.3	1.1	1.4	1.3	1.2	1.1
Hours worked	1.3	1.1	1.2	0.9	1.3	1.1	1.4
Hours worked by person in employment	- 0.2	- 0.2	0.1	- 0.4	0.0	- 0.1	0.3
Labor productivity ¹	0.9	0.9	1.1	1.1	0.7	0.9	1.2
Gross domestic product, price-adjusted	2.2	2.0	2.3	2.0	1.9	2.0	2.6

2. Use of gross domestic product at current prices

a) EUR bn.

Consumption expenditure	2 370.7	2 452.0	2 555.2	1 193.3	1 258.7	1 242.3	1 312.9
Private households ²	1 732.8	1 793.5	1 871.4	873.6	919.9	909.6	961.8
Government	637.9	658.5	683.7	319.7	338.8	332.7	351.1
Gross fixed capital formation	663.1	706.8	753.4	339.4	367.4	360.4	392.9
Machinery and equipment	214.6	224.3	234.5	106.9	117.4	111.2	123.4
Construction	323.0	350.7	379.4	168.2	182.5	181.4	198.1
Other products	125.4	131.8	139.4	64.2	67.6	67.9	71.5
Changes in inventories ³	- 17.5	- 21.0	- 22.9	- 2.8	- 18.3	- 2.9	- 20.0
Domestic expenditure	3 016.2	3 137.8	3 285.7	1 529.9	1 607.9	1 599.9	1 685.8
Net exports	247.2	250.9	254.6	134.7	116.2	134.4	120.1
Exports	1 541.5	1 606.6	1 696.5	794.6	812.0	836.7	859.8
Imports	1 294.3	1 355.7	1 441.9	659.9	695.7	702.3	739.7
Gross domestic product	3 263.4	3 388.7	3 540.2	1 664.6	1 724.1	1 734.3	1 805.9

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

Consumption expenditure	3.5	3.4	4.2	3.0	3.8	4.1	4.3
Private households ²	3.5	3.5	4.3	2.9	4.1	4.1	4.6
Government	3.6	3.2	3.8	3.3	3.1	4.1	3.6
Gross fixed capital formation	5.2	6.6	6.6	6.1	7.1	6.2	6.9
Machinery and equipment	4.3	4.5	4.6	5.0	4.0	4.0	5.1
Construction	6.1	8.6	8.2	7.3	9.7	7.8	8.6
Other products	4.8	5.1	5.8	4.7	5.4	5.8	5.8
Domestic expenditure	4.2	4.0	4.7	3.6	4.4	4.6	4.8
Exports	6.3	4.2	5.6	4.4	4.0	5.3	5.9
Imports	7.9	4.7	6.4	4.0	5.4	6.4	6.3
Gross domestic product	3.8	3.8	4.5	3.9	3.8	4.2	4.7

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

a) EUR bn.

Consumption expenditure	2 155.1	2 186.5	2 237.8	1 072.6	1 113.9	1 096.0	1 141.9
Private households ²	1 594.0	1 618.9	1 658.6	792.6	826.3	809.7	848.9
Government	560.8	567.3	579.0	279.8	287.5	286.0	292.9
Gross fixed capital formation	591.2	613.6	636.7	296.0	317.7	306.0	330.7
Machinery and equipment	207.6	216.1	224.7	102.6	113.5	106.0	118.6
Construction	271.2	281.5	291.7	136.4	145.1	140.9	150.9
Other products	113.2	116.8	121.2	57.2	59.6	59.3	61.9
Domestic expenditure	2 717.1	2 769.1	2 842.0	1 364.1	1 405.0	1 396.9	1 445.1
Exports	1 459.5	1 509.5	1 581.6	748.2	761.3	781.2	800.4
Imports	1 258.5	1 303.3	1 380.3	635.4	667.9	672.1	708.2
Gross domestic product	2 918.8	2 976.6	3 046.1	1 476.7	1 499.8	1 506.6	1 539.5

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

Consumption expenditure	1.7	1.5	2.3	1.2	1.7	2.2	2.5
Private households ²	1.8	1.6	2.5	1.2	1.9	2.2	2.7
Government	1.5	1.2	2.1	1.0	1.3	2.2	1.9
Gross fixed capital formation	3.3	3.8	3.8	3.4	4.1	3.4	4.1
Machinery and equipment	4.0	4.1	4.0	4.6	3.7	3.4	4.5
Construction	2.8	3.8	3.6	2.9	4.7	3.2	4.0
Other products	3.5	3.2	3.8	2.9	3.4	3.7	3.9
Domestic expenditure	2.2	1.9	2.6	1.7	2.2	2.4	2.9
Exports	4.6	3.4	4.8	3.9	3.0	4.4	5.1
Imports	5.2	3.6	5.9	3.5	3.6	5.8	6.0
Gross domestic product	2.2	2.0	2.3	2.0	1.9	2.0	2.6

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 ²	1.7	1.9	1.8	1.7	2.1	1.9	1.8
Government consumption	2.1	2.0	1.7	2.3	1.8	1.8	1.7
Gross fixed capital formation	1.9	2.7	2.7	2.6	2.8	2.7	2.7
Machinery and equipment	0.3	0.4	0.6	0.4	0.4	0.6	0.6
Construction	3.2	4.6	4.4	4.3	4.7	4.4	4.4
Exports	1.6	0.8	0.8	0.5	1.0	0.9	0.7
Imports	2.6	1.1	0.4	0.5	1.7	0.6	0.3
Gross domestic product	1.5	1.8	2.1	1.8	1.8	2.1	2.0

5. National income

a) EUR bn.

Primary income of private households ²	2 269.2	2 363.1	2 464.4	1 163.0	1 200.1	1 211.4	1 253.0
Employers social contributions	299.4	310.5	326.3	150.6	159.9	157.8	168.5
Gross wages and salaries	1 369.5	1 440.9	1 511.1	685.7	755.2	718.7	792.4
Other primary income ⁴	600.3	611.7	627.0	326.7	285.0	334.9	292.1
Primary income of other sectors	482.2	498.7	530.1	231.2	267.5	243.0	287.0
Net national income	2 751.4	2 861.8	2 994.5	1 394.3	1 467.6	1 454.4	1 540.1
Consumption of fixed capital	572.2	594.5	617.6	295.0	299.4	306.6	311.1
Gross national income	3 323.6	3 456.3	3 612.1	1 689.3	1 767.0	1 761.0	1 851.1
memorandum item:							
Net national income (factor costs)	2 434.7	2 536.6	2 659.8	1 231.6	1 305.0	1 287.2	1 372.6
Property and entrepreneurial income	765.8	785.2	822.4	395.3	389.9	410.7	411.7
Compensation of employees	1 668.9	1 751.4	1 837.4	836.3	915.1	876.5	960.9

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

Primary income of private households ²	4.2	4.1	4.3	4.1	4.2	4.2	4.4
Employers social contributions	3.7	3.7	5.1	3.9	3.5	4.8	5.4
Gross wages and salaries	4.4	5.2	4.9	5.0	5.4	4.8	4.9
... per employee	2.7	3.5	3.5	3.3	3.7	3.4	3.6
Other primary income ⁴	4.1	1.9	2.5	2.3	1.5	2.5	2.5
Primary income of other sectors	3.1	3.4	6.3	4.5	2.5	5.1	7.3
Net national income	4.0	4.0	4.6	4.2	3.9	4.3	4.9
Consumption of fixed capital	3.6	3.9	3.9	4.0	3.8	3.9	3.9
Gross national income	4.0	4.0	4.5	4.1	3.9	4.2	4.8
memorandum item:							
Net national income (factor costs)	4.1	4.2	4.9	4.3	4.0	4.5	5.2
Property and entrepreneurial income	3.8	2.5	4.7	3.3	1.7	3.9	5.6
Compensation of employees	4.3	4.9	4.9	4.8	5.0	4.8	5.0

6. Disposable income of private households ²

a) EUR bn.

Mass income	1 350.6	1 412.2	1 485.9	677.1	735.2	710.4	775.5
Net wages and salaries	906.0	954.1	1 006.6	448.8	505.3	471.9	534.7
Social benefits other than social transfers in kind	564.8	581.7	607.9	289.6	292.1	302.3	305.6
less: Levies on social benefits, taxes on consumption	120.2	123.6	128.5	61.4	62.3	63.7	64.8
Other primary income ⁴	600.3	611.7	627.0	326.7	285.0	334.9	292.1
Other transfers received (net) ⁵	- 77.6	- 80.6	- 83.9	- 39.6	- 41.0	- 41.5	- 42.4
Disposable income	1 873.3	1 943.4	2 029.0	964.2	979.2	1 003.8	1 025.2
Change in pension entitlements	49.5	50.2	50.8	24.8	25.3	25.1	25.6
Consumption expenditure	1 732.8	1 793.5	1 871.4	873.6	919.9	909.6	961.8
Saving	190.0	200.1	208.4	115.4	84.6	119.4	89.0
Saving ratio (%) ⁶	9.9	10.0	10.0	11.7	8.4	11.6	8.5

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

Mass income	4.0	4.6	5.2	4.2	4.9	4.9	5.5
Net wages and salaries	4.2	5.3	5.5	5.0	5.6	5.1	5.8
Social benefits other than social transfers in kind	3.7	3.0	4.5	2.5	3.5	4.4	4.6
less: Levies on social benefits, taxes on consumption	4.7	2.8	4.0	2.7	3.0	3.8	4.1
Other primary income ⁴	4.1	1.9	2.5	2.3	1.5	2.5	2.5
Disposable income	3.8	3.7	4.4	3.5	4.0	4.1	4.7
Consumption expenditure	3.5	3.5	4.3	2.9	4.1	4.1	4.6
Saving	5.8	5.3	4.2	7.3	2.6	3.4	5.2

National Accounts (cont.)

Forecast period: 2017 to 2019

	2017	2018	2019	2018		2019	
				H1	H2	H1	H2

7. Revenue and expenditure by general government ¹

a) EUR bn.

Revenue							
Taxes	765.9	795.3	826.4	397.9	397.4	414.9	411.5
Social contributions	548.0	571.9	597.3	277.3	294.6	288.9	308.5
Property income	16.4	17.4	17.4	9.9	7.5	10.0	7.4
Other current transfers	22.3	24.0	23.4	10.4	13.5	10.6	12.7
Capital transfers	10.9	12.5	10.6	5.2	7.4	5.2	5.4
Sales	109.7	113.3	117.9	53.2	60.1	55.9	62.0
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Total	1 473.3	1 534.5	1 593.2	753.9	780.6	785.5	807.6
Expenditure							
Intermediate consumption ²	433.9	447.4	465.5	215.5	231.8	224.9	240.6
Compensation of employees	246.1	254.5	264.1	122.1	132.4	127.2	136.9
Property income (interest)	33.8	31.7	29.7	16.1	15.5	15.1	14.5
Subsidies	27.8	28.4	29.2	13.8	14.6	14.2	15.0
Social benefits	506.0	522.0	547.0	260.0	262.0	272.0	274.9
Other current transfers	75.3	81.4	93.6	40.9	40.5	49.0	44.6
Capital transfers	43.5	40.2	37.2	18.8	21.4	14.7	22.5
Gross capital formation	70.3	76.0	80.6	32.5	43.5	34.4	46.2
Net acquisitions of non-produced non-financial assets	- 1.6	- 1.5	- 1.5	- 0.6	- 0.9	- 0.6	- 0.9
Total	1 435.1	1 479.8	1 545.3	719.1	760.8	751.0	794.3
Net lending	38.2	54.7	47.9	34.9	19.8	34.5	13.3

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

Revenue							
Taxes	4.6	3.8	3.9	3.9	3.8	4.3	3.5
Social contributions	4.6	4.4	4.5	4.4	4.3	4.2	4.7
Property income	- 9.4	6.3	0.1	13.1	- 1.6	1.0	- 1.1
Other current transfers	12.3	7.3	- 2.5	4.1	9.8	1.6	- 5.7
Capital transfers	- 29.5	14.8	- 15.7	- 4.6	34.0	0.0	- 26.6
Sales	4.5	3.3	4.1	2.3	4.1	5.2	3.2
Other subsidies	2.5	- 0.5	0.0	- 1.1	0.0	0.0	0.0
Total	4.2	4.2	3.8	4.0	4.3	4.2	3.5
Expenditure							
Intermediate consumption ²	3.6	3.1	4.1	2.9	3.3	4.3	3.8
Compensation of employees	4.1	3.4	3.8	3.4	3.3	4.2	3.4
Property income (interest)	- 4.6	- 6.3	- 6.3	- 6.6	- 6.1	- 6.2	- 6.4
Subsidies	0.0	2.0	2.9	1.1	2.9	2.9	2.9
Social benefits	4.1	3.2	4.8	2.6	3.7	4.6	4.9
Other current transfers	- 0.6	8.1	15.0	2.7	14.1	19.8	10.2
Capital transfers	19.5	- 7.5	- 7.5	- 13.5	- 1.5	- 21.8	5.1
Gross capital formation	5.2	8.1	6.2	7.6	8.4	6.1	6.2
Net acquisitions of non-produced non-financial assets	21.0	- 2.8	0.0	- 6.9	0.0	0.0	0.0
Total	3.8	3.1	4.4	2.3	3.9	4.4	4.4

¹ Price-adjusted gross domestic product per hour worked.

² Incl. nonprofit institutions serving households.

³ Incl. acquisitions less disposals of valuables.

⁴ Operating surplus/mixed income, net property income

⁵ Received less 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.