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COMMISSION STAFF WORKING DOCUMENT

Country Report Germany 2015
Including an In-Depth Review on the prevention and correction of macroeconomic imbalances

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EXECUTIVE SUMMARY

Economic activity in Germany has been uneven but is expected to gradually strengthen. Domestic demand has eventually taken over as a main driver of growth and household consumption has developed well, but business investment has disappointed and remains subdued. Going forward, economic activity is expected to gradually strengthen. The positive outlook for employment, low interest rates and real wage growth should support private consumption. Business investment should recover, but the housing investment is set to slow to a more moderate pace. Import growth should strengthen, while exports should benefit from increasing demand in Germany's trading partners. Falling oil prices will exert further downward pressure on consumer prices, but rising labour costs should uphold core inflation.

This Country Report assesses Germany's economy against the background of the Commission's Annual Growth Survey, which recommends three main pillars for the EU's economic and social policy in 2015: investment, structural reforms and fiscal responsibility. In line with the Investment Plan for Europe, it also explores ways to maximise the impact of public resources and unlock private investment. Finally, it assesses Germany in the light of the findings of the 2015 Alert Mechanism Report, in which the Commission found it useful to further examine the persistence of imbalances or their unwinding. The main findings of the in-depth review contained in this Country Report are:

- **The current account consistently shows a very high surplus, which is projected to increase to 8 % of gross domestic product (GDP) in 2015.** This is owed to a trade surplus resulting from strong competitiveness, notably in the export-oriented manufacturing sector, and high revenues from private sector investment abroad, which have not been offset by increased domestic demand, in particular due to weak investment. The impact of low energy prices is also contributing to the surplus. Germany's current account surplus in relation to its euro-area partners has fallen to less than a quarter of the total surplus, indicating an on-going rebalancing process in the euro area.
- **Private consumption has strengthened, but several factors may hamper future growth.** Some features of the tax system may hamper future private consumption. These include the high tax burden on labour and the impact of fiscal drag on disposable incomes. Moreover, the surging costs of renewable energies have affected households' disposable incomes.
- **Consistently weak business investment and insufficient public investment remain a drag on growth.** Private sector investment has disappointed owing to continued weakness in machinery and equipment investment, and a loss of momentum in growth of residential investment. While investments made by German companies abroad are buoyant, the domestic investment slump is noteworthy given the supportive conditions for capital formation. Public investment has fallen short of the required, and current federal fiscal relations have not ensured adequate public investment at the level of municipalities.
- **Germany is closely integrated with the euro area and economic spillovers imply that Germany's economic developments can benefit but also adversely affect other Member States.** The German market is an important export destination for other euro area Member States, in particular for countries integrated into German firms' production chain. While euro area partners benefit from Germany's success in trading, the weak domestic investment, falling potential growth and dependence on external conditions pose risks to both Germany and the euro area.

The Country Report also analyses other macroeconomic and structural issues and the main findings are:

- **Public finances:** Balanced headline budgets and structural surpluses in the years to come create scope for investment in the economy's future growth potential. The tax burden on labour remains high, in particular for low-wage earners, while the scope for shifting taxes to more growth-friendly revenue sources appears underused. Last year's pension reform put an additional strain on the sustainability of the pension system and the share of public spending on healthcare (in GDP) is one of the highest in the EU. The implementation of the constitutional balanced-budget rule ('debt brake') at federal state level is not yet complete.
- **Financial sector:** The banking sector has become more resilient, but impediments to

consolidation in the public banking sector remain and venture capital is underdeveloped. Low profitability and low interest rates may pose a challenge for institutional investors.

- **Labour market, education and social policies:** Employment continues to rise and unemployment is at a record low. Despite the current overall favourable situation, skills shortages are emerging, unemployment in some regions remains relatively high and the workforce is projected to decline in the medium to long term due to demographic change. In this context, insufficient incentives to work and the employability of workers remain an issue, also with a view to improving their income. Long-term unemployment is an increasing concern and it is still at a high level.
- **Energy, transport, services and public procurement:** More renewable electricity, combined with insufficient transmission capacity, poses a challenge for network management. Barriers to competition persist in the professional services and railway sectors, while the rate of publication of public contracts under EU procurement legislation remains very low.

Overall, Germany has made limited progress in addressing the 2014 country-specific recommendations. As regards policies relevant to the Macroeconomic Imbalance Procedure, some steps were taken to increase public investment, but they appear insufficient to address the investment backlog in infrastructure, education and research. No measures were taken to improve the efficiency of the tax system or reduce high taxes and social contributions. The potential of the general minimum wage to foster private consumption may be limited. As regards recommendations to address other policy challenges, Germany has taken some action to enhance the cost-effectiveness of public spending, but has not acted to ensure the sustainability of the pension system. Germany is making progress in addressing shortages in childcare and all-day schooling, but fiscal disincentives to work have not been tackled. No significant efforts have been made to stimulate competition in the railway and service sectors.

This Country Report reveals the policy challenges stemming from the analysis of macroeconomic imbalances. In particular, while Germany's international competitiveness is an asset, the country would benefit from greater tapping of domestic sources of growth. In particular:

- **A boost to investment could unlock the country's future growth potential.** Taking advantage of its fiscal space would enable Germany to address the backlog in public investment. Improvements in the business environment and corporate taxation would support private sector investment. Substantial investment is needed in both energy infrastructure and energy efficiency if Germany is to reach its targets. Initiatives to reap efficiency gains from sectoral reform, e.g. in the services sector, would also support investment.
- **Further tap into the labour and skills potential to strengthen growth and incomes.** Reducing disincentives to take up a job or to increase working time and facilitating better education outcomes would also help Germany to increase its growth potential. Addressing the impact of fiscal drag and dealing with the (potential) employment effects of the minimum wage are key medium-term policy challenges in order to ensure appropriate conditions for domestic demand

Other challenges are:

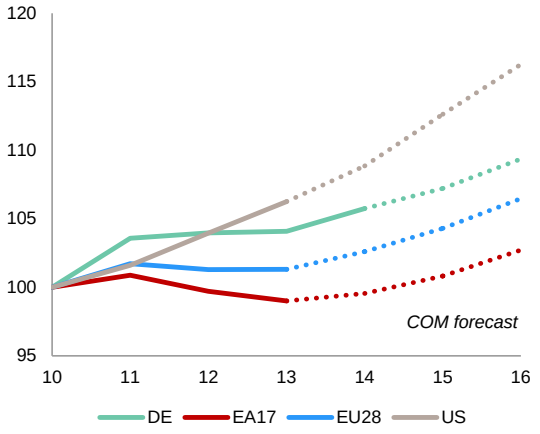
- **Structural policies favouring sustainable long-term growth.** In the energy sector, it seems important to continue monitoring the impact of renewable energy reform on consumer costs and to coordinate energy policies with neighbouring countries. Moreover, there appears to be scope for sectoral reform to improve competition, particularly in the professional services and railway sectors.

1. SCENE SETTER: ECONOMIC SITUATION AND OUTLOOK

Economic Situation

Economic output in Germany was uneven in the course of 2014 though started to rise at the end of the year. The acceleration of growth in 2013 carried over into the beginning of 2014. The cyclical slowdown that occured over the summer subsided as economic activity started to regain momentum at the end of 2014 (Graph 1.1). This weak development reflected a poor recovery in other euro area Member States, depressed business confidence due to geopolitical tensions as well as sluggish demand from some large German export markets. Quarterly growth rates have been volatile, partly owing to considerable weather effects as well as the fall in oil prices. Real GDP rose by 1.6 % in 2014, mostly driven by domestic demand, after increasing by 0.1 % in 2013.

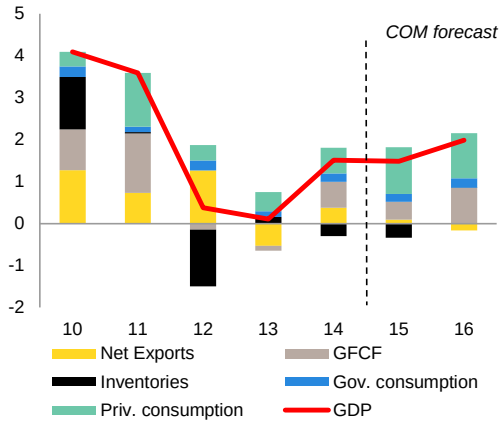
Graph 1.1: **GDP in constant prices (index, 2010 = 100)**



Source: European Commission

Economic activity, including corporate investment, is expected to strengthen further in 2015. The Commission winter 2015 forecast expects economic activity to strengthen further over the course of 2015 on the back of a robust labour market, favourable financing conditions and an improving external environment, including a significant boost from falling oil prices. The recovery in corporate investment that was interrupted in mid-2014 is expected to resume cautiously. Private consumption is forecast to grow noticeably thanks to low interest rates, high net migration and continued real wage growth. Very low inflation due to declining oil prices widens the scope for increased consumption expenditure. Overall, the Commission winter 2015 forecast expects GDP to increase by 1.5 % in 2015, helped along by more working days, and to accelerate to a rate of 2 % in 2016.

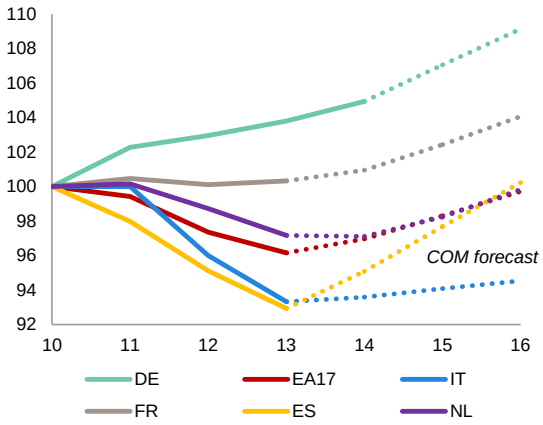
Graph 1.2: **Contribution to GDP growth by final demand components (%, pps.)**



Source: European Commission Calculations

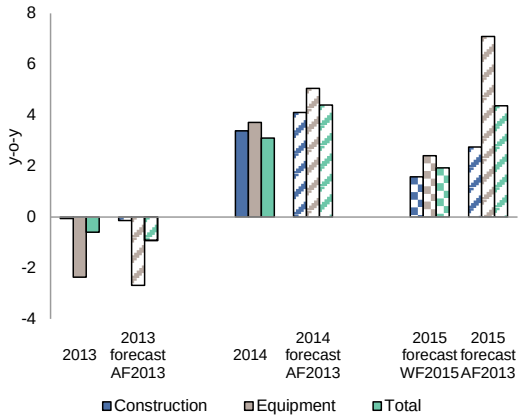
Domestic demand has taken over as the main contributor to GDP growth. While external demand played an important role from 2010 to 2012, GDP growth has since been driven mostly by domestic demand (Graph 1.2 and 1.3). In 2014, the largest driver of growth in domestic demand was consumption. Net exports contributed with 0.4 pp. to growth, with moderate export growth exceeding import growth. In the coming years, domestic demand is expected to remain the primary growth driver.

Graph 1.3: **Private consumption in constant prices (index, 2010 = 100)**



Source: European Commission Calculations

Graph 1.4: **Gross fixed capital formation and components compared to (autumn and winter) forecasts (annual growth, 2013–15)**

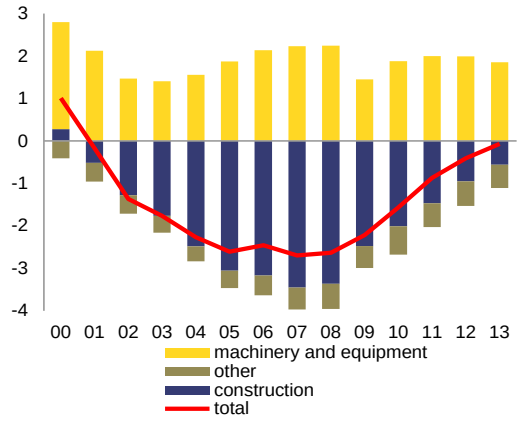


Source: European Commission Calculations

While investment has recovered somewhat, it developed less dynamically than expected. Gross fixed capital formation increased in 2014 across all sectors and asset types, but amid the interruption of the recovery process it increased less dynamically than previously projected by both the federal government and independent forecasters (Graph 1.4). However, as uncertainty decreases in 2015 and underutilisation of domestic production capacity declines, corporate investment is expected to recover in 2015, reflecting in particular pent-up replacement investment and investment in new product lines.

While the investment differential in relation to the euro area has closed for the economy as a whole, public investment remains low. In the past, Germany's generally low investment rate resulted mainly from weakness in residential and non-residential construction investment (Graph 1.5 and Graph 1.6). While the overall investment gap in relation to the euro area seems to have closed, public investment remains comparably low. Even though public investment expanded in 2014 and is expected to pick up further in 2015–16, the public sector investment differential in respect of the euro area is expected to remain largely unchanged (see Section 2.3).

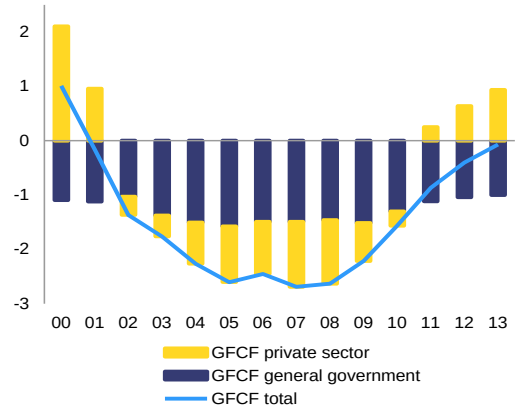
Graph 1.5: **Investment gap in relation to the euro area without Germany, Ireland and Spain — contribution by type of goods (% of GDP)**



[1]Diff. in pps. between shares of GFCF in GDP in current prices

Source: European Commission Calculations

Graph 1.6: **Investment gap in relation to the euro area without Germany, Ireland and Spain — contribution by sector (% of GDP)**

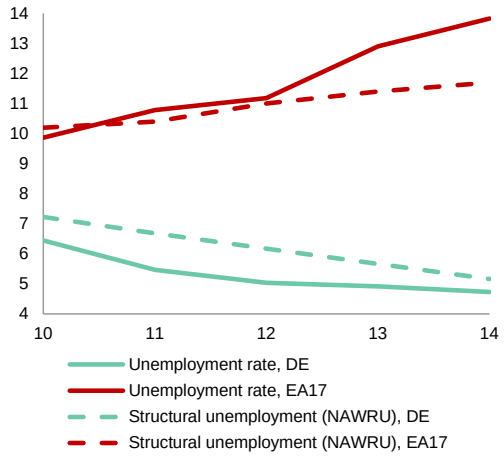


[1]Diff. in pps. between shares of GFCF in GDP in current prices

Source: European Commission Calculations

Though the German economy was showing some weakness in 2014, this has not affected the country's robust labour market. In 2014, employment rose by 0.9 pp. and the unemployment rate fell to a record-low of around 5 % (Eurostat definition). Employment growth is expected to slow to 0.5 % in 2015, while the unemployment rate is projected to fall slightly. Going forward, the new general minimum wage may have some negative employment effects. Youth unemployment continues to reach record lows. Contrary to the euro area, the unemployment gap – the difference between actual and structural unemployment – is close to zero in Germany, which suggests that the remaining unemployment in Germany is of a broadly structural nature (Graph 1.7).

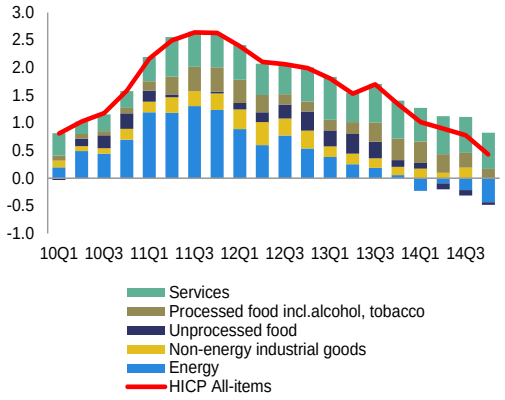
Graph 1.7: **Unemployment gap (%)**



Source: European Commission
Note: NAWRU stands for Non-Accelerating Wage Rate of Unemployment

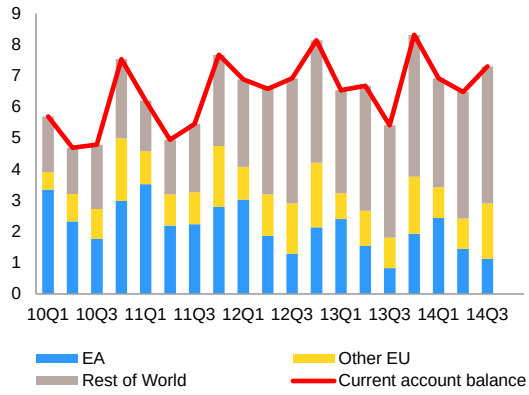
Both core and headline inflation in Germany remained low in 2014. Harmonised inflation averaged just 0.8 % in 2014, driven mainly by the marked decline in the price of oil and falling prices of unprocessed food (Graph 1.8). Harmonised inflation, excluding food and energy ('core inflation'), was somewhat higher but still moderate at 1.4 %, suggesting subdued domestic inflation pressures. Amid marked employment growth, remuneration per employee grew by 2.6 % in 2014, yet without feeding much into inflation. In recent years, real wage growth has exceeded that of productivity, which has helped to support domestic demand and maintain core inflation.

Graph 1.8: **Contributions to headline inflation (%, y-o-y)**



Source: European Commission

Graph 1.9: **Current account balance by geographical counterpart (% of GDP)**



Source: European Commission, Bundesbank

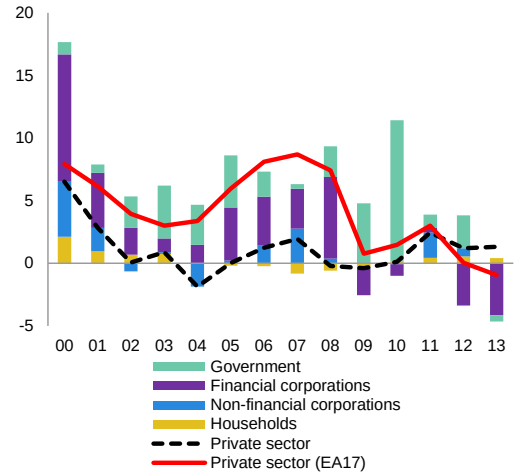
External and sectoral developments

Going forward, the current account surplus is expected to remain at high levels. From 7.7 % in 2014 ([1]), the current account is projected to increase to 8 % of GDP in 2015, while a slight decrease is forecast for 2016 (7.7 %) (Graph 1.9). The main reason for the rise in the persistently high surplus is the projected subdued increase in imports which is owed, on the one hand, to low energy prices and, on the other hand, to weak investment and the associated high import content.

([1]) According to provisional national accounts data for the year 2014.

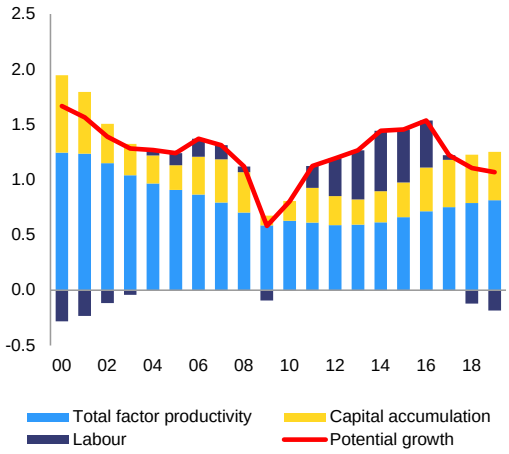
Favourable financing conditions have not led to higher credit growth. Despite favourable financing conditions and although Germany's banking sector has proven to have healthy balance sheets in the European Central Bank's asset quality review, borrowing by households and the corporate sector has been very low since 2009, in most cases due to a lack of credit demand (see also Section 3.2). For example, in the case of small and medium-sized enterprises bank loans have been amply available with only a 10 % rejection rate. However, firms have not applied as they have adequate internal funds. Likewise, housing investment seems to have been financed largely by own resources. This has coincided with a significant deleveraging of the financial sector via negative credit flows, which has not yet abated.

Graph 1.10: **Credit flows by institutional sector (consolidated, % of GDP)**



Source: European Commission

Graph 1.11: **Potential output growth and contributions by production factors (pps. per year)**



Source: European Commission Calculations

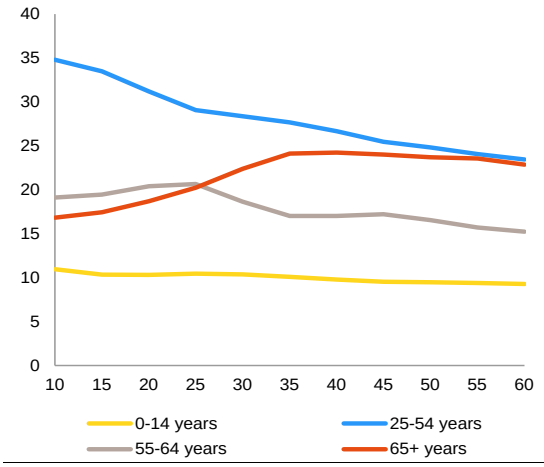
Germany's public finances are in a sound position, which creates scope for greater investment in the economy's future growth potential. Germany recorded a general government budget surplus of 0.4 % in 2014. Continued small budget surpluses are projected and the debt-to-GDP ratio is set to fall gradually in the years ahead. Germany is also expected to continue recording structural surpluses and hence over-achieving significantly its medium-term budgetary objective of a structural deficit deficit of no more than 0.5 % of GDP.

Germany's potential output is highly dependent on strengthening domestic sources of future growth. Total factor productivity growth in Germany has been low and declining in recent years, pointing to the scope and need for efficiency gains in the economy (Graph 1.11). Potential growth has been significantly benefitting from strong immigration since 2010 owing to the related rise in labour supply. In the medium term, however, adverse demographic developments are likely to have an increasing dampening impact, possibly leading to a decline of potential growth to about 1 % per year. It is thus forecast to be one of the lowest average potential growth rates over the next decades.

Demographic change will remain a key challenge for Germany's economy due to the imminent impact of an ageing society. Germany's population is ageing rapidly and in the coming years the impact on the German labour market and public finances will accelerate. This decline in the workforce due to demographic change is expected to increasingly affect potential growth, unless policy measures are taken. The population is projected to fall from around 81 million in 2013 to around 71 million in 2060 and the working-age population to decrease by around 28 % (Graph 1.12) ([2]). Assuming no policy change, this could both lower government revenue and steadily increase age-related expenditure.

([2]) European Commission (2014), 'The 2015 Ageing Report: Underlying assumptions and projection methodologies', European Economy No 8/2014

Graph 1.12: **Population projections (in million persons)**



Source: The 2015 Ageing Report, European Commission

Box 1.1: Economic surveillance process

The Commission's Annual Growth Survey, adopted in November 2014, started the 2015 European Semester, proposing that the EU pursue an integrated approach to economic policy built around three main pillars: boosting investment, accelerating structural reforms and pursuing responsible growth-friendly fiscal consolidation. The Annual Growth Survey also presented the process of streamlining the European Semester to increase the effectiveness of economic policy coordination at the EU level through greater accountability and by encouraging greater ownership by all actors.

In line with streamlining efforts this Country Report includes an In-Depth Review — as per Article 5 of Regulation no. 1176/2011 — to determine whether macroeconomic imbalances still exist, as announced in the Commission's Alert Mechanism Report published on November 2014.

Based on the 2014 IDR for Germany published in March 2014, the Commission concluded that Germany was experiencing macroeconomic imbalances monitoring and policy action, in particular, developments in the areas of household debt, linked to the high levels of mortgage debt and structural characteristics of the housing market, as well as unfavourable developments in export market shares.

This Country Report includes an assessment of progress towards the implementation of the 2014 Country-Specific Recommendations adopted by the Council in July 2014. The Country-Specific Recommendations for Germany concerned public finances, the labour market, education, energy, public procurement, the financial sector and competition in the railway and services sectors.

Table 1.1: **Key economic, financial and social indicators - Germany**

	2008	2009	2010	2011	2012	2013	Forecast 2014	2015	2016
Real GDP (y-o-y)	1.1	-5.6	4.1	3.6	0.4	0.1	1.5	1.5	2.0
Private consumption (y-o-y)	0.5	0.0	0.6	2.3	0.7	0.8	1.1	2.0	2.0
Public consumption (y-o-y)	3.4	3.0	1.3	0.7	1.2	0.7	1.0	1.0	1.1
Gross fixed capital formation (y-o-y)	1.2	-9.9	5.1	7.3	-0.7	-0.6	3.1	2.1	4.3
Exports of goods and services (y-o-y)	1.9	-14.3	14.5	8.0	2.8	1.6	3.7	4.8	5.3
Imports of goods and services (y-o-y)	2.2	-9.6	12.9	7.2	0.0	3.1	3.3	5.4	6.6
Output gap	1.8	-4.5	-1.4	1.0	0.2	-0.9	-0.9	-0.8	-0.4
Contribution to GDP growth:									
Domestic demand (y-o-y)	1.1	-1.5	1.6	2.8	0.5	0.5	1.4	1.7	2.1
Inventories (y-o-y)	-0.1	-1.6	1.3	0.0	-1.3	0.2	-0.3	-0.3	0.0
Net exports (y-o-y)	0.0	-2.6	1.3	0.7	1.3	-0.5	0.4	0.1	-0.2
Current account balance (% of GDP), balance of payments	5.8	5.8	5.7	6.1	7.1	6.7	.	.	.
Trade balance (% of GDP), balance of payments	6.0	4.9	5.1	4.8	5.8	5.7	.	.	.
Terms of trade of goods and services (y-o-y)	-1.7	4.6	-2.3	-2.4	-0.5	1.5	1.4	1.1	0.3
Net international investment position (% of GDP)	23.2	30.0	30.8	28.7	34.7	42.9	.	.	.
Net external debt (% of GDP)	-1.6*	-7.8*	-5.9*	-2.9*	-9.4*	-18.0*	.	.	.
Gross external debt (% of GDP)	146.62	148.21	155.99	157.3	159.2	142.0	.	.	.
Export performance vs advanced countries (% change over 5 years)	6.2	1.0	-0.4	-1.0	-7.0	-4.3	.	.	.
Export market share, goods and services (%)	8.2	8.2	7.6	7.5	7.2	7.3	.	.	.
Savings rate of households (net saving as percentage of net disposable income)	10.5	10.0	9.9	9.6	9.4	9.1	.	.	.
Private credit flow, consolidated, (% of GDP)	-0.2	-0.4	0.2	2.4	1.2	1.4	.	.	.
Private sector debt, consolidated (% of GDP)	109.3	113.5	107.7	103.9	103.7	103.4	.	.	.
Deflated house price index (y-o-y)	-0.3	0.8	-0.9	1.4	1.8	1.5	.	.	.
Residential investment (% of GDP)	5.0	5.1	5.2	5.6	5.8	5.9	6.0	.	.
Total financial sector liabilities, non-consolidated (y-o-y)	3.7	-5.0	-0.1	2.7	3.6	-5.9	.	.	.
Tier 1 ratio[1]	.	.	.	.	.	.	.	.	.
Overall solvency ratio[2]	.	.	.	.	.	.	.	.	.
Gross total doubtful and non-performing loans (% of total debt instruments and total loans and advances)[2]	.	.	.	.	.	.	.	.	.
Change in employment (number of people, y-o-y)	1.3	0.1	0.3	1.3	1.1	0.6	0.9	0.5	0.6
Unemployment rate	7.4	7.6	7.0	5.8	5.4	5.2	5.0	4.9	4.8
Long-term unemployment rate (% of active population)	3.9	3.5	3.3	2.8	2.4	2.3	.	.	.
Youth unemployment rate (% of active population in the same age group)	10.4	11.1	9.8	8.5	8.0	7.8	7.7	.	.
Activity rate (15-64 year-olds)	75.9	76.3	76.6	77.3	77.2	77.6	.	.	.
Young people not in employment, education or training (%)	8.4	8.8	8.3	7.5	7.1	6.3	.	.	.
People at risk of poverty or social exclusion (% of total population)	20.1	20.0	19.7	19.9	19.6	20.3	.	.	.
At-risk-of-poverty rate (% of total population)	15.2	15.5	15.6	15.8	16.1	16.1	.	.	.
Severe material deprivation rate (% of total population)	5.5	5.4	4.5	5.3	4.9	5.4	.	.	.
Number of people living in households with very low work-intensity (% of total population aged below 60)	11.7	10.9	11.2	11.2	9.9	9.9	.	.	.
GDP deflator (y-o-y)	0.8	1.8	0.7	1.1	1.5	2.1	1.8	1.4	2.0
Harmonised index of consumer prices (HICP) (y-o-y)	2.8	0.2	1.2	2.5	2.1	1.6	0.8	0.1	1.6
Nominal compensation per employee (y-o-y)	2.1	0.2	2.6	2.9	2.5	1.9	2.6	2.9	2.9
Labour productivity (real, person employed, y-o-y)	-0.3	-5.7	3.8	2.2	-0.7	-0.5	0.7	.	.
Unit labour costs (ULC) (whole economy, y-o-y)	2.4	6.3	-1.2	0.6	3.3	2.4	1.9	1.8	1.5
Real unit labour costs (y-o-y)	1.5	4.4	-1.9	-0.5	1.8	0.3	0.1	0.4	-0.5
REER[3] (ULC, y-o-y)	0.2	4.2	-4.5	-0.2	-1.1	4.4	1.7	-1.4	0.8
REER[3] (HICP, y-o-y)	-0.7	0.1	-5.2	-0.7	-2.9	1.9	1.5	-2.2	-0.3
General government balance (% of GDP)	0.0	-3.0	-4.1	-0.9	0.1	0.1	0.4	0.2	0.2
Structural budget balance (% of GDP)	.	.	-2.1	-1.2	0.1	0.7	0.9	0.7	0.5
General government gross debt (% of GDP)	64.9	72.4	80.3	77.6	79.0	76.9	74.2	71.9	68.9

[1] Domestic banking groups and stand-alone banks.

[2] Domestic banking groups and stand-alone banks, foreign-controlled (EU and non-EU) subsidiaries and branches.

[3] Real effective exchange rate

(*) Indicates BPM5 and/or ESA95

Source: European Commission, 2015 winter forecast; ECB

Source: European Commission, 2015 winter forecast; ECB

Table 1.2: **Macroeconomic Imbalance Procedure indicators**

			Thresholds	2008	2009	2010	2011	2012	2013
External imbalances and competitiveness	Current Account Balance (% of GDP)	3 year average	-4%/6%	6.2	6.2	5.8	5.9	6.3	6.7
		p.m.: level year	-	5.8	5.8	5.7	6.1	7.1	6.8
	Net international investment position (% of GDP)		-35%	*25.5*	*34.0*	*35.4*	*33.7*	34.7	42.9
	Real effective exchange rate (REER) (42 industrial countries - HICP deflator)	% change (3 years)	±5% & ±11%	0.9	2.9	-3.7	-4.9	-9.0	-1.9
		p.m.: % y-o-y change	-	0.5	1.0	-5.2	-0.7	-3.3	2.2
	Export Market shares	% change (5 years)	-6%	-6.1	-7.5	-8.8	-9.6	-15.8	-10.7
		p.m.: % y-o-y change	-	-3.4	-0.7	-6.5	-1.6	-4.6	2.4
	Nominal unit labour costs (ULC)	% change (3 years)	9% & 12%	-0.1	8.1	7.5	5.7	2.7	6.4
		p.m.: % y-o-y change	-	2.4	6.3	-1.2	0.6	3.3	2.4
Internal imbalances	Deflated House Prices (% y-o-y change)		6%	-0.3	1.2	-1.0	1.6	2.0	1.8p
	Private Sector Credit Flow as % of GDP, consolidated		14%	-0.1p	-0.4p	0.2p	2.4p	1.3p	1.2p
	Private Sector Debt as % of GDP, consolidated		133%	109.3p	113.4p	107.7p	103.9p	103.7p	103.5p
	General Government Sector Debt as % of GDP		60%	64.9	72.4	80.3	77.6	79.0	76.9
	Unemployment Rate	3-year average	10%	8.8	8.0	7.5	6.9	6.2	5.6
		p.m.: level year	-	7.5	7.8	7.1	5.9	5.5	5.3
	Total Financial Sector Liabilities (% y-o-y change)		16.5%	4.6p	-6.6p	-0.9p	3.0p	3.2p	-6.3p

Flags: p: provisional.

Note: Figures highlighted are the ones falling outside the threshold established by EC Alert Mechanism Report.
For REER and ULC, the first threshold concerns Euro Area Member States.
(1) Figures in italic are according to the old standards (ESA95/BPM5).
(2) Export market shares data: the total world export is based on the 5th edition of the Balance of Payments Manual (BPM5).
(3) Unemployment rate i=Eurostat backcalculation to include Population Census 2011 results.

Source: European Commission

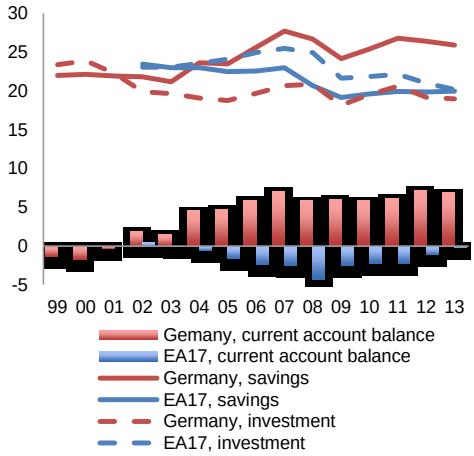
2. IMBALANCES, RISKS AND ADJUSTMENT

2.1. CURRENT ACCOUNT

Developments in saving and investment balances by sector

The German current account remains at high levels in the coming years. Contrary to the euro area as a whole, the high and persistent German current account surpluses reflect a combination of steadily increasing savings accompanied by low levels of investment for more than a decade. In recent years, the current account surplus has consistently remained at historically high levels (Graph 2.1.1). Going forward it is expected to remain at around 7–8 % of GDP from 2014 to 2016.

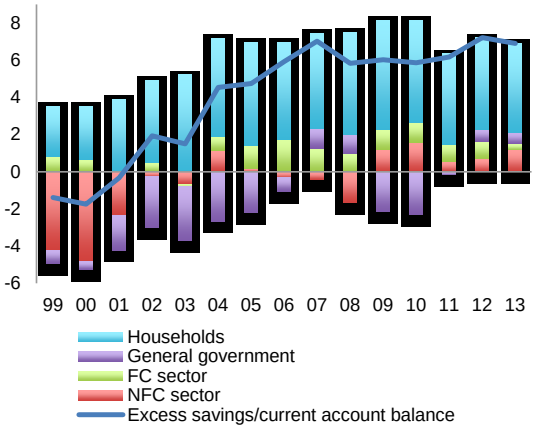
Graph 2.1.1: **Current account balance, national savings and investment (% of GDP)**



Source: European Commission Calculations

In contrast to previous years, a breakdown of excess savings shows that all sectors are now contributing to the current account surplus. While the largest contribution to the current account surplus remains the structurally large excess savings position of the household sector, in recent years the change in the current account balance has been driven mainly by the non-financial corporate and government sectors. This reflects a continuation of the long-term shift in the non-financial corporate sector towards a structural net saving position. This is coupled with ongoing fiscal consolidation efforts that have produced an excess savings position in the government sector (Graph 2.1.2). The contribution of the non-financial corporate sector to the current account surplus in the years following the crisis has been driven by a marked decrease in investment relative to the pre-crisis period (Table 2.1.1).

Graph 2.1.2: **Sectoral excess savings and current account balance (% of GDP)**



Source: European Commission Calculations

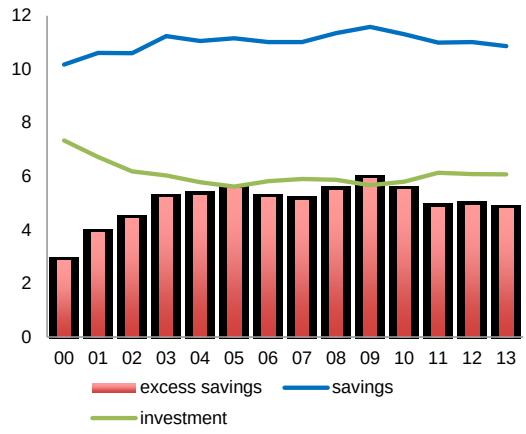
A further breakdown shows that changes in both savings and investment behaviour at the sectoral level are driving aggregate developments. The position of households and non-profit institutions serving households shows a slight reduction in excess savings as robust household consumption reduced the saving rate moderately (Graph 2.1.3). Finally, the excess savings of the general government were mainly driven by significantly higher savings after the crisis, in a context of reduced government expenditure (Graph 2.1.4), while public investment remained at low levels. While in the immediate aftermath of the crisis the excess savings position of non-financial corporate sector rose sharply as savings increased and investment fell, it appeared to be closing somewhat thereafter as both positions moved downwards. However, in 2013 a further divergence was visible as savings and investment moved in opposite directions (see Section 2.3). After a period of relative stability, the excess savings position of the financial corporate sector declined markedly in 2013, driven by a swing in savings.

Table 2.1.1: **Change in current account and contribution of savings and investment by sector (pps. of GDP)**

		Change	
		2010-2013	2000-2013
Total economy	Excess savings/CA balance	1.0	8.7
	Savings	0.5	3.8
	Investment	-0.5	-4.9
Non-financial corporate sector	Excess savings	-0.4	6.0
	Savings	-1.1	2.7
	Investment	-0.7	-3.3
Financial corporate sector	Excess savings	-0.7	-0.4
	Savings	-0.8	-0.5
	Investment	0.0	-0.2
General government	Excess savings	2.9	1.0
	Savings	2.8	0.9
	Investment	-0.1	-0.1
Households	Excess savings	-0.7	2.0
	Savings	-0.4	0.7
	Investment	0.3	-1.3

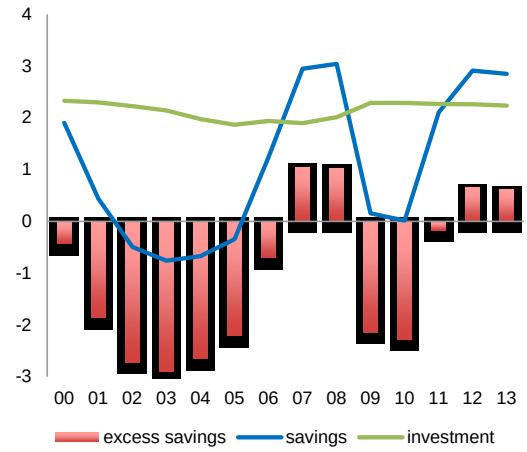
Source: European Commission Calculations

.Graph 2.1.3: **Households and non-profit institutions serving households (% of GDP)**



Source: European Commission

Graph 2.1.4: **General government (% of GDP)**



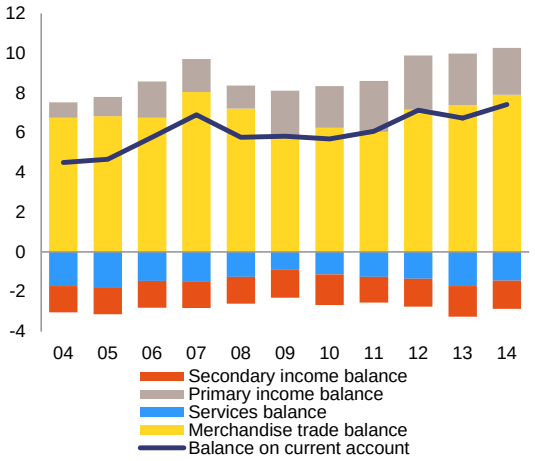
Source: European Commission

Current account developments

The German current account surplus increased in 2014, but remained broadly stable in relation to the euro area. The current account surplus increased from 6.7 % of GDP in 2013 to 7.4 % in 2014, well above the Macroeconomic Imbalance Procedure indicative three-year threshold of 6 % of GDP (Graph 2.1.5). The increase in the current account balance in 2014 was mainly explained by a further increase in the trade surplus in goods and a decrease in the deficit in services. According to provisional data, the current account balance in relation to the euro area flattened in 2014 (from 1.7 % to 1.8 % of GDP) and represented less than a

quarter of the total current account surplus, compared with more than 60 % at the end of the 2000s (Graph 2.1.6) ([3]). The current account surplus against the EU-28 also increased in 2014 according to provisional data, after some years of registering decreases (Graph 2.1.7). The external position in relation to Germany's main European partners improved slightly or remained stable.

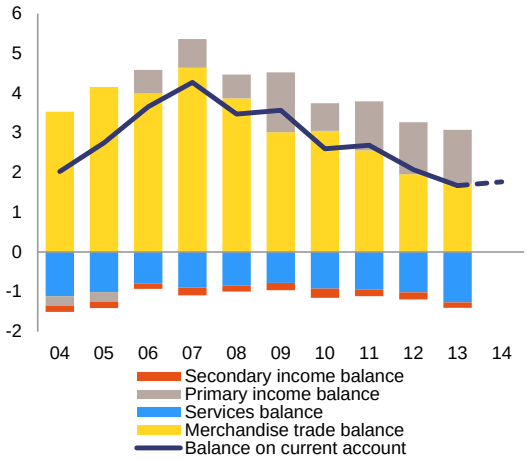
Graph 2.1.5: **Breakdown of current account balance in relation to all countries (% of GDP)**



Source: Bundesbank, European Commission Calculation

([3]) The 2014 figures in Graphs 2.1.6 to 2.1.11 (except 2.1.9) are estimated based on available quarterly data until Q1–Q3 2014. The growth rate of the period compared with the same period in 2013 is extrapolated to estimate the 2014 figure.

Graph 2.1.6: **Breakdown of current account balance in relation to the euro area (% of GDP)**



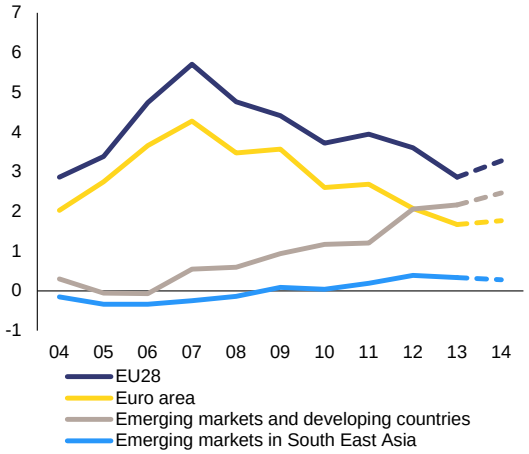
Source: Bundesbank, European Commission Calculation

The current account surplus with the rest of the world continued to grow, particularly in relation to emerging markets and developing countries. Germany's surplus against this group of countries has grown steadily in recent years (Graph 2.1.7) and represents almost one third of the total current account surplus. Furthermore, the external position against China has continuously improved since 2008, turning into a surplus in 2012 (Graph 2.1.8). This rise has been driven by a growing balance in goods. The increase in the German current account surplus is also supported by improving positions in relation to the United States and Japan. The increase in the trade surplus in goods in 2014 can be partly attributed to the decline in oil prices and a corresponding reduction of import values. The rising nominal effective exchange rate is not likely to have supported German exports to non-euro area trading partners in 2014 on average. However, the exchange rate declined considerably in the second half of the year, which implies an improvement in price competitiveness. This, together with the projected strong reduction of oil prices in 2015 compared to the previous year, supports the expectation of a further increase in the German current account surplus in 2015.

Germany's exports reached a record high in 2014 while imports grew less dynamically, contributing to the increase in the current

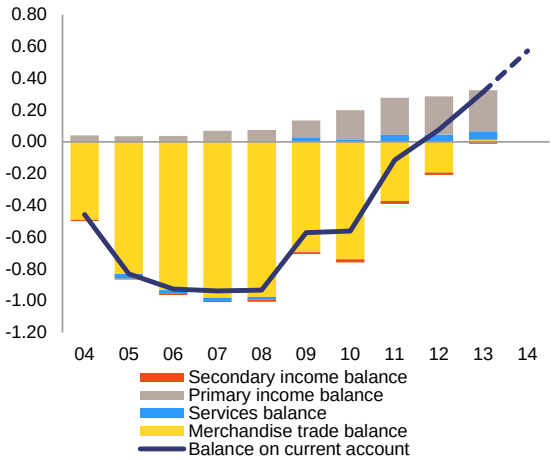
account. Export and import growth accelerated after the crisis, but exports have increased more than imports since 2012, contributing to the increase in the merchandise trade surplus (Graph 2.1.9). The pace of import growth was lower in nominal terms than in volume in 2014,

Graph 2.1.7: **Current account balance in relation to EU-28, euro area, emerging markets and developing countries (% of GDP)**



Source: Bundesbank, European Commission Calculation

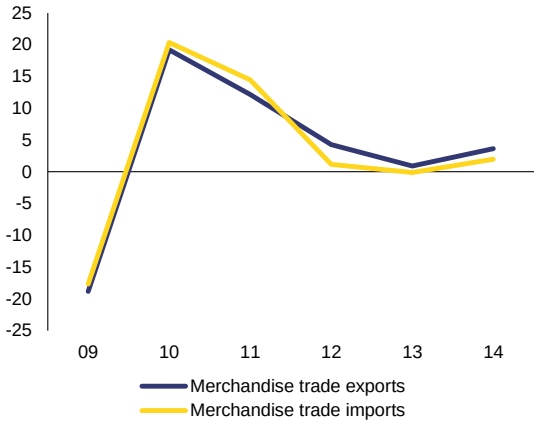
Graph 2.1.8: **Breakdown of current account balance in relation to China (% of GDP)**



Source: Bundesbank, European Commission Calculation

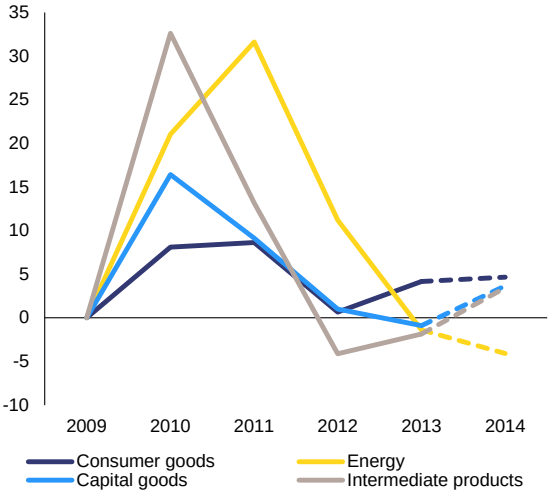
reflecting the decline in oil prices, while imports from the other main goods categories rose (Graph 2.1.10).

Graph 2.1.9: **Exports and imports (annual growth rate, %, y-o-y)**



Source: Bundesbank, European Commission Calculation

Graph 2.1.10: **Imports by broad economic categories (annual growth rate, %, y-o-y)**

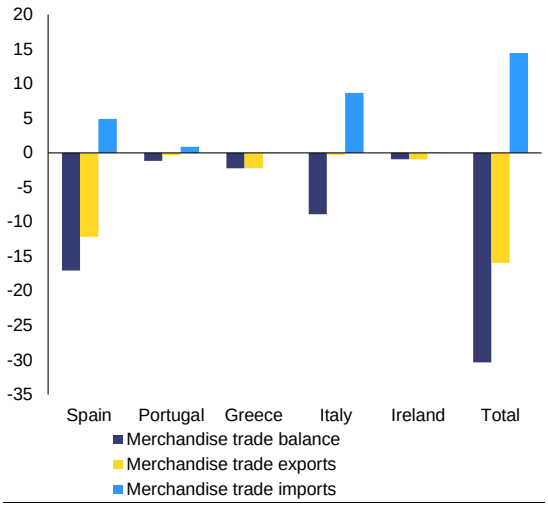


Source: Bundesbank, European Commission Calculation

Rebalancing in relation to the vulnerable EU countries is occurring as a result of import and export developments. A comparison of Germany's exports, imports and trade balances in relation to vulnerable countries before the crisis and in recent years (2004–2007 and 2011–2014, respectively) suggests that rebalancing within the euro area is taking place, and is a result of lower German exports to these countries and higher German imports (Graph 2.1.11). There are, however, differences between countries.

Decreasing trade balances in relation to Spain, Greece and Ireland seem to be mainly related to decreasing exports to those countries, while higher imports explain most of the decreasing German trade surpluses in respect of Italy and Portugal.

Graph 2.1.11: **Changes in trade in goods with vulnerable countries from 2004–2007 to 2011–2014 (EUR billions)**



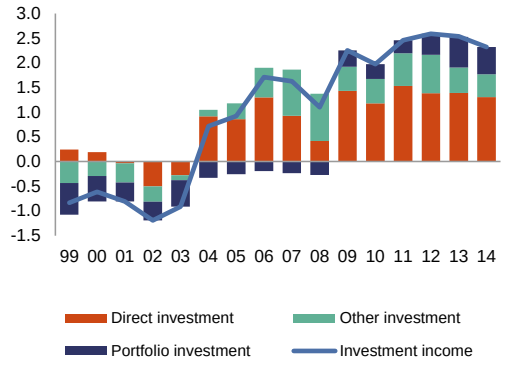
Source: Bundesbank, European Commission Calculation

Box 2.1.1: The importance of the income balance to the current account surplus

Primary income has been a key driver of the sharp rise in the German current account balance and has accounted for around 40 % of the total current account surplus since 2009. Against a background of a structurally high net international investment position and the net revenues created by this capital stock, the significant surplus in the balance of primary income is expected to persist.

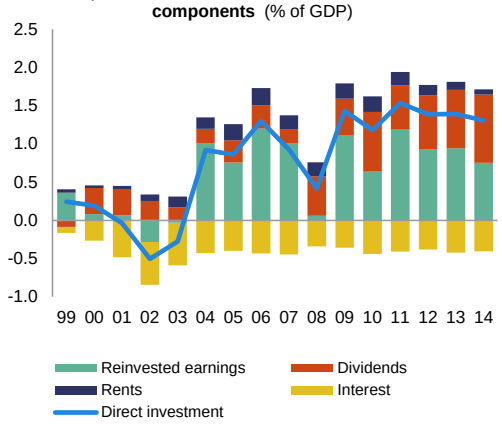
The balance of primary income is predominantly driven by investment income, while labour income and other primary income play a negligible role. The increase in the surplus since the economic crises in 2008–09 is the net effect of a decline in payments to foreign investors which is only partly offset by a decline in revenue from German investments abroad. This is to some extent explained by the increasing gap between German and foreign rate of returns on investment ([1]). As a result, the balance of investment income remained on an upward trend until 2012 and then broadly stabilised.

Graph 1: **Balance on investment income and its components** (% of GDP)



Source: Bundesbank

Graph 2: **Balance on direct investment and its components** (% of GDP)



Source: Bundesbank

All components of investment income contributed to the rise in the overall balance, but the return on direct investment abroad played a leading role. Sound returns and an increased net stock of foreign direct investment have significantly pushed up the overall primary income balance in recent years. From 2009–2014, net income generated by foreign direct investment accounted for around 60 % of total investment income. Other investments provided one quarter of total investment, while portfolio investments provided the remainder, despite the large negative balance in the stock of portfolio investments (Graph 1).

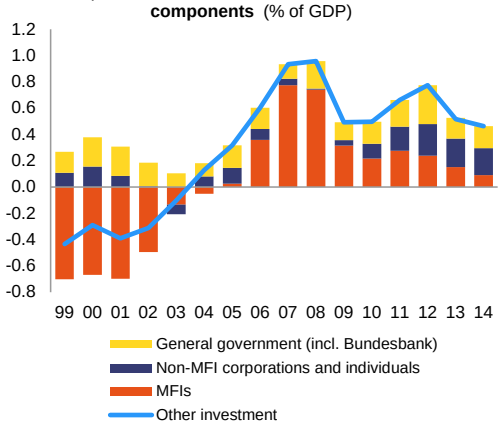
Large positive reinvested earnings and dividends contributed significantly to the growing surplus in investment income. Since 2004, reinvested earnings from direct investment have contributed considerably to the investment income surplus. This was partly driven by the high profitability of German enterprises' foreign subsidiaries and branches compared with foreign enterprises incorporated in Germany ([2]) ([3]). In addition, the 2001 corporate tax reform, which eliminated tax discrimination between the dividends and capital gains of foreign subsidiaries, and the recovery of the global economy, may have played a part (Graph 2).

([1]) For a comparison of total returns between 2005 and 2013 see Deutsche Bundesbank (2014), 'Discrepancy between changes in net foreign assets and the cumulated financial account: an unsuitable indicator of wealth losses', Monthly Report 05/2014.
([2]) Deutsche Bundesbank (2006), 'Die deutsche Zahlungsbilanz für das Jahr 2004', Monatsbericht 03/2006.
([3]) Compared to other financial investment abroad, direct investment had a notable rate of return of 7¼ % per year between 2005 and 2012 on average, while less than ½ % was related to valuation and exchange rate effects. During the same period, foreign securities had an average rate of return of only 4¼ % and the profitability of loans stood at just 3¼ % per year (Deutsche Bundesbank, 2014, 'The German economy's current account surplus', Annual report 2013).

(Continued on the next page)

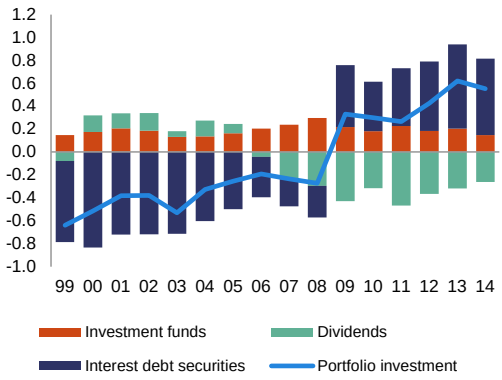
Box (continued)

Graph 3: **Balance on other investment and its components** (% of GDP)



Source: Bundesbank

Graph 4: **Balance on portfolio investment and its components** (% of GDP)



Source: Bundesbank

The net revenues of financial assets from Monetary Financial Institutions (MFIs) also contributed markedly to the build-up of the surplus, but the revenue share of MFIs has fallen in recent years. The financial sector moved from a net debtor to a net creditor position in the mid-2000s. This is reflected both in the MFIs' balance of other investment revenues and their net international investment position turning positive. In recent years, the role of MFIs has become less significant, largely because of impaired foreign markets, higher risk, weaker expected profitability and deleveraging pressure. In contrast, net revenues from other corporations and individuals (including interest rate payments on bank deposits) have increased. This could be explained by firms deleveraging in the periods 2002–2005 and 2009–2010 ([4]) (Graph 3). Following the crises, cross-border capital provision by MFIs has been partly replaced by capital provision by the central banks, leading to a large build-up of Bundesbank TARGET2 ([5]) claims. In 2013, the TARGET2 balance fell significantly.

Germany's 'safe haven' status is reflected by the balance of portfolio investment, owed largely to positive interest rate differentials. In 2009, net revenues from interest debt securities suddenly showed a positive position despite the fact that the negative net balance of the international portfolio investment position remained unchanged. With interest rates remaining at a very low level in Germany, foreign revenues from the debt securities of domestic creditors are higher than domestic payments to foreign creditors. By contrast, dividends from portfolio investments have weighed on Germany's current account surplus since 2006 (Graph 4).

Germany's high net international investment position is expected to continue generating significant financial revenues, while demographics might have a dampening effect. Higher investment in Germany could counteract the continued build-up of foreign investment positions. This would also reduce the risk of adverse wealth effects resulting from possible valuation changes. Demographic developments characterised by a rising share of the population in age groups with a comparatively low propensity to save are expected to have a dampening effect on financial revenues in the long-run ([6]). Analysis suggests that demographic developments could reduce the overall current account surplus by around 3 pps. in the long-term, but not before mid-2020 ([7]).

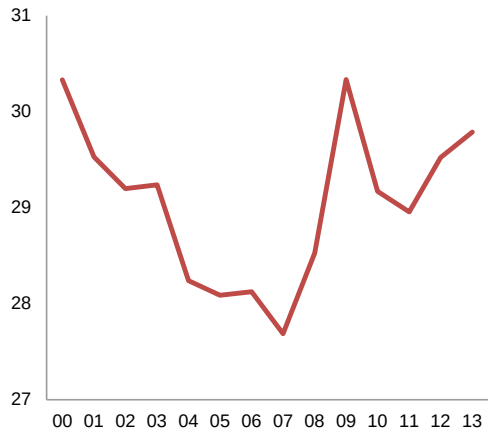
([4]) European Commission (2014), 'Macroeconomic Imbalances — Germany 2014', European Economy, Occasional Papers, No 174.
([5]) Second generation of the Trans-European Automated Real-time Gross settlement Express Transfer system. For a detailed explanation see box 4.2 'The role of the Target2 balances' in European Commission (2014), 'Macroeconomic Imbalances — Germany 2014', European Economy, Occasional Papers, No 174.
([6]) Deutsche Bundesbank (2014), 'The German economy's current account surplus', Annual Report 2013.
([7]) Sachverständigenrat (2014), 'Mehr Vertrauen in Marktprozesse', Jahresgutachten 2014/15.

2.2. PRIVATE CONSUMPTION

Impact of taxation on income and private consumption

Revenue from income taxes paid by households and from social contributions was on a downward trend before the crisis, but has risen in recent years. Total revenue from taxes on income and wealth paid by households and from social contributions, including paid by employers, fell steadily in relation to GDP before the crisis (Graph 2.2.1). This was caused by a sharp reduction in personal income tax rates across the progressive tax scale. Tax rates at the entry and top levels of the progressive tax scale were gradually reduced from 26 % and 53 % respectively in 1999 to 14 % and 42 % in 2009. The bulk of these cuts took place before 2005. Weak employment growth combined with wage moderation also reduced the revenue collected from payroll-related taxes. After the crisis and a temporary spike following the crisis-related GDP slump in 2009, the tax burden resumed its upward trend. Social contributions as a proportion of GDP were on a downward trend for most the 2000s, but have been rising steadily since the end of the decade in the wake of an increasingly favourable labour market, which has weathered the economic crisis remarkably well. Taxes on income and wealth paid by households as a proportion of GDP were on a downward trend for the first half of the 2000s, but have since been rising. The implicit tax rate on labour was also on a downward trend, though it increased briefly before the crisis and again in recent years, suggesting that the sum of all direct and indirect taxes and social contributions levied on labour has grown more quickly than total employee remuneration. The implicit tax rate on labour in Germany has fallen below the euro-area average in recent years, but remains significantly above the EU average (Graph 2.2.2).

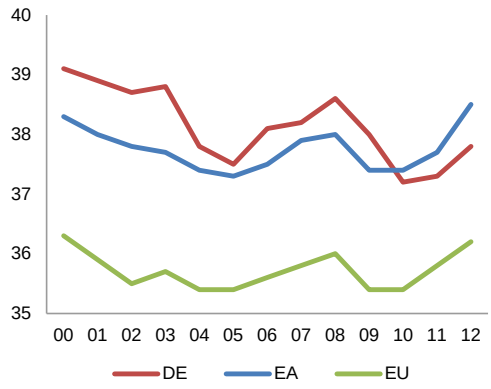
Graph 2.2.1: **Revenue from taxes on income and wealth paid by households and NPISH* and social contributions (% of GDP)**



*NPISH: Non-profit institutions serving households

Source: Destatis, European Commission

Graph 2.2.2: **Implicit tax rate on labour (%)**



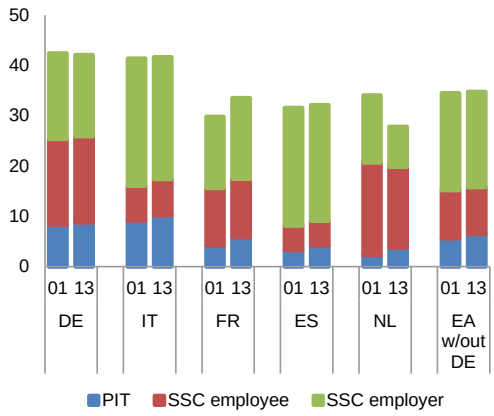
Source: European Commission (Taxation trends in the EU)

While the impact of fiscal drag has in the past been mitigated by discretionary tax cuts and is now strongly limited by low inflation, it remains a potential source of future non-discretionary tax increases. The downward trend in income taxes paid by households until the mid-2000s also reflects the impact of discretionary tax reforms that

more than offset the effect of fiscal drag ([4]), i.e. the process where, in a progressive tax system, rising incomes (whether due to inflation or increasing real incomes) result in a higher average tax burden. However, since 2005 there have been no further major discretionary income tax reductions. In 2013, Germany adopted a law aimed at reducing fiscal drag, which slightly increased the basic income-tax allowance. However, the law falls short of the initial proposal to also adjust the tax scale and to introduce a regular review every two years to limit unintended across-the-board tax increases owing to inflation, as already happens in many other Member States. Therefore, while the impact of fiscal drag is currently mitigated by low inflation, with dynamic wage growth and somewhat higher inflation rates in the coming years, fiscal drag could lead to significant non-discretionary tax increases, which could in turn affect disposable incomes. A model-based counterfactual analysis ([5]) which assumes that all tax brackets except the top rate are adjusted in line with inflation indicates that the non-adjustment of tax brackets will lead — at an inflation rate of 0.1 % as projected by the European Commission winter 2015 forecast — to a fall in the disposable income of households of just EUR 143 million in 2015. But in a scenario where there is 2 % inflation, this figure would increase to about EUR 3 billion (0.1 % of GDP). In its recent and first report on the impact of fiscal drag, based on an income tax micro-simulation model, the federal government estimates that in 2015 there will be additional revenue of EUR 0.7 billion (at 1 % inflation), EUR 1.8 billion (at 1.5 % inflation) and EUR 2.9 billion (at 2 % inflation).

The tax burden on labour remains relatively high, especially for low-wage earners, with potentially negative effects on labour market participation and disposable income. The tax wedge for workers earning 50 % and 67 % of the average wage has remained largely unchanged since 2001 and remains among the highest in the EU (based on 2013 data for a single person with no children, Graphs 2.2.3 and 2.2.4). In particular, social contributions paid by employees are among the highest in the EU, despite a reduction in contribution rates since the mid-2000s. The recent reforms to social insurance systems are likely to involve a further rise in contribution rates and again increase the tax wedge (see Section 3.1). Inactivity traps — which measure the part of the additional gross wage that is taxed away where an inactive person (not entitled to unemployment benefits but eligible for income-tested social assistance) takes up a job — are relatively high for low-wage earners, with a high contribution from personal income taxes and employee social contributions. For workers earning 50 % of the average wage, the inactivity trap in 2013 was in Germany 73.1 % (euro area average: 58.3 %), of which 30.9 % resulted from labour taxes.

Graph 2.2.3: **Tax wedge at 50% of average earnings in 2001 and 2013 (% of total labour costs)**



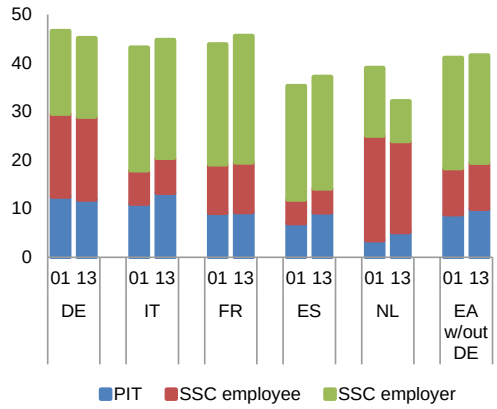
Note: Weighted euro area average excluding DE, CY, LV, LT and MT.

Source: European Commission, OECD (Tax and benefits indicators database)

([4]) Broer (2011) found that, for different individual income levels between 1996 and 2010, discretionary reduction of tax rates led to stronger tax relief than could have been achieved by tariff indexation to inflation (Broer, M., 2011, 'Kalte Progression in der Einkommensbesteuerung. Ist ein Tarif auf Rädern der diskretionären Anpassungspolitik in Deutschland überlegen?', Wirtschaftsdienst, No 10, pp. 694–698).

([5]) European Commission, Joint Research Centre, based on the EUROMOD model.

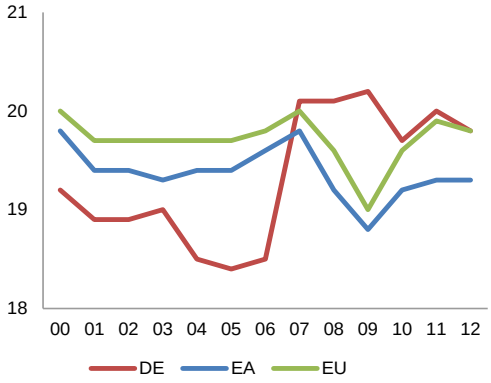
Graph 2.2.4: **Tax wedge at 67% of average earnings in 2001 and 2013 (% of total labour costs)**



Note: Weighted euro area average excluding DE, CY, LV, LT and MT.

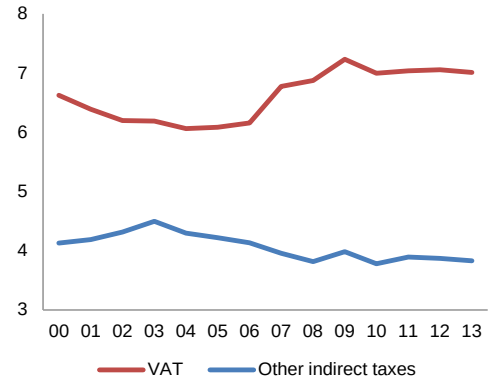
Source: European Commission, OECD (Tax and benefits indicators database)

Graph 2.2.5: **Implicit rate on consumption (%)**



Source: European Commission (Taxation trends in the EU)

Graph 2.2.6: **Revenue from value added tax and other indirect taxes (% of GDP)**



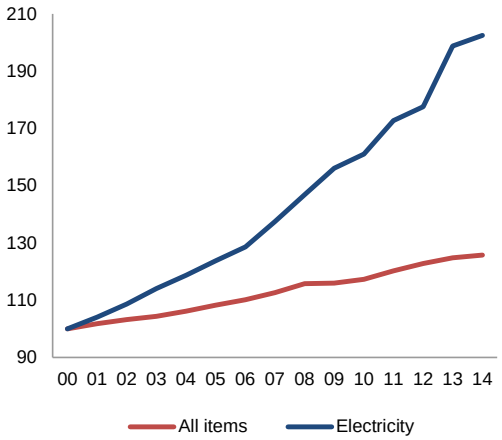
Source: European Commission

While the tax burden on consumption has increased over the last decade, it still does not appear to be particularly high. The implicit tax rate on consumption — the ratio between the revenue from all consumption taxes and the final consumption expenditure of households — increased by 0.6 pp. between 2000 and 2012, mainly due to a major hike in the standard rate of value added tax from 16 % to 19 % in 2007 (Graph 2.2.5). While revenues from value added tax as a proportion of GDP increased slightly over the last decade, those from other indirect taxes including excise duties decreased (Graph 2.2.6). Part of the additional revenue resulting from the increase in value added tax was used to reduce the unemployment insurance contribution rate. Despite the jump in the implicit tax rate on consumption caused by the increase in value added tax, Germany has one of lowest value added tax standard rates in the EU and its consumption taxes represent a below-average proportion of total tax revenue. Consumption-related taxation has been kept stable and does not appear to have constrained private consumption dynamics.

Surging costs for the use of renewable energy has affected households' disposable income. The surcharge paid by electricity consumers to fund the difference between guaranteed feed-in tariffs for renewable energy producers and market prices has increased steadily in recent years. The surcharge increased by 47 % in 2013 and by a further 18 % in 2014. For 2015, it has been reduced slightly, by 1 %. The total volume of the surcharge has increased significantly in recent years and is projected to reach EUR 21.8 billion or 0.7 % of GDP in 2015. The roll-out of renewable energy

with close-to-zero marginal generation costs has helped reduce wholesale prices. However, the hike in the surcharge has caused a significantly stronger increase in consumer electricity prices in Germany in comparison with consumer prices in general (Graph 2.2.7) and consumer electricity prices in other Member States (Graph 2.2.8). The cost of the surcharge has a direct impact on household net disposable income, with a larger impact for lower income households that tend to spend a higher proportion of their incomes on accommodation and energy. For example, based on an average annual electricity consumption of 3 456 kWh per household with on average 2.02 household members in Germany in 2013, the current renewable energy surcharge of 6.17 ct/kWh would amount to EUR 213 per household, per year.

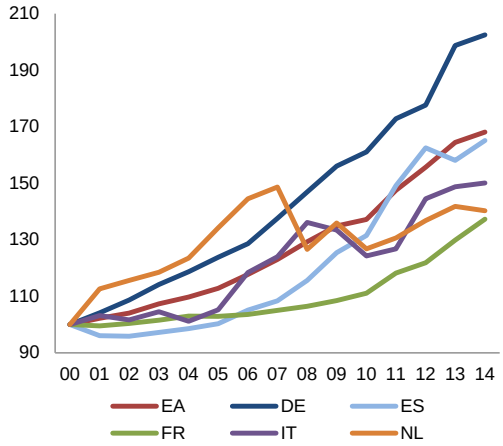
Graph 2.2.7: **HICP* in Germany (annual average index, 2000 = 100)**



*HICP: Harmonised Index of Consumer Prices

Source: European Commission

Graph 2.2.8: **HICP* for electricity (annual average index, 2000 = 100)**



*HICP: Harmonised Index of Consumer Prices

Source: European Commission

Overall, tax policies do not stand out as a major reason for subdued private consumption in the pre-crisis period, but — if they are not adjusted — may hamper private consumption in the future. The tax burden has resumed an upward trend in recent years and fiscal drag could lead to non-discretionary tax increases in the coming years and could dampen the effect of continued dynamic wage growth by increasing the average rate of taxation. The tax wedge on labour, in particular for low-wage earners, remains comparatively high, and there are risks of a further rise in social contribution rates. The policy-induced surge in electricity prices has affected disposable incomes and consumption, especially those of low-income households.

The potential impact of the general minimum wage on consumption

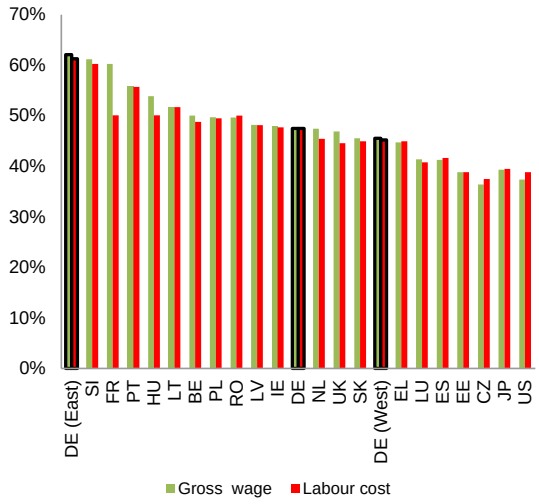
Germany has introduced a general minimum wage of EUR 8.50 an hour in 2015 with some exceptions and transitional arrangements. The new legislation is a response to the expansion of low-wage jobs, the increase in wage and income inequality, and the decline in the proportion of workers covered by collective bargaining agreements. Some groups are excluded. Negotiated sector-specific minimum wages remain valid, but cannot be lower than EUR 8.50 an hour from 2017. A new minimum wage commission

(*Mindestlohnkommission*) will make recommendations on future adjustments to the level of the minimum wage every two years, which can be adopted by the government. The law introducing the general minimum wage also provides for an easing of the conditions for applying collective bargaining agreements to all companies in a sector (*Allgemeinverbindlicherklärung*), and for an extension of the Posting of Workers Act to all sectors (*Arbeitnehmer-Entsendegesetz*). The minimum wage law is to be reviewed in 2020.

Overall, the potential of the minimum wage to strengthen domestic demand is likely to be limited due to employment and price effects and the interaction with the tax and benefits systems. The general minimum wage is intended to increase the income of low-wage earners, thus contributing to reducing inequality, preventing an increase in-work poverty and increasing consumption and domestic demand. However, the impact of the minimum wage on net disposable incomes and therefore on domestic demand could be mitigated by potential employment and price effects as well as by higher taxes and social contributions and lower benefits, including in some cases the withdrawal or reduction of income top-ups (*Aufstockung*). Household net equalised income is estimated to increase on average by less than EUR 5 per month due to the minimum wage, even assuming no employment effect ([6]). These results suggest that the impact of the minimum wage on consumption may be rather limited.

The employment impact of the minimum wage is expected to be significant in the eastern federal states and among those sectors with a high share of 'mini-jobbers'. The share of employees earning less than EUR 8.50 an hour is particularly high in the eastern federal states (23 %) and among 'mini-jobbers' (58 %), in specific services (up to 23 %), in companies with fewer than 10 employees (more than 30 %), in jobs requiring no or limited qualifications (35 %), and among women (20 %) and young workers (37 %) ([7]). Measured by estimates of the Kaitz index for full-time workers (quotient of the minimum and the median wages), the effective level of the minimum wage for Germany as a whole and in the western federal states is expected to be in the mid-range in EU terms, while for the eastern federal states, it would be at the upper end, for both gross wages and labour costs (Graph 2.2.9) ([8]).

Graph 2.2.9: **Kaitz index for gross wages and for labour costs, for full-time earners (2013)**



Source: OECD, European Commission Calculation based on OECD and European Commission – OECD Tax–Benefit model for labour cost.
***Note*:** Definitions of gross wages and labour cost reflect the categorisation of the OECD-EC Tax-Benefit database. Gross wages are equal to employees' pre-tax compensation. The German minimum wage of EUR 8.50 an hour is set at a gross wage level. The labour cost paid by employers is the sum of the gross wage and employer's social security contributions.

([6]) Bruckmeier, K. and J. Wiemers (2014), 'Die meisten Aufstocker bleiben trotz Mindestlohn bedürftig', IAB-Kurzbericht No 7/2014.

([7]) Data for 2012 from Brenke, K. (2014), 'Mindestlohn: Zahl der anspruchsberechtigten Arbeitnehmer wird weit unter fünf Millionen liegen', DIW Wochenbericht No 5/2014. The impact is expected to be smaller due to wage increases since 2012.

([8]) According to European Commission estimates based on uprated SOEP 2012 data and the European Commission – OECD Tax – Benefit model, the Kaitz index in 2015 is expected to be about 48 % (for both gross wages and labour costs) of the median wage for Germany as a whole, slightly lower for the western federal states (46 % and 45 % for gross wages and labour costs, respectively), and significantly higher for the eastern federal states (62 % and 61 % for both gross wage and labour costs, respectively).

The overall employment effect is difficult to estimate. Estimates of employment effects range from positive to very significant job losses, in many cases part-time jobs. The strong variation is partly due to different assumptions as regards the wage elasticity of labour demand, the number of workers affected and the impact of the minimum wage on wages in general. Moreover, the employment effect could be stronger if companies substitute labour for capital, or weaker if companies reduce non-wage benefits or if the statutory minimum wage is circumvented. On the other hand, the impact of higher wages on employment will be mitigated if companies pass on wage increases to consumers in the form of higher prices, or absorb part of the cost increases by reducing their profits. The minimum wage may also incentivise labour force participation and higher productivity. The magnitude of these effects is difficult to estimate, however. Price increases could be strong in some service sectors where many workers are affected by the new minimum wage.

Box 2.2.1: Labour productivity and labour costs developments in Germany

Labour productivity in Germany has grown more than in the euro area (without Germany) since 2000, but some service sectors have performed weakly ([1])**.** There are significant differences across sectors (Graph 1). For instance, productivity growth in information and communication was rather strong and above that in the manufacturing sector. Germany's performance in labour productivity between 2000 and 2013 was particularly weak in professional, scientific and support service activities, and in financial and insurance activities. In most countries and sectors, productivity growth has been significantly lower in recent years than before the crisis. This probably reflects strong reductions in gross value added during the crisis, while labour decreased more moderately. This was the case, for instance, in the German manufacturing sector in 2009, when real gross value added dropped by almost 20 %, while the number of employees fell by only 2.4 % and the number of hours worked (employees and self-employed) by 9.1 %. However, in Germany the information and communication sector and the financial and insurance activities sector performed better in terms of labour productivity growth in recent years than before the crisis.

Labour productivity growth in the German professional services sector has been particularly weak, including in an international context. Labour productivity growth in the German professional services sector has been negative or close to zero for more than a decade, which may partly be explained by structural features such as the persistence of very small firms but also by the inefficient allocation of resources within the sector ([2]). While most Member States have rather weak labour productivity growth rates in this sector, Germany is one of the worst-performing (Graph 2). This supports the view that there is scope for improving economic efficiency in the German professional services sector, even though the results need to be interpreted with caution given the difficulties in measuring labour productivity growth, especially in the services sector. Moreover, although Germany is one of the EU countries with more competition-friendly regulation overall according to the 2013 OECD indicators of product market regulation, it is also one of the countries where regulation is least conducive to competition in the professional services sector (Graph 3).

From an international perspective, Germany stands out as having moved from very weak unit labour cost developments before the crisis to nominal wages growing above productivity from 2008 to 2013, which is a sign of ongoing rebalancing. Unit labour cost fell during the 2000–2007 period in Germany, as wage growth remained below productivity in most years. This was especially true of trade, transportation and manufacturing. Following the prolonged period of wage moderation, nominal wages grew above productivity in most sectors in Germany from 2008 to 2013 (Graph 4). In some services sectors, such as retail and professional services, the increase in unit labour cost seems to be due to both a decline in productivity and higher wage growth.

In manufacturing and some services, there appears to be scope for real wages to grow above productivity. In the pre-crisis period, real wage growth in Germany was almost flat until 2007, while productivity grew moderately, and real wages grew less than productivity in several sectors including manufacturing and trade, transportation, accommodation and food. Despite recent wage increases, from a longer-term perspective wage growth is lagging behind productivity growth, especially in the tradable sector. The 2000–2007 period saw labour productivity per hour outstrip real compensation per employee by a sizeable margin and while this reversed somewhat in the aftermath of the crisis, the gap has remained significant throughout the 2000–2013 period. Theoretical wage benchmarks also suggest that wage developments in Germany may be misaligned with fundamentals. Benchmarks taking into account price levels, productivity and unemployment suggest that the growth rate of wages in Germany has been consistently below the level required to achieve equilibrium in domestic labour market ('internal equilibrium'), although the gap has narrowed in recent years ([3]). Benchmarks that aim to compare actual wage growth with the wage growth that would have guaranteed a stable evolution in price competitiveness

([1]) Labour productivity is defined as real gross value added per hour worked (total employment). Nominal unit labour costs are defined as the ratio between compensation of employees (nominal) divided by the number of hours worked (employees), and real labour productivity. European Commission calculations based on data from Eurostat and Destatis.

([2]) European Commission (2014), 'The economic impact of professional services liberalisation', European Economy, No 533/ 2014.

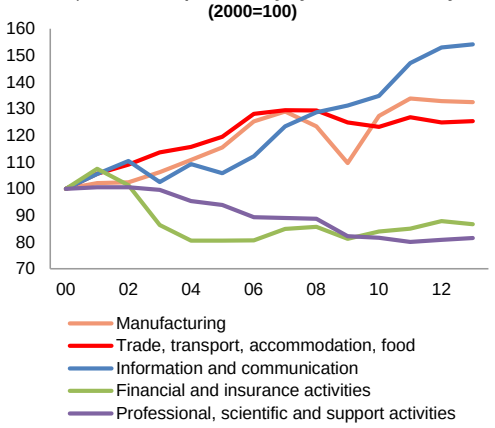
([3]) European Commission (2014), 'Benchmarks for the assessment of wage developments', European Economy, No 146/2013.

(Continued on the next page)

Box (continued)

('external equilibrium') also point to the strong wage moderation in the mid-2000s in comparison with other euro-area countries. Although wages have recently exceeded the benchmark, suggesting some reduction in price competitiveness, there appears to be further room for wage growth without eroding Germany's price competitiveness.

Graph 1: **Labour productivity by sector - Germany (2000=100)**



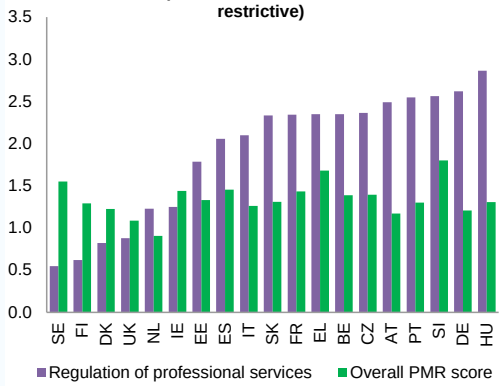
Source: Destatis, European Commission Calculation

Graph 2: **Annual labour productivity growth in professional services, scientific and support services (%)**

Source: European Commission Calculation

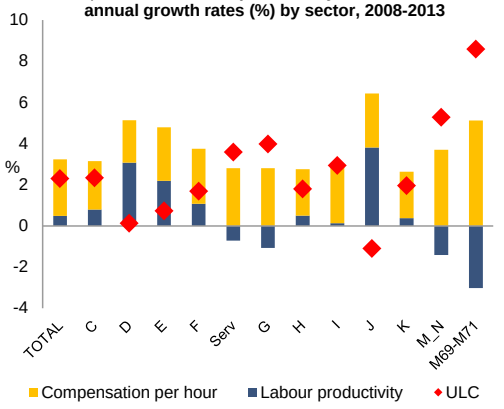
Note on Graph 2: sectors M-N in ESA2010: Professional, scientific and technical activities; administrative and support service activities.

Graph 3: **OECD indicators on product market regulation - EU countries (2013 - scale 0 to 6 from least to most restrictive)**



Source: OECD

Graph 4: **ULC, labour productivity and labour cost annual growth rates (%) by sector, 2008-2013**



Source: European Commission Calculation

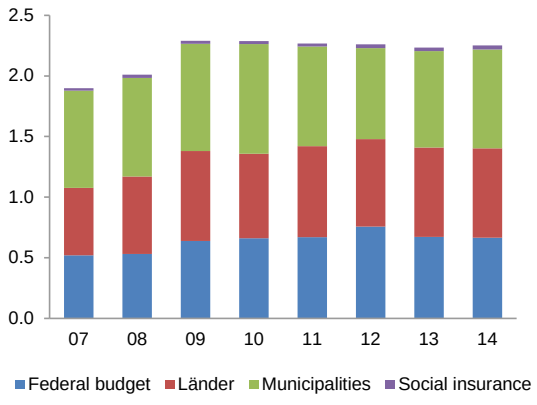
Note on Graph 4: C=manufacturing, D=electricity, gas, steam and air conditioning supply, E=water supply; sewerage, waste management and remediation activities, F=construction, G=wholesale and retail trade; repair of motor vehicles and motorcycles, H=transportation and storage, I=accommodation and food service activities, J=information and communication, K=financial and insurance activities, M-N=professional, scientific and technical activities; administrative and support service activities, M69-M71=legal and accounting activities; activities of head offices; management consultancy activities; architectural and engineering activities; technical testing and analysis, Serv=G-I, K, M-N.

2.3. INVESTMENT

Public investment in infrastructure and education

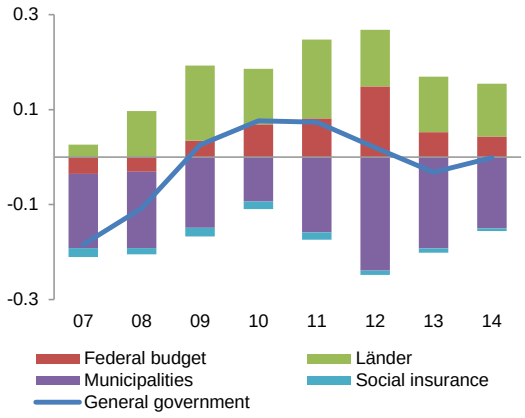
While the level of public investment has picked up recently, it still differs significantly from the euro-area average and there has been no lasting trend of positive net investment. After an increase in the second half of the 2000s resulting partly from crisis-related stimulus packages, the share of public sector gross fixed capital formation as a proportion of GDP has been stable in recent years, reflecting moderate nominal growth rates and even a slight fall in real terms in 2012 and 2013 (Graph 2.3.1). As a consequence, the differential in public investment as regards the euro-area average (excluding Germany, Spain and Ireland) remains significant, even though it decreased from 1.5 % of GDP in 2009 to 1.0 % in 2013 (see Graph 1.6). In 2014, gross public investment increased by 3.8 % in nominal terms and 3.1 % in real terms and is projected by the European Commission winter 2015 forecast to continue doing so in 2015/16, given the overall sound position of public finances and the policy measures adopted by the federal government. Moreover, after a short period of positive net public investment, gross investment fell again below depreciation in 2013 and just offset depreciation in 2014 (Graph 2.3.2).

Graph 2.3.1: **Gross fixed capital formation by layer of government (% of GDP)**



Source: Destatis, European Commission

Graph 2.3.2: **Net fixed capital formation by layer of government (% of GDP)**



Source: Destatis, European Commission

A public investment backlog has emerged in particular at the level of municipalities and with respect to Germany's transport infrastructure. Public investment by municipalities decreased from 1.1 % of GDP in 2000 to 0.8 % in 2014, whereas it increased slightly at federal and federal state level (Graph 2.3.1). Hence, the share of municipalities in total public sector gross fixed capital formation fell from 46 % in 2000 to 36 % in 2014. The downward trend in public investment can partly be explained by strong infrastructure investment in East Germany over the 1990s, which has been levelling off since, and by the privatisation of public enterprises and services, such as network industries or waste management. However, especially negative net investment by municipalities since the beginning of the 2000s suggests significant underinvestment (Graph 2.3.2). Investment has also been insufficient to maintain the quality of Germany's transport infrastructure, with real investment decreasing notably for federal state, county and municipal roads and local public transport. Therefore, bottom-up studies and surveys suggest that additional annual investment of ½ to 1 % of GDP (EUR 15–30 billion) in the coming years is needed to modernise Germany's transport infrastructure

and remove specific bottlenecks as well as overcome the municipal investment backlog ([9]).

Some progress has been made towards increasing public investment in infrastructure and enhancing the fiscal space of municipalities. The federal government has made available an additional EUR 5 billion for investment in public transport infrastructure and EUR 600 million for urban development over the period 2014–17. There are also plans to partly compensate municipalities for social expenditure by an additional EUR 5 billion annually, which should increase their fiscal space for investment. To this end, in December 2014 a law was adopted to relieve the federal states and municipalities by EUR 1 billion annually and to top up the special fund for the expansion of childcare facilities by EUR 550 million. Further financial relief for municipalities is to be provided in the form of funding for the integration of people with disabilities. There are also plans to make more flexible use of funds for infrastructure investment and to further develop infrastructure funding through public-private partnerships. An expert group has been set up to develop proposals on how to raise private and public investment, e.g. by tapping more into private funds for public infrastructure projects. More recently, a further EUR 10 billion for infrastructure investment over the period 2016–18 has been announced, though not yet specified, and proceeds from auctioning broadcast spectrum are planned to be invested in broadband expansion.

However, the planned measures fall short of the requirements to tackle the investment backlog in public infrastructure. If fully implemented, these measures would amount to about EUR 10 billion or 0.3 % of GDP per year and are thus significantly below the identified additional annual investment requirement of ½ to 1 % of GDP. Given the evidence of underinvestment, especially at local level, the fiscal position of municipalities and their resulting capacity to invest is particularly relevant in this context. This is also affected by the allocation of revenue and expenditure competences between the federal government, the federal states and the municipalities (see Section 3.1).

Germany has made limited progress in raising education spending, which remains rather low by international standards, especially as regards primary and lower secondary education. In 2011, Germany's total public and private expenditure on educational institutions of 5.1 % of GDP was well below the OECD average of 6.1 %, although educational institutions' expenditure per student of 27 % of per capita GDP was in line with the OECD average. This may also reflect the lower proportion of the under-30s in the German population. Expenditure per student relative to GDP per capita is below the OECD average in primary and lower secondary education, above average in upper secondary education and in line with the average in tertiary education. Public spending on education amounted to 4.4 % of GDP in 2011, compared to an average of 5.1 % in the euro area and 5.3 % in both the EU and the OECD. In 2012, public expenditure on education in Germany fell to 4.3 % of GDP.

([9]) European Commission (2014), 'Macroeconomic imbalances — Germany 2014', European Economy, Occasional Papers, No 174; European Commission (2014), 'Infrastructure in the EU: Developments and Impact on Growth', European Economy, Occasional Papers, No 203.

Table 2.3.1: **Germany's budgetary projections compared to European and national deficit ceilings (% of GDP)**

	2015	2016	2017	2018
Requirements of the stability and growth pact[1]				
General government balance	0	0.5	0.5	0.5
Deficit ceiling	-3.0	-3.0	-3.0	-3.0
Difference	**3**	**3 1/2**	**3 1/2**	**3 1/2**
Structural balance	1/2	1/2	1/2	1/2
Medium-term objective	-0.5	-0.5	-0.5	-0.5
Difference	**1**	**1**	**1**	**1**
National 'debt brake' for federal budget[2]				
Structural balance	0.03	0.04	0.01	0.01
Structural deficit ceiling (transition path)	-0.66	-0.35	-0.35	-0.35
Difference	**1/2**	**1/2**	**1/2**	**1/2**

Source: 1) German draft budgetary plan 2015; 2) Federal Ministry of Finance, Eckwertebeschluss der Bundesregierung zum Regierungsentwurf des Bundeshaushalts 2015 und zum Finanzplan 2014 bis 2018 sowie zum Sondervermögen 'Energie- und Klimafonds', March 2014.

In contrast, Germany has made some progress in increasing research spending and has almost reached its Europe 2020 target. Expenditure on research and development is mainly provided by the private sector and increased from 2.4 % of GDP in 2000 to an estimated 2.94 % in 2013, well above the estimated EU-28 average of 2.02 %. While Germany is close to achieving its Europe 2020 expenditure target of 3 % of GDP, other advanced economies such as Finland, Sweden and South Korea are investing even more. Moreover, significant disparities exist in innovation performance and expenditure at regional level, especially as regards private investment in research and development.

The federal government has taken measures to increase spending on education and research, but additional efforts appear needed to reach the national target. The 2014 stability programme already included plans to provide an additional EUR 6 billion to support the federal states in financing childcare facilities, schools and higher education institutions and additional EUR 3 billion for research. Moreover, it is planned to enhance cooperation between the federal government and the federal states in the area of science and research. However, the latest available data suggest that total public and private expenditure on education and research may fall short of the national target of 10 % of GDP by 2015 as agreed by the federal government and the federal state governments. While total expenditure increased from 8.6 % of GDP in 1995 to 9.1 % in 2011, it decreased to 9.0 % in 2012. Therefore, further efforts appear necessary at all levels of government to meet the 10 % expenditure target, and even would be needed to catch up with the most innovative economies. Besides an increased expenditure level, also the outcomes in the education system (see Section 3.3) and start-up companies' access to venture capital (see Sections 3.2 and 3.5) remain important challenges.

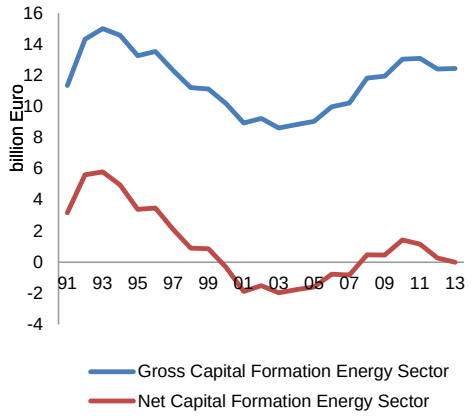
Germany's currently favourable fiscal position provides significant scope for additional infrastructure investment and education expenditure in full respect of European and national budget rules. Current projections indicate scope of up to 1 % of GDP under Germany's medium-term budgetary objective and of up to ½ % of GDP under its national 'debt brake'. According to the European Commission winter 2015 forecast, Germany is projected to comply with its medium-term budgetary objective with a margin of around 1.2 % of GDP in 2015 and 1.0 % of GDP in 2016. According to the draft budgetary plan for 2015, Germany plans to continue overachieving its medium-term objective during 2017–18 with a margin of about 1 % of GDP (Table 2.3.1). The federal government also plans to comply with a margin of about ½ % of GDP with the deficit ceiling for the federal budget set by the national 'debt brake' in the period 2015–

18 ([10]). Therefore, the national deficit ceiling is more constraining and sets the maximum fiscal buffer.

Investment in the energy sector

From an investment perspective, energy generation, efficiency and networks play a significant role. Corporate investment in the energy sector alone represented 9 % of total gross capital formation in 2013, not including most energy efficiency and photovoltaic investment, which are accounted for in the buildings sector (Graph 2.3.3). Total investment amounted to EUR 16.1 billion in renewable energy generation in 2013, up to EUR 10 billion in energy efficiency in residential buildings in 2011 ([11]) and EUR 5.5 billion in energy networks in 2013 (Table 1 in Box 2.3.1).

Graph 2.3.3: **Investment by the energy sector**



Source: Destatis

Private investors dominate energy investment. With public investment as a proportion of total investment in renewable energy generation at 2.5 % and in energy efficiency at 8.6 % in 2010, the role of the public sector as a direct investor is limited. Banks and private intermediaries provide the bulk of energy financing in Germany with households accounting for 37 % of total renewable energy investment in 2012. In 2010, concessionary loans by KfW, *Rentenbank*, and state banks were equivalent to EUR 16.5 billion or 45 % of energy efficiency and renewable energy investment in Germany. Private intermediaries provided EUR 12.4 billion in the same year ([12]).

The current policy framework and Germany's geographical location underline the relevance of investment in the energy sector. In the broader context of EU climate and energy policy, the *Energiewende* (transformation of Germany's energy system) and various policy instruments, such as the feed-in tariff for renewable energy, play a central role in this regard. The *Energiewende* sets renewable energy and energy efficiency objectives for 2020 and 2050, and requires the phasing out of nuclear energy by 2022, along with ambitious greenhouse gas

([10]) The constitutional 'debt brake' stipulates that as of 2016 the structural balance of the federal budget must not exceed a deficit of 0.35 % of GDP, with a gradually decreasing ceiling along an agreed transition path in the preceding years. The federal states must have structurally balanced budgets as of 2020. However, no meaningful assessment of possible fiscal space appears possible in the latter case, since the situation differs significantly across federal states and no consistent structural balances are available at the level of the federal states.

([11]) Blazejczak, J., J. Diekmann, D. Edler, C. Kemfert, K. Neuhoff and W-P. Schill (2013) 'Energy Transition Calls for High Investment', DIW Economic Bulletin, No 9/2013. The government reports energy efficiency investments in residential buildings of EUR 39.5 billion and EUR 15.3 billion for non-residential buildings in 2013, (Bundesministerium für Wirtschaft und Energie (2014), 'Ein gutes Stück Arbeit. Die Energie der Zukunft. Erster Fortschrittsbericht zur Energiewende'). However, these figures represent full capital expenditure for the refurbishment of the existing building stock (including investments in photovoltaic and non-investment related expenditure) while actual incremental investment in energy-efficiency-specific measures is significantly lower. Regarding industrial energy efficiency investments, the Federal Statistical Office reports EUR 0.93 billion in 2012.

([12]) Juergens, I., H. Amecke, R. Boyd, B. Buchner, A. Novikova, A. Rosenberg, K. Stelmakh and A. Vasa (2012), 'The Landscape of Climate Finance in Germany', CPI Report.

reduction targets. These objectives require significant investment in renewable energy for power and heating, in energy efficiency of the existing building stock and in the expansion and upgrading of power and gas networks. As a central 'switch table' in the EU's internal energy market, Germany's energy investment choices also have important spillover effects on the EU. Germany's geographical location requires significant domestic and cross-border network expansion in line with the requirements for electricity generation, transmission and distribution (see Section 3.4). Investment in gas declined between 1994 and 2004. Despite the slow recovery after 2005, investment should increase by a total of EUR 1.9 billion between 2014 and 2019 in order to meet the targets of 260 megawatts additional compressor capacity and 423 km grid expansion until 2019, according to the Network Development Plan Gas 2014.

Box 2.3.1: **A closer look at energy investment**

Despite sizeable investments in recent years, particularly by private households and corporate investors, a significant further increase in investment will be necessary to reach national and EU energy and climate policy targets. Investment in renewable electricity generation so far is generally heading in the right direction (Graph 1). However, although no specific target has been set for the renewable heating sector, achieving its estimated contribution to Germany's renewable energy targets requires a substantial increase in investment (Graph 2). The investment gap varies across scenarios, but the estimated required annual investment is significantly above the 2013 level of EUR 3.1 billion (Graph 1 and Table 1). In addition, upgrading and expanding the transmission network will require significantly higher investments in the years to come (Graph 3). While transmission system operators originally aimed at completing 50 % (~950 km) of all projects included in the Energy Grid Expansion Act (*EnLAG*) until 2016, by September 2014, only about 23 % of the projects listed since 2009 in the *EnLAG* have been realised ([1]). Investment gaps are also significant for energy efficiency, with investment currently below both the target for implementing the EU Energy Efficiency Directive and the national target for decarbonisation of the building sector. To reach this national target, the average annual rate for retrofitting of buildings of 1.1 % (2008–2013) would need to be roughly doubled ([2]). Achieving the target of a reduction in primary energy consumption of 20 % by 2020 is estimated to require additional incremental energy-efficiency-specific investments totalling EUR 75 billion between 2014 and 2020 for residential buildings alone ([3]).

Table 1:
Investment in renewable energy generation and energy networks (bn Euro)

	Annual Investment (2011 – 2013 average)	**Projected annual investment needs** (2013 - 2020)
Renewable Energy Generation	**20**	**18.3 - 24.0**
Electricity	16.9	13.0 - 17.0
Heat	3.1	5.3 - 7.0
Electricity Networks	**3.9**	**5.7 - 5.9**
Distribution	3.0	1.5 – 1.7
Trans-mission	0.9	4.2

Sources: Renewable energy generation from BMWi (2014), 'Erneuerbare Energien in Zahlen', p. 24; investment needs own calculations (see Graphs 2 and 3). Electricity networks from BNetzA (2014),'Monitoringreport 2014', p. 67-68 excluding EUR 3.1 billion of Transmission System Operators' and Distribution System Operators' expenditure for general maintenance of the existing grid; investment needs based on scenarios B2024* (Grid Development Plan 2014, second draft) and B2024 (Offshore GDP, first draft).

([1]) Bundesnetzagentur (2014), 'Bauliche Fertigstellung der EnLAG- Vorhaben', Volume 3, Q3-2014.
([2]) Löschel, A., G. Erdmann, F. Staiß and H-J. Ziesing (2014), 'Expertenkommission zum Monitoring-Prozess 'Energie der Zukunft'. Stellungnahme zum ersten Fortschrittsbericht der Bundesregierung für das Berichtsjahr 2013'.
([3]) Gornig, M., H. Hagedorn and C. Michelsen (2013), 'Bauwirtschaft: Zusätzliche Infrastrukturinvestitionen bringen zunächst keinen neuen Schwung', DIW Wochenbericht, No 47/2013.

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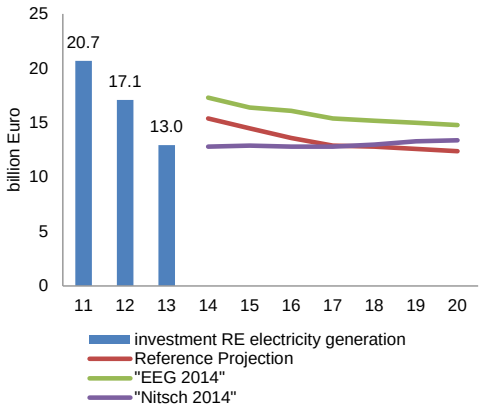
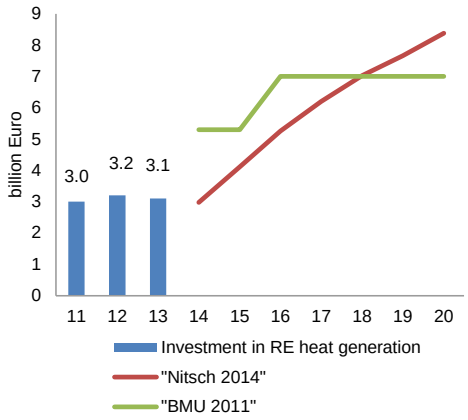
Box (continued)

Graph 1: **Current investment and projected investment needs for renewable electricity(1)**



Graph 2: **Current investment and projected investment needs for renewable heat generation(2)**



(1) *Sources:* Investments data from Bundesministerium für Wirtschaft und Energie (2014), 'Erneuerbare Energien in Zahlen'. 'Reference Projection' is an extrapolation of current trends in renewable electricity generation. 'EEG 2014' and 'Nitsch 2014' reflect the requirements for renewable energy expansion in the *Gesetz für den Ausbau erneuerbarer Energien* (EEG 2014) under different assumptions about cost developments. 'Nitsch 2014' is based on Nitsch (2014), 'Szenarien der deutschen Energieversorgung vor dem Hintergrund der Vereinbarungen der Großen Koalition'.

(2) *Sources:* Current investments Bundesministerium für Wirtschaft und Energie (2014), 'Erneuerbare Energien in Zahlen'; projection 'Nitsch 2014' based on Nitsch (2014), 'Szenarien der deutschen Energieversorgung vor dem Hintergrund der Vereinbarungen der Großen Koalition', p. 33, scenario 100-II), projection Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (2011) based on Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit Lead Study (2011), 'Langfristszenarien und Strategien für den Ausbau der erneuerbaren Energien in Deutschland bei Berücksichtigung der Entwicklung in Europa und global'.

Germany has taken measures to achieve its energy targets, but additional efforts are needed to incentivise energy-efficiency investment and address backlogs in renewable heat capacity. Regarding energy efficiency, recent analysis shows that the new measures proposed in the National Action Plan on Energy Efficiency (NAPE) would only address one third of the gap identified by the German federal government ([4]). While additional supply-side measures were announced in the Action Plan for Climate Change (*Aktionsprogramm Klimaschutz*) of December 2014, the federal government has not yet estimated their effect on narrowing this gap (see Section 3.4). Moreover, the ongoing revision of the market incentive programme for renewable heat generation is expected to lead to additional investment, but it remains unclear to what extent the measures will be sufficient to achieve the programme's target of a share of renewables in heat generation of 14 % by 2020 (9.1 % in 2013). Neither the federal government's coalition agreement nor the Act on the Promotion of Renewable Energies in the Heat Sector (*EEWärmeG*) includes quantitative goals for heat generation capacity that could support the expansion of renewables in this area ([5]). While the 2014 renewable energy reform achieved predictability for investment in geothermal energy, further improvements in terms of regulatory certainty still appear relevant to foster investment in other renewables such as wind power, photovoltaic and bioenergy.

Effectively tackling the delays in network development requires regulatory simplification and public acceptance of major grid infrastructure projects. Lack of public support is often emphasised as an important factor delaying grid expansion in Germany. To strengthen the dialogue with affected citizens, the federal government is supporting the initiative 'Citizens' Energy Infrastructure Dialogue'

([4]) Löschel, A., G. Erdmann, F. Staiß and H-J. Ziesing (2014), 'Expertenkommission zum Monitoring-Prozess 'Energie der Zukunft'. Stellungnahme zum ersten Fortschrittsbericht der Bundesregierung für das Berichtsjahr 2013'.

([5]) Nitsch (2014), 'Szenarien der deutschen Energieversorgung vor dem Hintergrund der Vereinbarungen der Großen Koalition'.

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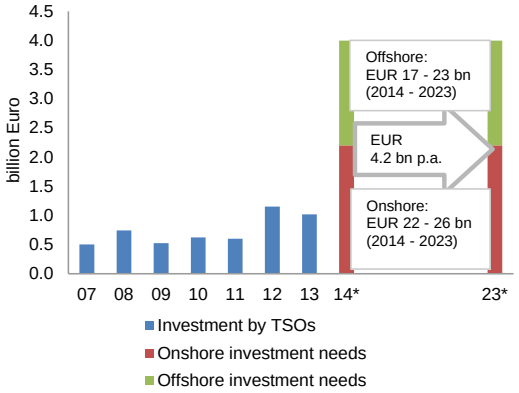
Box (continued)

(*Bürgerdialog Infrastruktur für die Energiewende*), which aims at a broad public dialogue in regions affected by energy infrastructure projects. Moreover, the Federal Requirements Plan Act (*Bundesbedarfsplangesetz*) adopted in 2013 is expected to have a positive impact on the implementation of the 'most crucial and urgently needed transmission infrastructure projects' ([6]). However, reducing administrative complexity in grid development ([7]) and regulatory risk would improve certainty for long-term investment planning and thereby reduce equity requirements and financing cost.

Graph 3: **Transmission grid investments 2007 - 2013 versus investment needs for 2014 - 2024 (billion Euro)**



Note: Annual investments by transmission system operators (TSO) in annual prices (2007–2013) based on Bundesnetzagentur (2014), 'Monitoringreport 2014'. The investment gap of EUR 4.2 billion based on the Grid Development Plan 2014, second draft (scenario B2024*) and the Offshore GDP, second draft (B2024), and derived from the cumulative investment gaps of EUR 23 billion (onshore) and EUR 19 billion (offshore) for the 2014–2023 period, assuming an even distribution of investment across years. The ranges refer to upper (scenario C 2024) and lower (scenario A2024) bounds.

([6]) European Commission (2014), 'Investment Projects in Energy Infrastructure', Commission Staff Working Document No 313 final.
([7]) Institut der deutschen Wirtschaft Köln (2014), 'Infrastruktur zwischen Standortvorteil und Investitionsbedarf'.

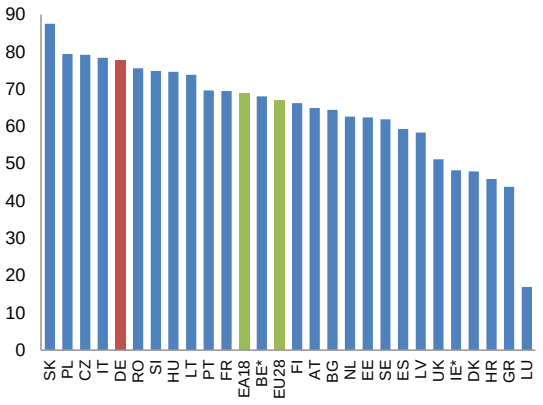
Investment in machinery and equipment

The German manufacturing sector accounts for a significant proportion of German investment in machinery and equipment, exports and gross value added. Its importance for the overall economy is reflected in its proportion of total economy gross value added, which has averaged 22 % since the mid-1990s without seeing a significant decline. The sector has also continued to dominate Germany's goods exports , accounting for around 80 % on average of the annual value of total German exports since the early 2000s. Finally, the manufacturing sector is an important driver of investment in Germany, accounting for an average of around 30 % nominal investment in machinery and equipment on average since the mid-1990s. Notably, while a trend decrease in its proportion of machinery and equipment investment took place between the mid-1990s and the mid-2000s, stabilisation or possibly even a trend reversal has since be observed.

A cross-country comparison shows that the German manufacturing sector drives the country's total exports to a larger extent than is the case for the entire euro area. The German manufacturing sector makes up nearly 80 % of the country's total exports compared to around 70 % in the euro area (2010–13 average). This reflects the relatively large importance of the manufacturing sector for the German economy (Graph 2.3.4 and 2.3.5). Having seen a less pronounced decline compared to other Member States since the mid-1990s, the German manufacturing sector as a proportion of total gross value added exceeds the euro area average by more than 6 pps. The sector's role for investment in machinery and equipment is above average also from a European perspective, although this

difference is less pronounced owing to a larger role of leasing financing in Germany than elsewhere, since in such cases investments are recorded in the (financial) services sector.

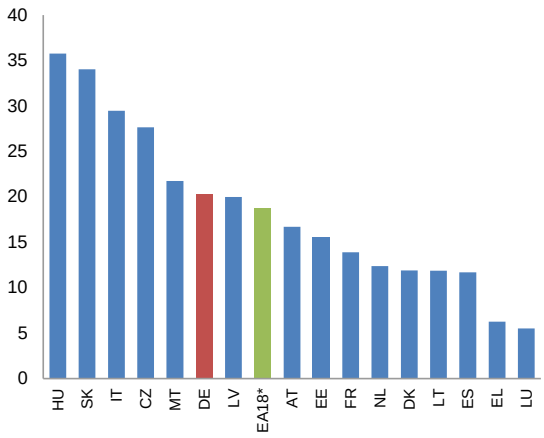
Graph 2.3.4: **Manufacturing as a proportion of total exports (%, 2010–13 average)**



Note: *2010-2012 average

Source: European Commission Calculations

Graph 2.3.5: **Manufacturing as a proportion of nominal machinery and equipment investment (%, 2010–13 average)**



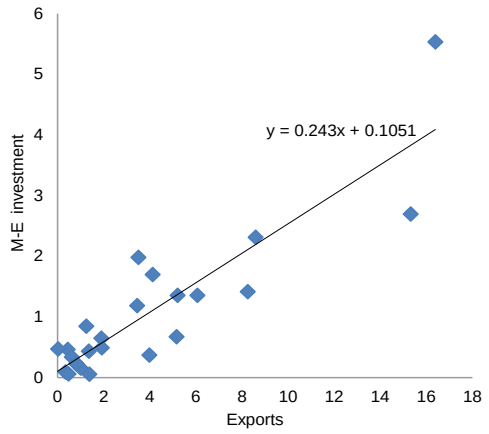
Note: EA18 excl. PT, ES, FI, CY.

Source: European Commission Calculations

Data for German manufacturing sub-sectors show that the most export-oriented branches are the same ones that drive manufacturing investment in machinery and equipment. In 2011 the sub-sector chemicals, pharmaceuticals, petroleum, minerals and rubber accounted for almost 20 % of gross value added of the total manufacturing sector, followed by cars and transport at 18 %. A pronounced positive correlation emerges when contrasting each manufacturing sub-sector's share of total German nominal investment in machinery and equipment with its share of total nominal goods exports. Unsurprisingly, the manufacturers of motor vehicles, chemicals electrical equipment, basic metals and other machinery and equipment are among those driving both aggregates.

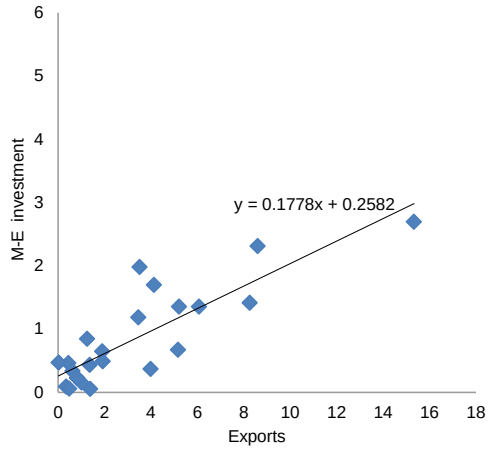
In a cross-country perspective, the difference between Germany and other Member States is driven mainly by the German automotive sector. While the positive association between machinery and equipment investment and exports is more pronounced in Germany than in Italy, Spain, the United Kingdom or than in comparison with the euro-area average, the difference narrows when excluding the manufacturing of motor vehicles from the data (Graph 2.3.6 and 2.3.7). This reflects the strong position of the German automotive sector and in particular the non-price competitiveness advantage that it enjoys relative to other Member States, including a specialisation in end products that is sustained by high levels of research & development investment. Moreover, the sub-sector 'motor vehicles and land vehicles' has benefited from growth in emerging market economies (Brazil, Russia, India and China) and the US.

Graph 2.3.6: **Share of total nominal goods exports and total nominal machinery and equipment investment (%, 2008–12 average) by manufacturing sub-sector**



Source: European Commission Calculations

Graph 2.3.7: **Share of total nominal goods exports and total nominal machinery and equipment investment (%, 2008–12 average) by manufacturing sub-sector, excl. motor vehicles sub-sector**



Source: European Commission Calculations

The central role of export-oriented manufacturing companies in driving machinery and equipment investment could reduce the scope for an investment-induced current account rebalancing. First, manufacturing plays a central role in quantitative terms in total machinery and equipment investment in Germany and the sector's investment behaviour is a main driver behind the overall cyclical machinery and equipment investment pattern. Second, machinery and equipment investment seems to be closely correlated with goods exports. Hence, given the current growth pattern of the German economy with a significant focus on exports, and with limited scope in the medium term for replacing exports with domestic demand in view of the shrinking German market, the current analysis supports the view that it is unlikely that a significant expansion in machinery and equipment investment would be observed without an associated increase in exports. This would offset part of the current account rebalancing that the high import content of machinery and equipment investment causes.

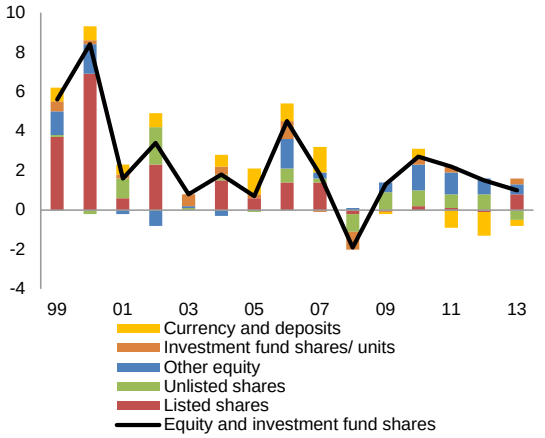
Understanding the nature of German corporates' financial acquisitions

The German non-financial corporates have maintained their excess savings position in the post-crisis period. Since the early 2000s the excess savings of Germany's non-financial corporate sector have been mainly used to acquire equity and investment fund shares ([13]). These financial investments have been very substantial, also in comparison with other EU Member States of similar size. A breakdown of equity and investment fund shares ([14]) shows that German non-financial corporates have primarily invested into listed and unlisted shares. During the crisis, however, other equity grew in importance, potentially reflecting the injection of capital into smaller supplier companies and/or the acquisition of privately-owned firms (Graph 2.3.8).

([13]) With ESA2010 the naming changed from unquoted/quoted to unlisted/listed shares, from shares and other equity to equity and investment fund shares (unit), from mutual fund shares to investment fund shares (unit).

([14]) Along the dimension (I) equity (listed shares, unlisted shares, other equity) and (II) investment fund shares or units (money market fund shares or units, non-money market fund shares/units), ESA2010.

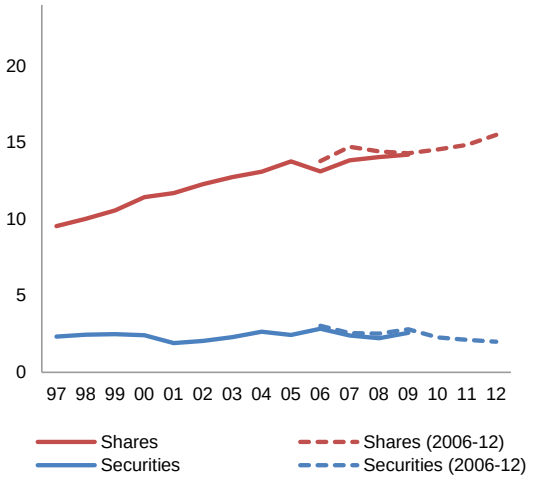
Graph 2.3.8: **Non-financial corporates' acquisition of shares and other equity (% of GDP)**



Source: European Commission Calculations

Firm-level balance sheet data for the period 1997-2012 provides evidence that strategy-related equity holdings in other firms are of increasing importance. This finding is based on extrapolated results based on firm-level annual balance sheet data from a large number of sectors ([15]). From a cross-sector perspective the importance of shares in other firms held with a view to supporting the holding firm's business activity by establishing a lasting relation with the other firms (shares or stakes, *Beteiligungen*) has increased from below 10 % in the mid-1990s to close to 16 % in 2012 (Graph 2.3.9). By contrast, the proportion of securities acquired without the motivation of a direct return on the investment made (securities, *Wertpapiere*) in total assets has been fluctuating around 2-3 % of total assets over the same period. Coinciding with the increase in German non-financial corporates' savings and acquisition of equity and investment fund shares, these developments give an indication that firms' increasing equity investments have been related to their corporate strategy, i.e. to support their business activity.

Graph 2.3.9: **Proportion of shares and securities in firms' total assets (in %)**



Source: Bundesbank

The size of strategic equity acquisition has increased over time, and is especially pronounced for manufacturing sub-sectors with a strong export orientation. Notably, the largest proportion of strategy-related shares is found in some of the export-oriented manufacturing sectors, such as chemicals and transport equipment, suggesting a likely link to their internationalisation strategy. Disaggregated stock data show heterogeneity across firms. The largest average proportion of stakes in total assets is found for the sectors 'manufacture of chemical and pharmaceutical products' and 'transport equipment' (around 29 %, 2006–11 average), and 'data processing, electrical and optical equipment' (25 %, 2006–11 average). For 2011 additional non-extrapolated data broken down by sector and size as well as legal form show that also in the sectors where shares are quantitatively most important (e.g. manufacturing of chemicals) developments are driven by large firms and, even among the latter group, developments are driven

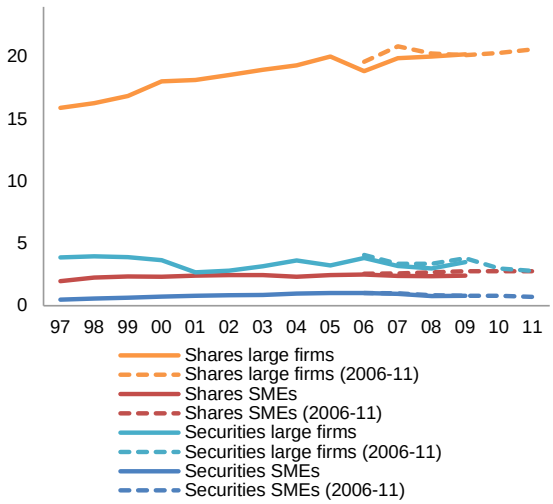
([15]) The Bundesbank data comprise firms from the following sectors: for 1997-2009, manufacturing, mining and quarrying, construction, wholesale and retail trade, transport excluding railway and business activities according to Destatis' 2003 'Klassifikation der Wirtschaftszweige' (WZ 2003, NACE Rev. 1.1); for 2006-2012, in addition to the above-mentioned sectors, gas, and water supply, sewerage, accommodation and food service activities, information and communication according to Destatis' 2008 'Klassifikation der Wirtschaftszweige' (WZ 2008, NACE Rev. 2). Deutsche Bundesbank (2013), 'Extrapolated results from financial statements of German enterprises from 2006 to 2012', Special Statistical Publication 5.

by incorporated firms ([16]). Holdings of securities only play a minor role in these sectors. These manufacturing sub-sectors are characterised by a strong export orientation; together, they accounted for close to one third of German exports. At the same time, their internationalisation strategy goes beyond pure reliance on exports. In particular, transport equipment includes the car manufacturing sector, which has been widely documented to be well-integrated in global value chains, making inter alia intensive use of foreign direct investment. The sector's high proportion of stakes is therefore presumably related to its internationalisation strategy. By contrast, very low average shares of stakes were found in typically domestically oriented service sectors such as construction and retail.

Equity holdings in other firms are especially high in large incorporated firms, which own quantitatively important holdings of shares for strategic reasons. Large firms drive the result of a large and increasing proportion of stakes in total assets (Graph 2.3.10). In a similar vein, strategy-related shares are more important for incorporated than unincorporated firms (Graph 2.3.11). On average incorporated firms' holdings of shares outstripped those of their unincorporated peers, but the data does not allow for a clear conclusion on whether this predominantly reflects a size effect. The importance of strategic investments for incorporated firms reflects the behaviour of stockholding companies (*Aktiengesellschaften*, *AG*). For *AGs*, typically the form of the largest, often internationally active enterprises, shares account for around 33 % of assets, whereas for smaller limited liability companies (*Gesellschaft mit beschränkter Haftung*, *GmbH*) it is only approximately 9 %.

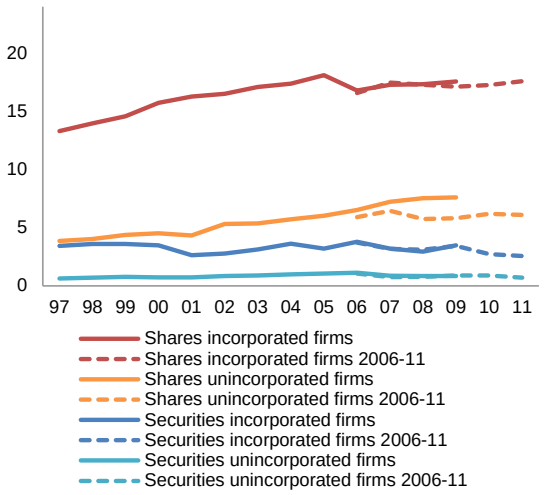
([16]) Deutsche Bundesbank (2014), 'Verhältniszahlen aus Jahresabschlüssen deutscher Unternehmen von 2010 bis 2011', Statistische Sonderveröffentlichung.

Graph 2.3.10: **Proportion of stakes and securities in firms' total assets (in %) — large firms vs SMEs**



Source: Bundesbank

Graph 2.3.11: **Proportion of stakes and securities in firms' total assets (in %) — incorporated vs unincorporated**



Source: Bundesbank

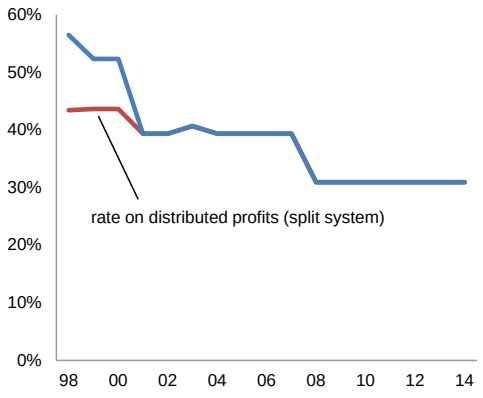
Complementary data showing important transactions and financial crossholdings among firms in German corporate groups of affiliated companies further supports the hypothesis of financial assets being held especially for business strategy reasons. The aggregate results show that financial assets as a proportion of total assets are indeed substantially lower based on large corporations' consolidated balance sheets

Box 2.3.2: Main features of the 2001 and 2008 tax reforms in Germany

In 2001, statutory corporate income tax (CIT) rates on retained and distributed profits were reduced and aligned to 25 % from 40 % and 30 %, respectively. The combined rate of CIT, the local trade tax (*Gewerbesteuer*) and the solidarity surcharge fell to around 39 %, from 56 % and 43 %, respectively (Graph 1) ([1]). In turn, the tax base was enlarged by tightened depreciation allowances for fixed assets. At shareholder level, the full imputation system was replaced by a half-income system (Graph 2). Under full imputation, dividends were taxed at the individual tax rate, and taxes paid at corporate level were credited against the tax liability of the shareholder in order to avoid double taxation. Under the half-income system, dividends were taxed at corporate level at the CIT rate. To avoid double taxation, inter-corporate dividends became tax exempt at shareholder (corporate) level. As relief for individual shareholders, only half of the dividends received were taxed at the ordinary personal income tax rate. The same tax regimes became applicable to capital gains realised upon disposal of shares in domestic and foreign corporations.

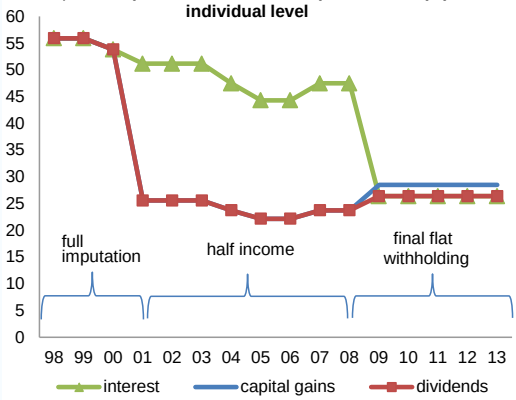
In 2008, the CIT rate was further reduced to 15 % and the uniform base rate of the local trade tax from 5 % to 3.5 %. An interest barrier was introduced to limit the deductibility of interest expenses for highly leveraged corporations. In turn, the tax base was broadened further by tightened depreciation rules and a larger local trade tax base. Also, the local trade tax was no longer deductible from its own base and the CIT base. All in all, including the solidarity surcharge, the German statutory corporate tax rate is high compared to other Member States. At individual level, a 25% flat rate withholding tax on capital income (interest, dividends and capital gains from the sale of shares) replaced the half-income system in 2009.

Graph 1: **Top federal tax rate on corporate income (%)**



Source: European Commission

Graph 2: **Top federal tax rate on capital income (%) - individual level**



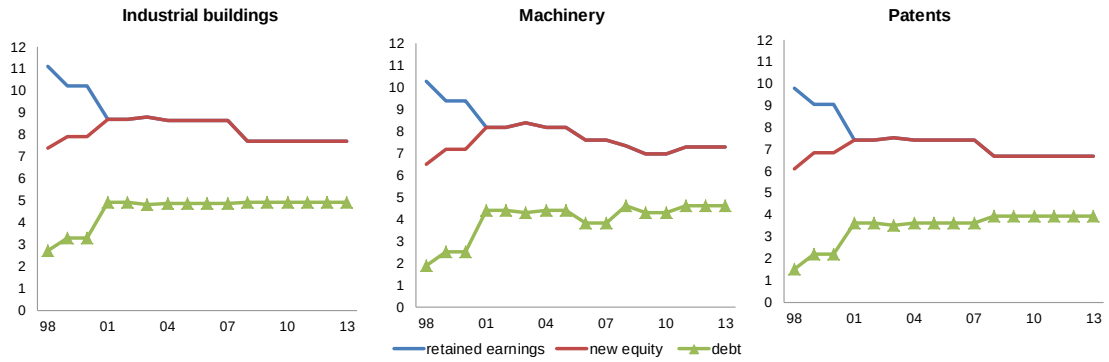
Source: European Commission

([1]) A relatively large part of corporate taxation is levied at municipal level through the local trade tax, which has a uniform base rate multiplied by a municipal factor of 428 % on average (and a minimum of 200 %).

(almost 13 %, end-2013) ([17]) than on average for the individual balance sheets of the same firms' (around 27 %). In addition to the data on shares in individual firms' balance sheets discussed above, this further supports the interpretation that financial assets are held by German non-financial corporates especially for strategic reasons. The aim could be to establish strategic ties with other firms that are linked to the international value chain of the company.

([17]) Deutsche Bundesbank (2014), 'Consolidated financial statement statistics as a contribution to the extended corporate analysis: approach and initial results', Monthly Report 07/2014.

Graph 2.3.12: **Marginal cost of additional domestic investment in different types of assets (in %, corporate level)**



Source: ZEW (2014), 'Effective tax levels using the Devereux/Griffith methodology'.

The impact of tax reforms on the incentives for corporate investment and the financing structure

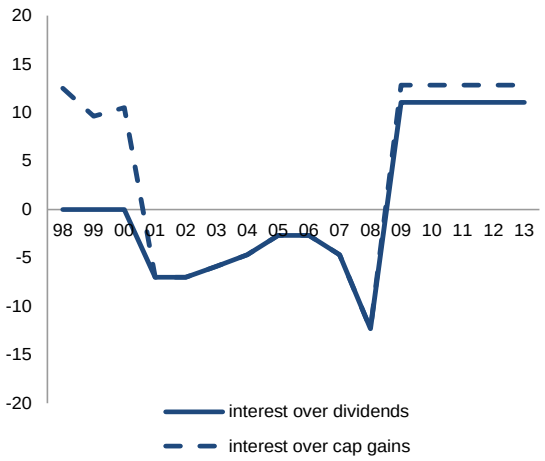
Corporate taxation in Germany was substantially reshaped by two major tax reforms of 2001 and 2008. At the corporate level, the corporate income tax rate was gradually reduced and in 2001 the split-rate on retained and distributed profits was eliminated. At the same time, the tax base was enlarged by tightened depreciation rules and an interest barrier limiting the tax deductibility of interest expenses. At the level of the shareholder, the full imputation system of corporate and personal income tax was ultimately converted into a final flat withholding tax on capital income (dividends, interest and capital gains) (Box 2.3.2).

As regards domestic investment, the two tax reforms have increased the relative attractiveness of retained earnings as a source of funding, but not eliminated the positive debt bias, which is high in international comparison. Graph 2.3.12 shows that prior to the 2001 reform the marginal cost of debt-financed investment ([18]) at the corporate level was much lower than of equity-financed investment, across all asset types considered (industrial buildings, machinery and patents as a proxy of intangible assets). The 'tax value' of interest expenditure was large due to the high corporate income tax rate against which the deduction can be claimed and the 'tax penalty' for equity particularly high for retained earnings. By lowering the statutory corporate income tax rate and limiting the deductibility of interest expenses, the two reforms in the 2000s have narrowed the gap between equity and debt financing, although it remains positive. This has created a more neutral tax incentive structure, which has made retained earnings as a source of funds for investments relatively more attractive, but still less attractive than debt finance. Econometric work with firm level data (ORBIS database) for German corporations over the period 1998-2013 has been carried out by the European Commission's Joint Research Center, focusing on the impact of the two tax reforms. First indications show that the effect of the tax reforms on excess savings of domestic operations is statistically significant, but of

([18]) Incentives for corporate investment under alternative sources of finance (retained earnings, new equity and debt) are analysed based on the tax-adjusted user cost of capital, which is an indicator of the marginal cost of investment calculated according to the Devereux and Griffith methodology. An investment project at a constant inflation rate of 2 % and a real interest rate of 5 % is assumed. The analysis accounts only for taxation at the corporate level, also given that in integrated capital markets and with diffused stock holdings it would be virtually impossible for the firm to account for taxation at the level of the individual investors. Differences in companies' financial structure or tax-minimising financial arrangements by multinational corporations are not taken into account (see Devereux, M. P. and R. Griffith, 2003, 'Evaluating tax policy for location decisions', International Tax and Public Finance, Vol. 10, pp. 107–126; the calculated indicators are available in ZEW, 2014, 'Effective tax levels using the Devereux/Griffith methodology', Report for DG TAXUD).

moderate magnitude, suggesting that tax changes are only one factor behind the observed trend in corporate savings ([19]).

Graph 2.3.13: **Marginal tax advantage of debt — individual level (in %)**



Source: ZEW (2014), 'Effective tax levels using the Devereux/Griffith methodology'.

The tax reforms have also changed the incentives for financing real investment abroad. One of the hypotheses for the dynamics observed in German corporate investment and net savings is that corporations might have had incentives, including from the tax system, to redirect investment from the domestic economy to foreign locations. A forward-looking indicator of the marginal cost of investment, adjusted to account for relevant tax provisions, allows assessing the tax-adjusted cost of an outbound investment compared to an investment undertaken domestically for various financing modes. The analysis shows that using retained earnings in a foreign subsidiary to fund domestic investment is more expensive than undertaking the same (marginal) investment abroad. This is in particular the case when the parent company raises debt domestically to co-finance the investment abroad. The same is the case for an investment financed by new equity issued by the subsidiary. At the same time, the gap between the marginal costs of alternative investment scenarios has generally been shrinking over time, thanks also to changes introduced by the 2001 and 2008 tax reforms.

Average tax rates point to a general trend after 2001 towards a lower tax burden on newly setup foreign operations, e.g. investment via a new subsidiary. The effective average tax rate captures the incentives for locating abroad a discrete rather than marginal investment. The investment project is supposed to have a 20 % pre-tax return. Among the main destinations for German foreign direct investment, falling effective average tax rates are found in Belgium, the Netherlands, the Czech Republic and the US, while tax incentives for investing in Luxembourg have remained constant for many years ([20]). This can be attributed to the tax reforms in Germany as well as concomitant changes to the tax systems in potential source countries, notably their lowering of headline corporate income tax rates.

At the level of the individual investor, debt has been tax-favoured relative to equity since 2009. Measured by the marginal tax advantage of debt, which factors in both corporate taxes and taxes on interest, dividends and capital gains at the individual level ([21]), debt was relative disadvantaged with respect to equity between 2001 and 2009 (Graph 2.3.13). This was driven by the fact that due to the half-income system personal taxes on interest income were much higher than those on dividends and capital gains. By ending the half-income system, debt has again been tax-favoured since 2009, since all types of capital income became subject to a final flat withholding tax. This implied a strong reduction of the personal tax rate on interest income, which tax-favoured

([19]) Barrios, S., D. Pontikakis and S. Riscado, (2015), 'The great swing in EU corporate savings: does tax policy matter?', European Commission, Joint Research Centre, forthcoming.

([20]) ZEW (2014), 'Effective tax levels using the Devereux/Griffith methodology', Report for DG TAXUD.

([21]) The 'marginal tax advantage of debt' is the difference between the after-tax value returned to the investor as interest and as equity income (dividends or realised capital gains). A positive indicator value signals that debt interest is the tax favoured way to return capital to investors, once taxation at both corporate and individual level has been factored in. The indicator also depends on the relative importance of external vs internal equity. Thus, the relevant dividend-pay-out ratio is assumed to take the extreme values of 0 (capital returned via share repurchase giving rise to a capital gain) and 1 (full distribution). Moreover, given that the top statutory personal income tax rates are used, the calculated value can be interpreted as a lower bound.

debt compared to equity. At the same time, retained earnings compared to dividends were tax-disadvantaged before 2001 since capital gains were fully subject to personal taxes while not benefiting from the full imputation credit granted to dividends. In addition, under the split system, undistributed profits at the corporate level were taxed at a higher corporate income tax rate than distributed profits. After the 2001 reform, taxes on dividends and capital gains were de facto aligned, resulting in a broadly neutral tax treatment between them (Box 2.3.2).

Changes in tax incentives have impacted on firms' capital structure and pay-out policies, giving some weight to the hypothesis that the tax arrangements have supported corporate deleveraging and made retained earnings more attractive as a source of funding. A statistically significant relationship between the tax advantage of debt and the debt ratio has been found for a panel of German companies, indicating that an increase in the tax advantage of debt is associated with a higher debt ratio ([22]). The overall reduction in the positive debt bias at corporate level could therefore in principle be one reason behind German corporate deleveraging. There is also empirical evidence that the interest barrier, which has not been captured by the indicators used in the analysis above, has led firms to lower their debt-to-assets ratios and their net interest expenditure. Supposedly opposing its originally intended effects, national firms also adjusted their capital structure, and external rather than internal debt (i.e. intra-group lending) was reduced ([23]). At the same time, the tax favouring of debt at an individual level following the 2009 tax reform does not appear to have had a major impact on the corporate debt-to-asset ratio. Changes to the tax system have also created an incentive for accumulating reserves out of earnings as a source of funds. Asymmetric tax treatment of dividends and capital gains is one factor determining the way shareholders are remunerated. In the German case, the abolishment of the tax advantage of dividends and the lowering of the corporate income tax rate — which has correspondingly reduced the tax value of deductible interest — has increased the relative attractiveness of retained earnings as a source of funding for possible real investment by corporations. Before the 2001 reform, dividend payments were regularly preferred to repurchases of shares, whereas the reform appears to have reduced both the propensity to pay dividends as well as their size ([24]). Furthermore, the switch from the full imputation to the half-income system by the 2001 tax reform may have contributed to a reduction in share ownership diffusion ([25]).

([22]) Accordingly, a 10 % increase in the tax advantage of debt is associated with a 1.5 % increase in the debt ratio (Hartmann-Wendels, T., I. Stein and A. Stöter, 2012, 'Tax incentives and capital structure choice: evidence from Germany', Deutsche Bundesbank Discussion Paper, No 18/2012).

([23]) Dreßler, D. and U. Scheuering (2012), 'Empirical evaluation of interest barrier effects', ZEW Discussion papers, No 12-046. .

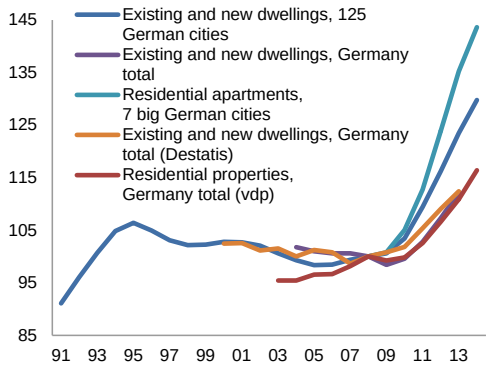
([24]) Kaserer, C., M. S. Rapp and O. Trinchera (2012), 'Payout policy and corporate insiders: evidence from the German Tax Reduction Act 2001', Zeitschrift für Betriebswirtschaft, Vol. 82, ZfB-Special Issue 5/2012, pp. 85-114.

([25]) Rünger, S. (2010), 'The Effect of Germany's Tax Reform Act 2001 on ownership diffusion of German corporations', CESIfo Conference on Corporate Taxes and Corporate Governance.

Box 2.3.3: Price developments and financing conditions in the German housing market

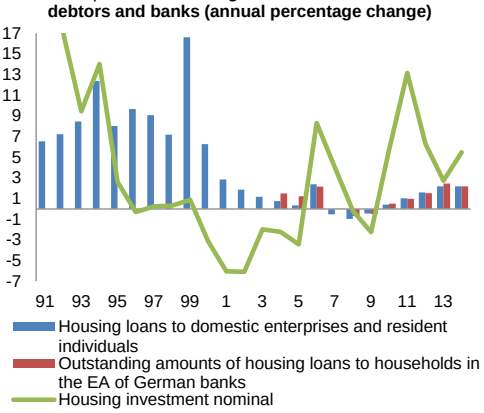
House prices have continued to rise considerably in 2013 and 2014. At an aggregate level house price developments are not yet a cause for concern, but overvaluation of dwellings in specific urban areas may have heightened. As pointed out in last year's in-depth review, house price developments in Germany are a clear outlier in an international comparison. Opposing developments have continued in recent years with significant upward dynamics in property prices since 2010, especially in large cities. Nominal house prices in 125 large cities increased by around 6 % on average in 2013, while economy-wide prices rose by about 3 to 4½ %. This is largely the same pace as in 2012. Available house prices for 2014 suggest that momentum has somewhat slowed in large cities (around 5 % on average) ([1]), while this seems not to be the case for Germany as a whole (Graph 1). On an aggregate level, real house price developments in Germany can generally be explained by fundamental factors ([2]). Nonetheless, estimates point to an overvaluation of dwellings of between 10 % and 20 % in urban areas, with residential apartments in large cities showing the strongest overvaluations ([3]) ([4]). Low interest rates and investor's search for yields could contribute to an emergence of house price bubbles, which entails potential risks for financial stability ([5]).

Graph 1: **Nominal house prices (index 2008=100)**



Source : Bundesbank, Destatis, vdp

Graph 2: **Outstanding amounts of German debtors and banks (annual percentage change)**



Source: Bundesbank, Destatis

Residential investment has lost momentum, despite seemingly favourable conditions. Rising house prices signal that housing demand exceeds the supply of dwellings. Residential investment growth picked up strongly in 2010 and 2011 under the impact of a considerable increase in net migration, low interest rates, favourable labour market developments and its status as a safe investment. In recent quarters, however, growth dynamics have significantly slowed. Despite low and declining interest rates for new housing loans, real housing investment has virtually stalled for a year since the third quarter of 2013. While net migration is still comparatively high, the rising share of refugees and applicants for asylum could partly explain lower

([1]) Prices for residential apartments in seven big cities slowed to around 6% in 2014 following increases by 9 % in 2013 and 10 % in 2012 (Graph 1).

([2]) Updated analysis up to the year 2013 as explained in box 3.4 'House prices in Germany' in European Commission (2014), 'Macroeconomic Imbalances — Germany 2014', European Economy, Occasional Papers, No 174; with replacement of population in the cointegration regression by external and internal net migration.

([3]) Deutsche Bundesbank (2015), 'Die Preise für Wohnimmobilien in Deutschland im Jahr 2014', Monthly Report 02/2015.

([4]) A geographical distribution of property price developments is provided and explained in Deutsche Bundesbank (2013), 'The determinants and regional dependencies of house price increases since 2010', Monthly Report 10/2013; and Kholodilin, K., C. Michelsen and D. Ulbricht (2014), 'Stark steigende Immobilienpreise in Deutschland – aber keine gesamtwirtschaftlich riskante Spekulationsblase', DIW Wochenbericht 47/2014.

([5]) Estimates suggest that residential property prices increased by 3½ % between 2009 and 2014 due to the decline in interest rates (Deutsche Bundesbank, 2015, 'Die Preise für Wohnimmobilien in Deutschland im Jahr 2014', Monthly Report 02/2015).

(Continued on the next page)

Box (continued)

demand for regular dwellings ([6]). However, against a background of property prices continuing to rise, the question arises of whether the adjustment process of reconciling housing demand and supply has already been largely accomplished or whether other factors are hampering housing investment.

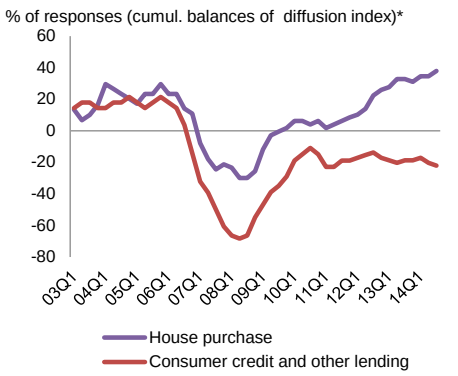
Table 1: **Features of property markets in an international comparison**

	Owner occupation rate (different years 2008-2011) [a]	Out-standing residential loans to GDP ratio in 2012 [a]	Outstanding residential debt to disposable income of households ratio in 2012 [a]	Loan-to-value (LTV) ratio		Share of loans with floating rate in 2007 [b]	Tax incentives for owner-occupied housing 2011 / 2012-2013 [d]	Incentives for risky debt-taking from prudential regulation and lending practices [d]			Regu-lation of rent control [d]
				2007 [c]	*recent years* [a]			*Typical maturity*	*Prevailing interest rate type*	*Typical LTV*	
Germany	45.8	44.8	66.2	70	71	15	Medium / Medium	Medium	Low	Medium	High
France	58.0	43.0	63.0	n.a.	n.a.	15	None / None	Medium	Low	Medium	Medium
Italy	80.0	23.3	33.9	n.a.	67	47	Medium / Low	Low	Medium	Low	Low
Austria	57.4	27.7	44.3	n.a.	n.a.	61	Medium / Medium	Medium	Medium	Medium	High
Irland	70.0	77.5	140.7	83	n.a.	67	Medium / Medium	High	High	High	Medium
Spain	82.0	61.1	94.7	73	58	91	Medium / None	Medium	High	Medium	Medium
Netherlands	55.5	108.4	227.4	101	70	18	High / High	Medium	Low	High	Medium
UK	64.7	81.0	119.1	92	75	n.a.	Low / Low	n.a.	High	Medium	Low
USA	66.1	68.8	86.9	80	n.a.	47	n.a.	n.a.	n.a.	n.a.	n.a

a) European Mortgage Federation (2013), Hypostat 2013. b) Sachverständigenrat (2013), 'Gegen eine rückwärtsgewandte Wirtschaftspolitik', Jahresgutachten 2013/14. c) Dreger C. and K. Kholodilin (2013), 'Immobilienmärkte im internationalen Vergleich', DIW Wochenbericht 17/2013. d) European Commission (2014), 'Institutional features and regulation of housing and mortgage markets', Quarterly Report on the Euro Area, Vol. 13 No 2.

The considerable rebound of residential investment that has taken place since 2010 was accompanied by only muted growth in housing loans. During the 1990s, housing loans surged in line with the boom in residential investment. Total loans to domestic individuals and enterprises as a percentage of GDP increased and peaked in the early 2000s at 48 %. The same pattern is not present in the period from 2010. Growth in housing loans to domestic enterprises and resident individuals accelerated slowly from 0.4 % in 2010 to a moderate 2.2 % in 2013. Growth in housing loans has not accelerated further and remained stable in 2014 (Graph 2). Correspondingly, total housing loans to domestic individuals and enterprises as a percentage of GDP continued to decline from around 44 % in 2009 to 40 % in 2014.

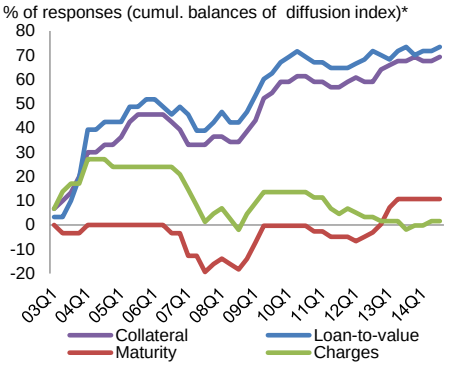
Graph 3: **Credit standards for loans to households**



** rise/decline implies tightening/easing*

Source: Bundesbank

Graph 4: **Credit terms and conditions for housing loans to households**



** rise/decline implies tightening/easing*

Source: Bundesbank

([6]) Deutsche Bundesbank (2014), 'Outlook for the German economy — macroeconomic projections for 2015 and 2016', Monthly Report 12/2014.

(Continued on the next page)

Box (continued)

Credit standards for loans to households have tightened since the financial crises and this might have lowered the value of housing loans granted. Weak credit growth along with dynamic investment growth indicates that households have mainly used their own resources to finance property purchases in recent years. In this respect, the low expected return on alternative assets — linked to the low level of interest rates — and the search for safe investments may have played a role. According to the Bank Lending Survey, credit standards have showed a clear and ongoing tendency towards tightening since 2009, while standards for consumer credit have remained broadly unchanged since 2011. In particular, banks have increased collateral requirements and demanded higher self-funding (see Graphs 3 and 4). The overall increase in credit standards has only partly been offset by the reduction of bank's non-interest rate charges. The tightening of credit standards since 2009 has most likely been triggered, or at least amplified, by the fact that mortgages and related investment products in markets outside Germany played an important destabilising role in the international financial crises 2008/2009. In this respect, it must be taken into account that financing conditions in Germany were already rather conservative from an international perspective at that time.

The features of the German property market reflect distinct risk aversion among market participants. Some scope exists to remove disincentives to house ownership and rental investment. In Germany, the low property ownership rate of around 46 % goes along with a comparatively moderate degree of residential indebtedness of households (66 % of disposable income and 45 % of GDP, respectively) which reduces risks for financial stability. However the question arises of whether there are certain disincentives which discourage households from buying their own properties. In Germany, housing loans are largely based on fixed interest rates. The share of loans with floating rates is very low in international terms. For instance, over 70 % of newly issued loans have an interest rate lock-in of more than five years ([7]). In a high interest rate environment, this may discourage households from incurring debt. On the other hand, this practice reduces the risk of follow-up financing, which is favourable from a financial stability point of view. Based on an international comparison, the European Commission (2014) concluded that the prevailing interest type provides low incentives for risky debt-taking in Germany ([8]).

Households tend to rent dwellings instead of purchasing them, which allows regional flexibility on the labour market. However, the Commission's international comparison found that in Germany there is a comparatively high degree of regulation of rent control. For instance, regulations that restrict the possibility of rent increases limit the profitability of and, hence, the incentives for property investment. The impairment of the reconciliation of housing supply and demand may eventually be reflected in rising house prices and lower demand for housing loans. The new *Mietpreisbremse* property law sets a ceiling for rent increases for existing dwellings in selected regions. Although landlords are likely to frontload expected rent increases into the initial level of rents for new dwellings, the restriction of future rent increases may hamper housing investment. Disincentives to invest in property could also arise due to the real estate transfer tax, which has continuously increased since 2006, and due to the comparatively poor tax deductibility of buildings costs for landlords ([9]). In contrast to these restrictive features of the German housing market, the European Commission (2014) concluded that in Germany neither the loan-to-value (LTV) ratio nor tax incentives for owner-occupied housing are outstanding. Before the financial crises, equity financing was rather high in international terms. The LTV ratio was around 70 % on average, while in the Netherlands, for instance, it was possible to borrow the full purchasing price. The financial crises proved, however, that high outstanding residential loans are a significant risk, and banks in countries with a high LTV ratio meanwhile markedly increased the requirement for equity financing.

([7]) Deutsche Bundesbank (2012), 'German housing market gaining momentum', Financial Stability Review 2012.
([8]) European Commission (2014), 'Institutional features and regulation of housing and mortgage markets', Quarterly Report on the Euro Area, Vol. 13 No 2.
([9]) See also Sachverständigenrat (2013), 'Gegen eine rückwärtsgewandte Wirtschaftspolitik', Jahresgutachten 2013/14.

2.4. EURO AREA SPILLOVERS

Trade and financial linkages between Germany and other EU countries

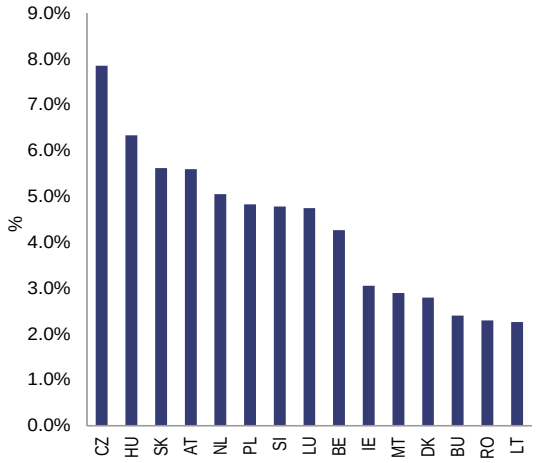
The German domestic market represents an important export destination for several other EU Member States, and in particular for smaller neighbouring countries. German-bound exports are of major significance to Hungary and the neighbouring countries of Czech Republic, the Netherlands, Austria and Luxembourg, accounting for between 15–25 % of their respective GDPs. For Belgium and Poland, Germany also represents an important market with exports amounting to over 10 % of national GDP, while in Bulgaria, Croatia and Denmark the figure is somewhat lower but still significant at 6–8 %. The larger EU Member States — France, Italy, the United Kingdom and Spain — all show export linkages in the range of 3–4 % of GDP.

In terms of inward trade spillovers, German exports still depend on the EU market though the rest of the world has become progressively more important. In 2013, total exports of goods and services represented approximately 46 % of German GDP. German exporters depend on a set of large markets across the world, most importantly France (4.4 % of German GDP) and the United States (4.3 %), followed by the United Kingdom, the Netherlands, China, Switzerland, Austria and Italy, with figures ranging between 2–3.5 % of GDP. Other important markets include neighbouring Belgium, Poland and the Czech Republic, as well as Spain (all above 1 % of German GDP).

When measured in exported value added ([26]), exports to Germany remain significant for many geographically-close EU countries, reflecting integration into global value chains. In value-added terms, exports to Germany are most important for the Czech Republic and Hungary, while for seven other EU Member States ([27]) exports — in terms of value added — account for over 4 % of domestic GDP. In many cases, this reflects the upstream position of these countries in global value chains involving German firms (Graph 2.4.1).

In exported value added, German exports are most significant to distant large economies. The main destinations of German exports in value added terms are the United States, China and France, confirming the picture of increasing diversification in Germany's external trade dependence (Graph 2.4.2).

Graph 2.4.1: **Exports to Germany in value added as a percentage of exporters' GDP (in %, 2011; top 15 EU countries)**

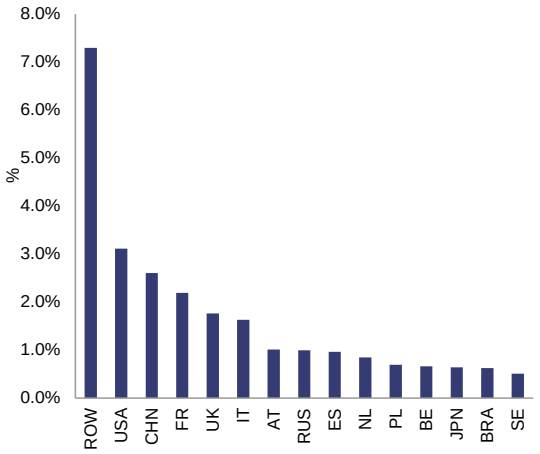


Source: World Input-Output database (2011). International Monetary Fund, World Economic Outlook database. European Commission. based on the methodology of Koopman, Wang and Wei (2014), 'Tracing Value-Added and Double Counting in Gross Exports', American Economic Review 104:2, pp. 459-494.

([26]) Exports in value added exclude the value of imports embedded in gross exports. Exports in value added refer to the value of exports that is added by the respective country.

([27]) Slovakia, Austria, the Netherlands, Poland, Slovenia, Luxembourg, Belgium, United Kingdom.

Graph 2.4.2: **German exports in value added as a percentage of German GDP (in %, 2011)**



Source: World Input-Output database (2011). International Monetary Fund, World Economic Outlook database. European Commission based on the methodology of Koopman, Wang and Wei (2014), 'Tracing Value-Added and Double Counting in Gross Exports', American Economic Review 104:2, pp. 459-494. ROW denotes the residual trading partner from a dataset comprising 39 trading partners.

Financial integration between Germany and other EU countries

Other EU Member States have large financial and banking exposures to Germany creating the possibility for significant outward spillovers. In 2012, financial interlinkages were strongest with Ireland and the Netherlands, where gross financial exposures to Germany via equity and debt instruments accounted for 95 % and 76 % of domestic GDP, respectively. Nine additional Member States, including the United Kingdom and France ([28]), registered exposures ranging from 15–35 % of national GDP. As regards the exposures of the banking sectors of EU Member States to Germany, the Netherlands, followed by Sweden, Italy and Austria recorded the largest exposures to Germany.

Germany is also a major funding partner and investor in several EU Member States. According to 2012 data, Germany is a major funding partner and investor, which holds domestic large gross financial stakes in Malta, Ireland, the Netherlands and Austria. For seven other Member States, including the United Kingdom, France and Spain ([29]), German financial assets corresponded to approximately 20–35 % of domestic GDP (Graph 2.4.3) ([30]). Funding from the German banking sector remains important for Malta and Cyprus as well as for the economies of Ireland, Austria and the United Kingdom ([31]). A large set of other Member States also benefit significantly from German bank funding ([32]).

([28]) As well as Austria, Denmark, Cyprus, Finland, Belgium, Malta, Sweden.

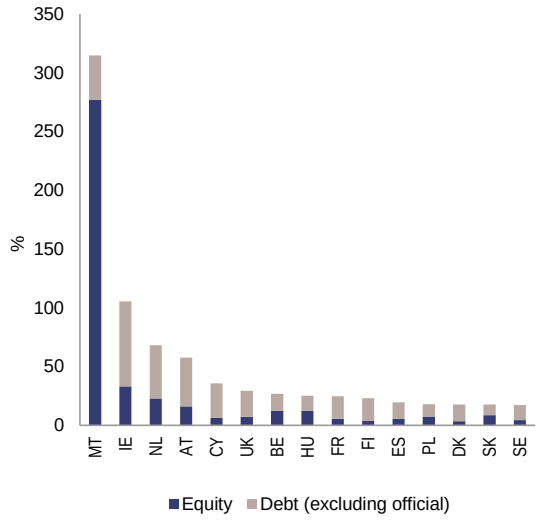
([29]) Along with Cyprus, Belgium, Hungary and Finland.

([30]) Debt excluding (official) represents other investment (e.g., loans) and portfolio investment in debt securities, minus official amounts linked to TARGET2, the European Central Bank's Securities Markets Programme and the euro area financial assistance programmes.

([31]) Data on bank claims cover in particular the banking sector, data on gross financial exposures cover the claims of the entire economy .The two data sources may not be entirely consistent as i) gross financial exposures are based on 2012 data while bank claims are based on Q2-2014 data, ii) countries in the sample differ across datasets and iii) data on bank claims is based on the country of ultimate risk (the country where the guarantor of a claim resides) and includes claims of banks' own foreign affiliates, while gross financial exposures are based on a locational notion of counterpart that is consistent with balance of payments statistics.

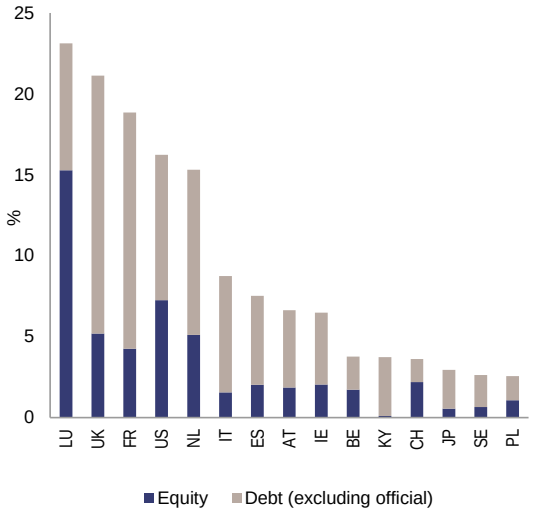
([32]) France, Italy, The Netherlands, Poland, Portugal, Spain, Finland, Hungary, Belgium and Denmark.

Graph 2.4.3: **Gross foreign assets of Germany as a percentage of counterpart GDP (in %, top 15 EU countries, excluding Luxembourg)**



Source: European Commission based on Hobza and Zeugner (2014), 'Current account and financial flows in the euro area', Journal of International Money and Finance 48, pp. 291-313.

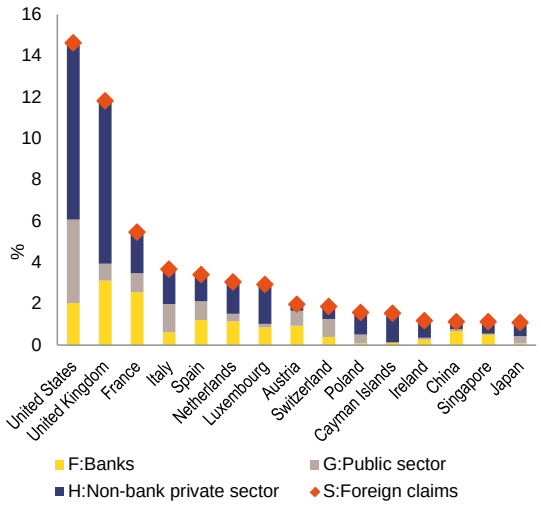
Graph 2.4.4: **Gross foreign assets as a percentage of German GDP (in %)**



Source: European Commission based on Hobza and Zeugner (2014), 'Current account and financial flows in the euro area', Journal of International Money and Finance 48, pp. 291-313.

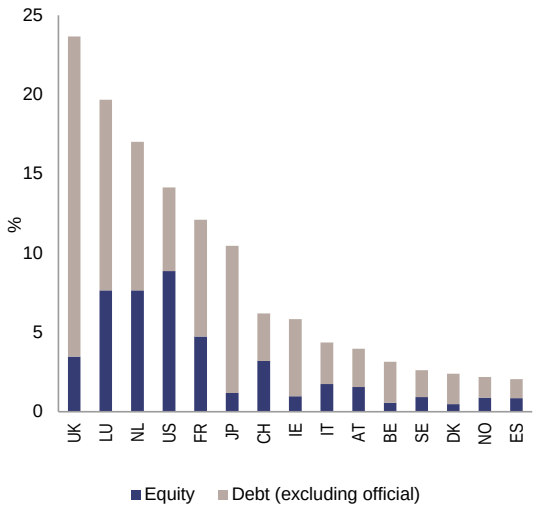
In terms of inward spillovers, Germany has the highest financial exposure towards the main financial centres of the EU and the United States. Luxembourg, the United Kingdom, France and the Netherlands are the countries where Germany's financial exposure is largest. Exposures to Italy, Spain, Austria and Ireland are also sizeable (Graph 2.4.4). Foreign claims of the German banking sector are mostly exposed to the United States and the United Kingdom, a large proportion of which is invested in the non-bank private sector. France, Italy, Spain, the Netherlands and Luxembourg follow (Graph 2.4.5). The funding dependence of the German economy is largely concentrated in the same set of countries (Graph 2.4.6).

Graph 2.4.5: **Foreign claims of German banks as a percentage of German GDP (in %, by sector)**



Source: European Commission based on Bank of International Settlements (2014), consolidated banking statistics (ultimate risk basis, Q2-2014). International Monetary Fund, World Economic Outlook database.

Graph 2.4.6: **Gross foreign liabilities as a percentage of German GDP (in %)**



Source: European Commission based on Bank of International Settlements (2014), consolidated banking statistics (ultimate risk basis, Q2-2014). International Monetary Fund, World Economic Outlook database.

Economic spillovers and euro area macroeconomic policy

Reinvigorating Germany's aggregate demand would raise growth domestically and have the additional benefit of supporting the euro area recovery. Coordinating the policy stance at euro area level is of major importance to avert the risk of halting the economic upswing and the rebalancing process. It is in this context that economic conditions in Germany and their impact on other economies of the euro area are of particular importance. The persistently high current account surplus in Germany partly reflects remaining weaknesses in domestic demand. This implies that there is scope to strengthen Germany's performance and at the same time contribute to foster growth dynamics and tackle downwards price pressures in the euro area as a whole. This appears particularly pertinent in light of the interplay between unprecedented monetary policy action, an appropriate fiscal policy stance and an ambitious structural reform agenda. Moreover, with Germany representing a large part of the euro area's growing current account surplus between 2008-14, it holds a central position in ensuring that the euro area contributes to the G20 objective of strong and sustainable global growth over the medium term, including the pledge to take policy action to achieve a lasting reduction in global imbalances.

Germany and the euro area would mutually benefit from a more symmetric adjustment. With a goods export share of around 40 % to the euro area and about 60 % to the EU, economic conditions in other Member States play a key role for Germany. Since external demand markedly determines German firm's investment and employment decisions, bringing an end to the demand contraction in other EU Member States would help strengthening their import demand and thereby boost German companies' confidence and longer-term sales expectations. It is therefore in the interest of the good functioning of both the German and the euro area economies to ensure that the adjustment becomes more symmetric than what has been observed in the past, further supporting the ongoing rebalancing of trade flows within the euro area (see Section 2.1). Given Germany's strong production chain linkages with its euro area partners, German import demand considerably impacts other Member States' economic situation. Hence, providing the conditions for continued robust private consumption growth and addressing the remaining weaknesses in private and public investment would be beneficial to Germany in its own right and would in addition strengthen import dynamics, also due to the relatively high import content of investment goods.

Euro area partners directly benefit from Germany's success in trade and share the risks of its reliance on external demand to drive growth. Euro area partners that are integrated in German firms' production chain benefit from their strong international price and non-price competitiveness. Almost half of German exports consist of imported intermediate goods of which around half of them are provided by other euro area Member States. Preserving Germany's international competitiveness is therefore to the benefit of the EU's economy as a whole. At the same time, the strong dependence of the German economy on external conditions combined with the rather weak trend growth adversely affect economic prospects in the euro area. Just as euro area partners benefit from the trade prowess of Germany, they likewise suffer from the risks associated with the heavy reliance on external demand to drive growth. As shown by Germany's

low trend growth, securing Germany's future economic potential depends on broadening its growth model, tapping more into domestic sources of growth. The current export-led growth model exposes Germany and its euro area partners to volatility in economic activity, which makes it more difficult for euro area partners to adjust production capacities and employment plans to meet fluctuating German import demand. Increasing the resilience of the German economy to external shocks by attaining over time a more balanced growth pattern is therefore in the common interest.

Policy settings as regards structural reform and fiscal policy are of direct importance for both Germany and its partners. Investment decisions in the private and public sector in Germany have a pronounced euro area dimension. While it is in the interest of the German economy itself to raise potential growth, this would also benefit the euro are as a whole since Germany's weak potential growth implies that also euro area partners are likely to move along a flatter long-term growth path. Private and public investment that raises productivity and seizes the economic efficiency gains embedded in new capital would shift the German economy to a more dynamic growth path. This would have both a lasting positive effect on potential growth in the euro area and in the shorter term benefit euro area partners via the provision of investment goods to Germany. These positive spillovers would support the recovery of the euro area economy, which in turn would be to the benefit of the German economy itself given the sizeable share of the EU and euro area in German exports. Furthermore, improving the euro area economic prospects would help to re-channel a larger part of Germany's excess savings towards investment in the internal market. Combined with investing more in Germany itself, these mutually reinforcing investments would increase the resilience of the German economy to external shocks. It would also reduce the risk of again experiencing large valuation losses of assets invested abroad, which could cause adverse wealth effects for German households and firms.

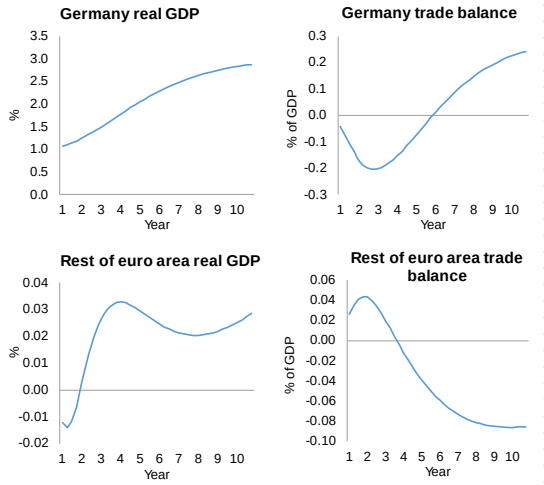
Higher public investment would strengthen growth in Germany and provide a considerable positive spillover on the euro area. Public sector investment can play an important role in addressing Germany's overarching challenge of strengthening domestic demand and the economy's growth potential. It is a tool available to policy makers, which has the potential to impact productivity growth in the economy directly but also indirectly by improving conditions for private investment. As analysed in Section 2.3, Germany's currently favourable fiscal position provides scope for additional public sector investment, in full respect of European and national budget rules. Current projections indicate scope annually of up to 1 % of GDP under Germany's medium-term budgetary objective and of up to ½ % of GDP under its national 'debt brake'. Therefore, even under the more constraining national 'debt brake', fiscal space exists for a timebound boost of public investment. As previously analysed by the European Commission ([33]), a positive boost to German public investment has a sizable effect on German GDP that grows over time. Private consumption increases, and German net exports fall during the first 4 years after the policy action. Initially, private investment falls, but in the medium terms private investment rises, as the rise in government capital raises the productivity of private production capital. GDP in the rest of the euro area falls in the very short term, but rises subsequently (see Graph 2.4.7). In the model simulation, the response of economic activity to a public investment boost is muted by a rise in the monetary policy rate. When monetary policy – as under the current circumstances - is constrained by the zero lower bound, the impact on economic activity is larger for Germany and growth in the rest of the euro area benefits already on impact. This assessment is supported by an economic analysis by the International Monetary Fund ([34]), which suggests that a four-year increase in public investment by ½ % of GDP would yield a persistent increase in Germany's real GDP of ¾ %. In the case of accommodative monetary policy, it would also raise growth in the euro area by $^1/_3$ %, with substantial positive effects on peripheral countries. In addition to the positive economic

([33]) Kollmann, R., M. Ratto, W. Roeger, J. in't Veld and L. Vogel (2014), 'What drives the German current account? And how does it affect other EU Member States?', European Economy, Economic Papers 516.

([34]) Elekdag, S. and D. Muir (2014), 'Das Public Kapital: How Much Would Higher German Public Investment Help Germany and the Euro Area?', IMF Working Paper, No 14/227.

impact on Germany and the euro area as a whole, decisive policy action to increase public investment in Germany would strengthen confidence in the policy stance at the euro area level, thereby also facilitating the implementation of much-needed structural reforms.

Graph 2.4.7: **Positive shock to German government investment**



(1)Dynamic responses to a positive 1% of GDP innovation to German government investment. Trade balance responses are shown as differences from unshocked path normalized by steady state domestic GDP; responses of other variables shown as relative % deviations from unshocked paths.
Source: European Commission Calculations

3. OTHER STRUCTURAL ISSUES

3.1. TAXATION, LONG-TERM SUSTAINABILITY AND FISCAL FRAMEWORK

Tax system

There has been no progress in shifting the tax burden towards more growth-friendly revenue sources. Revenues continue to rely strongly on labour taxation (22.1 % of GDP in 2012 vs 20 % in the EU-28) ([35]), which also implies a shrinking revenue base in view of demographic trends. The share of consumption taxes as a proportion of total tax revenues is below the EU average (27.5 % of total revenue vs 28.5 % in the EU-28). Moreover, the share of potential value added tax revenue lost due to the application of the reduced rate and exemptions is increasing ([36]). The federal government commissioned a study on the fiscal impact of the reduced value added tax rate (currently 7 %) ([37]), but this has not resulted in specific measures. The revenues from *recurrent* property taxes remain comparatively low (0.5 % of GDP in 2012 vs 1.5 % in the EU-28) and the valuation of property is outdated, dating back to market values of 1963/64 in the western federal states and 1935 in the eastern federal states. Although a reform of the municipal real-estate tax (*Grundsteuer*) is part of the coalition agreement and announced in the 2014 National Reform Programme, no concrete action has been taken so far. Instead of relying more on less distortive recurrent property taxes, the trend of increasing real estate *transfer* taxes has continued. After Berlin, Lower Saxony, Schleswig-Holstein and Bremen in January 2014, also Hessen, from August 2014, and Saarland, from January 2015, have increased the real estate transfer tax. The level of environmental taxes compared to total taxes is relatively low in Germany (5.6 % in Germany in 2012 vs 6.1 % in the EU-28), although this does not include the surcharge paid by electricity consumers to finance the expansion of renewable energy (see Section 2.2), which is not considered a tax. No measures have been taken to broaden the tax base by reducing environmentally harmful tax expenditure, such as energy tax reductions and exemptions or the favourable taxation of company cars.

There have been limited efforts to reduce the burden of high labour taxes and, in particular, of social contributions. The tax wedge for low-wage earners remains among the highest in the EU (see Section 2.2). Recently, the federal government slightly increased the minimum income tax allowance to align it with the subsistence level as is legally required every two years. It has also announced plans to reduce the impact of fiscal drag in the current legislative period. In 2015, the overall contributions rate hardly changed. The reduction in the pension contribution rate by 0.2 pp. was more than offset by an increase of 0.3 pp. in the contribution rate for long-term care. Moreover, as described above, the Act to enhance financial structures and quality in the statutory health insurance on the one hand reduced the contribution rate for employees from 8.2 % to 7.3 %. On the other hand, it allows individual health insurers to raise extra, income-based premiums from employees. This was expected to stimulate competition and result in lower contributions. Yet, it appears that for many insured people the total contribution rate has remained unchanged. Future cost increases in healthcare could again put pressure on the tax wedge as the new premiums will continue to be income-based. Furthermore, the 2014 pension reform is projected to lead to stronger increases in the contribution rate in the long-term.

No significant measures have been taken to address the significant disincentives to labour participation for second earners. Apart from still insufficient availability of full-time childcare facilities and all-day schools (see Section 3.3), fiscal disincentives due to the joint taxation of income for married couples (*Ehegattensplitting*) and free health insurance coverage for non-working spouses are likely to be an important factor discouraging second earners from taking up a job or increasing the number of hours worked. This contributes to a low proportion of women working full-time and one of the lowest numbers of hours worked on average by women in the EU, despite a high female employment rate. In 2013, a

([35]) European Commission (2014), 'Taxation trends in the European Union — Data for the EU Member States, Iceland and Norway, Luxembourg'.

([36]) This so-called value added tax policy gap is estimated to have increased from 37 % in 2000-2011 to 41 % in 2009-2012 (CASE, 2014, '2012 Update Report to the Study to quantify and analyse the value added tax Gap in the EU-27 Member States').

([37]) RWI (2013), 'Analyse der fiskalischen Auswirkungen des ermäßigten Umsatzsteuersatzes in Deutschland unter Verwendung eines Simulationsmodells sowie der Wachstumseffekte von Straffungskonzepten', Endbericht, Oktober 2013.

second earner increasing his/her income from 33 % to 67 % of the average wage lost 45.6 % of the extra earnings by taxation, compared to 35.8 % on average in the EU ([38]). The exemption of mini-jobs from personal income tax and in many cases from all employee social contributions also discourages workers from moving into jobs with earnings above the mini-job threshold of EUR 450 per month. This disincentive is in many cases even stronger for spouses subject to joint income taxation.

The local trade tax (*Gewerbesteuer*) has not been reviewed. The local trade tax adds to the corporate income tax and the solidarity surcharge and contributes to a relatively high overall tax burden on German corporations of 30.2 % in 2014 vs 22.9 % on average in the EU-28. Moreover, inefficiencies arise from the local trade tax due to the inclusion of non-profit elements in the tax base.

There has been no progress in improving the tax administration. The administrative burden of taxation for companies and the cost of tax collection remain comparatively high in Germany, while electronic filing in personal and corporate income tax is less used than on average in the EU ([39]). Disincentives for tax collection may arise from the current allocation of tax revenues and the design of the horizontal fiscal equalisation system (*Länderfinanzausgleich*), given that significant parts of additional tax revenues resulting from tax inspections are redistributed to other federal states. An enhanced cooperation between the federal states and in some areas possibly by centralisation, including by strengthening the role of the Federal Central Tax Office (*Bundeszentralamt für Steuern*), as envisaged by the coalition agreement of the current federal government, would be benefitial for the tax administration. The federal government and the federal state governments adopted a joint discussion paper in November 2014 on the modernisation of tax administration, which aims to give fresh impetus to a uniform tax administration software.

([38]) European Commission, OECD (2015), 'Tax and benefits indicators database'.

([39]) PwC and WorldBank (2014), 'Paying Taxes 2015: The global picture'; OECD (2013), 'Tax administration 2013, Comparative information on OECD and other advanced and emerging economies', OECD publishing..

Long-term sustainability

Overall, Germany has made some progress in enhancing the cost-effectiveness of public spending on healthcare and long-term care. At 8.4 % of GDP in 2012, the rate of public spending on healthcare in Germany is one of the highest in the EU, although it has been on a downward trend since 2009. Public expenditure on long-term care is close to the EU-28 average and its growth rate has been relatively low in recent years. Despite high spending and above-average costs in several areas, the health status of the German population is in most respects comparable to the rest of the EU ([40]). At the beginning of 2015, most provisions of the Act to enhance financial structures and quality in the statutory health insurance (*Gesetz zur Weiterentwicklung der Finanzstruktur und der Qualität in der gesetzlichen Krankenversicherung*) entered into force. It reduced the general contribution rate for employees, while allowing individual insurers to fill the funding gap as necessary by supplementary premiums from employees, also with a view to increasing competition between insurers. The Act also establishes an independent Institute for Quality Control and Transparency in Healthcare. Moreover, a working group of the federal government and the federal state governments endorsed the main features of a hospital care reform, which is planned to be converted into legislation in 2015 and aims to reduce bed capacity and operational costs, to introduce quality as an additional criterion for hospital planning and funding, and to make the reporting on quality more transparent. A draft Act to strengthen the provision of healthcare (*Versorgungsstärkungsgesetz*) aims in particular to ensure nationwide high-quality health services, including in rural areas. The Act to reinforce long-term care (*Pflegestärkungsgesetz*), which also entered into force at the beginning of 2015, increased the long-term care contribution rate by 0.3 pp. with a view to financing extended care services and a reserve fund which is intended to limit the expected contribution increases. By also promoting the use of out-patient benefits and

([40]) Germany has the highest number of (acute care) hospital beds per inhabitant among EU countries (5.3 per 1 000 in 2012 against 3.7 on average in the EU) and the second highest expenditure on pharmaceuticals per inhabitant after Belgium (in EUR purchasing power parity) (OECD, 2014, 'Health at a Glance: Europe 2014', OECD Publishing).

services, it may enhance the cost-effectiveness of long-term care. Later in this legislative period, the federal government plans to introduce a new definition of care dependency (*Pflegebedürftigkeitsbegriff*) and to increase the contribution rate by another 0.2 pp.

No measures have been taken to better ensure the sustainability of the pension system following the 2014 pension reform. The reform puts an additional strain on the sustainability of the pension system and affects intergenerational income distribution. It has improved pension benefits and early retirement conditions for certain groups, in particular a pension supplement for those having raised children born before 1992 (*Mütterrente*) and the possibility of retirement without pension reductions two years ahead of the statutory retirement age if contributions have been paid for 45 years (*Rente mit 63*). These benefits are financed through a higher pension contribution rate for the active labour force, including low-wage earners, and a lower average replacement rate. No measures have been specified to increase incentives for later retirement, which appear indispensable in view of the projected strong decline in Germany's working-age population and a possible shortage of skilled workers in the medium term. Moreover, measures to ensure a higher take-up of occupational and private pension insurance by low-wage earners are still outstanding (see Section 3.3).

Fiscal framework

Some further federal states have made progress in implementing the constitutional balanced-budget rule ('debt brake'). The federal constitution stipulates structurally balanced budgets for the federal states as of 2020. Unlike for the national budget, it does not lay down more specific implementing provisions, which are the sole responsibility of the federal states themselves. Recently, Bremen amended its constitution, so that to date eight federal states have enshrined balanced-budget rules in their constitutions and four in their budget laws ([41]). Saxony amended its budget law to further specify the implementing rules of its constitutional 'debt brake' regarding the cyclical adjustment of the deficit ceiling and the exemption clause for natural disasters and other emergencies. Such implementing rules and other provisions, including for decreasing annual borrowing ceilings for the transition period to 2020, financial transactions and recording deviations in budget execution from the authorised level of borrowing in a control account, also exist in Baden-Württemberg, Hessen, Rhineland-Palatinate and Schleswig-Holstein ([42]). On the other hand, Berlin, Brandenburg, North Rhine-Westphalia and Saarland have not enshrined balanced-budget rules in their legislation and the majority of federal states have not laid down detailed implementing rules.

First steps have been taken in improving the design of fiscal relations between the federal government, the federal states and the municipalities. Discussions between the federal government and the federal state governments have started on a comprehensive review of vertical and horizontal fiscal relations and the respective positions have been outlined on a broad range of issues. These include the enforcement of the European Fiscal Compact and the national 'debt brake' at federal state level, the allocation of revenue and expenditure competences between the different layers of government, the fiscal equalisation system among the federal states (*Länderfinanzausgleich*), tax autonomy and tax administration. Tangible results appear indispensable for further strengthening the framework for sustainable fiscal policies in Germany, including mechanisms that can ensure adequate public investment at all levels of government, including especially municipalities.

Germany has not put in place an independent body in charge of producing or endorsing macroeconomic forecasts. The federal budget and fiscal projections at general government level are based on the federal government's own macroeconomic forecasts. While for the

([41]) Bavaria, Bremen, Hamburg, Hessen, Mecklenburg-Western Pomerania, Rhineland-Palatinate, Saxony and Schleswig-Holstein have enshrined debt brakes in their respective constitutions and Baden Württemberg, Lower Saxony, Saxony-Anhalt and Thuringia in their budget laws.

([42]) Annual ceilings for the structural deficit to 2020 and provisions for the calculation of structural balances have been laid down in administrative agreements with the federal states receiving consolidation assistance (Berlin, Bremen, Schleswig-Holstein, Saarland and Saxony-Anhalt).

government's spring and autumn projections the independent joint economic forecast issued twice a year by leading research institutes is used as a benchmark, there is no legal requirement to follow it. Nor is there an endorsement procedure of forecasts involving an independent body within the meaning of Regulation (EU) No 473/2013. The Commission Opinion on Germany's draft budgetary plan for 2015 calls upon the national authorities to ensure that the EU provisions are followed. Moreover, Germany may need to adjust the timing of the established national procedures to the European cycle of budgetary monitoring so that the draft budgetary plan submitted to the European Commission is based on up-to-date projections. Currently, the autumn macroeconomic and tax revenue projections are published shortly after the submission deadline for the draft budgetary plan.

3.2. FINANCIAL SECTOR

The German banking sector has become more resilient following the crisis, ensuring sufficient loss absorption capacity, but low interest rates may pose a challenge. Between the end of 2008 and June 2014, German banks' 'tier 1 capital' increased from 9.6 % to 15 % of risk-weighted assets and is clearly above the euro-area average (13.6 %) ([43]), while a low ratio of non-performing loans (2.7 %) indicates solid bank assets. In November 2014, the loan-to-deposit ratio (79.4 %) was below the euro-area average (95.2 %). The level of private-sector indebtedness (103.4 % of GDP) is below the euro-area average and appears moderate. Very low interest rates may pose a challenge for institutional investors, notably insurance companies, and could also entail a risk for housing markets. However, apart from limited over-valuation of house prices in urban areas, there are no signs of overheating in the housing market.

Despite improved resilience, the German banking sector may prove vulnerable due to its low profitability. All but one German institution passed the comprehensive assessment, with the only bank at risk of failure having already closed the capital shortfall before the end of the exercise. However, some banks only just cleared the capital hurdle in the adverse scenario and five institutions would not have passed on full implementation of Basel III rules, which will apply as from 2019. German banks also perform relatively poorly on the leverage ratio. The low profitability of German banks is linked to their strong reliance on net interest income. A sudden increase in the interest rate level could be a problem for the sector, making strong capitalisation important for financial stability. Thus, a review of banks' business models appears needed to diversify earnings more.

Germany has made no progress in pursuing consolidation efforts in the *Landesbanken* (regionally owned banks) sector, including by improving the governance framework. No measures have been taken to continue restructuring *Landesbanken* and improving corporate governance, which in recent years had been driven mainly by Commission state-aid decisions. Facilitating a market-driven consolidation appears to depend on further steps to amend these banks' corporate structure and reduce political influence.. A review of the legal framework of the public banking sector could contribute to removing possible impediments to consolidation and to a clearer separation of public interest objectives and operational bank business.

Lending conditions remain favourable in Germany, though venture capital still appears to be underdeveloped. Lending conditions remain favourable for households, and credit standards for consumer credits have hardly changed recently. Even though the financing conditions for housing loans have become tighter (see Box 2.3.3), mortgage interest rates are in line with other euro-area countries, while loans to the corporate sector yield significantly lower interest than the euro-area average. Businesses (including small and medium-sized enterprises, SMEs) still have good access to finance and there are no indications of a significant tightening of lending conditions. However, capital-intensive young companies (e.g. in high-tech sectors and developing areas such as eco-innovation) are often lacking financing options in their growth phase, including because the venture capital market in Germany is poorly developed in international comparison. Private equity investment in Germany in 2013 (0.18 % of GDP) was below the EU average (0.25 %) and well below non-euro area countries like Denmark (0.7 %), the UK (0.5 %) or Norway (0.43 %), while venture capital investment in Germany in 2013 (0.03 % of GDP) was slightly above the EU-average (0.02 %) ([44]).

([43]) European Central Bank (2014), 'Statistics on Consolidated Banking Data'.

([44]) European Private Equity and Venture Capital Association (2014), '2014 Yearbook — European Private Equity Activity Data 2007-2013'.

3.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES

Labour market

Despite the overall good performance of the labour market, Germany faces important medium and long-term challenges, in particular population ageing and skills shortages. Germany's working-age population (between 20 and 64 years of age) is projected to decline by 11.4 % until 2030 — an annual average of -0.8 %. This results in a twofold challenge, namely the need to increase both labour supply and productivity. There is scope to increase the labour market participation of women and older workers, and to activate and integrate long-term unemployed and people with a migrant background. In addition, Germany is also trying to attract and better integrate skilled workers from abroad as part of its skilled labour concept (*Fachkräftekonzept*). The government has already improved the recognition of foreign occupational qualifications and has reduced barriers to immigration from third countries. Recent net migration is expected to increase labour force potential and thus compensate partly for demographic effects in the short-term — however, relying on foreign labour increases the need for more integration efforts. On the other hand, the 2014 pension reform allowing people to retire at the age of 63 under certain conditions (*Rente mit 63*, see Section 3.1) sends the wrong signals when it comes to safeguarding the human capital potential of skilled workers.

While the unemployment rate is overall low (5.0 % in 2014), it exceeds 10 % in several federal states and long-term unemployment is an increasing concern. The employment rate increased to 77.6 % in the first three quarters of 2014 and Germany reached its Europe 2020 national employment target in 2013. In particular, the employment rate for older workers (aged 55–64) reached 65.4 % in the first three quarters of 2014. The increase in employment was coupled with wage increases in the last year (see also Box 2.2.1).

There are gender gaps in terms of full-time labour market participation, pay and pension entitlements and the labour market potential of women is not used to the full. In 2013, the employment rate for women was 72.3 % (55.8 % in full-time equivalents) and thus considerably lower than for men (81.9 %). In addition, the gap in the share of part-time work between women (46.1 % in 2013) and men (11 % in 2013) is one of the highest in the EU and the part-time work rate of mothers (close to 70 %) is much higher in the western federal states. Germany also has the third highest gender pension gap in the EU. Limited availability of childcare, all-day schools and long-term care services as well as fiscal disincentives for second earners discourage women in particular from taking-up full-time jobs.

Despite low youth unemployment and rates of young people not in education, employment or training, geographical and socio-economic disparities remain and disproportionally affect East German residents and young migrants across Germany (see also *Education and skills*, below). Furthermore, more than half of the young people not in education, employment or training are inactive and Germany has not yet presented a comprehensive strategy for reaching out to and delivering the Youth Guarantee to those who are not registered with an employment service.

The labour market potential of people with a migrant background is underutilised. There are also gaps between employment rates of nationals and non-EU nationals. The employment rate of non-EU-28 nationals (15–64 years) was 54.9 % in 2013, which is 18.6 pps. below that of German nationals. Women are particularly affected, with an employment rate gap of 26.9 pps. Lower employment is accompanied with higher unemployment rates, and especially with higher inactivity rates.

Germany has made some progress in monitoring the minimum wage as the minimum wage law stipulates a permanent assessment of its impact and a global assessment of the law in 2020. The law provides that the new minimum wage commission (*Mindestlohnkommission*), which is supposed to make recommendations on future adjustments to the level of the minimum wage, will evaluate continuously the impact of the minimum wage on workers' protection, competition and employment in specific sectors and regions and in relation to productivity. It shall make a 'global assessment' to determine the level of the minimum wage that ensures workers' protection, allows competition and preserves

employment, and will take developments in agreed wages as a benchmark. Such an assessment requires appropriate data availability on wages, on the structure of earnings and on exempted groups.

Long-term unemployment is an increasing concern and it is still at a high level. The number of registered long-term unemployed is still high, despite the favourable situation on the labour market. Both the proportion of total unemployment accounted for by long-term unemployment (44.7 % in 2013) and the share of long-term unemployed among the labour force remain higher than in other Member States with low unemployment rates, such as Sweden, Finland, Austria or Denmark. The per capita integration budget for the long-term unemployed recipients of unemployment benefit II (*Eingliederungsleistungen*) was reduced by around 48 % between 2010 and 2013 ([45]). The Federal Ministry of Labour and Social Affairs announced in 2014 the initiative 'Creating opportunities – ensuring social integration. Concept on reducing long-term unemployment', which highlights the need for action. Although the initiative goes in the right direction, the measures might not be sufficient to improve the individualised personal support on a larger scale including continued assistance following placement.

Germany has not taken any measures to facilitate the transition from non-standard employment such as mini-jobs to more sustainable forms of employment. Mini-jobs are wide-spread in Germany with around 7.5 million people working under this form of contract, due to the beneficial treatment they offer (see Section 3.1). For almost 5 million people, mini-jobs are their only employment (however, about 40 % of these are students or pensioners) ([46]). Women represent $^{2}/_{3}$ of 'mini-jobbers' ([47]). Their transition rate into employment subject to full mandatory social security contributions are low (42 %). Companies often opt for mini-job contracts because of their flexibility. Workers in mini-jobs tend not to benefit from in-work training opportunities ([48]). Announced plans in the coalition agreement to facilitate the transition from mini-jobs to regular employment have since then not been further specified or followed-up. The introduction of the statutory minimum wage is supposed to affect the number of 'mini-jobbers', most probably by increasing the number of part-time workers subject to social security contributions – yet, the effects are not yet quantifiable.

Education and skills

Germany has made substantial progress in increasing the overall availability of childcare facilities, but regional bottlenecks and quality concerns remain. With 32.3 % of children under three in formal childcare facilities in 2014, Germany is close to reaching the Barcelona target (33 %) but has not yet reached its national target (39 %). There are still important regional differences regarding the availability of childcare facilities (52 % in the eastern federal states compared with 27.4 % in the western federal states). While additional funds are being dedicated to the expansion of childcare and the overall quantity of childcare facilities has grown rapidly in recent years, concerns about quality, insufficiently qualified staff, and limited flexibility in opening hours remain. The federal government, federal state governments and municipalities have recently agreed on a roadmap for setting common quality standards for childcare facilities. This includes regular conferences and a working group consisting of representatives of the federal government and the federal state governments and municipalities, which should submit a report by 2016. The childcare allowance (*Betreuungsgeld*) introduced in 2013 appears to have a negative

([45]) European Commission calculation based on 'Statistik der Bundesagentur für Arbeit'. From 2010 to 2013, the integration budget for long-term unemployed recipients of unemployment benefit II (*Eingliederungsleistungen*) was reduced from EUR 5.7 billion to EUR 2.8 billion, the integration budget as a proportion of total expenditure for active and passive labour market services under social code book II decreased from 12.2 % to 6.9 %.

([46]) Körner, T., H. Meinken, and K. Puch, 'Wer sind die ausschließlich geringfügig Beschäftigten? Eine Analyse nach sozialer Lebenslage', Wirtschaft und Statistik, Heft 1, Statistisches Bundesamt, Wirtschaft und Statistik, Januar 2013.

([47]) Hans-Böckler-Stiftung (2010), 'Atypische Beschäftigung. Minijobs: Ländlich, westlich, weiblich', Böckler Impuls, 19/2010, Hans-Böckler-Stiftung, Düsseldorf.

([48]) Voss, D. and C. Weinkopf, 'Niedriglohnfalle Minijob', WSI Mitteilungen, No 1/2012.

impact on participation in early childhood education and care ([49]).

Germany has made some progress in increasing the availability of all-day schools, but there is scope for improving the contribution of all-day schools to high-quality education. 32.3 % of the primary and lower secondary pupils attended all-day schools in 2012/13. Annual expansion has slowed from 2 % per year in 2002–2009 to 1.3 % in 2009–2012 and there are important regional differences. All-day schools differ widely as regards their organisation and the type of activity offered, in many cases providing care rather than innovative schooling in the afternoon. Some federal states have launched measures aimed at improving the quality of all-day schools. Lower Saxony, for instance, has determined compulsory models for all-day schools, provided for local flexibility to develop innovative concepts and increased the availability of staff.

Germany has made limited progress in improving the educational achievement of disadvantaged people. The German Education Report 2014 and the PISA (Programme for International Student Assessment) 2012 Results confirm that, despite progress, Germany remains one of the countries where educational attainment continues to be largely determined by socioeconomic background. The early school leaving rate in Germany reached the Europe 2020 national target in 2013. Young people with a migrant background are twice as likely to leave school early. There are open vacancies for apprentices while at the same time a quarter million of school graduates interested in taking up an apprenticeship are deemed unfit for it and are enrolled in catch-up courses in the so-called transitional system (*Übergangssystem*). This is due to general shortcomings in the school system but also to regional and sectoral mismatches. A federal level programme of EUR 500 million was launched in 2014 to support the quality of teacher training (*Qualitätsinitiative Lehrerbildung*) by supporting innovative concepts. Early testing of German language competence is being encouraged at pre-primary level in order to help low achievers, for instance in Saxony and Berlin. Furthermore, recent efforts to promote inclusion of disabled students in mainstream education may enable more young people with special educational needs to obtain a qualification and improve their employment prospects.

([49]) The allowance has played a role in the decision of 13 % of the parents with children under three who do not wish their children to participate in childcare. The allowance is particularly attractive for families with low labour market participation, low educational attaintment, a low income or a migrat background (Fuchs-Rechlin, K., G. Kaufhold, M. Thuilot and T. Webs, 2014, 'Der U3 Ausbau im Endspurt. Analysen zu kommunalen Betreuungsbedarfen und Betreuungswünschen von Eltern', Forschungsverbund TU Dortmund und DJI, Dortmund.

Social policy and social protection

Decreasing benefit levels in the statutory pension insurance, the relatively low work volume of women leading to a high gender pension gap, and a rise in non-standard forms of employment increase old-age-poverty risks. Old-age poverty has already increased in recent years and is expected to rise further ([50]). The 2014 pension reform will further reinforce the downward trend in the average replacement rate and will not address the risk of old-age poverty in the future. The standard pension within the statutory pension scheme has increased at a rate below inflation from 1990 to 2014, contributing to a decrease in the real value of pensions.

Germany has made no progress in increasing the coverage in second and third pillar pension schemes. Adequate retirement incomes of future retirees will increasingly depend on the accumulation of complementary private pension entitlements. It was the intention of the earlier pension reforms to compensate the reduction in the level of public pensions with the occupational and private state-subsidised *Riester* pension schemes. However, the low interest rates currently available on the capital markets jeopardise the effectiveness of private pension schemes ([51]). Moreover, the

([50]) Severe material deprivation among the elderly increased from about 2 % in 2010 to 3 % in 2013. The number of beneficiaries receiving a means-tested minimum income for retirees (*Grundsicherung im Alter*) nearly doubled between its introduction in 2003 and 2013 (the increase is 93.7 % according to the European Commission's calculation based on Destatis data). In 2013, around 500.000 people were receiving *Grundsicherung im Alter*. The at-risk of poverty rate in old age in Germany is higher than the EU-average (DE: 14.9 %, EU: 13.9 %).

([51]) In its annual pension report the federal government's long-term projection of the pension level until 2028 suggests

take-up and coverage of the two supplementary systems is too low to compensate for the loss in public pensions in a comprehensive way. Today, only about half of the eligible workforce has taken up a so-called *Riester* private pension plan and coverage is particularly low among those people who potentially benefit most, i.e. low-wage earners, individuals with basic education and migrants. Moreover, many people are not fully aware of the pension entitlements they have acquired and what they can expect upon retirement from all three pillars.

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that the total standard pension level as a percentage of average insured income (*Gesamtversorungsniveau vor Steuern*) may be kept at today's level, provided that people have contributed fully to a supplementary *Riester*-pension. However, the level of *Riester*-pension depends strongly on the projected interest rate. The report assumes an interest rate of 4 % per year which is very generous given today's low-interest environment.

3.4. ENERGY, TRANSPORT, SERVICES AND PUBLIC PROCUREMENT

Energy

Germany has been successful in promoting the development of renewable energy sources, but this has been achieved at a high cost. The increasing share of renewable electricity produced in Germany under the previous renewable energy support scheme has, in the absence of sufficient transmission capacity within Germany, created additional challenges for network management, including an increasing number of short interruptions in the distribution network ([52]). The successful implementation of the *Energiewende* (transformation of Germany's energy system) also depends on a further expansion of cross-border grids and coordination with neighbouring countries. Concerning energy efficiency, Germany is neither on track in meeting its target notified to the Commission in 2013, nor on track to reach the more ambitious target it set itself in 2010.

The reform of renewable energy has resulted in a stabilisation of cost development. The revised Renewable Energy Act (EEG) entered into force on 1 August 2014. The reform is intended to control costs, especially by introducing binding corridors for renewables expansion. The reform prioritises support for the least expensive renewable energy technologies (onshore wind and photovoltaics) and obliges larger renewable producers to sell their electricity directly on the market. The reform has resulted in a slight decrease of the renewable energy surcharge in 2015 compared to 2014, but in particular the comparably high feed-in tariff for offshore wind requires future cost development to be monitored carefully. It remains a challenge to better integrate renewables into the market and create market-based incentives for the allocation of new generation capacities, moving from a feed-in tariff into a tendering process. While the total financial exemption of energy-intensive industries from the renewable surcharge slightly decreased owing to the reform, the number of exempted sectors and companies remained almost unchanged. Exemptions for large sections of the industry add to the electricity bill of other industrial consumers and households and tend to distort price signals. In the future, using auctions as the standard procedure for allocating support could bring down costs even further.

Infrastructure development is being pursued, but faces significant delays (see Section 2.3)**.** Approximately 23 % of projects for the development of the highest voltage grid identified in 2009 in the Energy Network Expansion Act (*Energieleitungsausbaugesetz*) have been implemented. The initial target of 50 % by 2016 was lowered to 40 %, but it is uncertain whether this target will be met. For major infrastructure expansion, authorisation and planning procedures are now centralised at the Federal Network Agency. The national grid development plans include projects necessary to eliminate existing bottlenecks. However, most of the projects are still in the development or permitting stage. Despite an increased effort at federal level to encourage local and regional governments to accept necessary network expansions, public opposition and hesitation by regional governments delay the implementation significantly. Further cross-border interconnections, especially the implementation of the 'Projects of Common Interest' with Poland, Austria, Belgium and Netherlands as well as with Norway would improve links to the electricity network of neighbouring countries. There is scope to further increase the transport capacity of the gas network, in particular from North to South, and the distribution systems in southern Germany, and to improve its interconnectivity with neighbouring countries, including reverse flows.

Efforts to coordinate with neighbouring countries have been stepped up. In July 2014, the Federal Ministry of Economic Affairs and Energy set up a regular round-table discussion with neighbouring Member States and the Commission on regional cooperation for promoting security of electricity supply and renewable energy. Furthermore, the reformed Renewable Energy Sources Act includes an opening clause supporting renewable electricity produced outside Germany. In October 2014, the Federal Ministry of Economic Affairs and Energy published a Green Paper on electricity market

([52]) Germany performs well in terms of long disruptions (fifteen minutes per customer and year, 2009–2013 average) according to the System Average Interruption Duration Index (SAIDI), (http://www.bundesnetzagentur.de). However, 72 % of total disruptions in Germany take less than three minutes and are not captured by SAIDI.

design, which calls for regional cooperation in the area of capacity markets.

Planned energy efficiency measures appear insufficient for addressing Germany's policy targets. The federal government presented in December 2014 a comprehensive National Energy Efficiency Action Plan, including energy tax breaks linked to energy efficiency increases and low-interest loans, to address its target shortfalls. Despite the energy demand-side measures under this plan, including efficiency measures in the building sector, measures on the energy-supply-side as well as in the transport sector are insufficient to overcome the substantial target shortfall. A first step in this direction was taken by the Action Plan on Climate Action (*Aktionsprogramm Klimaschutz 2020*) adopted in December 2014, which includes measures aimed to reach Germany's greenhouse gas emissions reduction target of 40 % by 2020 compared to 1990 levels.

Transport

The competitive situation in the German railway markets has not significantly improved since last year. In particular, in the long distance rail passenger segment, the difficult competitive environment is discouraging for new entrants. Track access charges for long distance passenger transport are among the highest in the EU. The market share of new entrants in the long distance rail passenger market remains below 1 % and is falling. One of the few non-incumbent operators stopped operations during 2014. Since the rejection of the draft law aimed at streamlining the principles of network access, easing market access for railway undertakings and granting greater powers to the regulator (*Eisenbahnregulierungsgesetz*) by the federal council *(Bundesrat)* in 2013, no new initiatives have been adopted to increase competition in the railway markets. Germany is now preparing a new proposal to transpose Directive 2012/34/EU (Recast of the First Railway Package) in 2015. Moreover, the Commission considers that Germany does not comply with EU rules on financial transparency in the rail sector, and a case on that issue is pending at the European Court of Justice. Germany is the only Member State with a system of agreements on the transfer of profits from the infrastructure subsidiaries to the holding. It cannot be excluded that under the current arrangements, public funds may be used to cross-subsidise passenger and freight train services open to competition, even in other Member States. In early 2015, the federal government and Deutsche Bahn AG have signed a new infrastructure financing agreement, still to be submitted to the European Commission.

Professional services

Policy action has been limited as regards restrictions to enter the services markets and exercising professions. There are still barriers preventing companies and individual professionals from entering the services markets and exercising professional services; these include restrictions on legal form and shareholding, and professional qualification requirements. Germany has started reviewing existing rules concerning access and exercise of regulated professions, in order to assess whether they are justified by general interest and proportionate. To date, Germany has not taken any measures as a result of this review and the ongoing mutual evaluation process to address the cumulative effect of rules governing access and exercise of professional activities. Nor has it addressed the diversity of rules applying across federal states. Legal form and shareholding requirements have a negative impact on establishment as they restrict the choice of the business model and limit investment opportunities. For instance, when a very stringent legal form requirement applies (e.g. that only the professionals as natural persons may perform a certain activity), such a rule makes the primary establishment of a German legal person or the secondary establishment of a professional company from another Member State impossible in practice. It also limits the possibilities of service providers to choose company structures that would make it easier for them to raise capital for investments needed to grow. Fixed tariffs for a few but important professions also represent serious restrictions to service providers by depriving them of the possibility to compete on the basis of price or quality. These barriers may harm competitiveness and contribute to low productivity growth in the professional services sector (see Box 2.2.1) and affect other sectors consuming these services.

Retail

While the German retail sector is performing well overall, planning regulations in certain federal states may create market entry barriers. Measures to achieve spatial planning objectives of public interest, such as retaining supply areas in the city centres, need to be proportionate to avoid potential competition distortions. Economic criteria are sometimes applied in the authorisation procedures to assess the impact of large outlets on city and town centres. This may hamper market entries and favour certain types of retailers.

Public procurement

The value of contracts published by the German authorities under EU procurement legislation remains low despite ongoing efforts. Germany has the lowest values of contracts published under EU procurement legislation (2013 data: 1.1 % of GDP — including utilities — or 6.4 % of public expenditure on works, goods and services — excluding utilities —, as compared with 3.2 % or 19.1 % on average in the EU-28 respectively). At the end of 2014 the Federal Ministry for Economic Affairs and Energy presented an interim report of a statistical study aimed to develop an IT concept to collect, analyse and report on procurement data in Germany. This IT concept is due in December 2015 and the first statistics in 2018. Moreover, in the context of two infringement cases, the Ministry sent circulars to other Ministries, subordinate agencies, federal states and municipalities on the conditions for the use of exceptions to the publication requirement, in particular for urgency, and recommending an internal control system (the 'four-eyes' principle). These are steps in the right direction, but results in terms of more public procurement open to EU-wide bidding or fewer complaints to the Commission for non-publication are not visible so far and the reasons behind the low value of contracts published under EU procurement legislation are not clearly identified.

3.5. POLICIES FOR LONG-TERM GROWTH

Research and innovation

Germany is one of the EU's innovation leaders, but regional disparities are large and securing its competitive position in the future is challenging. The country is the best performer in the EU according to the European Innovation Output Indicator. Germany is close to achieving its research and development (R&D) expenditure target of 3 % of GDP (see Section 3.1), but other leading innovative economies are investing even more. Remaining at the technological frontier and securing its competitive position in the future would require continued investment in education, R&D, and innovation. Significant disparities exist in innovation performance and expenditure at regional level, especially as regards private investment in R&D, with the eastern federal states in general lagging behind. Regional clusters and smart specialisation to address disparities lead in the right direction.

Lack of finance and skills shortages are hindering the growth of start-up companies, including in high-tech sectors. The federal government supports fast-growing, innovative start-up companies through financing instruments such as investment grants and micro mezzanine funds. A review of the regulatory framework for venture capital, as foreseen in the coalition agreement, would be a welcome step and could contribute to stimulating private investment and entrepreneurship (see Section 3.2). Moreover, demographic trends and emerging skill shortages mean that the potential number of entrepreneurs who either start a new business or continue an established business is expected to continue to decline, which could hamper Germany's future growth and innovation performance. An adequate supply of skilled labour will be crucial for avoiding shortages of qualified staff in high-tech industries. Germany is already taking initiatives e.g. to attract and retain students and academics from abroad, but further efforts appear necessary, e.g. regarding the possibilities for qualified people to stay longer on the labour market.

Germany adopted a new high-tech strategy in September 2014. The strategy aims to strengthen economic growth by means of a coherent innovation policy, supporting knowledge transfer and innovation in future markets. The high-tech strategy focuses on six key strands: the digital economy and society, sustainable economy and energy, the innovative workplace, health living, intelligent mobility, and civil security. The update in 2014 was a useful step towards making the strategy more integrated and coherent and to improve acceptance by strengthening communication and the involvement of society.

Information and communication technologies

Germany's performance could be improved as regards the roll-out of fixed ultra-fast broadband lines. While Germany performs well on basic and fast broadband access, Germany performs weakly with regard to ultra-fast broadband connections in international comparison. The whole German territory has access to basic broadband (both fixed and mobile technologies) and 75 % of the territory has access to fast broadband (connections of 30 Megabits per second). However, Germany ranks 19th out of 28 Member States as regards the share of population subscribed to an ultra-fast broadband connection of above 100 Megabits per second (0.9 % of the population, equivalent to 2.6 % of all subscriptions). The share of fibre connections in relation to total broadband penetration is also low in international comparison (0.94 % compared to 16.65 % OECD average and more than 60 % in South Korea and Japan, according to OECD broadband statistics). This may be partly explained by factors such as the topographical size of the country and its decentralised settlement structure. In this context, it is important to ensure a competitive and investment-friendly environment.

The new Digital Agenda 2014-2017 is a step in the right direction. In August 2014, the federal government passed its first 'Digital Agenda 2014–2017' bill, aimed at helping Germany become a worldwide leader in expanding high-speed data lines, internet security and fostering cyber-related entrepreneurship. It aims to provide fast broadband (50 Megabits per second) internet to rural and urban areas alike by 2018, through a variety of technologies on the market. This is well above the EU target of all European households having

access to internet connections of 30 Megabits per second by 2020, but it does not tackle the EU target of 50 % of households subscribing to internet connections above 100 Megabits per second by 2020. In December 2014, an early allocation of the 700 MHz band for new broadband wireless applications was agreed. This can ensure that certain peripheral areas gain access to high-speed networks soon. The revenues resulting from the auctioning of the spectrum are planned to be used for broadband deployment.

Public administration and business environment

There continues to be scope to reduce the administrative burden and improve the business environment. The introduction of the statutory minimum wage and corresponding documentation requirements may have resulted in additional administrative burden for businesses. On the positive side, the federal government adopted in 2014 a better regulation work programme and approved new measures to reduce the administrative burden for businesses and citizens. These included for example a 'one-in, one-out' system for new legislation, requiring the revision or scrapping of existing rules for any new regulations that impose costs on businesses. The federal government also adopted exemptions from reporting obligations for start-ups as well as measures to support the uptake of electronic invoicing and archiving. These are welcome steps, but the business environment for SMEs in particular still faces challenges, including a simplification of the tax system, reforms of tax administration (see Section 3.1) and better coordination across federal states.

The availability of online public services remains below the EU average. Germany is still one of the EU countries with the lowest online interaction between public authorities and citizens (23rd out of 28 Member States). In 2014, 18 % of German citizens interacted with the government via the internet (the EU average is 33 %). An e-government strategy was adopted in August 2014 in the context of the 'Digital Agenda 2014–2017' bill, to foster the digital transformation of the public administration. The main challenge now is to implement the strategy accordingly.

ANNEX A
Overview Table

Commitments	Summary assessment ([53])
2014 Country-specific recommendations (CSRs)	
CSR 1: Pursue growth-friendly fiscal policy and preserve a sound fiscal position, ensuring that the medium-term budgetary objective continues to be adhered to throughout the period covered by the Stability Programme and that the general government debt ratio remains on a sustained downward path. In particular, use the available scope for increased and more efficient public investment in infrastructure, education and research. Improve the efficiency of the tax system, in particular by broadening the tax base, in particular on consumption, by reassessing the municipal real estate tax base, by improving the tax administration and by reviewing the local trade tax, also with a view to foster private investment. Make additional efforts to increase the cost-effectiveness of public spending on healthcare and long-term care. Ensure the sustainability of the public pension system by (i) changing the financing of new non-insurance/extraneous benefits ('*Mütterrente*') to funding from tax revenues, also in order to avoid a further increase of social security contributions, (ii) increasing incentives for later retirement, and (iii) increasing the coverage in second and third pillar pension schemes. Complete the implementation of the debt brake consistently across all *Länder*, ensuring that monitoring procedures and correction mechanisms are timely and relevant. Improve the design of fiscal relations between the federation, *Länder* and municipalities also with a view to ensuring adequate public investment at all levels of government.	Germany has made **limited progress** in addressing CSR 1 (this overall assessment of CSR 1 does not include an assessment of compliance with the Stability and Growth Pact): • Some progress in increasing public investment in infrastructure, including an additional EUR 10 billion for infrastructure investment recently announced for the period 2016–18. • Limited progress in raising education spending and some progress in increasing research spending. The federal government has increased expenditure on education and research, but the share of public spending on education as a proportion of GDP is still below EU average and total expenditure on education and research may fall short of the national target of 10 % of GDP by 2015. • No progress in improving the efficiency of the tax system. • Some progress in increasing the cost-effectiveness of public spending on healthcare and long-term care. An independent Institute for Quality Control and Transparency in Healthcare has been set up and the main features of a hospital care reform outlined. The use of out-patient benefits and services in long-term care have been promoted.

([53])The following categories are used to assess progress in implementing the 2014 CSRs:
No progress: The Member State (MS) has neither announced nor adopted measures to address the CSR. This category also applies if the MS has commissioned a study group to evaluate possible measures.
Limited progress: The MS has announced some measures to address the CSR, but these appear insufficient and/or their adoption/implementation is at risk.
Some progress: The MS has announced or adopted measures to address the CSR. These are promising, but not all of them have been implemented and it is not certain that all will be.
Substantial progress: The MS has adopted measures, most of which have been implemented. They go a long way towards addressing the CSR.
Fully implemented: The MS has adopted and implemented measures that address the CSR appropriately.

	• No measures have been taken to better safeguard the sustainability of the pension system following the 2014 pension reform. • Some progress in completing the implementation of the 'debt brake'. One more *Land* has amended its constitution and another one further specified implementing rules. • Limited progress in improving the design of fiscal relations between the federal government, the federal states and the municipalities. Preparatory steps towards a comprehensive reform have been taken.
CSR 2: Improve conditions that further support domestic demand, inter alia by reducing high taxes and social security contributions, especially for low-wage earners. When implementing the general minimum wage, monitor its impact on employment. Improve the employability of workers by further raising the educational achievement of disadvantaged people and by implementing more ambitious activation and integration measures in the labour market, especially for the long-term unemployed. Take measures to reduce fiscal disincentives to work, in particular for second earners, and facilitate the transition from mini-jobs to forms of employment subject to full mandatory social security contributions. Address regional shortages in the availability of fulltime childcare facilities and all-day schools while improving their overall educational quality.	Germany has made **limited progress** in addressing CSR 2: • Limited progress in reducing the high tax wedge, especially for low-wage earners. The reduction in the pension contribution rate by 0.2 pp. was more than offset by an increase of 0.3 pp. in the contribution rate for long-term care. Moreover, the Act to enhance financial structures and quality in statutory health insurance reduced the contribution rate for employees from 8.2 % to 7.3 %, but also allows individual health insurers to raise extra, income-based premiums from employees, and it appears that for many insured people the total contribution rate has remained unchanged. The federal government announced plans to reduce the impact of fiscal drag in the current legislative period. On the other hand, the recent increase in the minimum income tax allowance results from existing law and is not considered a new policy measure. • Some progress towards monitoring the minimum wage. The minimum wage law requires continuous assessment of its impact and a global assessment of the law in 2020. • Limited progress in improving the educational achievement of disadvantaged people. The federal government launched a programme in 2014 to support the

	quality of teacher training (*Qualitätsinitiative Lehrerbildung*). Early testing of German language competence is being encouraged at pre-primary level in some federal states. Germany is making efforts to promote the inclusion of disabled students in mainstream education. • Limited progress in implementing more ambitious activation and integration measures. The Federal Ministry of Labour and Social Affairs announced in 2014 an initiative aimed to reducing long-term unemployment (‘*Chancen eröffnen – soziale Teilhabe sichern. Konzept zum Abbau der Langzeitarbeitslosigkeit’*). This is a step in the right direction, but might not be sufficient to improve individualised support. Germany has not assessed the effectiveness of the 2011 reform of active labour instruments. • No progress in addressing fiscal disincentives to work for second earners. • No progress in taking measures to facilitate the transition from non-standard employment such as mini-jobs to more sustainable forms of employment subject to full mandatory social security contributions. • Substantial progress in increasing the availability of childcare facilities. The quantity of childcare facilities has grown rapidly, but regional bottlenecks and quality concerns remain. Additional funds for investment in childcare are planned. The federal government, federal state governments and municipalities have recently agreed on an overall approach to address quality issues. • Some progress in increasing the availability of all-day schools. Annual expansion slowed in 2009–2012 compared with the previous years and there are important regional differences. Some federal states have launched measures aimed at improving the quality of all-day schools. However a comprehensive

	national and federal approach is missing.
CSR 3: Keep the overall costs of transforming the energy system to a minimum. In particular, monitor the impact of the Renewable Energy Act reform on the cost-effectiveness of the support system for renewable energies. Reinforce efforts to accelerate the expansion of the national and cross-border electricity and gas networks. Step up close energy policy coordination with neighbouring countries.	Germany has made **some progress** in addressing CSR 3: • Some progress in keeping the overall costs of transforming the energy system to a minimum. • Substantial progress as regards the support system for renewables. The reform of the Renewable Energy Act (EEG) curbs the cost increases associated with the renewable support system, controls the expansion of renewables, initialises market integration and stabilises the cost contribution of industrial consumers. The increased use of competitive bidding for supporting renewable energy sources may result in further progress. • Limited progress in electricity network development. The planning of projects to eliminate internal bottlenecks for electricity transmission has begun, but these are still at the development or permitting stage and face regional public opposition. • Some progress in policy coordination with neighbouring countries. Regular round-table discussions on regional cooperation to promote the security of the electricity supply and renewable energies have been set up. A Green Paper on electricity market design aimed at facilitating the decision on whether to introduce a national capacity remuneration mechanism has been published.
CSR 4: Take more ambitious measures to further stimulate competition in the services sector, including certain professional services, also by reviewing existing regulatory approaches and converging towards best practices across *Länder*. Identify the reasons behind the low value of public contracts open to procurement under EU legislation. Increase efforts to remove unjustified planning regulations which restrict new entries in the retail sector. Take action to remove the remaining barriers to competition in the railway markets. Pursue consolidation efforts in the *Landesbanken* sector, including by improving the	Germany has made **limited progress** in addressing CSR 4: • Limited progress as regards stimulating competition in the services sector. Germany is participating in the mutual evaluation exercise provided for in the Directive amending the Professional Qualifications Directive. However, no major changes can be expected before the end of that exercise or before the deadline for submission of the national action plan,

governance framework.	which is expected to be in the second quarter of 2015. On legal form and shareholding restrictions, limited changes are underway in some federal states, but there is still no broad review of such restrictions. • Limited progress in identifying the reasons behind the low value of public contracts open to procurement under EU legislation. The Federal Ministry for Economic Affairs and Energy presented an interim report of a statistical study aimed to build a statistical database and sent circulars on the use of the urgency procedure. • No progress as regards restrictions in retail. • Limited progress in improving competition in the railway markets. Germany has announced the preparation of a new proposal to transpose Directive 2012/34/EU in 2015 (Recast of the First Railway Package). The federal government and Deutsche Bahn AG have signed a new infrastructure financing agreement. • No progress in pursuing consolidation efforts in the *Landesbanken* sector.
Europe 2020 (national targets and progress)	
Employment rate target: 77 % of the population aged 20-64	Employment rate for population aged 20–64: 76.9 % in 2012 and 77.3 % in 2013. The national employment target has been reached.
R&D target: 3.0 % of GDP	Gross domestic expenditure on R&D was 2.88 % of GDP in 2012 and 2.94 % in 2013. Germany made clear progress in achieving the 3 % R&D target and in 2013 had almost reached it. In 2013, in line with the national target, private R&D spending represented two thirds of the total figure (about 1.9 % of GDP and nearly 2 % if spending from abroad is

	included), while public spending represented one third (about 1 % of GDP). Both public and private spending have increased in recent years.
Greenhouse gas emissions: 14 % in 2020 compared to 2005 (in non-ETS sectors)	According to the latest national projections submitted to the Commission, and taking into account existing measures, emissions in 2020 will be 13 % lower than 2005 levels (i.e. the target is expected to be missed by 1 pp.). Non-emissions trading scheme (ETS) greenhouse gas emissions fell by 3.8 % between 2005 and 2013, while the gap between non-ETS projected emissions and the 2013 ESD-target amounts to a 0.7 % shortfall.
2020 Renewable energy target: 18 % Share of renewable energy in all modes of transport: 10 %	In 2013, the share of energy from renewable sources in gross final energy consumption reached 12.2% according to EurObserv'ER data. This is above the renewable share set out in the indicative trajectory under the EU Renewables Directive 2009/28/EC.
Indicative national energy efficiency target: Annual improvement of energy intensity (energy productivity) by 2.1 % p.a. on average until 2020. The absolute level of energy consumption in 2020 was determined to be at 276.6 Mtoe (primary energy consumption) or 194.3 Mtoe (final energy consumption). Germany set itself a more ambitious target in 2010 (Energy Concept: reduction of energy consumption from 2008 to 2020 by 20 %)	For two years, Germany has not been on track to meet the target it communicated to the Commission in 2013, or the more ambitious target it set itself in 2010. In December 2014 a comprehensive National Energy Efficiency Action Plan (including better financing) was presented to address these gaps.
Early school leaving target: <10 %	Early leavers of education and training (percentage of the population aged 18–24 with at most lower secondary education and not in further education or training): 10.5 % in 2012 and 9.9 % in 2013. Germany achieved the target in 2013.
Tertiary education target: 40 % (EU 2020) or 42 % (national target).	Tertiary educational attainment: 31.9 % in 2012 and 33.1 % in 2013, compared with an EU-average of 36.9 %. Germany has not achieved the EU target of 40 %. However, the national target of 42%, which includes International Standard Classification of Education (ISCED) 4, has

	already been met.
Target on the reduction of population at risk of poverty or social exclusion in number of persons: Risk-of-poverty or social exclusion target: 20 % reduction in the number of long-term unemployed by 2020 as compared with 2008 (i.e. reduction by 320 000 long-term unemployed).	The number of long-term unemployed decreased by 485 000 in 2011, 623 000 in 2012 and 658 000 in 2013 as compared with 2008. The number of long-term unemployed decreased by around 40 % between 2008 and 2013. Germany has already fulfilled the national Europe 2020 poverty target.

ANNEX B
Standard Tables

Table B.1: **Macroeconomic indicators**

	1996-2000	2001-2005	2006-2010	2011	2012	2013	2014	2015	2016
Core indicators									
GDP growth rate	1.9	0.6	1.3	3.6	0.4	0.1	1.5	1.5	2.0
Output gap [1]	0.0	-0.8	-0.4	1.0	0.2	-0.9	-0.9	-0.8	-0.4
HICP (annual % change)	1.1	1.6	1.6	2.5	2.1	1.6	0.8	0.1	1.6
Domestic demand (annual % change) [2]	1.7	-0.4	1.1	3.0	-0.9	0.7	1.2	1.5	2.3
Unemployment rate (% of labour force) [3]	8.9	9.5	8.1	5.8	5.4	5.2	5.0	4.9	4.8
Gross fixed capital formation (% of GDP)	22.7	19.9	19.7	20.2	20.0	19.8	20.0	20.1	20.4
Gross national saving (% of GDP)	22.2	22.4	25.9	26.8	26.4	25.9	26.6	26.6	26.9
General government (% of GDP)									
Net lending (+) or net borrowing (-)	-1.8	-3.6	-1.7	-0.9	0.1	0.1	0.4	0.2	0.2
Gross debt	58.8	62.2	69.5	77.6	79.0	76.9	74.2	71.9	68.9
Net financial assets	-32.6	-42.0	-45.2	-48.7	-49.0	n.a.	n.a.	n.a.	n.a.
Total revenue	45.5	43.3	43.4	43.7	44.3	44.5	44.5	44.5	44.2
Total expenditure	47.4	46.9	45.1	44.6	44.2	44.3	44.1	44.3	43.9
of which: Interest	3.2	2.9	2.6	2.5	2.3	2.0	1.8	1.7	1.6
Corporations (% of GDP)									
Net lending (+) or net borrowing (-)	-2.5	0.6	2.1	2.1	2.2	2.0	2.5	2.9	3.0
Net financial assets; non-financial corporations	-52.4	-50.8	-56.0	-50.9	-52.3	n.a.	n.a.	n.a.	n.a.
Net financial assets; financial corporations	-2.7	-5.3	-1.3	7.4	8.3	n.a.	n.a.	n.a.	n.a.
Gross capital formation	13.0	11.8	11.9	12.2	10.8	10.7	10.6	10.4	10.8
Gross operating surplus	22.7	24.9	26.7	25.9	25.2	24.7	24.9	24.9	25.6
Households and NPISH (% of GDP)									
Net lending (+) or net borrowing (-)	3.3	5.4	5.7	4.8	5.0	4.8	4.9	4.9	4.5
Net financial assets	88.6	101.6	115.5	117.0	122.7	n.a.	n.a.	n.a.	n.a.
Gross wages and salaries	42.3	41.3	39.7	40.3	41.2	41.5	41.7	41.9	41.7
Net property income	11.3	12.8	14.4	13.8	14.1	13.6	13.2	13.1	13.0
Current transfers received	22.2	22.7	21.4	20.6	20.5	20.6	20.5	20.4	20.2
Gross saving	10.7	10.9	11.3	11.0	11.0	10.9	10.9	10.9	10.6
Rest of the world (% of GDP)									
Net lending (+) or net borrowing (-)	-1.0	2.4	6.1	6.1	7.3	7.0	7.8	8.0	7.8
Net financial assets	0.1	-1.7	-9.9	-19.8	-24.7	n.a.	n.a.	n.a.	n.a.
Net exports of goods and services	0.9	4.0	5.6	4.8	5.9	5.8	6.5	6.9	6.7
Net primary income from the rest of the world	-0.5	-0.2	1.9	2.6	2.6	2.6	2.5	2.4	2.2
Net capital transactions	0.0	-0.1	0.0	-0.1	0.0	0.1	0.1	0.1	0.1
Tradable sector	42.2	42.7	42.7	42.7	42.7	42.4	42.2	n.a.	n.a.
Non-tradable sector	48.3	47.8	47.3	47.1	47.1	47.5	47.8	n.a.	n.a.
of which: Building and construction sector	5.2	3.9	3.6	4.0	4.1	4.1	4.3	n.a.	n.a.

Notes:

[1] The output gap constitutes the gap between the actual and potential gross domestic product at 2010 market prices.

[2] The indicator of domestic demand includes stocks.

[3] Unemployed persons are all those who were not employed, had actively sought work and were ready to begin working immediately or within two weeks. The labour force is the total number of people employed and unemployed. The unemployment rate covers the age group 15-74.

Source:
European Commission 2015 winter forecast; Commission calculations

Source: European Commission 2015 winter forecast; Commission calculations

Table B.2: **Financial market indicators**

	2009	2010	2011	2012	2013	2014
Total assets of the banking sector (% of GDP)[1)]	313.2	332.9	321.6	308.5	275.0	276.8
Share of assets of the five largest banks (% of total assets)	25.0	32.6	33.5	33.0	30.6	n.a.
Foreign ownership of banking system (% of total assets)	10.7	10.9	11.5	12.2	11.2	n.a.
Financial soundness indicators:						
- non-performing loans (% of total loans)[2)]	3.3	3.2	3.0	2.9	2.7	n.a.
- capital adequacy ratio (%)[3)]	14.8	16.1	16.4	17.9	19.2	17.7
- return on equity (%)[4)]	5.0	8.8	13.0	10.8	7.5	n.a.
Bank loans to the private sector (year-on-year % change)[1)]	0.0	0.0	2.0	1.1	0.5	1.4
Lending for house purchase (year-on-year % change)[1)]	0.2	0.7	1.2	1.9	2.0	2.3
Loan to deposit ratio[1)]	87.6	84.7	83.4	82.5	80.1	79.4
Central Bank liquidity as % of liabilities[5)]	3.7	1.7	1.3	1.2	1.0	0.4
Private debt (% of GDP)	113.5	107.7	103.9	103.7	103.4	n.a.
Gross external debt (% of GDP)[6)] - public	39.1	43.9	49.0	51.2	46.6	47.7
- private	42.8	44.6	46.0	43.6	42.4	42.2
Long-term interest rate spread versus Bund (basis points)*	0.0	0.0	0.0	0.0	0.0	0.0
Credit default swap spreads for sovereign securities (5-year)*	37.4	32.2	44.8	32.7	14.9	12.7

Notes:

[1)] Latest data November 2014.

[2)] Latest data 2013. Methodological break in 2009 due to changes in the regulatory reporting framework for the audit of banks. Basel III introduced in 2014.

[3)] Latest data Q2 2014.

[4)] Only domestically incorporated deposit-takers are included, along with their dependent domestic and foreign branches.

[5)] Latest data September 2014.

[6)] Latest data June 2014. Monetary authorities, monetary and financial institutions are not included.

* Measured in basis points.

Source: IMF (financial soundness indicators); European Commission (long-term interest rates); World Bank (gross external debt); ECB (all other indicators).

Table B.3: **Taxation indicators**

	2002	2006	2008	2010	2011	2012
Total tax revenues (incl. actual compulsory social contributions, % of GDP)	38.9	38.6	38.9	38.0	38.5	39.1
Breakdown by economic function (% of GDP)[1]						
Consumption	10.4	10.2	10.7	10.7	10.9	10.8
of which:						
- VAT	6.4	6.4	7.1	7.2	7.3	7.3
- excise duties on tobacco and alcohol	0.8	0.8	0.7	0.7	0.7	0.7
- energy	2.2	2.0	1.8	1.9	1.8	1.8
- other (residual)	1.0	1.0	1.1	1.0	1.1	1.1
Labour employed	20.7	19.0	19.2	18.9	18.9	19.5
Labour non-employed	2.9	2.9	2.7	2.7	2.6	2.6
Capital and business income	3.8	5.4	5.3	4.5	5.1	5.1
Stocks of capital/wealth	1.0	1.1	1.0	1.0	1.0	1.1
p.m. Environmental taxes[2]	2.5	2.4	2.2	2.2	2.2	2.2
VAT efficiency[3]						
Actual VAT revenues as % of theoretical revenues at standard rate	56.5	56.9	55.6	54.4	55.3	55.1

Notes:

1. Tax revenues are broken down by economic function, i.e. according to whether taxes are raised on consumption, labour or capital. See European Commission (2014), *Taxation trends in the European Union* , for a more detailed explanation.
2. This category comprises taxes on energy, transport and pollution and resources included in taxes on consumption and capital.

3. VAT efficiency is measured via the VAT revenue ratio. It is defined as the ratio between the actual VAT revenue collected and the revenue that would be raised if VAT was applied at the standard rate to all final (domestic) consumption expenditures, which is an imperfect measure of the theoretical pure VAT base. A low ratio can indicate a reduction of the tax base due to large exemptions or the application of reduced rates to a wide range of goods and services ('policy gap') or a failure to collect all tax due to e.g. fraud ('collection gap'). It should be noted that the relative scale of cross-border shopping (including trade in financial services) compared to domestic consumption also influences the value of the ratio, notably for smaller economies. For a more detailed discussion, see European Commission (2012), *Tax Reforms in EU Member States* , and OECD (2014), *Consumption tax trends* .

Source: European Commission

Table B.4: **Labour market and social indicators**

	2008	2009	2010	2011	2012	2013	2014
Employment rate (% of population aged 20-64)	74.0	74.2	74.9	76.5	76.9	77.3	77.6
Employment growth (% change from previous year)	1.3	0.1	0.3	1.3	1.1	0.6	0.8
Employment rate of women (% of female population aged 20-64)	67.8	68.7	69.6	71.3	71.6	72.5	73.1
Employment rate of men (% of male population aged 20-64)	80.1	79.6	80.1	81.7	82.1	82.1	82.2
Employment rate of older workers (% of population aged 55-64)	53.7	56.1	57.7	60.0	61.6	63.6	65.4
Part-time employment (% of total employment, age 15 years and over)	25.9	26.1	26.2	26.8	26.8	27.7	27.7
Part-time employment of women (% of women employment, age 15 years and over)	45.7	45.4	45.5	46.0	45.9	47.3	47.1
Part-time employment of men (% of men employment, age 15 years and over)	9.3	9.6	9.7	10.2	10.3	10.6	10.8
Fixed term employment (% of employees with a fixed term contract, age 15 years and over)	14.7	14.5	14.7	14.5	13.7	13.3	13.0
Transitions from temporary to permanent employment	37.2	36.5	41.0	40.7	40.2	n.a.	n.a.
Unemployment rate[1] (% of labour force, age group 15-74)	7.4	7.6	7.0	5.8	5.4	5.2	5.0
Long-term unemployment rate[2] (% of labour force)	3.9	3.5	3.3	2.8	2.4	2.3	2.3
Youth unemployment rate (% of youth labour force aged 15-24)	10.4	11.1	9.8	8.5	8.0	7.8	7.7
Youth NEET rate (% of population aged 15-24)	8.4	8.8	8.3	7.5	7.1	6.3	n.a.
Early leavers from education and training (% of pop. aged 18-24 with at most lower sec. educ. and not in further education or training)	11.8	11.1	11.9	11.7	10.6	9.9	n.a.
Tertiary educational attainment (% of population aged 30-34 having successfully completed tertiary education)	27.7	29.4	29.8	30.7	32.0	33.1	n.a.
Formal childcare (from 1 to 29 hours; % over the population aged less than 3 years)	10.0	7.0	7.0	9.0	9.0	n.a.	n.a.
Formal childcare (30 hours or over; % over the population aged less than 3 years)	9.0	12.0	13.0	15.0	15.0	n.a.	:
Labour productivity per person employed (annual % change)	-0.3	-5.7	3.8	2.2	-0.7	-0.5	0.6
Hours worked per person employed (annual % change)	-0.4	-3.2	1.3	0.2	-1.4	-0.9	0.5
Labour productivity per hour worked (annual % change; constant prices)	0.2	-2.6	2.5	2.0	0.6	0.4	0.1
Compensation per employee (annual % change; constant prices)	1.3	-1.5	1.8	1.7	1.0	-0.2	0.8
Nominal unit labour cost growth (annual % change)	2.3	5.6	-1.1	1.0	3.1	2.1	n.a.
Real unit labour cost growth (annual % change)	1.5	4.4	-2.1	-0.2	1.6	-0.1	n.a.

Notes:

[1] Unemployed persons are all those who were not employed, but had actively sought work and were ready to begin working immediately or within two weeks. The labour force is the total number of people employed and unemployed. Data on the unemployment rate of 2014 includes the last release by Eurostat in early February 2015.

[2] Long-term unemployed are persons who have been unemployed for at least 12 months.

(Continued on the next page)

Table (continued)

	2007	2008	2009	2010	2011	2012
Sickness/healthcare	8.0	8.3	9.7	9.5	9.4	9.6
Invalidity	2.1	2.2	2.3	2.3	2.2	2.3
Old age and survivors	11.4	11.4	12.2	11.8	11.4	11.4
Family/children	2.8	2.8	3.2	3.2	3.1	3.2
Unemployment	1.5	1.4	1.9	1.7	1.3	1.2
Housing and social exclusion n.e.c.	0.7	0.6	0.7	0.7	0.6	0.6
Total	26.6	26.9	30.2	29.4	28.3	28.3
of which: means-tested benefits	3.3	3.3	3.6	3.5	3.4	3.4
Social inclusion indicators	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
People at risk of poverty or social exclusion[1] (% of total population)	20.1	20.0	19.7	19.9	19.6	20.3
Children at risk of poverty or social exclusion (% of people aged 0-17)	20.1	20.4	21.7	19.9	18.4	19.4
Elderly at risk of poverty or social exclusion (% of people aged 65+)	15.5	16.0	14.8	15.3	15.8	16.0
At-risk-of-poverty rate[2] (% of total population)	15.2	15.5	15.6	15.8	16.1	16.1
Severe material deprivation rate[3] (% of total population)	5.5	5.4	4.5	5.3	4.9	5.4
Proportion of people living in low work intensity households[4] (% of people aged 0-59)	11.7	10.9	11.2	11.2	9.9	9.9
In-work at-risk-of-poverty rate (% of persons employed)	7.1	6.8	7.2	7.7	7.8	8.6
Impact of social transfers (excluding pensions) on reducing poverty	37.2	35.7	35.5	37.1	33.7	34.0
Poverty thresholds, expressed in national currency at constant prices[5]	10743.3	10609.1	10709.9	10730.3	10772.8	10537.9
Gross disposable income (households)	1653050.0	1648650.0	1697540.0	1762560.0	1805220.0	n.a.
Relative median poverty risk gap (60% of median equivalised income, age: total)	22.2	21.5	20.7	21.4	21.1	20.4
Inequality of income distribution (S80/S20 income quintile share ratio)	4.8	4.5	4.5	4.5	4.3	4.6

Notes:

[1] People at risk of poverty or social exclusion (AROPE): individuals who are at risk of poverty (AROP) and/or suffering from severe material deprivation (SMD) and/or living in households with zero or very low work intensity (LWI).

[2] At-risk-of-poverty rate (AROP): proportion of people with an equivalised disposable income below 60 % of the national equivalised median income.

[3] Proportion of people who experience at least four of the following forms of deprivation: not being able to afford to i) pay their rent or utility bills, ii) keep their home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) enjoy a week of holiday away from home once a year, vi) have a car, vii) have a washing machine, viii) have a colour TV, or ix) have a telephone.

[4] People living in households with very low work intensity: proportion of people aged 0-59 living in households where the adults (excluding dependent children) worked less than 20 % of their total work-time potential in the previous 12 months.

[5] For EE, CY, MT, SI and SK, thresholds in nominal values in euros; harmonised index of consumer prices (HICP) = 100 in 2006 (2007 survey refers to 2006 incomes)

[6] 2014 data refer to the average of the first three quarters.

Source: European Commission (EU Labour Force Survey and European National Accounts)
For expenditure for social protection benefits ESSPROS; for social inclusion EU-SILC.

Table B.5: **Product market performance and policy indicators**

	2004-08	2009	2010	2011	2012	2013	2014
Labour productivity[1] in total economy (annual growth in %)	1.4	-6.2	4.0	2.2	-0.7	-0.5	0.5
Labour productivity[1] in manufacturing (annual growth in %)	3.2	-17.3	20.9	6.8	-2.4	0.0	1.6
Labour productivity[1] in electricity, gas (annual growth in %)	1.0	9.7	2.8	-21.1	21.3	0.6	n.a.
Labour productivity[1] in the construction sector (annual growth in %)	-0.5	-3.4	6.8	2.0	-1.3	-1.1	2.0
Labour productivity[1] in the wholesale and retail sector (annual growth in %)	2.4	-5.4	-2.5	2.6	-4.6	-0.5	n.a.
Labour productivity[1] in the information and communication sector (annual growth in %)	5.4	0.3	2.6	9.6	3.4	0.7	0.2
Patent intensity in manufacturing[2] (EPO patent applications divided by gross value added of the sector)	0.0	0.1	0.0	0.0	n.a.	n.a.	n.a.
Policy indicators	**2004-08**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Enforcing contracts[3] (days)	396	394	394	394	394	394	394
Time to start a business[3] (days)	24.9	18	15	15	15	15	15
R&D expenditure (% of GDP)	2.5	2.7	2.7	2.8	2.9	2.9	n.a.
Total public expenditure on education (% of GDP)	4.5	5.1	5.1	5.0	n.a.	n.a.	n.a.
(Index: 0=not regulated; 6=most regulated)	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Product market regulation[4], overall	1.41	n.a.	n.a.	n.a.	n.a.	1.29	n.a.
Product market regulation[4], retail	2.88	n.a.	n.a.	n.a.	n.a.	2.71	n.a.
Product market regulation[4], professional services	2.82	n.a.	n.a.	n.a.	n.a.	2.65	n.a.
Product market regulation[4], network industries[5]	1.33	1.32	1.33	1.28	1.27	1.27	n.a.

Notes:

[1] Labour productivity is defined as gross value added (in constant prices) divided by the number of persons employed.

[2] Patent data refer to applications to the European Patent Office (EPO). They are counted according to the year in which they were filed at the EPO. They are broken down according to the inventor's place of residence, using fractional counting if multiple inventors or IPC classes are provided to avoid double counting.

[3] The methodologies, including the assumptions, for this indicator are presented in detail here: http://www.doingbusiness.org/methodology.

[4] Index: 0 = not regulated; 6 = most regulated. The methodologies of the OECD product market regulation indicators are presented in detail here: http://www.oecd.org/competition/reform/indicatorsofproductmarketregulationhomepage.htm

[5] Aggregate OECD indicators of regulation in energy, transport and communications (ETCR).

Source: European Commission; World Bank — Doing Business (for enforcing contracts and time to start a business); OECD (for the product market regulation indicators)

Table B.6: **Green Growth**

Green growth performance		2003-2007	2008	2009	2010	2011	2012
Macroeconomic							
Energy intensity	kgoe / €	0.15	0.14	0.14	0.14	0.13	0.13
Carbon intensity	kg / €	0.45	0.41	0.40	0.40	0.38	0.38
Resource intensity (reciprocal of resource productivity)	kg / €	0.59	0.55	0.55	0.53	0.55	n.a.
Waste intensity	kg / €	n.a.	0.15	n.a.	0.15	n.a.	0.15
Energy balance of trade	% GDP	-2.3	-3.5	-2.5	-2.9	-3.7	-3.8
Energy weight in HICP	%	10.3	11.9	11.7	11.6	12.3	12.6
Difference between energy price change and inflation	%	4.9	8.6	-2.6	-0.8	7.0	3.6
Ratio of environmental taxes to labour taxes	ratio	11.0%	10.1%	10.3%	10.1%	10.4%	9.9%
Ratio of environmental taxes to total taxes	ratio	6.3%	5.6%	5.9%	5.7%	5.8%	5.5%
Sectoral							
Industry energy intensity	kgoe / €	0.12	0.11	0.12	0.11	0.11	0.11
Share of energy-intensive industries in the economy	% GDP	10.8	10.7	9.8	10.5	10.2	n.a.
Electricity prices for medium-sized industrial users**	€ / kWh	n.a.	0.11	0.11	0.12	0.12	0.13
Gas prices for medium-sized industrial users***	€ / kWh	n.a.	0.05	0.04	0.04	0.04	0.04
Public R&D for energy	% GDP	n.a.	0.03	0.04	0.04	0.03	0.04
Public R&D for the environment	% GDP	n.a.	0.02	0.03	0.03	0.02	0.03
Recycling rate of municipal waste	ratio	64.5%	76.7%	77.2%	78.2%	79.0%	82.5%
Share of GHG emissions covered by ETS*	%	n.a.	48.3	46.9	48.1	48.5	48.2
Transport energy intensity	kgoe / €	0.73	0.63	0.69	0.67	0.63	0.64
Transport carbon intensity	kg / €	1.89	1.58	1.75	1.71	1.62	1.63
Security of energy supply							
Energy import dependency	%	60.2	60.8	61.0	60.0	61.5	61.1
Diversification of oil import sources	HHI	0.13	0.12	0.13	0.13	0.14	0.14
Diversification of energy mix	HHI	n.a.	0.25	0.24	0.24	0.24	0.24
Renewable energy share of energy mix	%	5.2	6.9	7.7	8.5	9.4	10.4

Country-specific notes:

2013 is not included in the table due to lack of data.

General explanation of the table items:

All macro intensity indicators are expressed as a ratio of a physical quantity to GDP (in 2000 prices)

Energy intensity: gross inland energy consumption (in kgoe) divided by GDP (in EUR)

Carbon intensity: Greenhouse gas emissions (in kg CO_2 equivalents) divided by GDP (in EUR)

Resource intensity: Domestic material consumption (in kg) divided by GDP (in EUR)

Waste intensity: waste (in kg) divided by GDP (in EUR)

Energy balance of trade: the balance of energy exports and imports, expressed as % of GDP

Energy weight in HICP: the proportion of "energy" items in the consumption basket used for the construction of the HICP

Difference between energy price change and inflation: energy component of HICP, and total HICP inflation (annual % change)

Environmental taxes over labour or total taxes: from DG TAXUD's database 'Taxation trends in the European Union'

Industry energy intensity: final energy consumption of industry (in kgoe) divided by gross value added of industry (in 2005 EUR)

Share of energy-intensive industries in the economy: share of gross value added of the energy-intensive industries in GDP

Electricity and gas prices for medium-sized industrial users: consumption band 500–2000MWh and 10000–100000 GJ; figures excl. VAT.

Recycling rate of municipal waste: ratio of recycled municipal waste to total municipal waste

Public R&D for energy or for the environment: government spending on R&D (GBAORD) for these categories as % of GDP

Proportion of GHG emissions covered by ETS: based on greenhouse gas emissions (excl LULUCF) as reported by Member States to the European Environment Agency

Transport energy intensity: final energy consumption of transport activity (kgoe) divided by transport industry gross value added (in 2005 EUR)

Transport carbon intensity: greenhouse gas emissions in transport activity divided by gross value added of the transport sector

Energy import dependency: net energy imports divided by gross inland energy consumption incl. consumption of international bunker fuels

Diversification of oil import sources: Herfindahl index (HHI), calculated as the sum of the squared market shares of countries of origin

Diversification of the energy mix: Herfindahl index over natural gas, total petrol products, nuclear heat, renewable energies and solid fuels

Renewable energy share of energy mix: %-share of gross inland energy consumption, expressed in tonne oil equivalents

* European Commission and European Environment Agency

** For 2007 average of S1 & S2 for DE, HR, LU, NL, FI, SE & UK. Other countries only have S2.

*** For 2007 average of S1 & S2 for HR, IT, NL, FI, SE & UK. Other countries only have S2.

Source: European Commission unless indicated otherwise; European Commission elaborations indicated below