

KIEL INSTITUTE ECONOMIC OUTLOOK

German EconomySpring 2017

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EXPANSION IS SET TO BROADEN

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

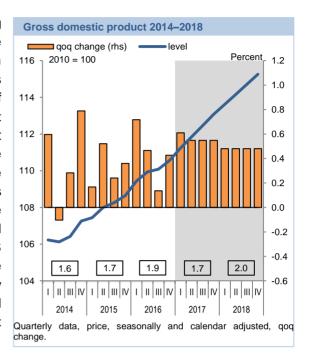
The expansion in Germany continues. We leave our forecast as of December 2016 unchanged and expect GDP to grow by 1.7 percent in 2017 and by 2 percent in 2018. The somewhat weaker growth rate in 2017 results from the lower number of working days. Overall, the expansion is set to broaden. While consumption is expected to increase with lower rates, exports and investment will gain momentum. Private consumption was one of the growth engines in the last two years as it expanded with 2 percent in both years; for Germany a remarkably high rate. However, the oil price-induced increase in consumer prices from 0.5 percent in 2016 to about 2 percent will weigh on real disposable income. Subsequently, private consumption will only expand by 1.2 percent in the current year and by 1.5 percent in 2018. Also growth rates in government consumption are expected to decline because the stimulating effects of the refugee influx are phasing out. Government consumption will grow by 2.5 this year and by 1.6 percent next year after having reached its highest growth rate (4 percent) since 1992 in the last year. In contrast, exports will regain momentum as the world economy is expected to grow with somewhat higher rates. In 2018, we expect exports to expand by about 5 percent, after an increase of 3.7 percent in the current year. Also, investment will increase with higher rates. In the past quarters, business investment was dampened by high policy uncertainty stemming from the uncertain international environment. With uncertainty phasing out, business investment will regain momentum given that capacity utilization is already above normal levels and business confidence is very high. Construction activity will remain to grow with very high rates, as financing conditions are still very supportive. The general government budget balance will remain in positive territory close to 0.5 percent relative to GDP over the forecast period. However, the budget surplus is mainly due to high revenues with the economy already operating above normal levels of capacity utilization. The structural budget balance, which takes capacity utilization (measured via the output gap) into account, is expected to reach negative territory again in 2017 and to further decline in 2018. The labor market remains in a good shape. A revision of employment data from March revealed that employment grew with strong rates over the course of last year while earlier data releases indicated a remarkable slowdown in employment growth.

The upswing in Germany is set to continue. We expect GDP to grow by 1.7 percent this year and by 2 percent next year after an increase of 1.9 percent in 2016. The somewhat lower growth in the current year is due to the low number of working days; when adjusted for calendar effects GDP will grow by 2 percent. The high level of business confidence in the manufacturing and in the service sectors signal that GDP will grow with high rates in the next quarters. The rebound in industrial production in January (increase of 3.7 percent compared to December), after having plunged in December (-2.7 percent), indicates some upward risks for our forecast of GDP growth of 0.6 percent in the first quarter GDP.

German exports gain pace. After a rather feeble growth of 2.6 percent in 2016, which resulted from a low level at the beginning of the year, on the one hand, and weak demand from important export markets such as the United States and the United Kingdom, on the other hand, exports are to expand at a faster pace over the forecast horizon. Having considerably gained momentum towards the end of the previous year, exports are set for a further marked increase in the first quarter. Particularly, export expectations of German firms climbed to their highest level for three years in February. Also production expectations in German export markets have been expanding considerably since September and are located well above their historical mean. Thereafter, exports are to grow at fairly strongly rates, backed by the economic upswing in the United States, the ongoing recovery in the Euro



area, and the improved outlook for emerging markets. Additional tailwind is provided by the improvement of German price competitiveness in the current year. By contrast, the dampening effects of the Brexit vote and the associated depreciation of the pound sterling on exports to the UK will fade out slowly. Negative effects of the United Kingdom's exit from the European Union on German exports are expected to remain limited, to the extent that the introduction of high tariffs or other trade barriers is omitted, and should not materialize within the forecast horizon. Also downward risks associated with potential protectionist measures of the new US administration against the European Union are currently small, given that such measures are likely to face the opposition of US firms strongly involved in European markets through direct investment (Kooths and Potjagailo: IfW-Box 2017.3).



Imports expand at even higher rates. German imports saw a very strong increase at the end of the year after a weakness over the preceding two quarters, thus growing at an annual rate of 3.7 percent in 2016. Over the forecast horizon, imports are expected to grow dynamically, driven by the expansion in exports and the associated demand for imported intermediate goods, as well as by business investment gaining momentum. We expect imports to grow at 5.2 percent in the current year and 5.6 percent in 2018. With imports in nominal terms being additionally spurred by the rising expenses for energy imports, the German current account balance is set to decrease in relation to GDP. None-theless, the current account balance will remain well above the threshold set by the Macroeconomic Imbalance Procedure of the European Commission.

Consumer price inflation has picked up considerably. While there was only a modest overall increase in consumer prices of 0.5 percent in 2016, inflation rose markedly in December to a year-on-year rate of 1.7 percent. Inflation rates continued to rise in January and February and came in at 1.9 and 2.2 percent, respectively. This development was mainly driven by oil prices which increased noticeably and now stand at around 56 dollars per barrel of Brent, compared to around 36 dollars one year ago. However, because OPEC seems to have been successful at capping oil production, and shale oil producers stand ready to enter the market, we do not expect oil prices to rise further in the near future. Therefore, inflationary pressures may recede somewhat in the spring of 2017. Conversely, the overutilization of production capacities and the tightness of labor markets will increase over the forecasting period. We therefore expect inflation to come in at 1.8 percent in both 2017 and 2018.

The domestic economy will continue to expand with high rates despite losses of purchasing power due to the oil price increase. The increase in inflation will weigh on real disposable income. While growth in wages and salaries will even accelerate due to the good shape of the labor market, growth in real disposable income will markedly decelerate from 2.1 percent in 2016 to 1.2 percent in the current year and 1.4 percent next year. This deceleration will only partly be absorbed by the savings rate, which we expect to slightly decline from 9.7 in 2016 to 9.5 percent in 2018 due to the increase in oil prices. As a consequence, private consumption will grow at rates much lower than 2 percent, by which it expanded in the last two years. We expect growth rates of 1.2 percent in the current year and 1.5 percent in 2018.



Investment is set to become an additional pillar of the upswing. Business investment was weak in the last year despite increasing capacity utilization, high business confidence, and supportive financing conditions; investment in machinery and equipment even declined in the last three quarters. One major impediment was the pronounced fluctuation in uncertainty triggered by the uncertain international environment. In the last months, policy uncertainty was at particularly high levels due to the change of government in the United States and the Brexit vote. However, in the course of the year business investment is likely to pick up. The dampening effects of uncertainty is expected to phase out as policy uncertainty has declined in February and as other uncertainty indicators, such as stock market volatility, are at low levels. Behind this backdrop, the supportive general conditions will gain in importance for firms' investment decisions again. We expect investment in machinery and equipment to increase by 1.4 percent this year and by 5 percent next year. Construction investment will continue to increase with high rates in the forecast period as the key drivers (favorable financing conditions, the good shape of the labor market, and the increasing need for additional living space) remain in place. After an increase of about 2 percent in the current year, growth is expected to accelerate to more than 4 percent in the next year. In the first half of the current year, we will see a pronounced drop and rebound pattern in the quarterly rates due to unfavorable weather conditions at the start of the year.

Employment numbers have been revised heavily for the second half of 2016, now showing a sustained strong increase in employment instead of a deceleration. Until recently, official statistics showed a sharp slowdown in employment growth in the second half of 2016, at odds with leading indicators such as job vacancies or hiring plans of businesses as well as "hard" indicators of real economic activity. Moreover, for labor supply effects to be responsible, the slowdown in employment occurred too suddenly. As was announced on March 1, a data-processing error at the Federal Employment Agency had led to a significant underreporting of social-security jobs. Now, the revised data show quite a different picture for the German labor market, according to which employment growth has not decelerated but has remained strong. This is also much more in line with the very favorable labor market conditions as signaled by almost all indicators

Employment growth is expected to remain strong, leading to a further decline in unemployment. Given the continued economic upswing, favorable wages in relation to prices and productivity, and the expansion in labor supply due to immigration and participation, we expect employment growth to remain strong in 2017 and 2018. In the medium term, however, labor supply growth is set to slow down significantly due to demographic reasons, making large employment gains increasingly unlikely. While the number of refugees without a job has risen significantly in 2016, 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. All in all, we expect the overall unemployment rate to decline further in 2017 and 2018, albeit less than proportional compared to employment growth.

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 influx. For 2017, revenues are expected to increase at a lower rate mainly because the extraordinary strong rise in earnings taxes of the previous year is unlikely to be repeated. Further, tax cuts will weigh on revenues. Expenditures do not increase as fast as before, either, since the refugee influx will not increase government consumption again. In sum, expenditures will be more dynamic than revenues, not least due to expansionary fiscal policy that includes tax cuts and additional social spending. The budget surplus decreases slightly and the structural budget surplus is reduced by roughly 10 bill. Euro. In 2018, budget surplus rises again due to faster increasing revenues. However, the budget surplus is due to the ongoing upswing with capacity utilization being already above normal levels. The structural budget balance is deteriorating in the forecasting period and reaches negative territory again in 2017.



Table 1: Key indicators, 2015–2018

110) 111010101010				
	2015	2016	2017	2018
Gross domestic product (GDP), price-adjusted	1.7	1.9	1.7	2.0
Gross domestic product, deflator	2.0	1.4	1.2	1.9
Consumer prices	0.2	0.5	1.8	1.8
Labor productivity (per hour worked)	0.8	1.2	1.3	1.2
Employment (1,000 persons)	43,057	43,476	43,882	44,331
Unemployment rate (percent)	6.4	6.1	5.7	5.5
in relation to nominal GDP				
Public sector net lending	0.7	0.8	0.6	0.6
Gross public debt	71.1	69.0	66.5	63.3
Current account balance	8.5	8.5	7.7	7.6

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

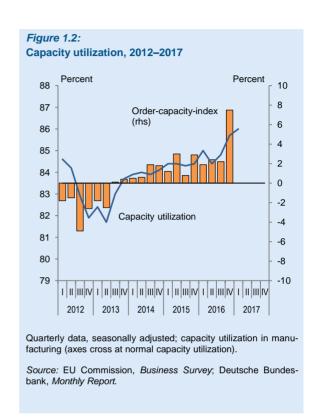
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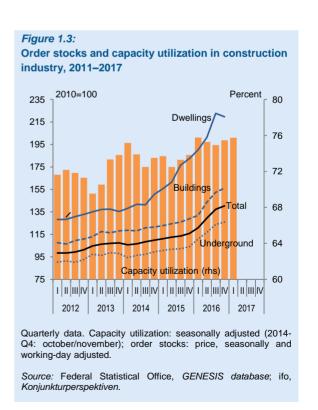
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1. Leading indicators

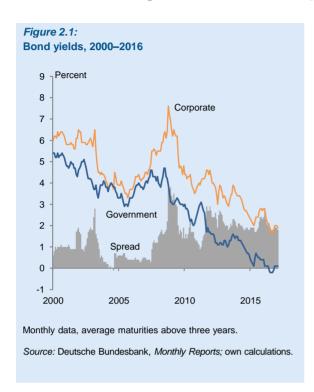
Figure 1.1: Leading indicators, 2009-2017 Incoming orders in manufacturing 2010=100 130 120 From abroad 110 Total 100 90 80 70 2009 2010 2011 2012 2013 2014 2015 2016 2017 Production 2010=100 130 125 Construction 120 115 110 Manufacturing 105 100 95 90 85 2009 2010 2011 2012 2013 2014 2015 2016 2017 Business climate 2005=100 125 120 Situation 115 110 105 100 Expectations 95 90 85 80 2009 2010 2011 2012 2013 2014 2015 2016 2017 Monthly data, seasonally adjusted; incoming orders in manufacturing and production: 3-month moving average. Source: Deutsche Bundesbank, Saisonbereinigte Wirtschaftszahlen; ifo, Konjunkturperspektiven; own calculations.

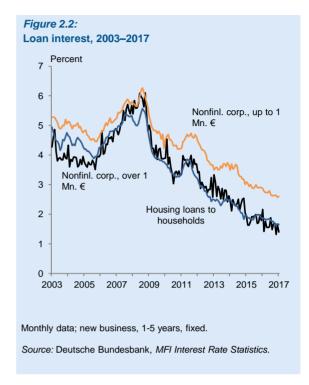


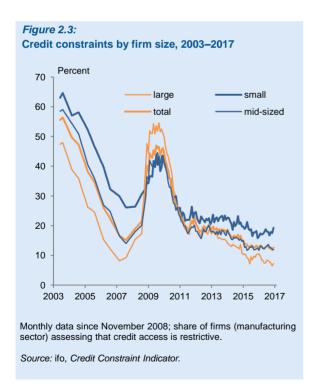




2. Monetary conditions and prices







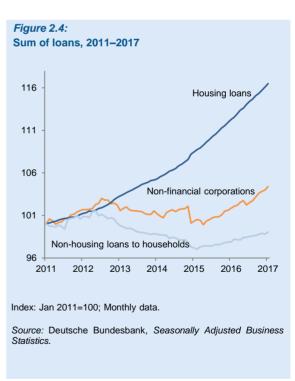
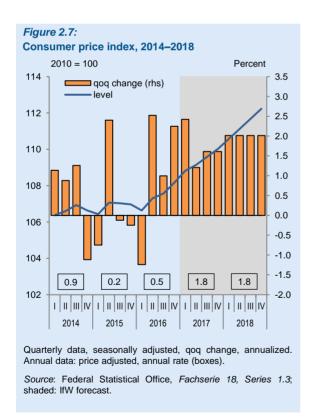




Figure 2.5: Credit impulse, 2005-2017 Percentage Points 1.5 Households: Non-Housing Households: Housing Loans Nonfinancial Corporations Total 0.5 0 -0.5 -1 -1.5 2005 2007 2011 2009 2013 2015 2017 Quarterly data, most recent quarter based on first month;

Quarterly data, most recent quarter based on first month; calculations follow Biggs et al. (2009), Credit and economic recovery, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam. The credit impulse is the change of the credit growth relative to the growth in GDP.

Source: Deutsche Bundesbank, Seasonally Adjusted Business Statistics; own calculations.



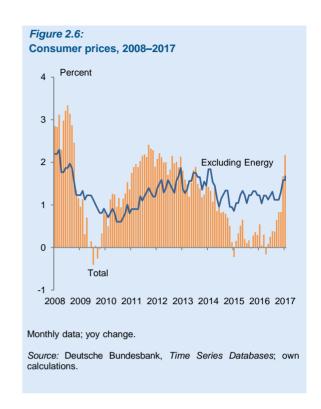




Table 2.1: Projections and assumptions on the international environment, 2015–2018

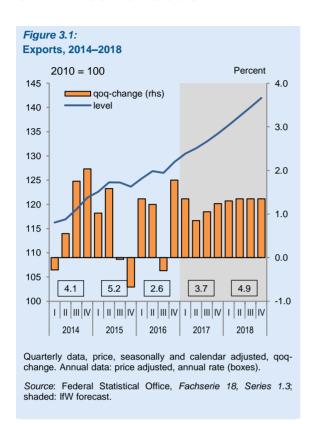
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	I	П	Ш	IV	ı	П	Ш	IV	- 1	П	Ш	IV	- 1	П	Ш	IV
ECB key interest rate	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long-term interest rate	0.4	0.5	0.5	0.5	0.1	0.0	-0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7
US-dollar/euro exchange rate	1.13	1.10	1.12	1.09	1.10	1.13	1.12	1.07	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Price competitive- ness Export markets Oil price	83 0.71 54.1	82.4 0.47 62.1	83.3 0.53 47.0	83.5 0.56 50.4	84.2 0.43 35.3	84.5 0.59 46.8	84.5 0.54 47.0	84.2 0.69 49.5	83.6 0.43 56.0	83.3 0.57 56.7	83.2 0.55 56.9	83.0 0.58 56.7	83.0 0.59 56.4	82.9 0.62 56.1	82.8 0.62 55.8	82.7 0.61 55.4

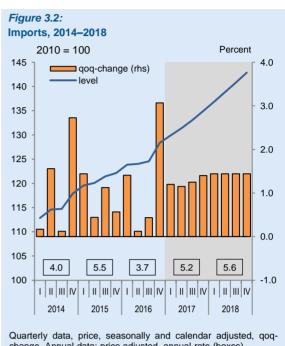
ECB key interest rate: main refinancing operations; long-term interest rate on 9-10 year bonds; price competitiveness: against 37 trading partners, based on the deflators of total sales, index: 1991:I = 100, increasing values indicate deterioration of price competitiveness; export markets: GDP growth 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.



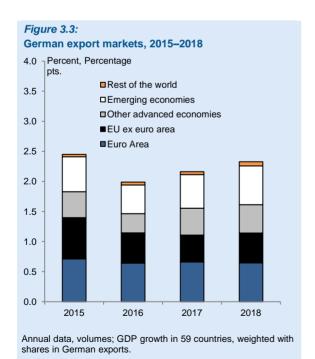
3. **External trade**





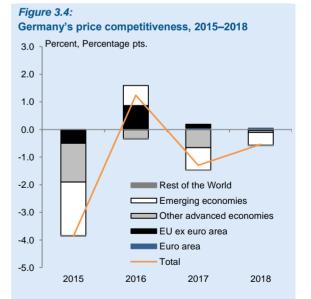
change. Annual data: price adjusted, annual rate (boxes).

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



Source: Federal Statistical Office, Fachserie 7 Series 1; national

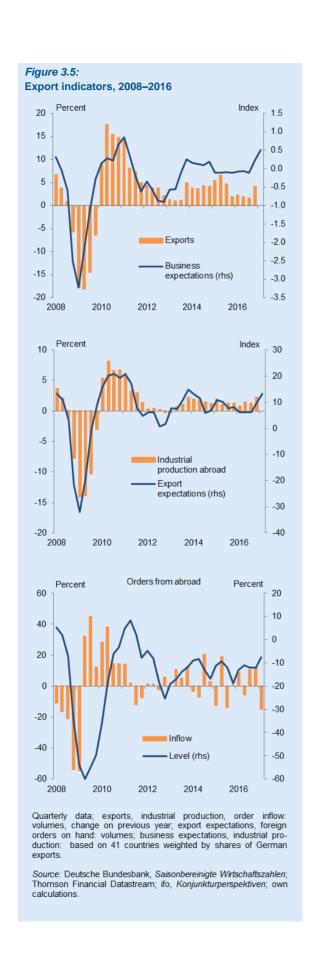
sources: own calculations: 2016-2018: IfW forecast.



Annual data; against 59 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

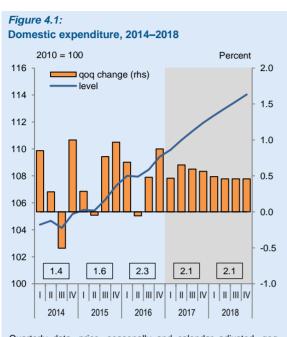
Source: Bundesbank, Monthly Report 8.2015; national sources; own calculations; 2016-2018: IfW forecast.





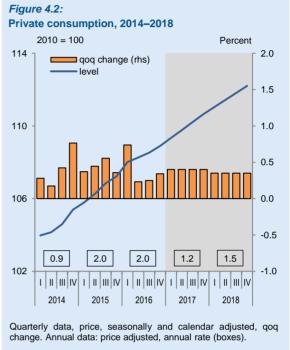


4. **Domestic expenditure**

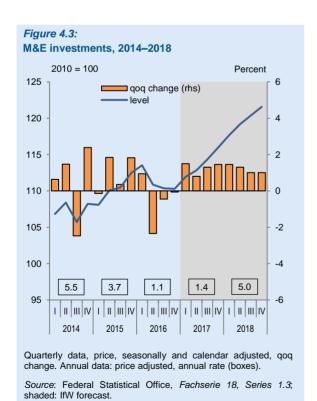


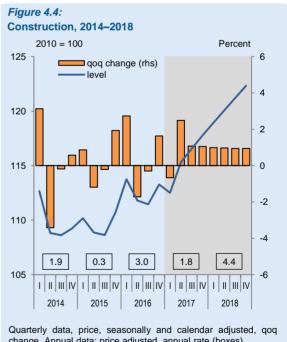
Quarterly data, price, seasonally and calendar adjusted, gog change. Annual data: price adjusted, annual rate (boxes).

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



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

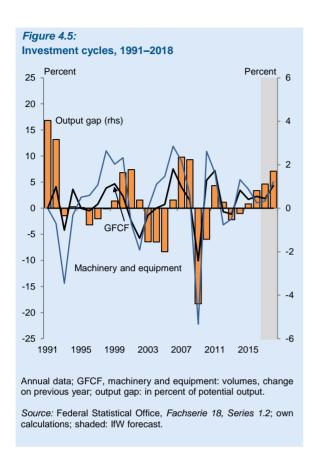


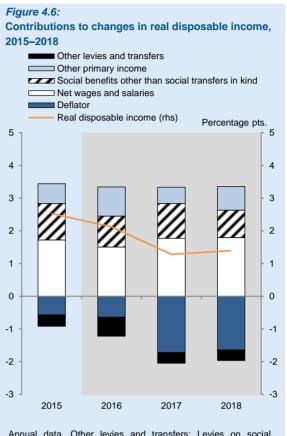


change. Annual data: price adjusted, annual rate (boxes).

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







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.

Table 4.1:
Gross fixed capital formation, 2015–2018

	2015	2016	2017	2018
Total	1.7	2.3	1.8	4.3
Corporate investment	2.0	1.3	1.4	3.9
Machinery and				
equipment	3.7	1.1	1.4	5.0
Construction (non-				
dwellings)	-1.8	0.2	-0.3	2.6
Other	1.9	2.6	2.7	2.9
Dwellings	1.5	4.2	2.6	5.4
Public (non-dwellings)	-0.4	2.9	2.5	3.3
Memorandum item:				
Construction	0.3	3.0	1.8	4.4

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 2016–2017

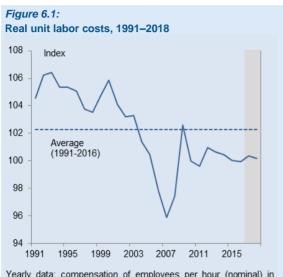
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Gross domestic product	0.1	0.4	0.6	0.5	0.5	0.5
Gross value added	0.1	0.4	0.6	0.5	0.5	0.5
Industry excluding construction	0.7	-0.1	1.3	0.3	0.6	0.6
Manufacturing	0.6	0.0	1.3	0.3	0.6	0.6
Construction	-0.6	1.4	-0.9	2.3	1.0	1.0
Trade, transport, accommodation, and food services	-0.5	1.3	0.6	0.8	0.6	0.6
Information and communication	0.3	0.7	1.3	1.2	1.5	1.4
Financial and insurance services	0.8	0.4	0.0	0.2	0.1	0.0
Real estate activities	-0.2	0.3	0.4	0.4	0.4	0.4
Business services	-0.3	0.3	1.0	0.6	0.7	0.7
Public services, education, health	0.3	0.1	0.2	0.3	0.3	0.3
Other services	-0.1	0.4	0.2	0.1	0.2	0.2

Quarterly data, volumes.

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



6. Wages



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, 2015–2018

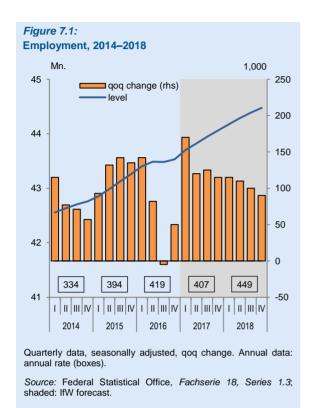
	2015	2016	2017	2018
Per hour				
Negotiated wages	2.3	2.1	2.2	2.5
Gross wages and				
salaries	2.6	2.7	3.2	3.0
Wage drift	0.3	0.6	1.0	0.5
Compensation of employees	2.3	2.6	3.1	2.9
Labor productivity	0.8	1.2	1.3	1.2
Unit labor costs	1.5	1.4	1.9	1.7
Unit labor costs (real)	-0.4	0.0	0.6	-0.2
Per capita				
Negotiated wages	2.2	2.1	2.2	2.5
Gross wages and salaries	2.7	2.4	2.6	2.9
Wage drift	0.4	0.3	0.4	0.4
Compensation of				
employees	2.4	2.3	2.6	2.7
Labor productivity	0.8	0.9	0.7	1.0
Unit labor costs	1.6	1.4	1.9	1.7
Unit labor costs (real)	-0.3	0.0	0.6	-0.2

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**





annual rate (boxes).

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

Table 7.1: Employment, 2014-2018 (1,000 persons)

	2014	2015	2016	2017	2018
Hours worked (domestic concept, mn. hours)	58,343	58,895	59,280	59,513	60,000
Persons in employment (domestic concept)	42,663	43,057	43,476	43,882	44,331
Self-employed	4,402	4,336	4,310	4,317	4,317
Employees (domestic concept)	38,261	38,721	39,166	39,565	40,014
Employees subject to social security contributions	30,219	30,853	31,392	31,953	32,401
Minijobs	5,028	4,849	4,804	4,788	4,788
Net commuting	61	78	82	80	80
Persons in employment (national concept)	42,602	42,979	43,393	43,802	44,251
Employees (national concept)	38,200	38,643	39,084	39,485	39,934
Unemployed persons (registered)	2,896	2,793	2,689	2,558	2,481
Unemployment rate (registered; percent)	6.7	6.4	6.1	5.7	5.5
Unemployment rate (ILO; percent)	4.7	4.3	4.0	3.4	3.1

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, 2014–2018 (bn. euro)

	2014	2015	2016	2017	2018
Revenues	1,306.8	1,354.8	1,411.4	1,449.5	1,502.1
relative to GDP	44.7	44.7	45.1	44.9	44.8
axes	668.6	700.0	731.2	752.4	780.6
relative to GDP	22.9	23.1	23.3	23.3	23.3
Social contributions	482.0	500.8	523.1	543.4	565.2
relative to GDP	16.5	16.5	16.7	16.9	16.9
Other revenues	156.1	154.0	157.1	153.6	156.3
relative to GDP	5.3	5.1	5.0	4.8	4.7
Expenditures	1,298.2	1,333.9	1,387.7	1,429.7	1,482.0
relative to GDP	44.4	44.0	44.3	44.3	44.2
Compensation of employees	224.1	228.6	235.8	242.9	249.9
ntermediate consumption	134.3	139.5	151.7	155.2	159.1
Social transfers in kind	240.0	252.4	268.1	282.7	294.8
Gross capital formation	60.9	64.3	66.5	70.2	73.9
Capital transfers	52.0	47.3	43.4	40.2	38.6
Social benefits	452.5	471.0	487.7	506.0	520.5
Subsidies	26.0	27.5	27.6	28.3	29.1
Other current transfers	72.3	75.2	74.6	76.7	84.9
Other capital transfers and investment grants	72.3 37.2	75.2 29.7	33.5	32.4	32.5
Other capital transfers and investment grants Other expenditures	-1.4	-1.8	-1.3	-5.1	-1.5
oner experialities	-1.4	-1.0	-1.3	-5.1	-1.5
let lending/net borrowing	8.6	20.9	23.7	19.8	20.1
relative to GDP	0.3	0.7	0.8	0.6	0.6
Revenues of central, state, and local					
governments	852.1	881.0	916.3	934.7	966.3
Net of transfers from social security funds	851.0	880.0	915.2	933.7	965.2
Fransfers from social security funds	1.1	1.1	1.1	1.1	1.1
Expenditures of central, state, and local					
governments	846.5	862.2	900.8	922.2	956.6
Net of transfers to social security funds	744.7	758.0	790.6	805.4	836.5
Fransfers to social security funds	101.8	104.2	110.2	116.8	120.0
Net lending/net borrowing central, state, and					
local government	5.5	18.8	15.5	12.6	9.7
Revenues of social security funds	557.6	579.1	606.4	632.6	656.9
Net of transfers from central, state, and local	00.10	0.0	00011	002.0	000.0
governments	455.8	474.9	496.2	515.9	536.9
Expenditures of social security funds	554.6	577.0	598.2	625.4	646.5
Net of transfers to central, state, and local	334.0	377.0	330.E	020.4	0-0.5
governments	553.5	575.9	597.1	624.3	645.5
Net lending/net borrowing social security					
funds	3.0	2.1	8.2	7.3	10.4

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, 2016–2018

		20	16			20)17			20	18	
	1	II	Ш	IV	1	II	III	IV	I	Ш	Ш	IV
Gross domestic product	0.7	0.5	0.1	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Private consumption	0.7	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Government consumption	1.3	0.9	0.2	0.8	0.7	0.5	0.6	0.6	0.3	0.2	0.2	0.2
Machinery and equipment	0.9	-2.3	-0.5	-0.1	1.5	0.8	1.3	1.5	1.5	1.3	1.0	1.0
Constructions	2.7	-1.7	-0.3	1.6	-0.7	2.5	1.1	1.0	1.0	1.0	0.9	0.9
Other investment	0.9	0.7	0.6	0.3	1.0	0.5	0.8	0.8	0.8	0.7	0.6	0.6
Change in inventories	-0.4	-0.1	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	0.7	-0.1	0.5	0.9	0.5	0.7	0.6	0.6	0.5	0.5	0.5	0.5
Exports	1.4	1.2	-0.3	1.8	1.3	0.9	1.0	1.2	1.3	1.3	1.4	1.3
Imports	1.4	0.1	0.4	3.1	1.2	1.2	1.2	1.4	1.4	1.4	1.4	1.4
Net exports	0.1	0.5	-0.3	-0.4	0.2	-0.1	0.0	0.0	0.0	0.1	0.1	0.1
Employment (domestic)	43,404	43,486	43,481	43,531	43,701	43,821	43,946	44,061	44,176	44,286	44,386	44,476
Unemployment (registered)	2,730	2,702	2,678	2,647	2,590	2,568	2,543	2,524	2,505	2,488	2,471	2,455

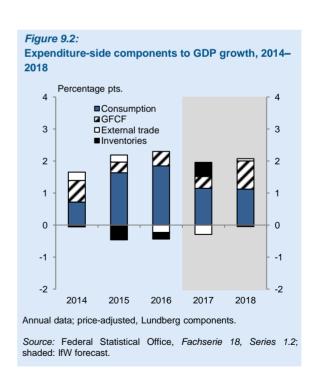
Volumes, seasonally and working-day adjusted. Change on previous quarter in percent; change in inventories, net exports: Lundberg component (contribution to GDP growth); employment, unemployment: seasonally adjusted, 1,000 persons; unemployment: as defined by the Federal Employment Agency (BA).

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 6 Percent 5 4 3 2 1 0 -1 -2 -3 2017 2018 GDP: volumes, change over previous year. Point forecasts: orange lines. Forecast intervalls greay 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 1994-2016.

Source: Own calculations.





10. The German economy, 2015–2018

	2016	2015	2016	2017	2018
	€ bn.	Change	over previ	ous year in	percent
GDP (constant prices)		1.7	1.9	1.7	2.0
Private consumption expenditure		2.0	2.0	1.2	1.5
Public consumption expenditure		2.8	4.0	2.5	1.6
Total fixed investment		1.7	2.3	1.8	4.3
Machinery and equipment		3.7	1.1	1.4	5.0
Construction		0.3	3.0	1.8	4.4
Other equipment		1.9	2.6	2.7	2.9
Changes in stocks		-0.5	-0.2	0.4	0.0
Domestic Demand		1.6	2.3	2.1	2.1
Exports		5.2	2.6	3.7	4.9
Imports		5.5	3.7	5.2	5.6
Net exports		0.2	-0.2	-0.3	0.1
GDP (current prices)	3,132.7	3.7	3.3	2.9	4.0
Private consumption expenditure	1,679.2	2.6	2.6	3.0	3.2
Public consumption expenditure	616.1	4.0	5.6	4.1	3.4
Total fixed investment	626.7	3.2	3.8	3.8	6.8
Machinery and equipment	204.4	4.6	2.1	2.6	6.6
Construction	309.4	2.2	4.9	4.3	7.5
Other equipment	112.9	3.5	3.9	4.6	5.3
Changes in stocks (€ bn.)		-20.2	-28.1	-14.8	-16.3
Domestic Demand	2,893.9	2.6	3.2	3.9	4.0
Exports	1,441.4	6.3	1.6	6.5	6.0
Imports	1,202.6	3.9	1.1	9.5	6.4
Net exports (€ bn.)	,	229.5	238.8	217.5	225.5
Gross national income	3,197.3	3.7	3.2	2.9	3.9
Deflator of GDP	,	1.7	1.9	1.7	2.0
Private consumption expenditure		2.0	2.0	1.2	1.5
Public consumption expenditure		2.8	4.0	2.5	1.6
Investment in machinery and equipment		1.7	2.3	1.8	4.3
Investment in construction		3.7	1.1	1.4	5.0
Investment in other equipment		0.3	3.0	1.8	4.4
Exports		1.9	2.6	2.7	2.9
Imports		-0.5	-0.2	0.4	0.0
Addendum: Consumer prices		1.6	2.3	2.1	2.1
Income distribution					
National income	2,338.4	3.8	3.3	2.9	4.3
Employment income	1,593.2	3.7	3.5	3.7	3.9
in percent of national income		68.0	68.1	68.6	68.3
Entrepreneurial and property income	745.2	4.2	3.0	1.3	5.3
Disposable income of private households	1,811.8	3.1	2.8	2.9	3.0
Savings rate		9.7	9.7	9.6	9.5
Wages and salaries	1,305.9	3.9	3.6	3.8	4.0
Wage per hour	1,000.0	2.6	2.7	3.2	3.0
Unit labor costs		1.5	1.4	1.9	1.7
Productivity per hour		0.8	1.2	1.3	1.2
Unemployment (1,000)		2,793	2,689	2,558	2,481
Rate of unemployment (percent)		6.4	6.1	5.7	5.5
Total employment (1,000)		43,057	43,476	43,882	44,331
Public sector budget balance (€ bn.)		20.9	23.7	19.8	20.1
Public sector budget balance (c bit.) Public sector budget balance (in percent of GDP)		0.7	0.8	0.6	0.6
Public debts (in percent)		71.1	69.0	66.5	63.3
Change in stocks, net exports: contribution to GDP growth.					
Source: Federal Statistical Office, Fachserie 18, Series 1.2; sh	aded: IfW forecast.				
12. 13. 13. 13. 13. 13. 13. 13. 13. 13. 13					



11. National accounts

National	Accounts

Forecast period: 2016 to	2010

	2016	2017	2018	20	2017		18
	2016	2017	2018	H1	H2	H1	H2
4. Droduction							
1. Production							
Change over the same period of the preceding year in '	%						
Persons in employment	1.0	0.9	1.0	0.7	1.1	1.1	1.0
Hours worked	0.7	0.4	0.8	0.7	0.1	0.7	0.9
Hours worked by person in employment	- 0.3	- 0.5	- 0.2	- 0.1	- 1.0	- 0.4	0.0
Labor productivity 1	1.2	1.3	1.2	1.0	1.5	1.2	1.2
Gross domestic product, price-adjusted	1.9	1.7	2.0	1.6	1.7	2.0	2.1
2. Use of gross domestic product at current pric	es						
a) EUR bn.							

a) 20.15							
Consumption expenditure	2 295.3	2 370.7	2 447.7	1 156.7	1 214.1	1 193.6	1 254.2
Private households ²	1 679.2	1 729.1	1 784.0	844.4	884.8	869.7	914.3
Government	616.1	641.6	663.7	312.3	329.3	323.8	339.9
Gross fixed capital formation	626.7	650.5	694.9	311.6	338.9	333.5	361.5
Machinery and equipment	204.4	209.7	223.6	99.9	109.8	106.3	117.3
Construction	309.4	322.7	347.0	154.3	168.4	166.6	180.3
Other products	112.9	118.1	124.3	57.4	60.7	60.5	63.8
Changes in inventories ³	- 28.1	- 14.8	- 16.3	2.6	- 17.4	0.9	- 17.1
Domestic expenditure	2 893.9	3 006.5	3 126.4	1 470.9	1 535.6	1 527.9	1 598.5
Net exports	238.8	217.5	225.5	115.6	101.9	119.0	106.4
Exports	1 441.4	1 534.6	1 627.0	758.2	776.3	802.4	824.6
Imports	1 202.6	1 317.1	1 401.5	642.7	674.4	683.4	718.1
Gross domestic product	3 132.7	3 224.0	3 351.9	1 586.5	1 637.5	1 646.9	1 704.9

Consumption expenditure	3.4	3.3	3.2	3.2	3.3	3.2	3.3
Private households ²	2.6	3.0	3.2	2.9	3.1	3.0	3.3
Government	5.6	4.1	3.4	4.2	4.0	3.7	3.2
Gross fixed capital formation	3.8	3.8	6.8	2.6	4.9	7.0	6.7
Machinery and equipment	2.1	2.6	6.6	1.2	3.9	6.4	6.8
Construction	4.9	4.3	7.5	3.0	5.5	8.0	7.1
Other products	3.9	4.6	5.3	4.3	5.0	5.4	5.1
Domestic expenditure	3.2	3.9	4.0	3.9	3.9	3.9	4.1
Exports	1.6	6.5	6.0	6.4	6.5	5.8	6.2
Imports	1.1	9.5	6.4	10.0	9.1	6.3	6.5
Gross domestic product	3.3	2.9	4.0	2.8	3.1	3.8	4.1

${\it 3.}~{\it Use~of~gross~domestic~product,~price-adjusted~(chain-linked,~2010=100)}$

a) EUR bn.

u) 20112111							
Consumption expenditure	2 122.0	2 155.4	2 188.4	1 058.5	1 096.9	1 075.6	1 112.7
Private households ²	1 570.7	1 590.1	1 614.2	778.9	811.2	790.4	823.7
Government	551.0	564.6	573.5	279.1	285.4	284.7	288.8
Gross fixed capital formation	567.7	578.2	603.3	277.8	300.4	290.5	312.8
Machinery and equipment	196.8	199.5	209.6	94.7	104.8	99.4	110.2
Construction	268.2	273.0	285.0	131.4	141.6	137.8	147.2
Other products	103.0	105.8	108.9	51.7	54.1	53.3	55.6
Domestic expenditure	2 655.4	2 711.8	2 768.7	1 338.1	1 373.7	1 366.4	1 402.3
Exports	1 388.4	1 440.2	1 511.2	715.0	725.2	746.8	764.4
Imports	1 200.0	1 262.9	1 333.2	618.8	644.1	651.5	681.7
Gross domestic product	2 843.0	2 890.4	2 949.0	1 434.3	1 456.1	1 462.4	1 486.7

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

Consumption expenditure	2.5	1.6	1.5	1.5	1.7	1.6	1.4
Private households ²	2.0	1.2	1.5	1.1	1.4	1.5	1.5
Government	4.0	2.5	1.6	2.4	2.5	2.0	1.2
Gross fixed capital formation	2.3	1.8	4.3	0.8	2.8	4.6	4.1
Machinery and equipment	1.1	1.4	5.0	0.0	2.6	4.9	5.2
Construction	3.0	1.8	4.4	0.7	2.9	4.9	4.0
Other products	2.6	2.7	2.9	2.6	2.9	3.1	2.8
Domestic expenditure	2.3	2.1	2.1	2.1	2.1	2.1	2.1
Exports	2.6	3.7	4.9	3.9	3.5	4.4	5.4
Imports	3.7	5.2	5.6	5.5	5.0	5.3	5.8
Gross domestic product	1.9	1.7	2.0	1.6	1.7	2.0	2.1



National Accounts (cont.) Forecast period: 2016 to 2018				-			
	2016	2017	2018	20			18
	20.0		20.0	H1	H2	H1	H2
4. Deflators (2010=100)							
Change on the same period of the preceding year in %							
Private consumption ²	0.6	1.7	1.6	1.7	1.7	1.5	1.8
Government consumption	1.5	1.6	1.8 2.4	1.8	1.5 2.1	1.6 2.4	2.0 2.4
Gross fixed capital formation Machinery and equipment	1.5 1.0	1.9 1.2	2.4 1.5	1.8 1.2	1.3	2.4 1.5	2.4 1.6
Construction	1.8	2.4	3.0	2.2	2.6	3.0	3.0
Exports	- 1.0	2.6	1.0	2.4	2.9	1.3	0.8
Imports	- 2.5	4.1	0.8	4.2	3.9	1.0	0.6
Gross domestic product	1.4	1.2	1.9	1.1	1.4	1.8	2.0
5. National income							
a) EUR bn.							
Primary income of private households ²	2 186.5	2 250.6	2 328.3	1 109.5	1 141.0	1 143.4	1 184.9
Employers social contributions	287.3	296.3	305.5	143.7	152.7	147.6	157.9
Gross wages and salaries	1 305.9	1 353.6	1 408.6	649.0	704.6	671.9	736.7
Other primary income 4	593.3	600.6	614.1	316.8	283.8	323.9	290.2
Primary income of other sectors	458.7	469.9	503.8	218.4	251.5	236.8	267.0
Net national income	2 645.2	2 720.5	2 832.1	1 327.9	1 392.6	1 380.2	1 451.9
Consumption of fixed capital Gross national income	552.1 3 197.3	568.6 3 289.1	586.8 3 418.9	282.6 1 610.5	286.0 1 678.6	291.6 1 671.8	295.2 1 747.1
memorandum item:	3 197.3	3 289.1	3 418.9	1 610.5	1 6/8.6	16/1.8	1 /4/.1
Net national income (factor costs)	2 338.4	2 406.1	2 510.0	1 171.6	1 234.4	1 220.1	1 289.9
Property and entrepreneurial income	745.2	756.1	795.8	378.9	377.2	400.6	395.2
Compensation of employees	1 593.2	1 649.9	1 714.1	792.7	857.2	819.5	894.7
	- L			_			
b) Change over the same period of the preceding year in	_	2.0	2.5	2.0	2.0	2.4	2.0
Primary income of private households ² Employers social contributions	3.3 2.9	2.9 3.2	3.5 3.1	3.0 3.4	2.9 3.0	3.1 2.7	3.8 3.5
Gross wages and salaries	3.6	3.6	4.1	3.4	3.4	3.5	4.6
per employee	2.4	2.6	2.9	3.1	2.1	2.3	3.5
Other primary income ⁴	2.7	1.2	2.3	1.0	1.5	2.3	2.3
Primary income of other sectors	2.9	2.4	7.2	1.0	3.7	8.4	6.2
Net national income	3.2	2.8	4.1	2.7	3.0	3.9	4.3
Consumption of fixed capital	3.1	3.0	3.2	3.0	3.0	3.2	3.2
Gross national income	3.2	2.9	3.9	2.7	3.0	3.8	4.1
memorandum item:	0.0		4.0	0.7	0.4		4.5
Net national income (factor costs)	3.3 3.0	2.9 1.5	4.3 5.2	2.7 0.3	3.1 2.7	4.1 5.7	4.5 4.8
Property and entrepreneurial income Compensation of employees	3.5	3.6	3.9	3.8	3.3	3.4	4.6
	0.0	0.0	0.0	0.0	0.0	0.1	
6. Disposable income of private households ² a) EUR bn.							
Mass income	1 291.3	1 337.8	1 384.8	647.1	690.7	666.9	717.9
Net w ages and salaries	863.1	893.7	927.8	424.6	469.1	438.6	489.1
Social benefits other than social transfers in kind	542.7	562.0	577.7	281.6	280.5	288.4	289.3
less: Levies on social benefits,	114.5	118.0	120.7	59.0	59.0	60.2	60.5
taxes on consumption							
Other primary income ⁴	593.3	600.6	614.1	316.8	283.8	323.9	290.2
Other transfers received (net) 5	- 72.8	- 75.2	- 78.6	- 37.1	- 38.1	- 38.8	- 39.8
Disposable income Change in pension entitlements	1 811.8 48.5	1 863.2 48.9	1 920.3 49.3	926.8 24.2	936.4 24.7	952.0 24.4	968.3 24.9
Change in pension entitiements	40.5	40.9	49.3	24.2	24.7	24.4	24.9
Consumption expenditure	1 679.2	1 729.1	1 784.0	844.4	884.8	869.7	914.3
Saving	181.1	182.9	185.6	106.6	76.3	106.6	78.9
Saving ratio (%) ⁶	9.7	9.6	9.4	11.2	7.9	10.9	7.9
b) Change over the same period of the preceding year in	n %						
Mass income	3.1	3.6	3.5	4.0	3.3	3.1	3.9
Net wages and salaries	3.2	3.6	3.8	3.7	3.4	3.3	4.3
Social benefits other than social transfers in kind	3.2	3.6	2.8	4.4	2.7	2.4	3.1
less: Levies on social benefits,	3.6	3.0	2.3	3.9	2.2	1.9	2.6
taxes on consumption							
Other primary income 4	2.7	1.2	2.3	1.0	1.5	2.3	2.3
Disposable income	2.8	2.8	3.1	3.0	2.7	2.7	3.4
Consumption expenditure	2.6	3.0	3.2	2.9	3.1	3.0	3.3
Saving	3.4	1.0	1.4	3.3	- 2.0	0.0	3.5
<u> </u>							

National Accounts (cont.)



Forecast period: 2016 to 2018 2018 2016 2017 2018

7. Revenue and expenditure by general government $^{\scriptscriptstyle 7}$

	bn.	

a) EUR bn.							
Revenue							
Taxes	731.2	752.4	780.6	376.5	376.0	389.7	390.9
Social contributions	523.1	543.4	565.2	264.3	279.2	273.5	291.6
Property income	18.0	16.7	16.5	8.9	7.8	8.8	7.7
Other current transfers	19.3	19.3	19.3	9.3	10.0	9.3	10.0
Capital transfers	15.3	11.2	11.2	5.6	5.6	5.6	5.6
Sales	104.3	106.2	109.2	50.0	56.2	51.0	58.2
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Total	1 411.4	1 449.5	1 502.1	714.6	734.9	737.8	764.2
Expenditure				•			
Intermediate consumption 8	420.0	438.1	454.1	211.4	226.7	219.4	234.7
Compensation of employees	235.8	242.9	249.9	117.0	125.9	120.2	129.7
Property income (interest)	43.4	40.2	38.6	19.9	20.3	19.1	19.5
Subsidies	27.6	28.3	29.1	13.8	14.6	14.1	15.0
Social benefits	487.7	506.0	520.5	253.6	252.4	259.9	260.6
Other current transfers	74.6	76.7	84.9	40.5	36.2	45.1	39.8
Capital transfers	33.5	32.4	32.5	13.2	19.2	13.3	19.2
Gross capital formation	66.5	70.2	73.9	29.9	40.4	31.7	42.2
Net acquisitions of non-produced non-financial assets	- 1.3	- 5.1	- 1.5	- 4.3	- 0.8	- 2.5	1.0
Total	1 387.7	1 429.7	1 482.0	695.0	734.7	720.3	761.7
Net lending	23.7	19.8	20.1	19.6	0.2	17.6	2.5

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

Revenue							
Taxes	4.5	2.9	3.7	3.2	2.6	3.5	4.0
Social contributions	4.5	3.9	4.0	4.3	3.5	3.5	4.5
Property income	- 17.5	- 7.1	- 1.6	- 11.0	- 2.3	- 1.4	- 1.7
Other current transfers	- 0.9	0.0	0.0	0.0	0.0	0.0	0.0
Capital transfers	25.7	- 26.8	0.0	- 26.3	- 27.3	0.0	0.0
Sales	3.9	1.8	2.8	1.8	1.8	1.9	3.6
Other subsidies	- 7.6	0.0	0.0	0.0	0.0	0.0	0.0
Total	4.2	2.7	3.6	2.9	2.5	3.3	4.0
Expenditure							
Intermediate consumption 8	7.1	4.3	3.7	4.2	4.4	3.8	3.5
Compensation of employees	3.1	3.0	2.9	3.2	2.8	2.7	3.0
Property income (interest)	- 8.3	- 7.3	- 4.0	- 7.9	- 6.7	- 4.0	- 3.9
Subsidies	0.2	2.8	2.8	2.8	2.8	2.8	2.8
Social benefits	3.5	3.7	2.9	4.7	2.8	2.5	3.3
Other current transfers	- 0.8	2.8	10.7	2.8	2.8	11.2	10.1
Capital transfers	12.8	- 3.2	0.2	- 12.0	4.0	0.2	0.2
Gross capital formation	3.5	5.7	5.2	3.9	7.0	6.0	4.5
Net acquisitions of non-produced non-financial assets	- 28.2	287.0	- 70.3	714.3	0.0	- 41.6	- 227.3
Total	4.0	3.0	3.7	2.8	3.3	3.6	3.7

¹ Price-adjusted gross domestic product per hour worked. ² Incl. non-profit institutions serving households.

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

 $^{^{\}mbox{\tiny 3}}$ Incl. acquisitions less disposals of valuables.

⁴ Operating surplus/mixed income, net property income

⁵ Received less payed other current transfers.

^e 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.