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BETTER POLICIES FOR BETTER LIVES

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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Germany were reviewed by the Committee on 29 February 2016. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 15 March 2016.

The Secretariat's draft report was prepared for the Committee by Andrés Fuentes Hutfilter, Andreas Kappeler, Naomitsu Yashiro and by Dorothee Schneider, who was seconded from the German Ministry of Economic Affairs and Energy, under the supervision of Andreas Wörgötter. Eun Jung Kim and Giovanni Maria Semeraro provided research assistance. Heloise Wickramanayake formatted and produced the layout. The previous Survey *of Germany was issued in May 2014.*

Information about the latest as well as previous Surveys *and more information about how* Surveys *are prepared is available at www.oecd.org/eco/surveys.*

BASIC STATISTICS OF GERMANY, 2014

(Numbers in parentheses refer to the OECD average)[a]

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	80.9		Population density per km^2	226.5	(34.9)
Under 15 (%)	13.1	(18.1)	Life expectancy (years, 2013)	80.9	(80.5)
Over 65 (%)	20.9	(16.0)	Men	78.6	(77.8)
Foreign-born (%, 2013)	13.0		Women	83.2	(83.1)
Latest 5-year average growth (%)	-0.2	(0.6)	Latest general election	September 2013	

ECONOMY

Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	3.879.7		Primary sector	0.7	(2.5)
In current prices (billion EUR)	2.919.8		Industry including construction	30.3	(26.8)
Latest 5-year average real growth (%)	2.0	(1.9)	Services	69.0	(70.7)
Per capita (000 USD PPP)	46.5	(39.3)			

GENERAL GOVERNMENT

Per cent of GDP

Expenditure	44.2	(42.7)	Gross financial debt[b]	82.1	(114.4)
Revenue	44.5	(38.5)	Net financial debt[b]	45.9	(72.6)

EXTERNAL ACCOUNTS

Exchange rate (EUR per USD)	0.753		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	0.776		Machinery and transport equipment	47.5	
In per cent of GDP			Chemicals and related products, n.e.s.	15.0	
Exports of goods and services	45.8	(53.8)	Manufactured goods	12.4	
Imports of goods and services	39.0	(49.8)	Main imports (% of total merchandise imports)		
Current account balance	7.4	(0.0)	Machinery and transport equipment	33.9	
Net international investment position	38.4		Manufactured goods	12.9	
			Chemicals and related products, n.e.s.	12.8	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate for 15-64 year-olds (%)	73.8	(65.6)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	5.0	(7.3)
Men	78.1	(73.6)	Youth (age 15-24, %)	7.8	(15.1)
Women	69.5	(57.9)	Long-term unemployed (1 year and over, %)	2.2	(2.5)
Participation rate for 15-64 year-olds (%)	77.7	(71.2)	Tertiary educational attainment 25-64 year-olds (%, 2013)	28.5	(33.3)
Average hours worked per year	1 371	(1 770)	Gross domestic expenditure on R&D (% of GDP)	2.8	(2.4)

ENVIRONMENT

Total primary energy supply per capita (toe)	3.8	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes)	9.4	(9.6)
Renewables (%)	11.1	(9.1)	Water abstractions per capita (1 000 m^3, 2010)	0.4	
Fine particulate matter concentration ($PM_{2.5}$, µg/m^3, 2013)	15.3	(13.8)	Municipal waste per capita (tonnes, 2013)	0.6	(0.5)

SOCIETY

Income inequality (Gini coefficient, 2012)	0.289	(0.308)	Education outcomes (PISA score, 2012)		
Relative poverty rate (%, 2012)	8.4	(10.9)	Reading	508	(496)
Median equivalised household income (000 USD PPP, 2010)	24.2	(20.4)	Mathematics	514	(494)
Public and private spending (% of GDP)			Science	524	(501)
Health care, current expenditure[b]	11.1	(8.9)	Share of women in parliament (%, December 2015)	36.9	(27.7)
Pensions (2011)	10.6	(8.7)	Net official development assistance (% of GNI)	0.42	(0.37)
Education (primary, secondary, post sec. non tertiary, 2012)	3.1	(3.7)			

Better life index: *www.oecdbetterlifeindex.org*

a) Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

b) 2013 for the OECD aggregate.

c) 2012 for the OECD aggregate.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

Executive summary

- *Unemployment is low but productivity growth has weakened*
- *Demographic ageing and a large refugee inflow pose challenges*
- *Investment is subdued and key social infrastructure needs to be developed further*

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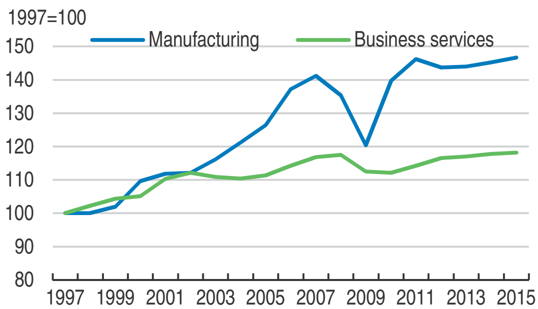
Unemployment is low but productivity growth has weakened

Gross value added per hour worked, constant prices



Source: OECD (2016), *OECD Productivity Database.*

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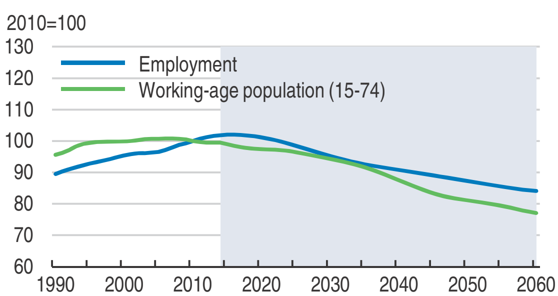
The economy has steadily recovered from the 2008 global crisis and, thanks to past reforms, the labour market has proved strong. Labour productivity growth has weakened and productivity is low in services. Germany has high material living standards, low income inequality and scores well in most dimensions of well-being. Despite substantial progress, there still are gaps in childcare and full-day schooling. Disincentives to work full-time in the tax system also contribute to low earnings of women as many work part-time. In recent years many low-income households have not benefited from economic growth and investment.

Demographic ageing and a large refugee inflow pose challenges

Projected employment and population trends



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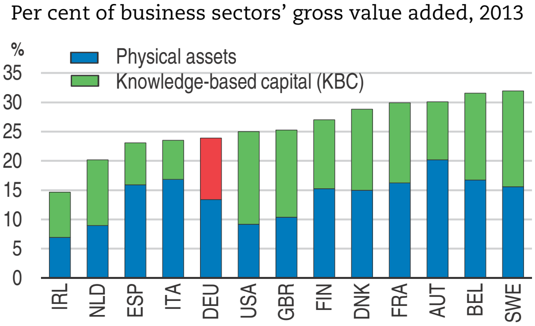
Labour supply is set to shrink faster than the population as a consequence of ageing. This can be offset by improving employment opportunities for women and older workers. Immigration, including the recent inflow of refugees, will also add to the labour force, but their integration requires additional efforts and spending which may exceed the currently available fiscal room. Some well-being outcomes decline with age, and therefore better prevention of health risks could raise income and well-being. Further reforms in the pension system are needed to ensure its long-term sustainability.

Investment is subdued and key social infrastructure needs to be developed further

Business investment in physical and knowledge-based capital

Per cent of business sectors' gross value added, 2013



Source: OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015.*

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Investment and productivity growth are held back by weak demand growth in emerging economies and also the euro area as well as restrictive regulation in services. Public investment has been low, although recently the government has provided more funds to improve maintenance of transport infrastructure. There is scope to improve efficiency in the procurement and management of public investment projects. Investment in formal childcare has increased. However, provision of childcare, early childhood education and full-day primary schooling still fall short of needs.

Main findings and key recommendations

Integrate refugees and migrants to limit fiscal costs and improve their productivity	
The inflow of refugees is large. They lack German language and recognised professional skills.	Improve training and the recognition of immigrants' skills.
Most asylum-seekers can only be hired within the first 15 months if a labour market test shows that no suitable EU national is available.	Ease labour market testing requirements for asylum seekers who are judged likely to stay and include them in active labour market programmes.
Strengthen investment and productivity	
Regulation barriers, such as rules on exclusive activities, hamper competition in some services.	Reduce restrictive regulation in the professional services.
Regulatory biases and government ownership in business sector activities hold back the reallocation of resources, hampering investment in knowledge-based capital.	Improve governance or privatise government stakes in the *Landesbanken*, car manufacturing, telecommunications and postal services. The administration should strengthen the analysis of the economy-wide impact of regulation.
Government investment remains weak, especially in poor municipalities.	Provide more support for good municipal investment projects, including by strengthening administrative capacity, especially in municipalities burdened with high spending mandates (such as cash transfers). Strengthen investment in childcare, early childhood education and primary education.
Lower hours worked by women reduce well-being and economic activity. Income earned by secondary earners faces high taxation.	Lower the tax burden on the second earner in personal income taxation for example by introducing a separate tax-free allowance for second earners. Relate health insurance premiums to the number of adults in a household.
Exemptions from energy taxation and tax advantages for environmentally harmful activity weaken environmental policy.	Gradually adjust energy tax rates according to carbon intensity. Introduce taxation of NO_x emissions.
Address challenges posed by demographic change	
Some aspects of the pension system penalise those who choose to work beyond 65 years of age or combine employment with the receipt of an old-age pension, holding back incomes and well-being.	Raise the pension premium for starting to draw old-age pensions later in life and do not reduce pensions for old-age pensioners who work.
The generosity of the public pensions is falling and coverage of private supplementary pensions is low, especially among low-income households.	Enroll all individuals in occupational pension schemes by default, allowing them to opt out.
Rising life expectancy will raise pension spending.	Index the pensionable age to increases in life expectancy.

Assessment and recommendations

- *Economic growth has been modest and business investment is recovering slowly*
- *Euro area monetary conditions have eased further*
- *Risks from the low interest rate environment have so far been limited*
- *The current account surplus remains large*
- *The labour market has tightened, but a large gender pay gap and rising immigration pose challenges*
- *Fiscal policy must address several challenges*
- *Raising investment and productivity*
- *Well-being and demographic change*

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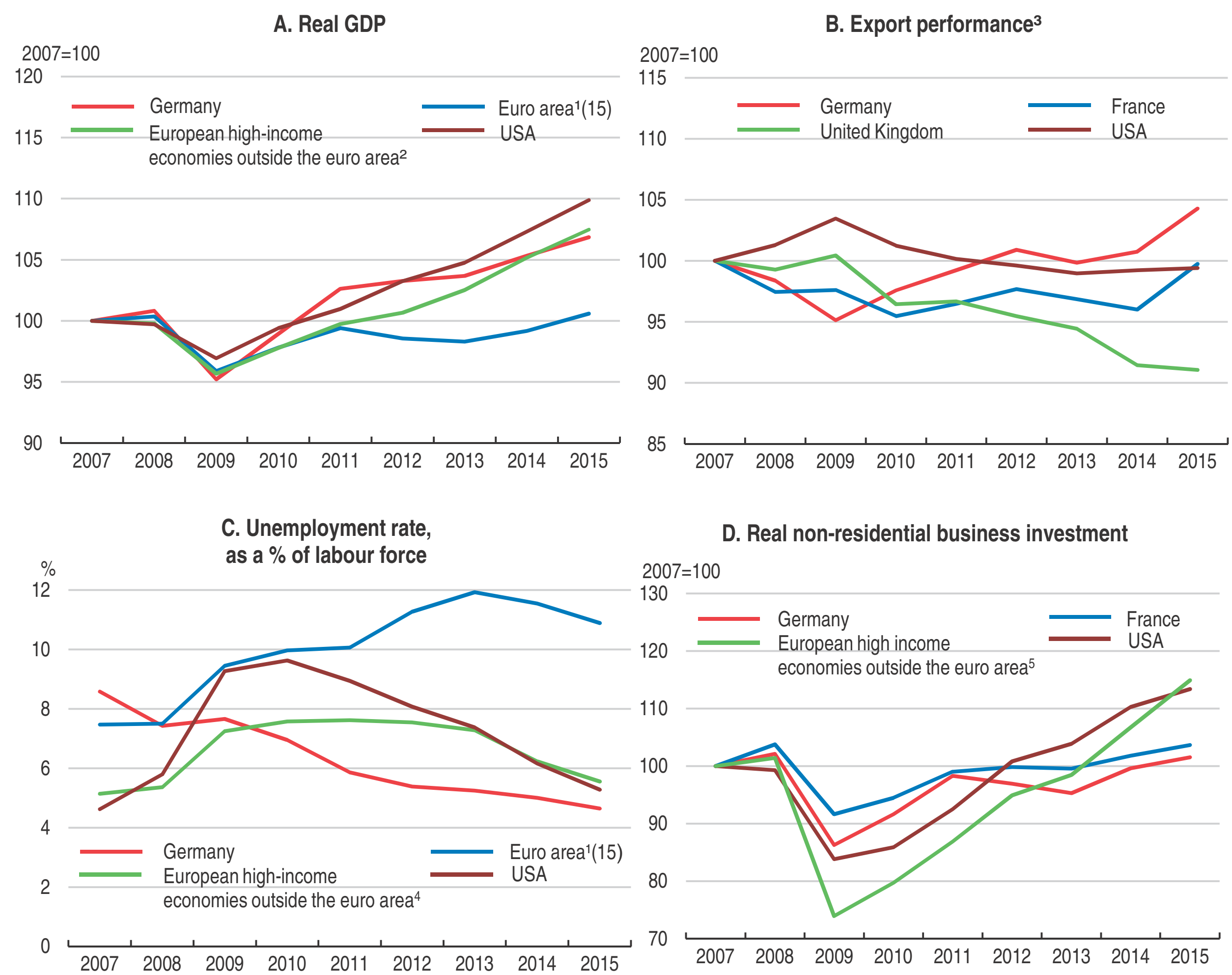
Economic growth has rebounded quickly since the global financial crisis of 2009. A competitive manufacturing sector and euro depreciation have driven strong export performance. Reflecting past labour market reforms, the unemployment rate has continued to fall and is now the lowest in the European Union (Figure 1, Panels A, B and C). Private household demand has risen on the back of a robust labour market and the recent

Figure 1. **Key economic indicators**



1. Euro area countries which are OECD members.
2. Includes Denmark, Sweden, Switzerland and the United Kingdom. They are weighted on the basis of GDP at 2011 purchasing power parities.
3. Growth in exports relative to the growth of the country's export markets.
4. Includes Denmark, Sweden, Switzerland and the United Kingdom.
5. Includes Denmark, Sweden, Switzerland and the United Kingdom. They are weighted on the basis of investment spending in 2011.

Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections* (database), and OECD calculations based on *OECD Economic Outlook: Statistics and Projections* (database) and on *Main Economic Indicators Database*.

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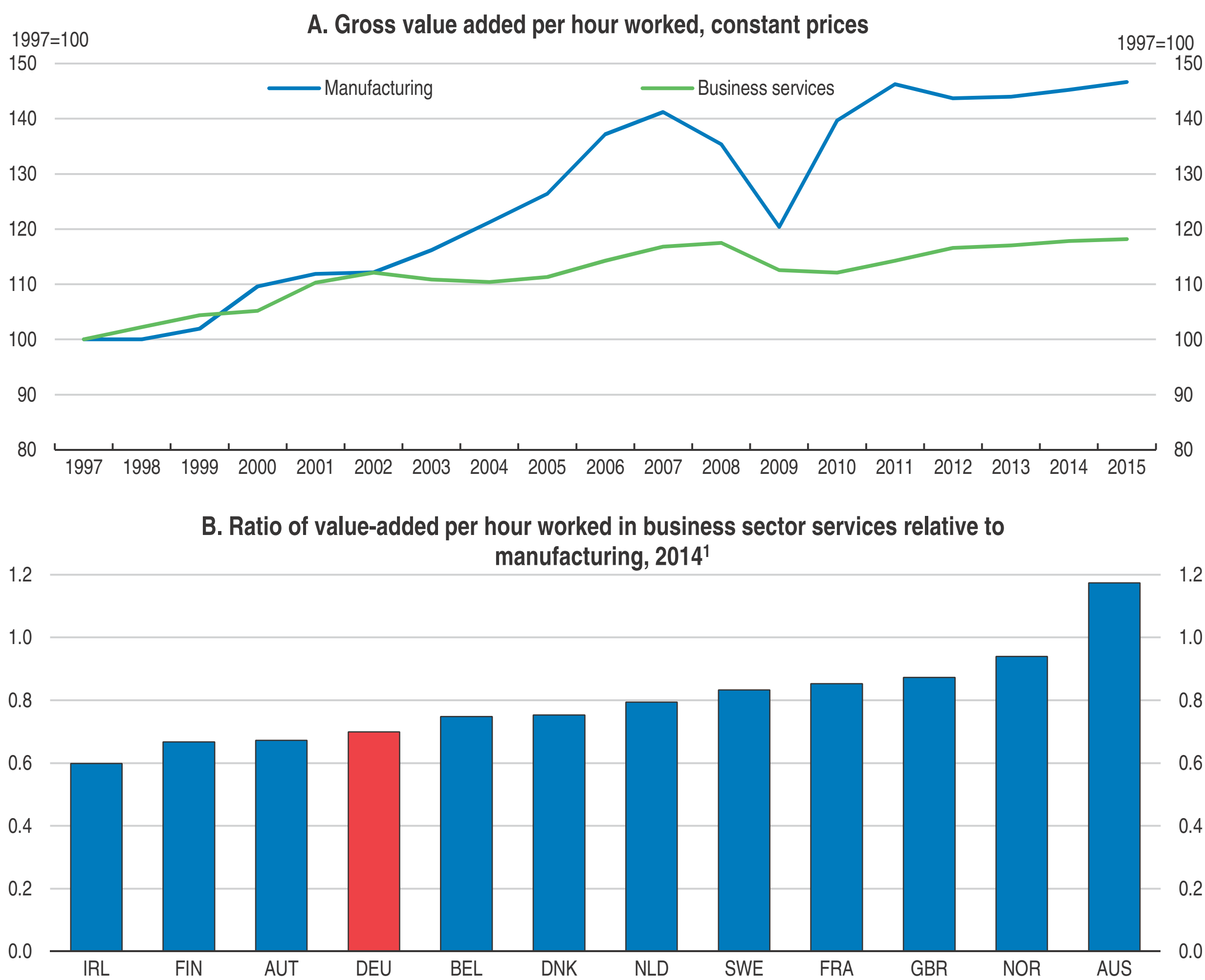
introduction of a minimum wage, which significantly increased the benefits of working at the lower end of the labour market. Decisive action by the European Central Bank (ECB) provided monetary support and helped to stabilise the euro area. Germany's status as a safe haven for financial investors has also supported activity while euro area membership prevented appreciation *vis-à-vis* most key European trading partners. An effective fiscal rule resulting in a solid fiscal position and overall competition-friendly product market regulation are key factors which sustain a high level of productivity and confidence.

However, growth and business investment have recently been weaker than in high income countries outside the euro area (Figure 1, Panels A and D). Labour productivity growth has weakened and has been low in the services (Figure 2). Stronger productivity growth will be critical to ensure rising living standards in the medium and long-term, as the labour force is set to fall more strongly than the population as a result of ageing. The recent large inflow of refugees may help damp the impact of demographic change on

Figure 2. **Productivity growth has weakened and is relatively low in the services**



1. 2013 for France, 2012 for Australia and the United Kingdom.

Source: OECD (2016), *OECD Productivity Database* and OECD (2015), *OECD National Accounts Database*.

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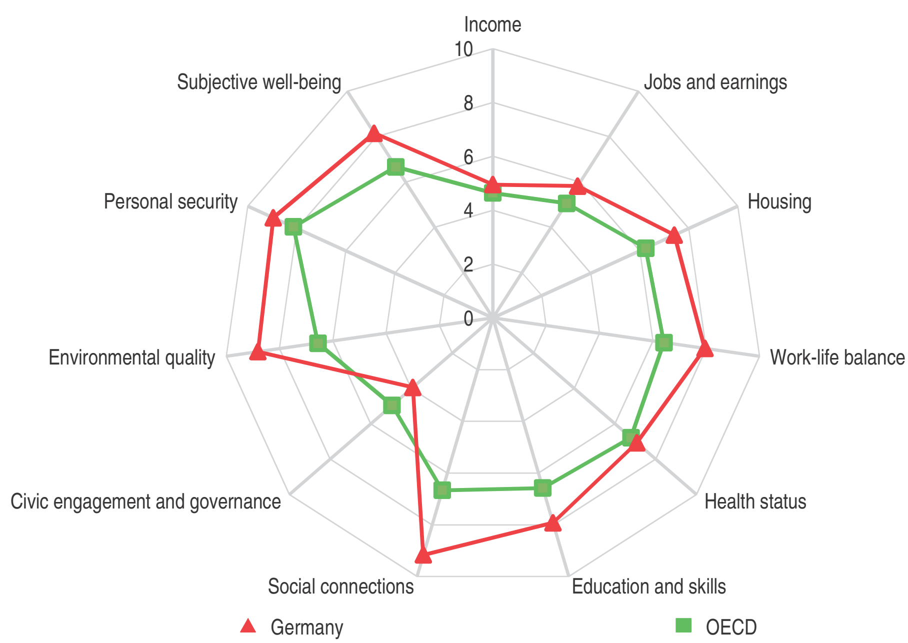
labour supply in the medium term, but comprehensive policies will be needed to integrate the newly arrived immigrants into German society and the labour market. A large current account surplus contributes to global imbalances.

Well-being outcomes for Germany are above the OECD average and particularly strong for social connections, work-life balance, education and environmental quality (Figure 3). However, well-being evolves less favourably with age than in other OECD countries (Unger and Schulze, 2013; Schöllgen et al., 2010; Wetzel, Huxhold and Tesch-Römer, 2015). Education outcomes continue to depend strongly on socio-economic background, although less so than in the past (*OECD Economic Survey of Germany 2014*, OECD, 2014a). Life expectancy and subjective health outcomes vary considerably with socio-economic background and inequality in well-being outcomes tends to increase with age. While income inequality is one of the lowest among large OECD economies, disposable incomes of the poorest households have not grown in real terms over the past decade, despite lower unemployment.

Figure 3. **Well-being in Germany**



Note: Each well-being dimension is measured by one to four indicators from the OECD Better Life indicator set. Normalised indicators are averaged with equal weights. Indicators are normalised to range between 10 (best) and 0 according to the following formula: (indicator value – minimum value)/(maximum value – minimum value).
Source: OECD (2015), *OECD Better Life Index*.

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Against this backdrop the key messages of the *Survey* are:

- Effective integration policies for immigrants are critical for Germany to meet its humanitarian commitments, improve economic outcomes of the refugee inflows and ensure social cohesion.
- Higher investment will be key to raise productivity and living standards. There is particular scope to raise productivity in services through regulatory reform. Reforms to foster investment in knowledge-based capital and unleash the potential of key services

and would also boost competitiveness of manufacturing, fostering the transition to "Industry 4.0", which requires close integration of manufacturing and services. Investing in key education and social services would enhance inclusive growth.

- Much potential lies in removing barriers for women to develop their professional careers. There is also scope to further remove barriers to employment and well-being of older workers. Indexing the statutory retirement age would improve the sustainability of the pension system.

Economic growth has been modest and business investment is recovering slowly

Economic growth in 2015 was sustained by exports and private household demand (Table 1). Export performance has been impressive over the past 10 years, keeping the share of industry in domestic value-added at an unusually high level of 22%. Exporters continued to gain substantial market shares in part owing to the depreciation of the euro. Exports of transport, electronic and optical equipment as well as chemicals, for which Germany has a longstanding comparative advantage, were particularly strong. Empirical evidence suggests that decentralised management, with significant worker involvement, has provided incentives for product improvements, helping exporters to compete on quality, while offshoring production to low wage countries has reduced costs of intermediate inputs (Marin et al., 2015). However, weakening growth in emerging economies has started to weigh on exports.

Demand is therefore shifting from external sources to private households, which are projected to remain the main driving force for growth in the near-term (Table 1). Household consumption will be supported by strong real wage growth, as cheap oil has damped consumer prices, while a tight labour market and the introduction of the national minimum wage have pushed up nominal wages. Demand for housing continues to rise, pushing up housing rents and prices in urban centres and spurring construction. Loose monetary conditions and expansionary fiscal policy, in part reflecting government spending for the needs of newly arrived refugees, provide further stimulus to domestic demand. Wage growth has raised unit labour costs somewhat, but price competitiveness remains strong (Figure 4) and inflation is still very low. Mortgage lending to households has picked up somewhat, while lending to non-financial businesses remains subdued.

Overall, GDP growth is projected to remain solid in 2016 and 2017, as domestic consumption remains strong and the demand for German exports in the euro area recovers and compensates emerging economies' weakness. The newly arrived humanitarian immigrants will start looking for jobs only gradually and immigration is assumed to diminish. The cyclical unemployment rate is expected to remain low, but the natural rate will rise because of the inflow of large numbers of refugees with a long distance from employability. Consumer price inflation is projected to rise, as wage growth has picked up, there is little remaining economic slack, and as the effect of the fall in oil prices will wear off (the projection assumes, as a technical matter, that oil prices and exchange rates remain constant going forward). Weaker export growth, robust domestic demand growth and lower net foreign capital income are projected to reduce the current account surplus somewhat.

A sharper slowdown of activity in emerging markets and renewed weakness of activity in the euro area could weaken exports more strongly than projected, damp investment, and spill over to consumer confidence. The German economy depends more on world trade than

Table 1. **Macroeconomic indicators and projections**

Annual percentage change in volume terms unless specified otherwise

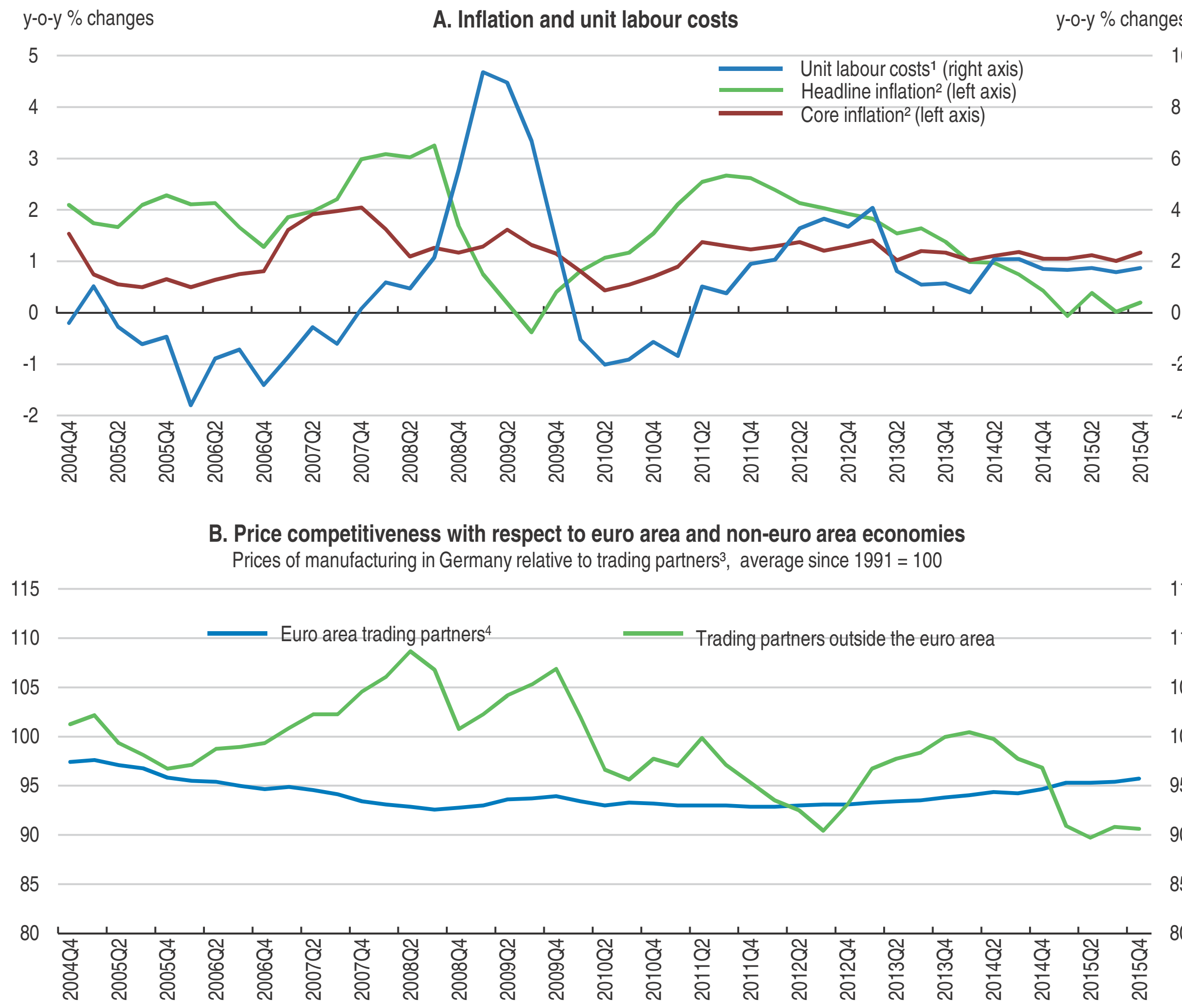
	2012 Current prices (EUR billion)	2013	2014	2015	2016[1]	2017[1]
Working-day adjusted GDP	2 756	0.4	1.6	1.4	1.3	1.7
Private consumption	1 532	0.8	1.0	1.9	1.8	1.9
Government consumption	523	0.8	1.7	2.4	2.9	2.3
Gross fixed capital formation	557	-1.3	3.5	1.7	3.1	3.6
Housing	160	-0.9	3.3	1.0	2.8	3.1
Business	335	-1.7	4.5	1.9	2.5	4.0
Government	62	0.3	-1.6	1.8	7.7	3.1
Final domestic demand	2 612	0.3	1.7	1.9	2.3	2.4
Stockbuilding[2]	-25	0.5	-0.3	-0.5	0.1	0.0
Total domestic demand	2 588	0.9	1.3	1.4	2.4	2.4
Exports of goods and services	1 270	1.8	3.9	4.8	1.6	3.6
Imports of goods and services	1 101	3.2	3.7	5.4	4.2	5.6
Net exports[2]	169	-0.5	0.3	0.1	-0.9	-0.5
Other indicators (growth rates, unless specified)						
GDP without working day adjustment	2 755	0.3	1.6	1.7	1.4	1.5
Potential GDP	..	1.1	1.1	1.3	1.3	1.3
Output gap[4]	..	-1.4	-0.9	-0.8	-0.8	-0.4
Employment	..	1.0	0.9	0.6	0.8	0.7
Unemployment rate[5]	..	5.2	5.0	4.6	4.6	4.7
GDP deflator	..	2.1	1.7	2.1	1.5	1.4
Harmonised index of consumer prices	..	1.6	0.8	0.1	0.5	1.4
Core HICP	..	1.2	1.1	1.1	1.2	1.4
Household saving ratio, net[3, 6]	..	9.1	9.5	9.7	9.6	9.3
Export performance[3]	..	-1.0	0.9	2.0	..	..
Current account balance[3, 7]	..	6.5	7.4	8.3	8.1	7.4
Government financial balance[3, 7]	..	-0.1	0.3	0.6	0.2	0.4
General government underlying balance[7]	..	0.4	0.7	0.8	0.6	0.6
Underlying government primary balance[4]	..	2.0	2.1	2.0	1.6	1.4
Government gross debt (Maastricht definition)[3, 7]	2 057	77.2	74.8	71.5	68.6	66.0
Government gross debt (national accounts definition)[3, 7]	2 146	81.4	82.1	78.8	75.9	73.3
Government net debt[3, 7, 8]	1 232	45.1	45.9	43.7	42.4	40.8
Three-month money market rate, average	..	0.2	0.2	0.0	-0.1	0.1
Ten-year government bond yield, average	..	1.6	1.2	0.5	0.5	0.8

1. OECD projections.
2. Contribution to changes in real GDP.
3. OECD projections for 2015.
4. As a percentage of potential GDP.
5. As a percentage of the labour force.
6. As a percentage of household disposable income.
7. As a percentage of GDP.
8. Gross debt (national accounts definition) minus assets.

Source: OECD Economic Outlook: Statistics and Projections (database), Federal Statistical Office and OECD calculations.

most because of the high weight of exports in GDP and the relatively high share of investment goods exported to emerging economies. Other potential shocks could result from a further increase in immigration or turbulence in the euro area (Box 1). On the other hand, steps to strengthen confidence in the euro area would boost the attractiveness of Germany as a location to invest. Adopting policies to deal with domestic long-term challenges, notably to deal with population ageing, could also boost investment in the near term.

Figure 4. **Inflation remains low and competitiveness strong**



1. Per unit of turnover at constant prices on an hourly basis.
2. Harmonised consumer price index (HICP). Core HICP excludes energy, food, alcohol and tobacco.
3. Based on the deflators of manufacturing sales.
4. Provisional value for 2015Q4.

Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections* (database) and Deutsche Bundesbank.

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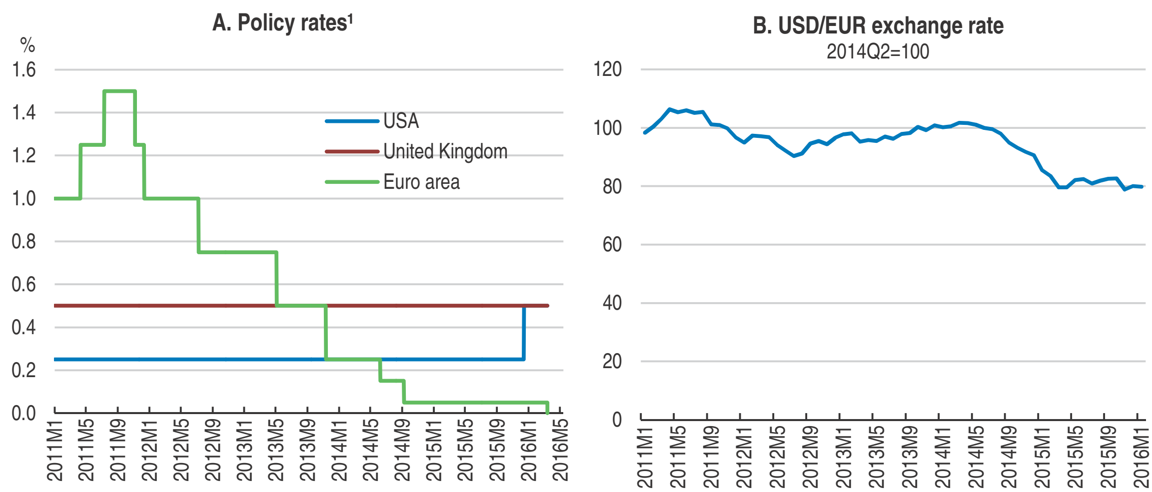
Box 1. **Shocks that might affect economic performance**

Vulnerability	Possible outcome
Euro area turbulence and prolonged weak growth in the euro area	Financial and trade ties to other euro area countries remain substantial. The low leverage ratios in systemically important European banks could aggravate the consequences of turbulence. Weak demand in the euro area would harm exports and investment. It would also keep long-term interest rates low, with adverse consequences for household interest and pension income and risks for financial stability.
Further increase of migrant flows	Integrating large numbers of refugees with low qualifications and language skills will involve costs and could raise unemployment. Integration measures could fail if applied under restrictive regulatory circumstances or if there are inadequate public services, like housing, health, education and in particular active labour market policies. Fading political support for refugees and increasing tensions with other EU member states could lead to the re-introduction of border controls which will increase business costs, hitting Germany's export oriented economy. Transit countries on the Balkans may refuse refugees at their borders, eventually leading to a new economic and humanitarian crisis with considerable contagion risks.

Euro area monetary conditions have eased further

While the European Central Bank kept policy rates higher than the monetary authorities of the UK and the US until 2013, its policy stance has been highly expansionary recently (Figure 5). The European Central Bank (ECB) reduced policy rates further and has engaged in unconventional measures since June 2014, including a large asset purchase programme and targeted longer-term refinancing operations (TLTROs) for banks. As a result, the Eurosystem's balance sheet has expanded strongly. To encourage commercial banks to use the additional liquidity to boost lending, the ECB introduced negative interest rates on their deposits at the ECB. It announced an extension of its asset purchase programme by 6 months and reduced the deposit rate further below zero in December 2015.

Figure 5. **Low monetary policy rates have depreciated the euro**



1. Policy rate of the central banks. The United States: Federal Funds target rate; euro area: Euro short term repo rate (ECB); The United Kingdom: clearing banks' base rate.

Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections* (database) and Thomson Reuters.

StatLink http://dx.doi.org/10.1787/888933345350

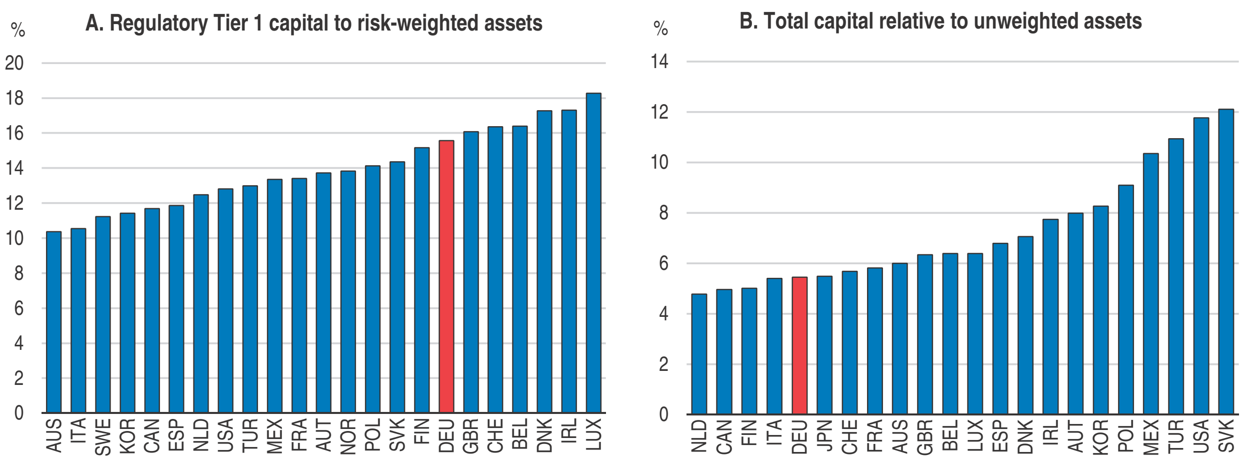
These steps contributed to a substantial depreciation of the euro against the dollar, boosting competitiveness, including in Germany's export-oriented economy. Credit to the private sector in the euro area has been gradually recovering. Banks have begun relaxing lending standards, in particular in countries where these standards were tight (OECD, 2015n), and lending interest rates have fallen. The impact on lending in Germany has been relatively small, in part because conditions for access to credit have been good throughout in recent years (*Ifo Business Survey*, 2015). Credit growth remains modest. Strong profitability and subdued business investment plans are holding back the demand for bank loans. Nevertheless, euro area monetary conditions are relatively loose for the cyclical position of the Germany economy, as economic growth and employment have been stronger than elsewhere in the euro area, and the output gap in Germany is now likely to be small.

Risks from the low interest rate environment have so far been limited

Easy monetary conditions do not appear to have led to excessive asset prices or lending. Increases in house prices have been broadly aligned with rising household income and rental prices (Deutsche Bundesbank, 2015a), although in some of the largest cities with highest population density housing prices have grown significantly faster than rents (Kholodilin and Michelsen, 2015). In any case, growth of lending to private households for housing purchases remains moderate (Deutsche Bundesbank, 2016b). The large internationally active banks have downsized their large exposures to derivatives, which were identified as a substantial systemic risk in the 2014 *OECD Economic Survey of Germany*. They have improved capital buffers, which also reduces systemic risk. The ratio of Tier 1 capital to risk-weighted assets of Germany's banking sector is relatively high. However, the ratio of total book capital to unweighted assets remains is low (Figure 6).

Figure 6. **The capital to assets ratio remains low**

2013



Source: IMF (2015), *IMF Financial Soundness Indicators Database.*

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Low interest rates are primarily affecting profit margins of small and medium-sized banks which depend the most on deposits for funding. Most of these institutions will be able to withstand the strains caused by the low interest rates, as they are relatively well capitalised (Deutsche Bundesbank, 2015b). The government reformed life insurance regulation in 2014, allowing insurance companies to reduce their long-term payment commitments which they had contracted when interest rates were higher. However, the credit institutions foresee a fall of pre-tax profit by around 25% by 2019 and insurers' resilience is uncertain should market interest rates remain low (Deutsche Bundesbank, 2015a). If interest rates stay low financial institutions may choose to take on more risk to protect returns. For example, life insurance companies have increased the share of equities in their portfolios. Low interest rates make it more difficult to expand private pension schemes, as intended by the government.

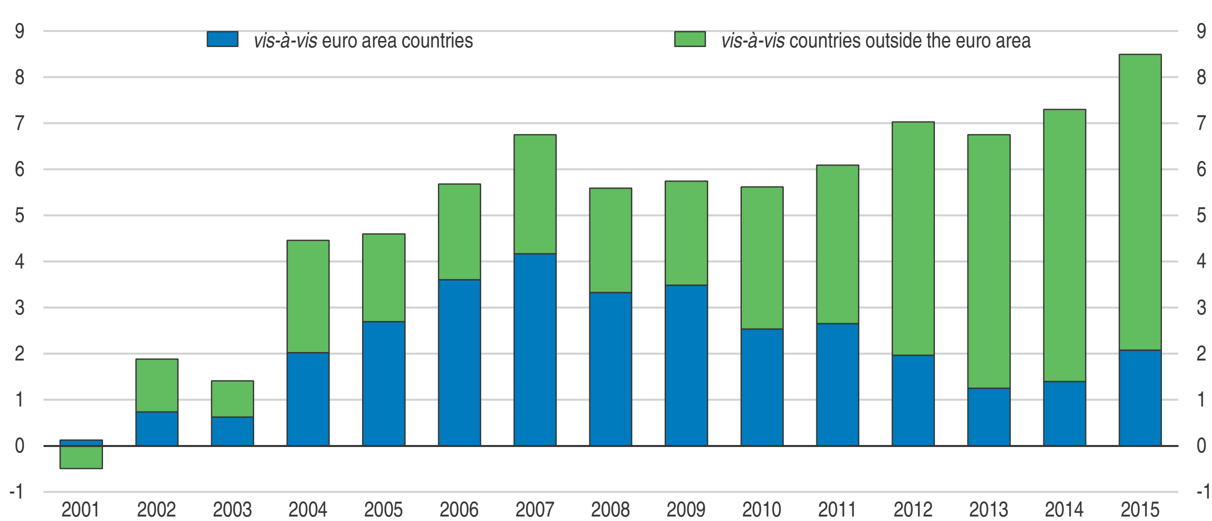
The current account surplus remains large

The current account surplus is expected to be about 8% of GDP in 2016, as lower oil prices limit the import bill and euro depreciation boosts exports. The current account surplus *vis-à-vis* other euro area countries has also risen since 2013 reflecting the gradual recovery of activity in the euro area (Figure 7), although it remains substantially lower than before the global economic and financial crisis. There is, however, no mono-causal explanation to the German current account surplus. There are a variety of underlying transitory factors, in particular, real exchange rate effects and low commodity prices as well as more fundamental factors such as the ongoing demographic change, the widening gap between productivity in manufacturing and services (Coricelli, Ravasan and Wörgötter, 2013) and a substantial increase in net foreign assets and related revenues. The large surplus reflects in part the reversal of the saving-investment balance in the corporate and government sectors (Figure 8). The remarkable increase in the saving-investment balance of the corporate sector reflects subdued growth in non-residential investment, which has not kept pace with higher profits. Household saving is high and has increased somewhat since the early 2000s, as households raised precautionary saving in response to low growth and high unemployment in the early half of 2000s and to reductions in public pension entitlements (Deutsche Bundesbank, 2015c).

Policies which reduce the current account surplus by strengthening domestic demand and making the services sector more attractive for investment would have positive spillovers in the context of subdued economic growth in the euro area and world-wide, supporting adjustment in deficit countries at a lower cost in terms of output foregone. Addressing the structural reform priorities set out below would not only increase Germany's potential growth but also reduce its external imbalance to some extent. This is particularly the case for policies that stimulate investment, such as regulatory reforms that reduce barriers to entry in service sectors. Removing barriers for full-time employment of women would reduce poverty risks and could thereby lower precautionary household saving. Pension reforms which lengthen working lives would also lower saving as

Figure 7. **The current account surplus with countries outside the euro area has risen**

Percentage of GDP



Source: Deutsche Bundesbank.

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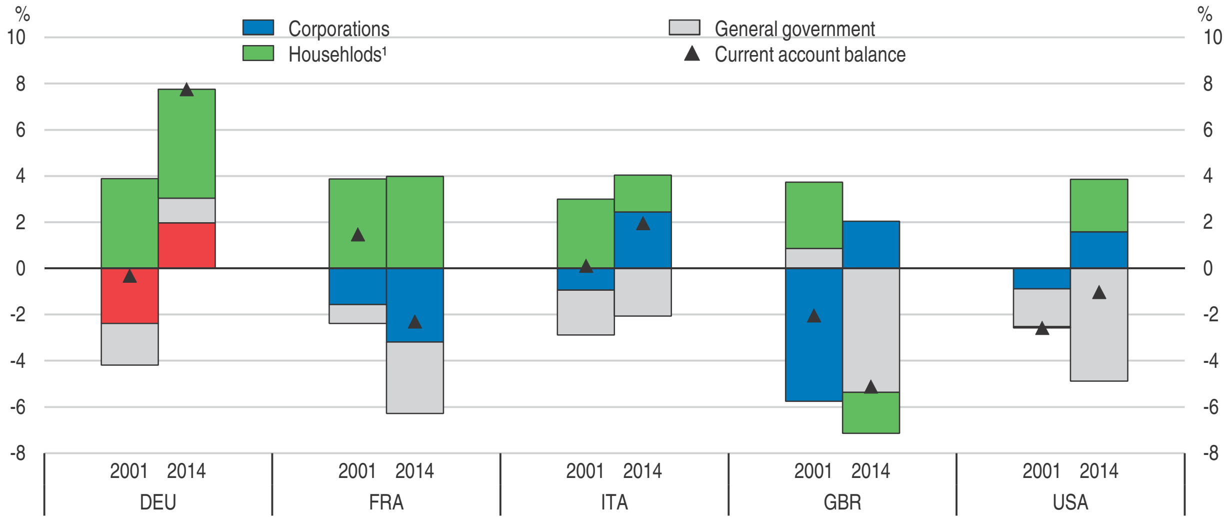
Figure 8. **The current account surplus is large**

Investment-saving balances by sector and current account balance, % of GDP



1. Includes non-profit institutions serving households.

Source: OECD (2015), *OECD National Accounts Database.*

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households would have more years to accumulate wealth for their retirement (Kerdrain et al., 2010). Energy tax exemptions for energy-intensive, export-oriented manufacturing firms have protected profitability (see below).

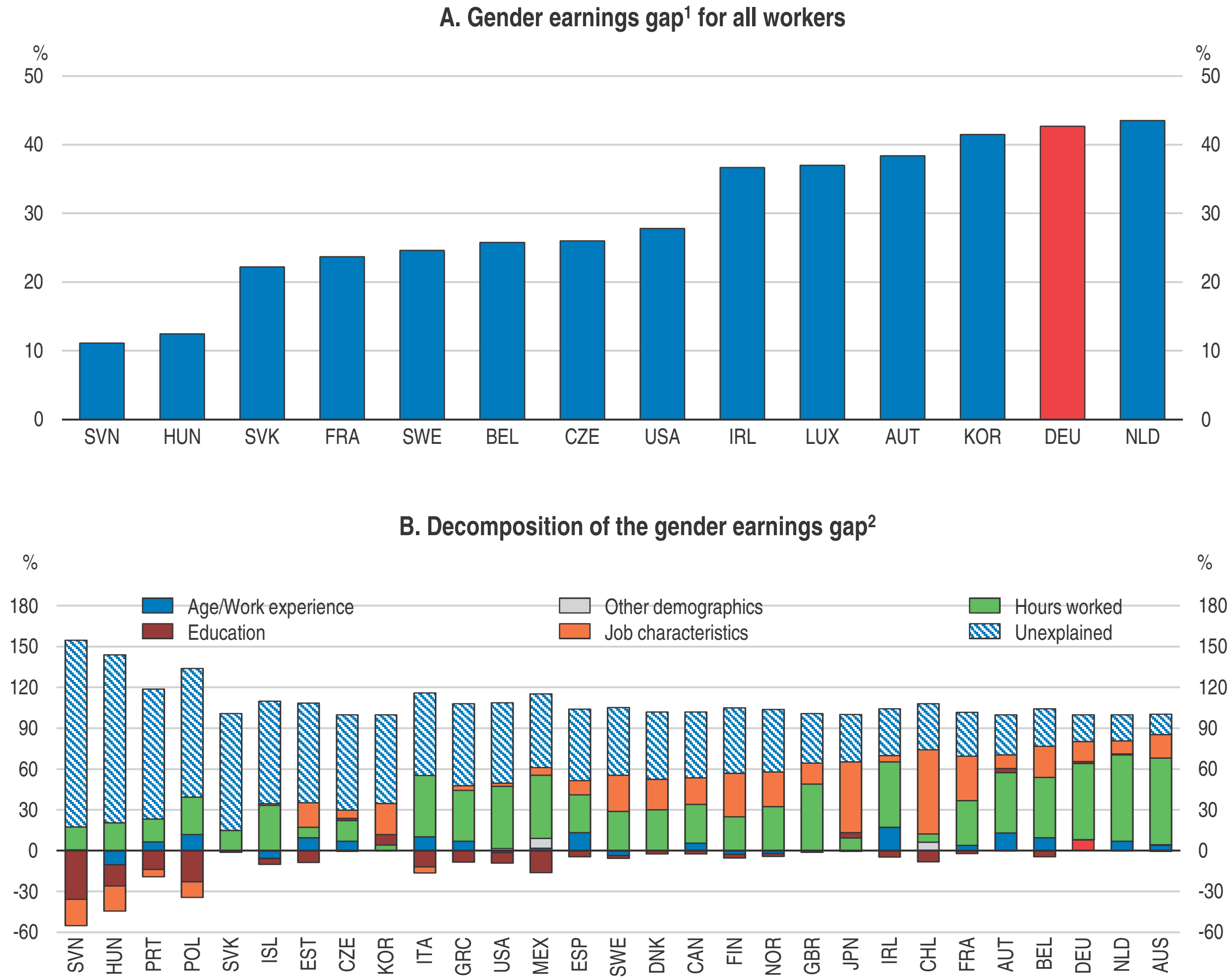
The labour market has tightened, but a large gender pay gap and rising immigration pose challenges

Employment has continued to grow, mostly in services. So far the minimum wage does not appear to have had significant negative employment effects overall, and even had a positive employment impact in sectors and regions with a high incidence of low pay. Transitions of workers from employment to unemployment appear not to have increased as a result of the minimum wage (IAB, 2016). The minimum wage appears to have led to a shift of employment towards standard employment contracts, away from *minijobs*, which are taxed at low rates and are not covered by unemployment insurance (BMWi, 2015).

The minimum wage now has been almost fully phased in, with exceptions in some sectors, mostly in East Germany, in which it will be phased in by end-2017. The government has introduced an independent minimum wage commission, which includes employers, trade unions and independent experts, to make recommendations about future adjustments. Its objective is to ensure employment outcomes are not harmed. The effectiveness of the minimum wage commission could also be strengthened by giving the independent experts voting rights. It is important that future evaluations take into account the impact of immigration on the supply of labour.

The gender earnings gap in Germany is large, because many women work part-time (Figure 9). It is particularly large among the highly educated. 43% of men, but only 11% of women, with a university degree earn more than twice the median income (OECD, 2012). The part-time employment rate is particularly high among young women in families with young children. In 2013 two thirds of women with children worked 30 hours a week or less (BMAS, 2015). The lack of full-day childcare and schools for young children constrains many women's

Figure 9. **The gender earnings gap is wide because many women work few hours**



1. Defined as the difference between male and female median labour earnings (not adjusted for hours worked) divided by male median labour learnings.
2. Countries are arranged from left to right in descending order of the proportion of the unexplained gender earnings gap.

Source: OECD (2012), *Closing the Gender Gap: Act Now*.

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labour market choices. Women who work part-time are also more limited in the choice of job, reducing their prospects for pay. Low working hours among young women undermines subsequent career and earnings prospects, even if they move to full-time jobs eventually.

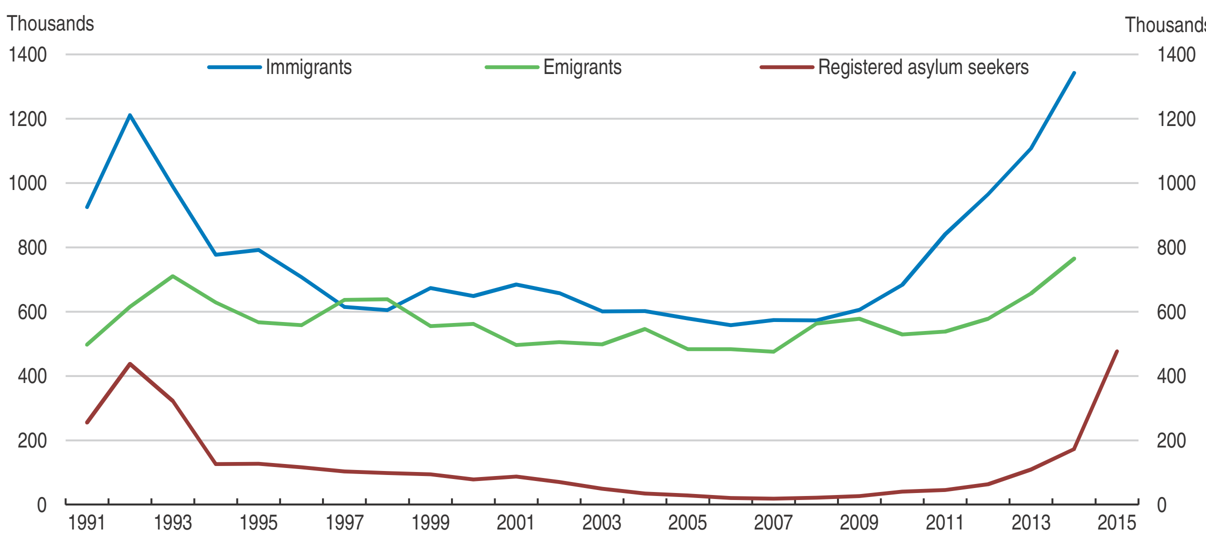
The government is preparing legislation to promote equal pay conditions for men and women. If the legislation is implemented, large companies will be required to provide information on how they promote gender balance in pay and career opportunities. Each employee will have the right to be informed by their employer on equal pay for men and women. Firms will be called upon to follow prescribed steps to remove any discriminatory practices. The government has also made it easier to combine work with family life by making the parental leave regulations more flexible, allowing an easier combination of parental leave and part-time work. Recent legislation requires large listed companies to fill a minimum of 30% of posts in supervisory boards with women from 2016 onwards. These steps will increase women's incentives to develop their careers.

The ongoing expansion of childcare facilities has improved the compatibility of work and family life. Nonetheless, insufficient provision of full-day childcare and schooling as well as disincentives in the tax system continue to create barriers for full-time employment that mostly affect women (see below). Experience across OECD countries shows that a smaller gender pay gap reduces poverty risks in households markedly (OECD, 2015a). Indeed, at the household level, job loss and household reconstitutions are key triggers of poverty risk. If both partners in a couple work, resulting poverty risks are reduced.

Integrating immigrants effectively

Immigration has risen strongly since 2011, at first mostly on account of inflows from east and southern Europe in the context of the euro area debt and economic crisis. It accelerated sharply in 2015 with the arrival of around 1 million humanitarian immigrants seeking asylum (1.2% of the German population). This is considerably more than the number of registered asylum requests shown in Figure 10, reflecting the time lag between their arrival and the application for asylum. In the first half of 2015, 30% of asylum seekers were youth or children while 50% are adults below 35 years. Most asylum seekers are from the Middle East and east Africa, and are expected to stay. But they are getting jobs only slowly.

Figure 10. **The number of immigrants and registered asylum seekers has risen**



Source: Federal Statistical Office and Federal Office for Migration and Refugees.

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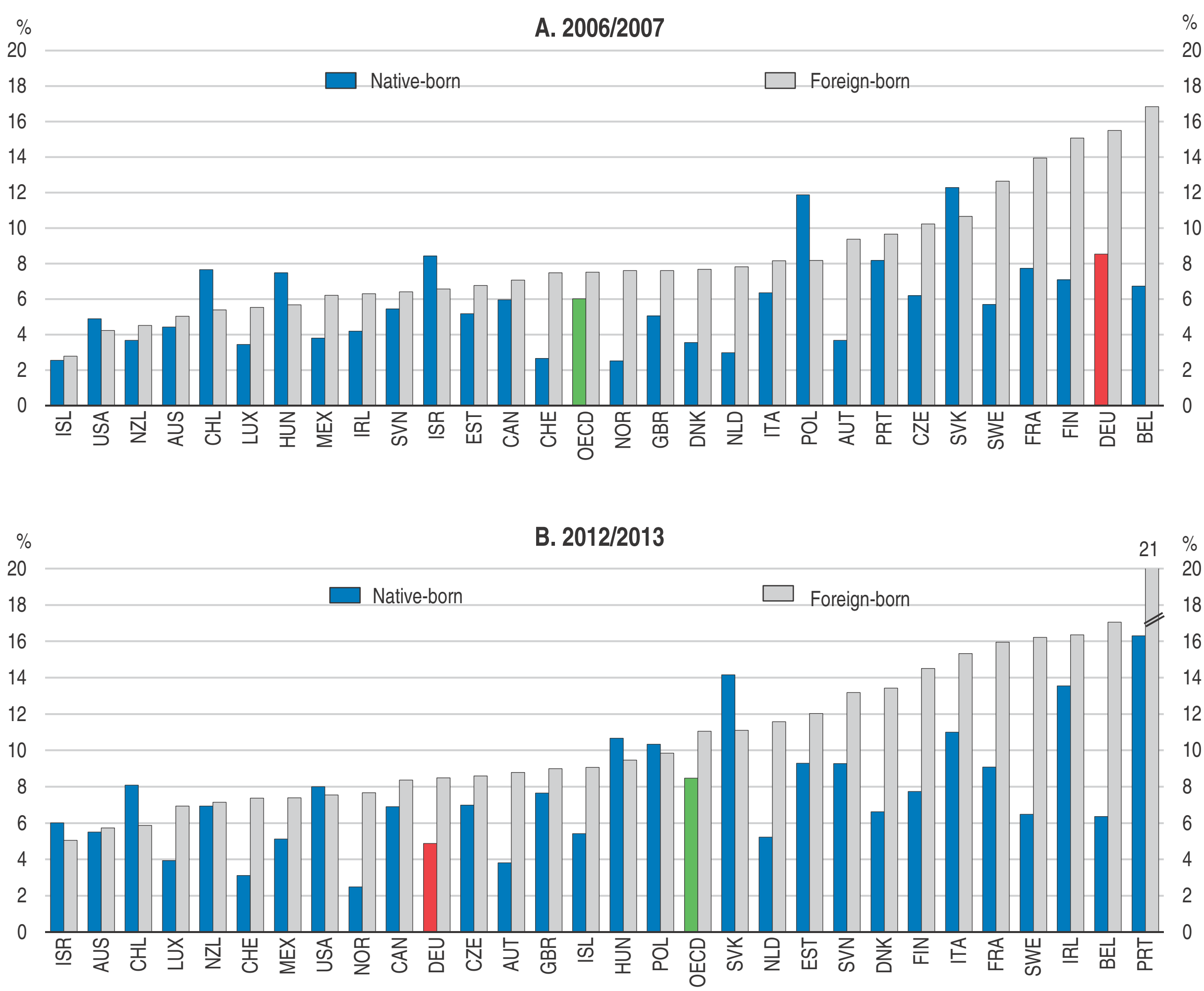
In response to the large inflow of asylum seekers in 2015 the government has undertaken a major logistical effort to provide for basic needs and housing. It is also accelerating administrative procedures to clarify asylum seekers' status and is focussing support on those who can be expected to stay. The asylum process takes 5 months on average in Germany, less than in many countries, and the German government is reducing the average duration further (BAMF, 2015). In late 2014, Germany lowered barriers to labour market entry for asylum seekers. The agency dealing with asylum applications and integration issues has been linked more closely to the federal job agency and both are increasing staff. The government has taken steps to take stock of immigrants' skills, expand training opportunities and improve access to the education system.

Integration of immigrants in the labour market and in the education system has improved. The unemployment rate for immigrants has fallen markedly over the past 10 years (Figure 11). Nonetheless, scope to improve labour market integration remains. Unemployment gaps between natives and immigrants are close to the OECD average but still larger than in best-performing OECD countries. Gaps in PISA test scores between immigrant and native youth have also decreased substantially, but remain relatively large (Figure 12). Children raised in Germany but with immigrant parents are eligible to dual citizenship, easing their social integration. Measures have been taken to attract qualified immigrants, including through residence permits for highly-skilled workers and for workers with qualifications that are in short supply. Certification of foreign qualifications has also been improved.

To ensure bigger economic benefits from immigration, for example through higher productivity and better attachment to the labour market, and thereby lower long-term budgetary costs of benefit dependency, the refugees need to be integrated quickly. This

Figure 11. **The unemployment rate has fallen, especially for immigrants**

Percentage of labour force (15-64 years old)



Source: OECD (2015), *Indicators of Immigrant Integration 2015: Settling In.*

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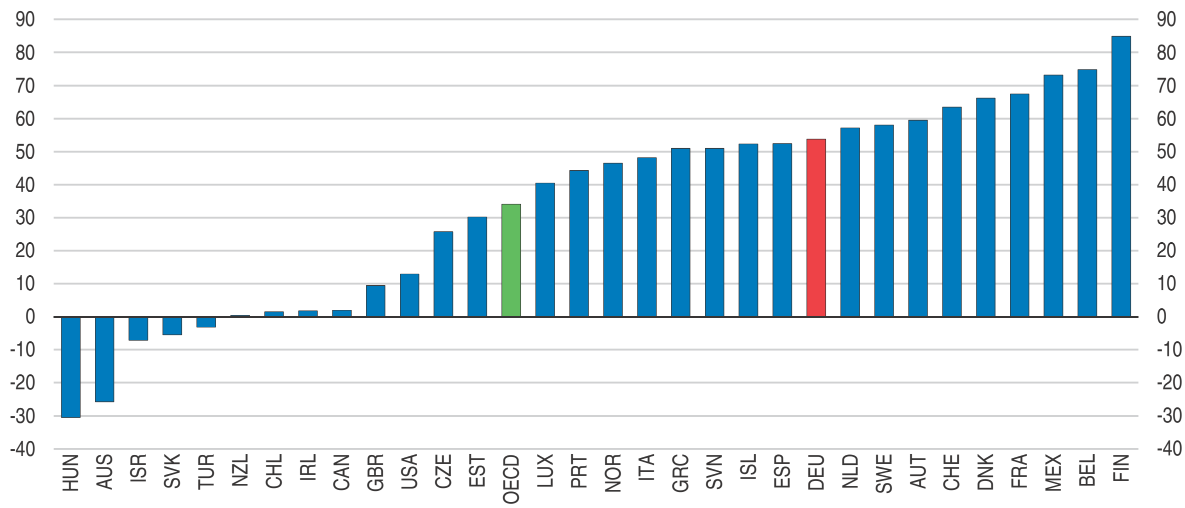
Figure 12. **The difference in learning outcomes between immigrant and non-immigrant youth is substantial**

Difference in mathematics score before accounting for socio-economic status



Source: OECD (2013), *PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed.*

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requires upfront spending, for which the government has appropriately budgeted substantial resources (see below). Experience across OECD countries suggests that the following policies are important to improve their labour market prospects (OECD, 2016):

- Germany has improved access of asylum seekers to the labour market. For example labour market testing has been abolished for some asylum seekers, integration and language courses have been opened to them and measures to assess qualifications and to improve skills have been introduced. However, most asylum-seekers can only be employed in the first 15 months after requesting asylum if no suitable EU national is available to take the post. This also applies to asylum-seekers with a high probability of staying in Germany durably. Moreover, a waiting period of 15 months applies for employment by a temporary work agency with exemptions only for high-skilled and shortage occupations. These barriers should be lowered.
- Notwithstanding recent efforts to make recognition of formal skills easier for immigrants, regulations for the recognition of formal skills differ by *Land* and the process remains costly for applicants. If immigrants are not granted recognition in the form of a degree or permission to perform the job they trained for, they should get access to training to gain the missing qualifications, ideally on the job (OECD, 2014e). Training measures are for example provided by the nationwide Network "Integration through Qualification (IQ)". However, active labour market policies, upskilling opportunities and the provision of housing for vulnerable low income households should be stepped up.

Experience with past immigration waves (Jean et al., 2007) shows that immigration reinforces the need for policies which keep labour markets and product markets open to entry. Less restrictive entry regulation in some services, notably the crafts, would raise the economic benefits of immigration and steps to facilitate firm creation, for example by improving access of all self-employed to low-cost public health insurance, would also help (OECD/European Union, 2013; OECD, 2014a). The share of immigrants in public sector jobs is low. Public employment could be opened further to non-EU nationals.

Improvements in the education system help to integrate all children of families, including immigrant children (OECD, 2015g). Support for students with weak socio-economic background in education needs to be raised (OECD, 2014a). Refugee children and youth should be included quickly within the regular compulsory education system to avoid segregation and the standard curriculum should be supplemented with German language training. Families with weak socio-economic status and immigration background should be encouraged to make use of formal childcare and early childhood education for their young children, including with financial support (OECD, 2014e; OECD, 2015g).

Fiscal policy must address several challenges

Germany's budgets are governed by top-down and multi-year budgeting (OECD, 2014b). They are bound by a structural general government deficit limit of 0.5% agreed with the European Union. According to national constitutional rules, a structural deficit limit applies to the federal government and, from 2020 onwards, balanced budget rules will apply to *Länder* governments.

Strong budget balances in recent years, in part reflecting low interest rates on government debt, and the sale of financial assets acquired from banks during the global financial crisis have reduced government debt to 71% of GDP. However, without reforms to the pension system, public pension expenditure is projected to increase by at least 2½ per cent of GDP between 2013 and 2060 (Federal Ministry of Finance, 2016), which would weaken the sustainability of government finances. Indexing the pensionable age to life expectancy would improve the sustainability of government finances.

Spending to receive and integrate immigrants is expected to increase by ¼ per cent of GDP in each of 2016 and 2017. Spending for child benefits and child tax allowances and long-term care benefits rises (by 0.2% of GDP). Government investment spending for transport infrastructure, broadband networks, energy efficiency, urban renewal, childcare facilities, universities and other research institutions also increases (by 0.1% of GDP). The federal government has also made higher transfers to local governments for investment and plans to create a long-distance road infrastructure corporation, to which it has assigned the revenues of road use charges.

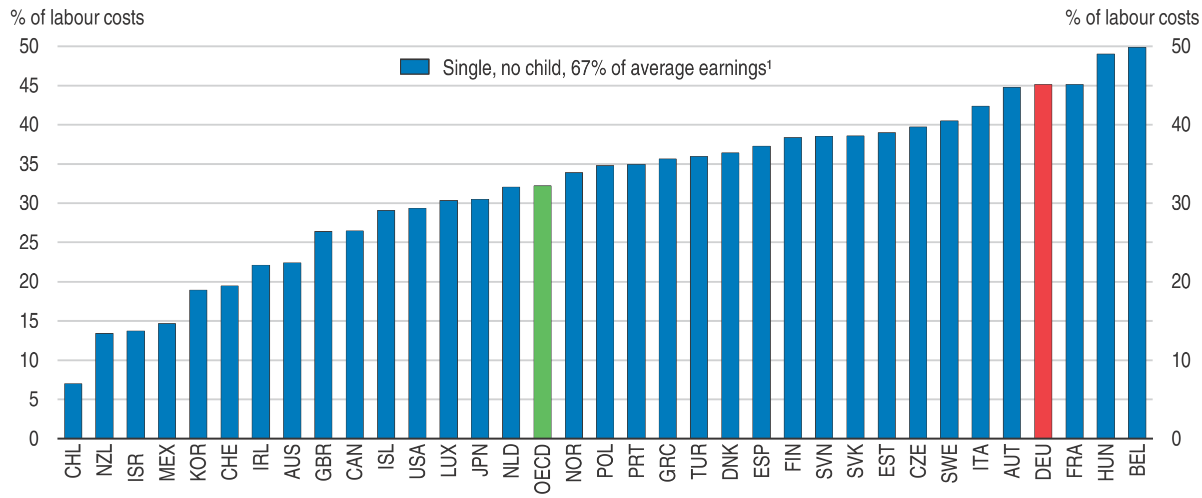
Under EU rules the fiscal room for the general government is projected to amount to about ½ per cent of GDP in 2016. If there is also room under the national rules this could be used to finance additional short-term spending needs. Chief among these is spending to receive and integrate immigrants. Further spending priorities include filling remaining gaps in the provision of early childhood education and care, full-day primary schooling and transport infrastructure.

Reforming the tax system

The labour tax wedge in Germany is higher than in many OECD economies (Figure 13). Public health and long-term care spending is mostly funded from social security contributions on wage income, and this spending will rise as the population ages and as a result of technological progress in health care. As argued in previous *Economic Surveys* (e.g. OECD, 2014a) the tax burden could be shifted towards real estate and consumption, for example by updating valuation of real estate and by eliminating exemptions and lower tax rates in the VAT system.

Figure 13. **The labour tax wedge is high**

Income tax plus employee and employer contributions less cash benefits, 2014



1. 67% of the average earnings of a full-time worker.

Source: OECD (2015), *Taxing Wages 2015*.

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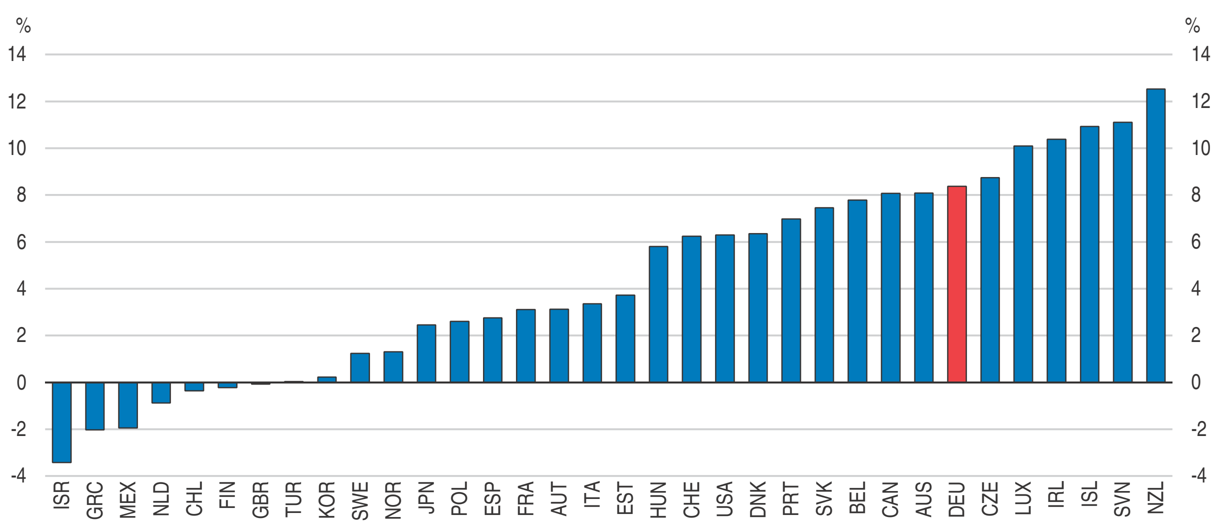
The tax system features disincentives for full-time employment of second earners in dual-earner couples. In Germany, in comparison to other OECD countries, the tax burden on household labour income rises strongly when a second person takes up employment (Figure 14). This reflects joint taxation of couples and free health insurance for married spouses as well as the progressive income tax schedule. To avoid the higher marginal tax, second earners (mostly women) have incentives to take up part-time employment in the

Figure 14. **Difference in the average tax wedge between two- and one-earner families in 2014**



Note: The bars show the difference between the tax wedge of a two- and a one-earner family. The main earner earns the average earnings and the secondary earner earns 67% of the average earnings of a full-time worker in a family of a married couple with two children. The tax wedge is the sum of personal income tax, employee plus employer social security contributions, minus benefits as a percentage of labour costs.

Source: OECD (2015), "Taxing Wages: Comparative tables", *OECD Tax Statistics* (database).

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context of a *minijob*, which is almost fully exempt from tax for income up to EUR 450 per month. Indeed, 20% of women only work on a *minijob* and women account for over 60% of all *minijobbers*. Eliminating these disincentives would remove significant barriers to women participating more fully in the labour market and to pursuing their careers. Such steps would raise womens' hours worked substantially (Bach et al., 2011; Bonin et al., 2013; Böhmer et al., 2014).

Replacing the joint assessment of couples by separate assessment of each individual would eliminate the difference in the effective tax burden between the first and the second earner. However this reform is not compatible with the constitution. Incentives to supply labour for the second earner could be improved in other ways. For example, a separate tax-free allowance for second earners would reduce the tax wedge on the second earner, and is thus a second best alternative worth consideration. Health insurance contributions could be assessed on the basis of the number of adults who are insured. For example, in Switzerland, adults pay a lump sum fee for compulsory health insurance and low-income households receive a transfer from the government to cover for the full or for part of the fees, depending on income.

Recent evaluations show that the general child cash benefit (*Kindergeld*), which does not depend on household income, has a small effect in lowering income poverty of families, relative to its substantial budgetary cost (1.1% of GDP, Bonin et al., 2013). Families in which the parents' income is high enough only to cover their own basic needs, but not those of their children, are eligible to a child benefit supplement (*Kinderzuschlag*). Its budgetary cost is small (less than 0.1% of GDP). It has proven effective in lowering poverty of families with children and has little impact on labour supply. The income tax allowances for families with children lower the tax burden, but widen the gap in the tax wedge between the first and the second earner, with little overall impact on labour supply or poverty reduction. Higher investment in childcare and early childhood education facilities as well as full-day schooling by contrast have proven the most efficient in reducing poverty. Moreover, such investment has a high return in terms of better education outcomes and reducing the disincentives women face when they consider supplying market labour.

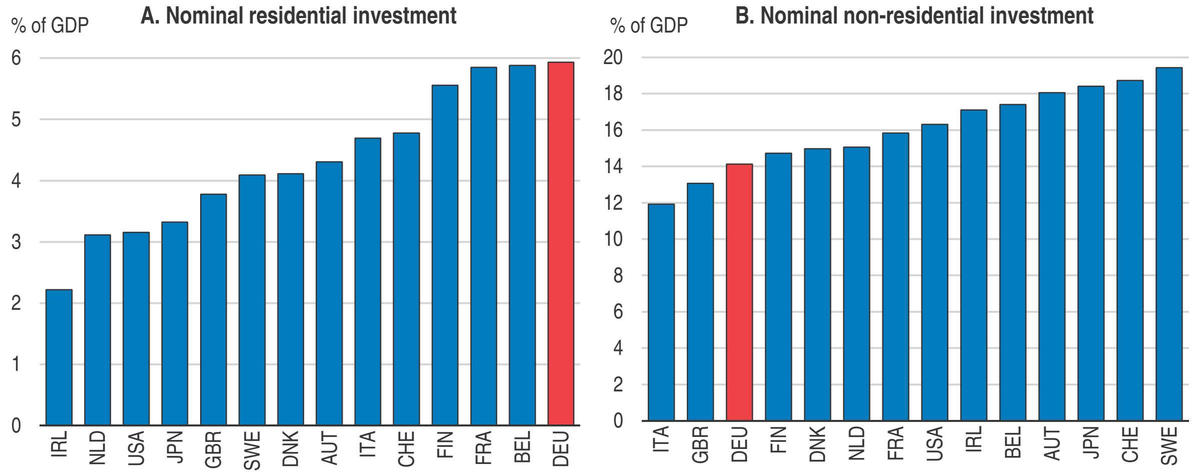
Raising investment and productivity

The government and businesses have taken little advantage of low interest rates to boost investment, despite sound government finances and strong profitability. Non-residential investment spending as a share of GDP is modest (Figure 15). The growth of the capital stock has slowed and appears to be weaker than in most high income countries (OECD, 2015c, Chapter 1). Relative to value-added, over the past 20 years business services account for most of the decline in non-residential business investment. The subdued growth in investment can slow the replacement of old vintages of capital goods, which may constrain long-run competitiveness as new technologies are often embodied in new capital goods.

Weak non-residential investment does not appear to reflect a shift towards intangible forms of productive capital ("knowledge-based capital", KBC). While business expenditure in R&D in Germany is high compared to other OECD countries, investment in KBC, which also includes spending on other intangible assets, such as other intellectual property, software and management skills, is lower than in leading high-income OECD economies (Figure 16) and has grown little over time.

Figure 15. **Non-residential investment spending is low in international comparison**

2014



Note: 2013 for Japan and Switzerland.

Source: OECD (2015), *OECD National Accounts Database.*

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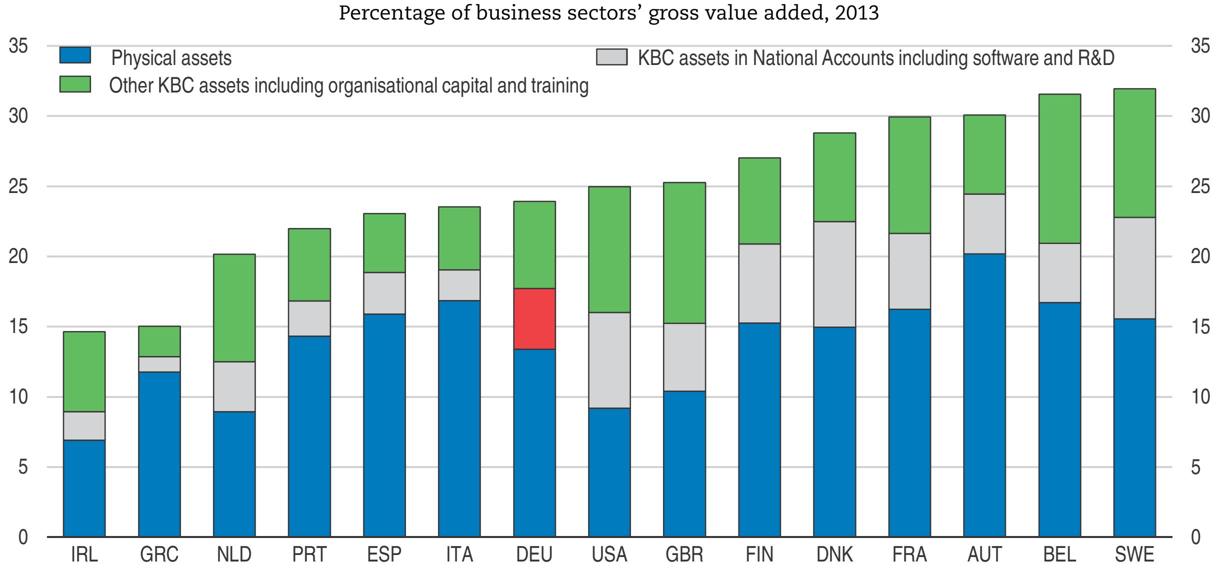
Figure 16. **Business investment in physical and knowledge-based capital (KBC)**

Percentage of business sectors' gross value added, 2013



Source: OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society.*

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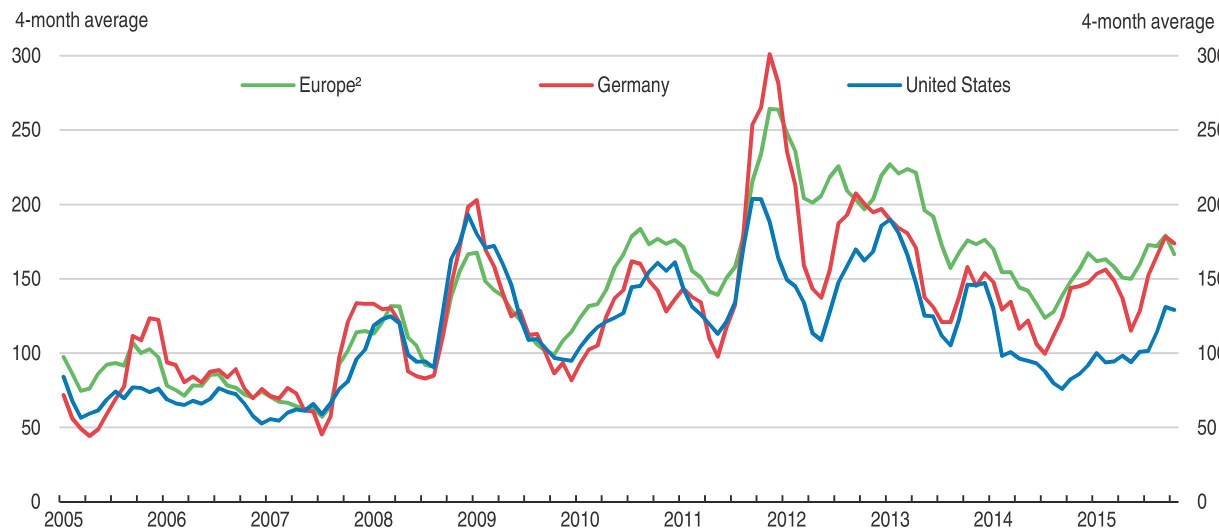
Knowledge-based capital (KBC) is a key determinant of long-term productivity growth. It has been estimated to account for one-fifth to one-third of labour productivity growth in the market sector of the US and EU economies (Corrado et al., 2013). Investment in KBC can boost productivity especially strongly in countries close to the technology frontier such as Germany, which have higher capability to absorb and leverage advanced knowledge.

Business investment growth has been weaker in euro area countries, including in Germany, than in other high income countries, since 2011 (Figure 1, Panel D). Demand is a key determinant of business investment (OECD, 2015e), and weak demand conditions in geographically close export markets, notably in the euro area, are likely to be particularly damaging to investment, as geographic proximity is a key determinant of trade flows (e.g. Boulhol and de Serres, 2008). Episodes of demand weakness, even if temporary, can have lasting effects on the capital stock if investment decisions are costly to reverse (Dixit, 1992). In addition, uncertainty rose in the euro area, including in Germany, with the eruption of the euro area crisis (Figure 17), and estimates suggest that higher uncertainty may have lowered investment in Germany (Federal Ministry for Economic Affairs and Energy, 2013; *Deutsche Bundesbank*, 2016a).

Figure 17. **Uncertainty remains high in Germany and main European economies**

News based policy uncertainty index[1] normalised to a mean of 100 prior to 2011



1. Index constructed by drawing on two newspapers per country through the count of articles containing the terms uncertain or uncertainty, economic or economy, and one or more policy-relevant terms.
2. Average of ten European newspapers from France, Germany, Italy, Spain and the United Kingdom.

Source: Economic Policy Uncertainty (*www.policyuncertainty.com*).

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Policies that strengthen stability and growth prospects in the euro area would raise the attractiveness of Germany as a location to invest. Germany should therefore continue to support efforts to improve growth prospects in the euro area, notably steps to strengthen the single market and cross-border infrastructure, and complete the banking union. These steps will strengthen long-term growth, reduce the risk of financial crises, and strengthen crisis management.

Weak demand growth cannot fully explain why investment spending is especially low in Germany. Recent empirical research suggests that cross-country differences in cyclical positions, as well as in structural features, including employment, demography and the sectoral structure, do not appear to explain why investment in Germany is relatively low (DIW, HRI, 2014). Moreover, in Germany firms retained large profit and equity buffers, which typically boost investment (e.g. Schiantarelli, 1996). These findings suggest that there is scope for improved structural policies to boost investment in Germany.

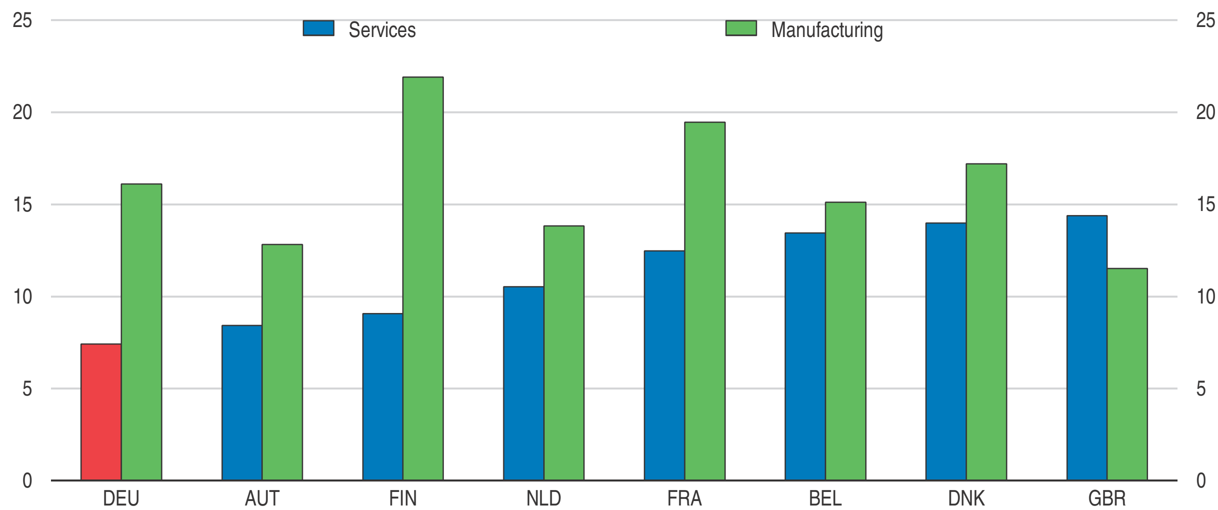
Opening up the services sector

Reducing regulatory barriers to competition or market entry stimulates business investment, including in KBC, and thereby improves productivity. The impacts on investment are especially large for regulation restricting entry (Alesina et al., 2005;

Nicoletti and Scarpetta, 2005; OECD, 2015d). While Germany has made much progress in reforming product market regulation in general over the past 15 years, regulation in some services, especially professional services, network industries and crafts, remains restrictive (see the *OECD Economic Survey of Germany 2014*, OECD, 2014a). In Germany investment in KBC is particularly low in the services, both compared to other high-income countries and compared to German manufacturing (Figure 18). The estimated contribution of investment in KBC to services productivity growth has been also lower than in other advanced EU economies (Corrado et al., 2014). Less stringent regulation increases the diffusion of knowledge, which contributes to productivity growth (OECD, 2015d).

Figure 18. **Investment in knowledge-based capital is low in the services**

Percentage of activity-specific value added, 2010



Source: INTAN-Invest (*www.intan-invest.net*).

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Regulation of professional services and network industries is particularly relevant because they play an important role as intermediate inputs. Close to 100% of the services produced by lawyers and notaries, building engineers and architects in Germany are intermediate. In telecommunications, this share is 50%. Empirical evidence suggests that steps to make regulation as competition-friendly in the professional services as in one of the best-performing OECD country in this regard, the United Kingdom, suggests that productivity throughout the German economy could rise by 2% (IWU, 2015). Deregulation of notary services has brought economic benefits for example in the Netherlands and the UK (OECD, 2014a).

Several professional services are subject to extensive exclusivity rules that reserve activities to particular professions. In some of these activities, other OECD countries have eased such rules with substantial reductions in costs (OECD, 2014a), for example for legal services needed to create a new business. Shareholder requirements in a wide range of professional services require that the certified professionals themselves must be majority owners in their businesses. There are binding price regulations for notaries, architects and building engineers. Advertising continues to be restricted in some professional services.

In the network industries, sectoral regulators lack powers to prevent vertically integrated incumbents from discriminating against market entrants. In telecommunications, a large potential lies in breaking up the exclusive right to issue SIM cards (*OECD Economic Survey of Germany 2014*, OECD, 2014a). Steps in this direction have been taken by the Netherlands and Belgium. In the railways the authorities are implementing an EU directive which will improve conditions for competitors to access the network. But the government should also strengthen the regulator's powers by granting it more investigative competences, which will help ensure a level playing field between the incumbent and market entrants.

In 41 crafts professions, including in the construction industry (painters, plasters, bricklayers, scaffolders and installation of heating and cooling installations) self-employment is restricted to holders of tertiary level vocational degrees. Alternatively, workers in these professions can open a business with a minimum work experience of six years, four of them in a managing position, in addition to the vocational education degree at the upper secondary level required to exercise the profession. These requirements raise entry barriers for self-employment. Self-regulation by sector-specific business chambers, notably in the professional services and the crafts, also risks protecting incumbents.

Fostering the reallocation of resources

Owing to its intangible nature, the initial cost incurred in deploying KBC typically does not increase when it is combined with increasing amounts of other inputs (labour, capital) in the production of goods or services. Therefore taking advantage of KBC depends on the ability to reallocate labour and capital to their most productive use. With the rise of the importance of KBC, the ability to reallocate resources is becoming increasingly important for productivity growth (Andrews and Criscuolo, 2013).

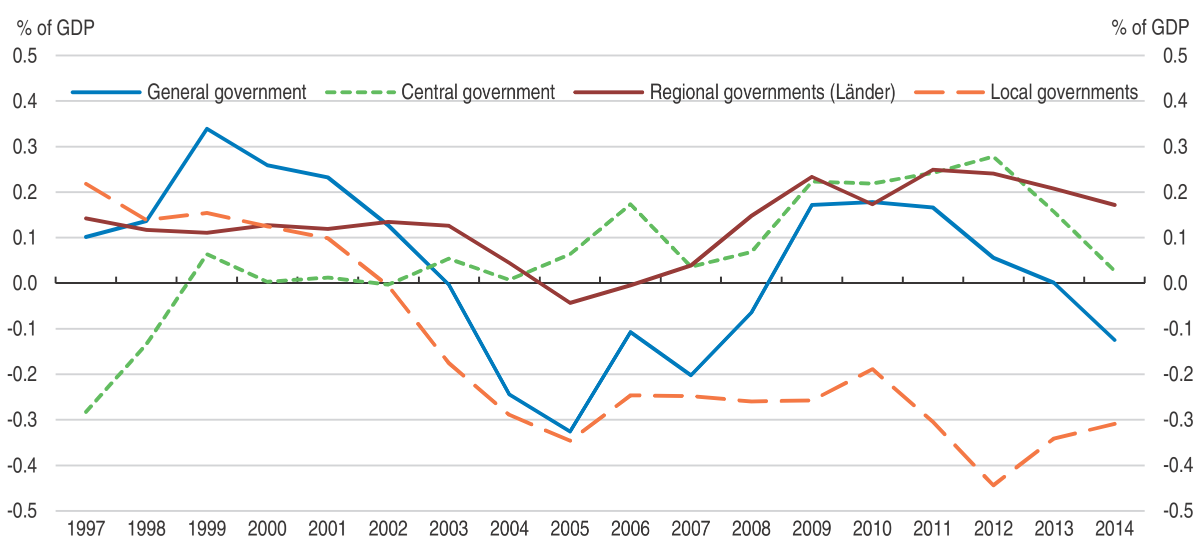
Extensive government ownership in some business sectors risks hampering the reallocation of resources to more productive sectors or firms. Publicly owned commercial banks have a market share of more than 40% in Germany. As the 2014 *Economic Survey* pointed out, the regional *Landesbanken*, which are mostly owned by *Länder* governments, have had a poor track record in allocating credit, technical efficiency and vulnerability to solvency risk. Reflecting stricter risk management standards, governance has improved also in the *Landesbanken*, but specific governance problems for the *Landesbanken* resulting from regional government ownership are likely to remain (*OECD Economic Survey of Germany 2014*, OECD, 2014a). *Länder* governments are planning to privatise only one of 7 *Landesbanken*. Further privatisation would be welcome. Steps to further improve governance might be an alternative option. Since the outbreak of the global financial crisis, the federal government has also kept a minority share in one of the large private, commercial banks. A regional government also owns just above 20% of *Volkswagen*, one of the biggest car manufacturers. The federal government owns substantial shares in network industry incumbents, notably in telecommunications and postal services. Privatising these shares would help remove perceptions of conflicts of interest between the government's role as owner of these businesses and its role as the regulator of the relevant markets, boosting market entry, competition and investment.

Policies to avoid that incumbents' interests disproportionately affect the design of regulation can also improve reallocation, thereby raising innovation and productivity. Germany has made significant improvements to its regulatory policy system over the last years, introducing systematic *ex post* evaluation of regulations in 2013. Nonetheless, the capacity of the administration should focus more strongly on the analysis of the economy-wide impacts of policies, rather than on sector-specific impacts. Germany could benefit from an independent standing capacity to regularly undertake comprehensive in-depth reviews of policy areas to inform large scale regulatory reforms (OECD, 2015o). In the Netherlands, for example, the Bureau for Economic Policy Analysis conducts analysis of economy-wide impacts of regulation for the government. In Australia, such analysis is conducted by the productivity commission. Germany can also do more to raise transparency of lobbyists' involvement in public decision processes. For example, the German lobbying register does not provide information about the potential beneficiary or the government action targeted by lobbying (OECD, 2014c).

Low government investment poses risks for long-term inclusive growth

Net government investment has been low in the past 15 years and declined markedly at the level of the municipalities in the first half of the 2000s (Figure 19). While survey evidence suggests that the quality of German transport infrastructure continues to rank highly, there is some indication that maintenance standards have fallen (BMVI 2015). Moreover, there is scope to raise provision of social infrastructure which is key to raise long-term inclusive growth. For example, in 2014, only 33% of children under the age of 3 were enrolled in day care and only 53% of elementary schools offered full-day schooling, although supply has improved considerably over the past 10 years. The subnational government levels contribute to the funding of transport and key social infrastructure. Municipalities which invest less tend to be those with weak budgetary positions, are in relatively poor regions, and have relatively high spending on social cash transfers (which are often mandated at the federal level, but are the responsibility of municipalities). (Arnold et al., 2015). Fiscal federal transfers broadly equalise tax revenues per capita across the *Länder* but do not take into account differences in federally mandated social cash transfer spending. This reduces budgetary space for investment spending in municipalities where such transfer spending is high.

Figure 19. **Net government investment has fallen, especially by local governments**



Source: OECD (2015), *OECD National Accounts Database.*

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The *Länder* are primarily responsible for providing local governments with adequate financial resources. Fiscal equalisation systems take needs-related socio-economic indicators in municipalities into account within each *Land*. In order to increase budgetary leeway for investment financial flexibility of *Länder* may be strengthened, by allowing them to levy a surcharge on the income tax.

The federal government has assumed an increasing share of spending which results from federally-mandated social transfer programmes. This has provided some budgetary relief for municipalities. It has also introduced a programme which allows municipalities with high debt to apply for federal co-funding of up to 90% for selected investment projects until 2018. However, by linking transfers to outstanding debt, this scheme risks harming incentives for sound budgetary policies. Municipal public investment could be strengthened in a financially sounder way. The federal government should provide more support for investment in municipalities where spending on cash transfers mandated in federal entitlement programmes is high. Alternatively federal government support for municipal investment could be based on income and demographic indicators, which are correlated with higher social spending needs, such as age composition or the share of the immigrant population.

The federal government currently contributes to the funding of physical infrastructure for childcare facilities. However, meeting gaps in the quality of childcare may also require more qualified personnel. The federal government makes no contribution to full-day compulsory schooling. The long-term benefits of investment in childcare and full-day schooling are likely to accrue nation-wide, generating positive economic externalities for other jurisdictions. Therefore there is a case for the federal government to play a strong role in funding such services. Constitutional barriers prevent federal co-funding for full-day primary education. In view of the large benefits of full-day primary schooling, there is a case for reviewing these constitutional barriers. There also is a case for disbursing federal subsidies for childcare in a way which takes into account parental preferences. A scheme of vouchers, linked to a nation-wide accreditation system, could ensure that supply adjusts better to parental demand.

Germany has so far made little use of public-private partnerships (PPPs) (*Partnerschaften Deutschland*, 2015). PPP arrangements can improve efficiency, but call for a sound analysis of their suitability to particular infrastructure projects, careful contract design and full transparency regarding current and future public costs and benefits, preferably in the context of the budget process. Municipalities often lack the competence to manage large investment projects, including PPPs. Germany's federal structure generates considerable diversity in the procurement and the implementation of investment projects across municipalities. This yields valuable lessons about best practices, which are not exploited. Advisory units at the national or regional level to support municipalities in procuring and managing investment projects, including for PPPs, as already introduced in some *Länder*, would help (Academic Advisory Board of the Federal Ministry for Economic Affairs and Energy, 2015).

Germany takes relatively little advantage of e-governance and e-procurement practices which could make government services more efficient (OECD, 2015i; OECD, 2011). Stronger e-governance would also generate spillovers to the private sector, fostering investment in information and communication technology and knowledge-based capital. Parliament is considering draft legislation to implement a comprehensive e-procurement system which is welcome. More efforts are needed to use procurement as a policy lever to promote such strategic objectives as promoting inclusive and green growth, SMEs and innovation.

Complex infrastructure projects often entail important benefits for society as a whole, but also come along with local costs, for instance pollution and noise. Moderating such conflicts effectively is key to efficient decision-making, but requires early involvement of the public in the planning and realisation of investment projects (Bertelsmann Stiftung, 2012). There is scope to involve the public more effectively in realising complex investment projects in Germany (OECD, 2014c). Steps to do so would also raise Germany's wellbeing score on civic engagement and governance (Figure 3 above). The recent advances in electronic media and communication technologies have substantially changed the way public administrations, citizens and civil society can interact. E-governance, if used as a two-way communication tool, can be particularly useful in raising citizen participation, but it is rarely used in Germany in this way (European Institute for Public Participation, 2009; OECD, 2014c).

Strengthening green growth

Germany has a strong record of investment in energy efficiency, supported by demanding building standards and extensive government financial support, for example, through subsidised loans. Germany invests close to 0.7% of GDP in energy efficiency (IEA, 2015). Investment on this order of magnitude is needed across OECD countries to limit the increase in global temperatures to 2°C, according to estimates by the International Energy Agency (IEA, 2015). Germany is committed to the climate change mitigation targets fixed in the COP21 climate conference. In residential housing, efficiency is estimated to have improved by 23% since 2002, although these gains were partly offset by the impact of higher income and changes in household structure on energy consumption (IEA, 2015). In industry and services, efficiency gains have been smaller and have been more than offset by growth in activity, while sectoral change has contributed little to efficiency gains. To meet its CO_2 emission targets and reduce CO_2 emissions by 40% below the 1990 level until 2020, the government has introduced a wide-ranging programme to further strengthen support for energy-saving investment.

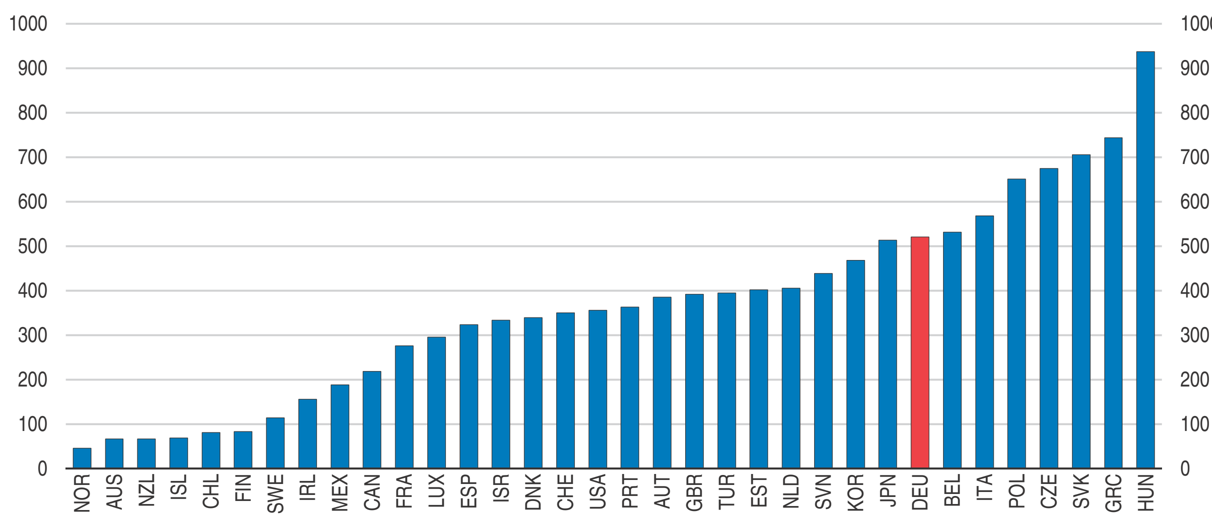
While environmental regulation in Germany is demanding and energy taxation is among the highest in the EU, energy taxation is subject to exemptions which weaken incentives to reduce the environmental externalities of energy use. Tax exemptions and subsidies which are harmful to the environment have a budgetary cost of about 1½ per cent of GDP (*Umweltbundesamt*, 2014). Achieving environmental objectives in a way that is less costly to the government and taxing environmental externalities more consistently could thus create more fiscal space. Some energy-intensive manufacturing industries (such as chemicals, iron and steel) and agriculture are exempt from energy taxation. The gap between electricity prices paid by households and energy-intensive manufacturing firms is particularly large, as reported in the 2014, *OECD Economic Survey of Germany* (OECD, 2014a). Coal is virtually tax-free (OECD, 2012b). Tax breaks on business cars and commuting allowances encourage car use.

Energy tax exemptions, including for energy-intensive manufacturing which are motivated by competitiveness considerations, were already reduced in the course of the 2011-14 tax reform package (OECD 2012b; 2012c). The output and employment effects of the current exemptions are small overall, but can be considerable for individual companies and sectors (Fraunhofer-ISI and Ecosys, 2015). Gradually removing the tax exemptions, taking into account EU rules and according to a predetermined time schedule would reduce uncertainty and strengthen incentives to invest in energy efficiency, while limiting the costs of transition to new technologies and products. This will become easier, if regulatory reforms foster innovation and structural change (see above and Chapter 1). The removal of these tax exemptions would also help to reduce the economy-wide cost for Germany to reach its CO_2 emission targets. In any case, the authorities should carefully monitor the real-economy effects to ensure that implemented policies are effective and least-cost for the economy as a whole.

Aligning taxation of energy more closely with environmental externalities and eliminating tax exemptions for environmentally harmful behaviour would also contribute to reducing local pollution which is harmful for human health. As in other OECD countries estimated mortality from outdoor air pollution is high (Figure 20). The cost of mortality induced by air pollution is estimated at 5% of GDP (OECD, 2014d). Diesel is taxed less than petrol, even though analysis suggests it should be taxed more because it is more polluting. Many cities in Germany have high levels of NO2 emissions, in part because of diesel cars. The introduction of stricter pollution standards for cars has not lowered emissions (Löschel et al., 2014). Raising diesel taxes and taxing cars according to their NO_x emissions could do better. Sweden also tackled NO_x emissions by taxing large emitters.

Figure 20. **Deaths from ambient air pollution**

Per million inhabitants



Source: OECD (2014), *The Cost of Air Pollution: Health Impacts of Road Transport.*

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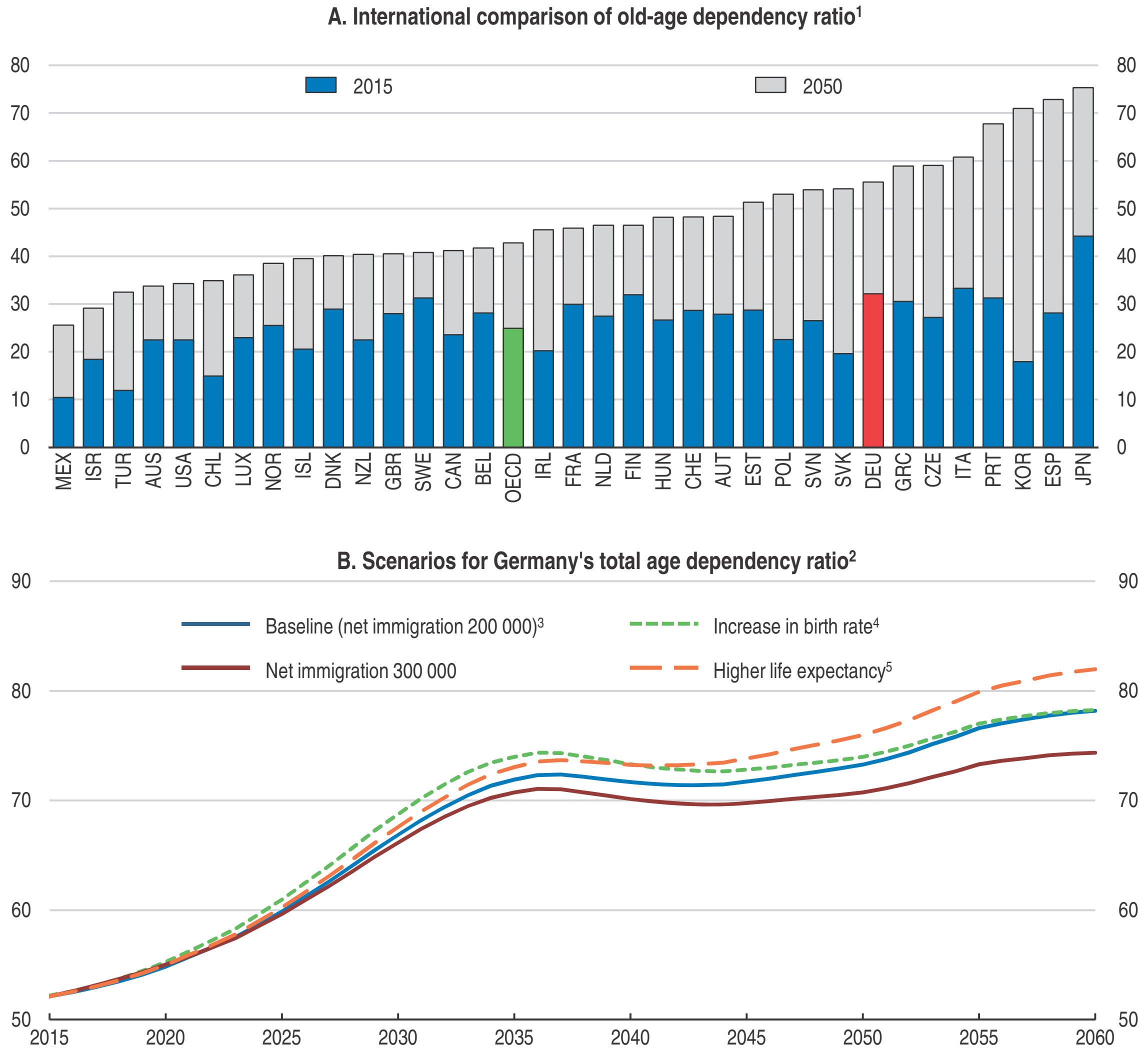
Well-being and demographic change

Projected population ageing implies a marked increase in the old-age dependency ratio by 2060 (Figure 21), earlier than in many other OECD countries. The OECD projects population to decline by 18% and employment, on current policies, by 23% by 2060, reducing GDP per capita by 6½ per cent, according to the *OECD Long-Term Database*. The recent inflow of refugees has raised immigration well above projected levels. Immigration can delay the impact of demographic ageing on labour supply.

Figure 21. **The dependency ratio will rise**



1. Population above 65 years old relative to population aged 15-65.
2. Population below 15 and above 65 years old relative to population aged 15-65.
3. The assumptions of the "baseline (net immigration 200 000)" scenario include a constant birth rate of 1.4 children per woman, a moderate increase in life expectancy at birth to 84.8 years for men and 88.8 for women in 2060, and a gradual adjustment of net immigration from 500 000 in 2014 to 200 000 in 2021.
4. The "increase in in birth rate" scenario assumes the birth rate to gradually increase to 1.6 children per woman in 2028.
5. The "higher life expectancy" scenario is based on a sharp increase in life expectancy at birth to 86.7 years for men and 90.4 for women by 2060.

Source: OECD (2015), *OECD Population Statistics: Historical population data and projections (1950-2050)* (database) and Statistisches Bundesamt.

StatLink http://dx.doi.org/10.1787/888933345513

Reducing barriers for women in the labour market

Steps to reduce barriers for women in the labour market, notably the reforms recommended above, could raise GDP per capita growth considerably, offsetting the impact of ageing on employment. Full convergence by women to men in terms of labour market participation and hours worked could result in a gain of GDP per capita of 20% when convergence is complete, boosting GDP per capita growth by 0.4% annually if convergence is achieved by 2060 (Table 2). This estimate includes the impact higher female employment and hours worked have on access to better-paid, more productive jobs, as well as the gains

Table 2. **Impact of convergence of women's to men's employment outcomes on GDP per capita**

Per cent

	Increase of average GDP per capita growth, 2015-60	Increase of GDP per capita when convergence is complete
Convergence of the participation rate[1]	0.1	5
Convergence of participation rate, hours worked and earnings[2]	0.4	20

1. The female labour market participation rate of women is assumed to converge to the male participation rate from 2015 to 2060.
2. Productivity per worker is assumed to rise in line with the closure of the gender earnings gap to the extent it reflects differences in experience and hours worked.

Source: Simulations on the basis of long-term economic projections in OECD (2015), *OECD Economic Outlook 96*, and OECD (2012), *Closing the Gender Gap: Act Now*, OECD Publishing, Paris.

in productivity that would result from more job experience. Most of these gains would reflect women working longer hours. In a simulation exercise, Teignier and Cuberes (2014) have estimated the potential impact of gender convergence on GDP per capita in Germany at 10%. Their estimation does however not include the impact of higher female labour input on investment which can be expected to raise the capital stock in the long-term. This effect accounts for 7 percentage points of the estimated impact on GDP per capita in Table 2.

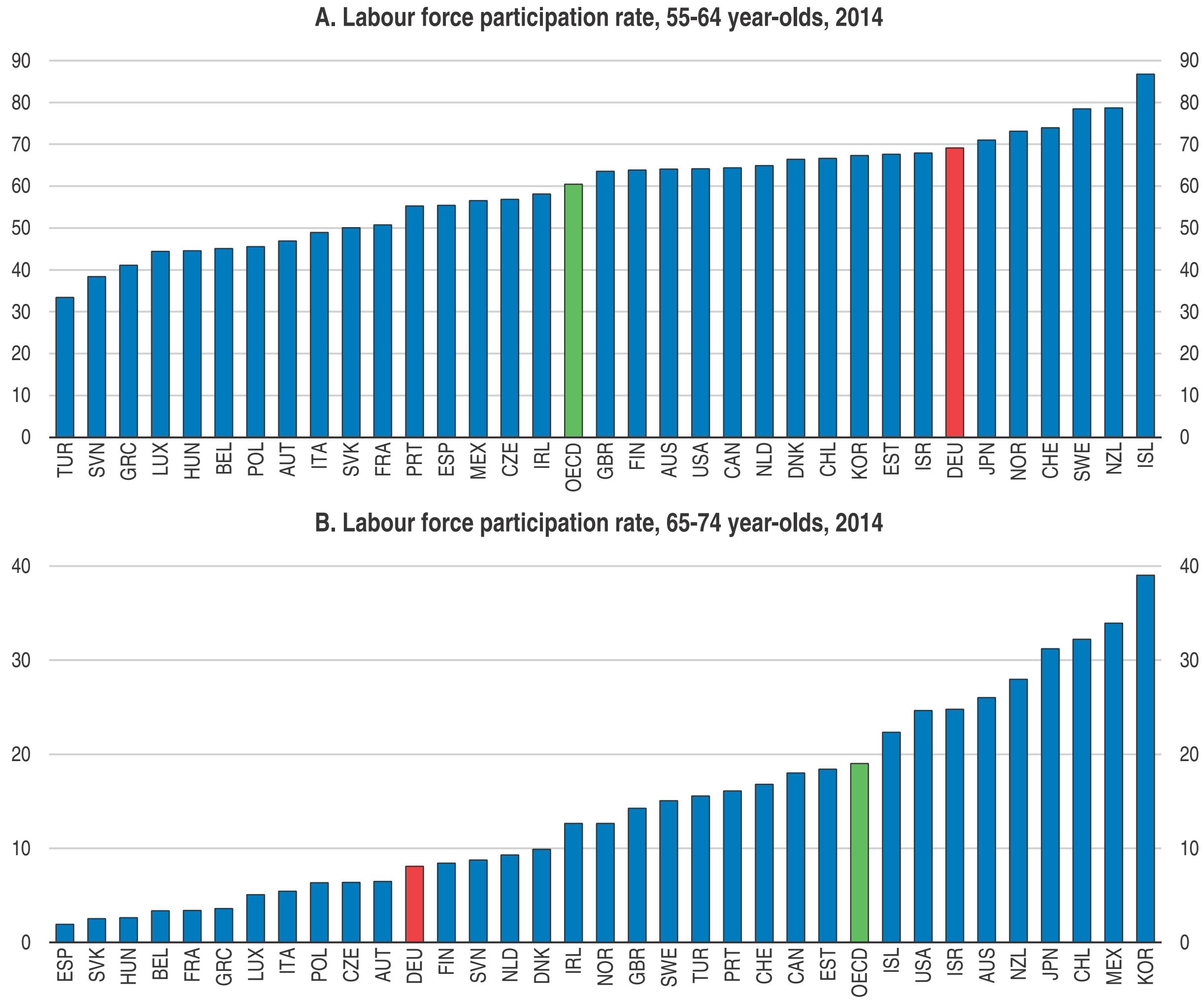
Improving the work-life balance of the elderly

The labour market and output effects of ageing are exacerbated by policies that encourage individuals to withdraw from employment prematurely. These policies include early retirement schemes and features of pensions systems that penalise working. The labour market participation of individuals older than 65 years remains comparatively low in Germany (Figure 22). Enabling individuals to adjust their working hours to their physical and mental ability and their willingness to work is essential for work-life balance and subjective well-being of the elderly (Reday-Mulvey, 2005; Barnay, 2014; Nikolova and Graham, 2014). This includes options to combine an old-age pension with paid employment. Steps to remove barriers to employment at higher age can also help to reduce old-age poverty risks.

The German government made it easier to extend employment contracts beyond the pensionable age for workers who start receiving their pension in 2014. However, pensioners lose pension wealth if they postpone their decision to draw old-age pensions beyond the age of 60 (OECD, 2015b). Current rules cut pension benefits by up to two thirds if pensioners on early retirement enter a new employment relationship. Employers pay unemployment and pension insurance contributions when they employ pensioners who have reached the pensionable age or receive a full pension, although these workers do not accrue the corresponding entitlements. The government is considering steps to correct this.

To remove disincentives for older workers to work, the pension premium for drawing old-age pensions later in life should be raised and pension benefits should not be withdrawn when pensioners work. This would also raise subjective wellbeing. The pension reform in Norway in 2010-11 provides an example for a comprehensive flexible retirement scheme that does not penalise continued work (OECD, 2013c; OECD, 2014m). In Norway, pension and work income can be combined without any restrictions and employment income earned by pensioners generates additional pension rights. Pension discounts for drawing a pension

Figure 22. **The labour force participation rate remains low for 65 to 74 year-olds**



Source: OECD (2015), *OECD Labour Force Statistics* (database).

StatLink http://dx.doi.org/10.1787/888933345526

before the pensionable age are large enough to fully compensate for the longer period of expected pension receipt and the shorter contribution record (so-called actuarial neutrality). Nearly 65% of workers aged 62-66 combine old age pensions with work.

Life-long learning is particularly important to support employability in the context of population ageing, as the renewal of skills through the entry of young people in the labour market diminishes and workers are considering working more at higher age. The participation rate of workers with upper-secondary vocational education degrees in life-long training has increased from 38% in 2010 to 47% in 2014. Nonetheless, vocational education graduates participate less in lifelong learning (including informal training) than university graduates (Behringer and Schönfeld, 2014). Employment rates of vocational education graduates decline relatively quickly with age in particularly in Germany (Hanushek et al., 2011) and earnings rise relatively little with experience (Chapter 2). These findings suggest that policies to encourage life-long learning for vocational graduates are particularly important to maintain high employment prospects for them at high age.

Indexing mandatory pension systems to life expectancy is important for ensuring the long-term affordability of public pensions for government finances as life expectancy increases (OECD, 2011c; OECD, 2014g; Johansson et al., 2013). The pensionable age is gradually rising from 65 to 67 years by 2029, but no further adjustment is foreseen. Without further increases in the pensionable age, increases in life expectancy after 2029 would raise the government deficit, increase the tax burden on labour and lower the level of pensions relative to average income (OECD, 2013d; OECD, 2015g). Some OECD countries, including Italy and Denmark, index the pensionable age to life expectancy (OECD, 2011b) to balance the ratio of retirement and working years and ensure the sustainability of old-age pension systems as life expectancy increases. In Denmark the resulting increases in pensionable age are subject to parliamentary approval every five years. Germany should also index the pensionable age to life expectancy.

Public pension entitlements relative to wages are lower than in many OECD countries and past pension reforms will reduce this ratio further. While old-age poverty is not a major concern in Germany today, poverty risks among the elderly are expected to increase (Geyer, 2014; Martens, 2014). The federal government is monitoring the situation carefully. Continuous employment records and avoiding barriers to employment are important to reduce poverty risk. Moreover, individuals systematically under-save when planning for retirement due to myopia (Holmes, 2011; Börsch-Supan, 2005).

Occupational pensions provide an opportunity to supplement public pensions from private sources at relatively low cost and are the most common form of private pensions in Germany. Workers have the legal right to join an occupational pension plan, but need to take an active decision to do so. Only half of workers are aware of this legal right (Lamla and Coppola, 2013). The government plans to promote occupational pensions through the legal extension of collective agreements among social partners. A number of countries have chosen a broader approach, by introducing automatic enrolment with an option to opt out. Insights from behavioural economics and evidence from Italy, New Zealand and the United Kingdom suggest that automatic enrolment improves coverage (OECD, 2014f). Such automatic enrolment could be complemented with the introduction of a fall-back pension fund, which offers a low-cost investment instrument to those firms and individuals who do not wish to make their own arrangements to save for complementary private pensions. Occupational pension plans may not reduce old-age poverty risks substantially for workers with long interruptions in their employment careers. As recommended in the 2014 *Survey*, a cost-effective way of limiting future old-age poverty risks with poor employment careers while preserving incentives to work would be to phase out means-tested subsistence benefits more slowly as pension entitlements rise. Moreover, compulsory pension coverage should be extended to the self-employed.

Improving health outcomes in the light of population ageing

Health outcomes are a strong determinant of well-being and of employment at older ages. Germany faces a range of ageing-related health challenges (OECD, 2014h; OECD, 2015j; OECD, 2015k; OECD, 2015l; OECD, 2015m). The number of expected healthy life years at 65 is lower than in other high-income countries (OECD, 2014h). The prevalence of unhealthy lifestyles is high in international comparison, despite improvements in recent years (OECD, 2014h). Stricter regulation of advertising alcohol and tobacco products, raising taxes and imposing explicit price thresholds below which alcoholic beverages cannot be sold to consumers would yield high benefits in terms of higher disability adjusted life years and lower health costs. The government is already taking steps to improve health prevention, including through higher spending.

Employment is a major driver of material living standards and non-material well-being. However, it can also be an important source of stress and poor health, diminishing employability later in life, if job quality is low (OECD, 2010). Germany performs comparatively well in terms of earnings in international comparison, but falls below the OECD average in terms of quality of the working environment. For example, 19% of German workers report difficult and stressful working conditions, which is more than twice as high as for Denmark and the Netherlands. Low quality of the working environment and high stress contribute to poor self-reported health and to sickness absence and raise the risk of mental illness and associated early retirement (Argaw et al., 2013; Barnay, 2014; OECD, 2015k). The share of disability benefits recipients with mental ill-health increased substantially in recent years, especially among those aged 55 to 60.

Employers are well placed to reduce stress and thereby help employees stay healthy (OECD, 2014k). Many German businesses already make substantial efforts to support sick employees to return to work. Firms engaging in prevention can be awarded premia and certificates through the accident insurance scheme (IAG, 2010) and employers' contributions to the accident insurance depend on the share of former employees on accident insurance benefits (experience rating), which helps provide incentives to employers to prevent health risks at the workplace. The public health insurance funds have been required to raise workplace health promotion spending. In addition, safety-at-work regulation has been strengthened. But there is scope for improvement:

- Collaboration between authorities, health insurance and employers in the prevention of work-place related health risks can become more effective (Ahlers, 2015; Kohte, 2015; OECD, 2015k), in particular to serve as a platform for exchange of information among the private sector, researchers, health insurance providers and the government. This would help to build up a common stock of knowledge by regional authorities to keep the quality of inspections high, support small firms, to ensure enforcement for workers in precarious employment and to monitor progress.
- Financial incentives for enterprises to engage in prevention could be raised. In accident insurance contributions, penalties for employers with a high incidence of work-related accidents are small overall (IAG, 2010). These penalties could be raised. Moreover firms' disability insurance contributions are not adjusted according to the likelihood of disability (experience rating). Some countries, including Switzerland and the Netherlands, introduced experience rating in employer contributions to disability insurance, obliging employers with many former employees on disability benefits to pay higher contributions.

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ANNEX

Progress in structural reform

This annex summaries key recommendations made in previous Surveys *and main actions taken since the* OECD Economic Survey on Germany *published in May 2014.*

Recommendations in previous *Surveys*	Action taken
A. Improve Labour Market Performance	
Reduce the gap in employment protection between permanent and temporary workers by moving towards a unified job contract with the degree of protection rising with tenure. Ease employment protection legislation for regular job contracts by shortening the notification procedure, by reducing the notice period for workers with long tenure and, in case of dismissals for economic reasons, by giving employers the right to choose between paying a severance payment or paying a higher unfair dismissal compensation which would replace the court route. Limit the use of multiple successive fixed term contracts with the same employee.	The government is planning to limit the duration of employment on jobs filled by temporary work agency workers to 18 months. If these plans are implemented, these workers will also have to be paid like comparable regular workers after 9 months.
Target the preferential tax treatment of *minijobs* towards low-wage workers.	No action taken.
Introduce a general minimum wage at a sufficiently low level that will not lead to job losses, determined by an expert commission. Cautious use should be made of higher sectoral minimum wages set on the basis of collective agreements.	On 01 January 2015, Germany introduced a general minimum wage of EUR 8.50 per hour, or equals 51% of the median wage of a full time worker in Germany (fifth-highest in the EU). Adjustments of minimum wage level will be decided by the Minimum Wage Commission which comprises 6 members representing the social partners (members entitled to vote) and 2 labour market experts (non-voting members). According to the government's assessment, so far the minimum wage has not resulted in significant employment loss.
Make active labour market policies more targeted by monitoring self-selection problems within target groups.	Programs were launched to reach long-term unemployed and low-skilled people to increase their participation in further education and training. Measures to promote basic skills, provide support for retraining and financial incentives for completion of interim and final exams are planned.
Reduce fiscal work disincentives for second earners by reforming joint income taxation of couples and by considering introducing contributions for public healthcare co-insurance of nonworking spouses.	No action taken.
Continue to expand early childcare provision, notably for full-day care, and further increase the availability of full-day schooling. Ensure equal access of the most vulnerable to affordable high-quality childcare. Consider introducing a voucher system for childcare. Lower regulations for the set-up of childcare facilities to encourage more private supply.	Enrolment in formal childcare continued to rise strongly. The government has committed EUR 1.1 billion additionally for expanding and improving the quality of childcare and early childhood education until 2018. A working group to develop quality targets and financing strategies has been established, involving representatives from all government levels as well as stakeholders such as trade unions and non-profit organisations providing early childhood education and care. An interim report will be presented by the end of 2016. Programmes supporting children's language development and extended childcare hours for single parents and workers on unconventional time schedules have been launched.
Raise pension discounts for drawing a pension before the statutory pension age towards an actuarially neutral level.	No action taken.
Focus additional pension entitlements on reducing future old age poverty risks, for example, by phasing out subsistence benefit entitlements more slowly as pension entitlements rise. Fund such additional spending from general tax revenue instead of higher payroll taxes.	No action taken.
Extend compulsory pension insurance coverage to all self-employed.	No action taken.
Continue to review in-work benefits (long-term unemployment benefits which low-pay workers may be able to receive in employment) to ensure that the most vulnerable receive sufficient support while minimising disincentives to work. For instance, phase out more slowly means-tested subsistence benefits for particularly vulnerable individuals earning more than EUR 100. Phase out additional child benefits paid to parents receiving a housing allowance more slowly.	No action taken.
Expand support for German language training for immigrants.	Since October 2015 asylum seekers from countries with a recognition rate of more than 50 % (at present Syria, Iraq, Iran and Eritrea) may attend an integration course consisting of a language course and an orientation course before the asylum procedure is completed. Budgetary resources for the integration courses were increased from EUR 269 million in 2015 (for about 190 000 new participants) to EUR 559 million in 2016 (for about 300 000 new participants). Follow-up German language courses adapted to individual professional needs will also be funded. A new programme "vocationally oriented German language courses" will be launched in mid-2016.
Improve the recognition of foreign qualifications.	Monitoring through common statistics across the *Länder* is planned. Since 2015, new projects to validate informal qualifications and provide information on follow-up training are introduced.
Consider engaging more actively in foreign recruitment policy.	A website for the recruitment of foreign highly-skilled labour ("Make it in Germany") was expanded. The Federal Employment Agency has started providing support, including placement services, for foreign residents intending to work in Germany.
Consider establishing an institution tasked with designing, assessing and coordinating labour migration policy.	No action taken.

Recommendations in previous *Surveys*	Action taken
B. Enhance competition in product markets	
Liberalise the issuance of SIM cards in mobile communication. Sell the remaining government shares of Deutsche Telekom.	No action taken.
Raise competition in the railway sector, for example by fully privatising the transport service subsidiaries while retaining state ownership of the tracks, and by eliminating exemptions from tendering of regional railway services. Facilitate access of market entrants to rolling stock. Strengthen the role of the regulator by improving its investigative and interventional competences. Move to full ex ante regulation of access conditions.	Draft legislation to implement the minimum requirements of an EU directive will, if implemented, strengthen the incumbent's incentives to reduce infrastructure costs and broaden the range of infrastructure on which the regulator can determine access conditions.
Provide equal treatment in value added taxation for all postal service providers. Sell the remaining government shares of Deutsche Post.	No action taken.
Scrutinise compulsory membership and chamber self-regulation in the professional and crafts chambers for entry barriers and lower entry requirements where possible. Examine if entry conditions to crafts could be further liberalised without jeopardizing the vocational education and training system.	No action taken.
Abandon price regulation in some professional services. Abolish the price regulation for architects and engineers and consider liberalising price regulation for notaries. Give lawyers more options to deviate from the principle of effort-based remuneration, e.g. allow all-inclusive fees for certain tasks and extend outcome-based payments.	In the context of the infringement proceedings launched by the European Commission, the government plans to abolish regulated prices (*Steuerberatervergütungsverordnung*) for tax consultants in out-of-court matters and for tax consultants based abroad.
Reduce exclusive rights in the professional services. For example, allow new companies to register in the commercial registry without notary services and open the provision of auxiliary services in property conveyancing to other professions. Reduce exclusive rights of lawyers in providing legal advice and representation in court.	No action taken.
Review restrictions on business conduct. Abolish all remaining restrictions on advertising for lawyers. Give consideration to abolishing restrictions on shareholders for limited liability companies of lawyers, tax consultants, architects and engineers.	No action taken.
Relax the requirement that pharmacies can only be owned by a pharmacist who has to work personally in one out of a maximum of four branches he/she is allowed to own.	No action taken.
Establish an advisory body tasked with identifying and reviewing regulatory hurdles to higher productivity.	No action taken.
C. Improve educational outcomes	
Improve the quality of early childhood education and care, including by improving the staff-child ratio in accredited facilities; by better integrating education and care; and by ensuring early childhood professionals have better qualifications, more professional development opportunities and better working conditions.	New measures to improve early childhood education and childcare have been launched (see "Improving Labour Market Performance" above). An on-going program (*Kindertagespflege*) provides a competence-oriented qualification handbook to prepare childminders in pedagogy. It also supports municipalities that implement this qualification.
Continue to reduce the stratification in the school system, notably by delaying the tracking decision beyond age 10 and reducing the number of school tracks across all *Länder*. Reduce grade repetitions.	Some more *Länder* have started to combine different tracks in one school type.
Further reform the VET system by considering reducing the variety of VET qualifications and providing continuing education offers of general skills (mathematics, German, foreign languages, computer skills) according to labour market needs. Let vocational schools and chambers jointly prepare and carry out the final examination of dual VET programmes.	No action taken.
Provide more financial resources to schools with a comparatively high share of pupils with weak socio-economic background in particular at lower secondary level. Continue reducing the assignment of pupils to special needs schools (*Sonderschulen*) and make sure assignment to such schools does not reflect the socio-economic background of pupils.	Disadvantaged youth can receive assistance such as remedial teaching and auxiliary instruction. Social educational support is available.

Recommendations in previous *Surveys*	Action taken
Provide more support for disadvantaged youth to complete formal upper secondary education programmes, in particular mainstream vocational education and training (VET).	The federal government and the *Länder* seek to further reduce the number of young people aged 20 to 29 who do not have an upper secondary VET degree and are not in education or training. The Alliance for Initial and Further Training (*Allianz für Aus- und Weiterbildung*), concluded between national and subnational governments and the social partners, aims to strengthen vocational education and render it more attractive to young people. Disadvantaged youth can receive assistance to acquire a degree at upper secondary level, especially in VET. This covers the transition from school to vocational training, for example support and guidance to find an appropriate occupation via the "Educational Chains Initiative". In case of financial problems that endanger the completion of the training, a subsidy can be granted to defray training and living costs.
Make tertiary education more attractive and responsive to labour-market requirements by increasing universities' input flexibility.	Public higher education institutions now generally have budgetary autonomy in the context of agreements with *Länder* governments specifiying education targets. In order to improve conditions for study and the quality of teaching, the Federal Government and the *Länder* have started the Teaching Quality Pact.
Ensure sufficient and diverse financing of higher education and overcome the free-rider problem between *Länder* in the financing of university education.	The Higher Education Pact 2020 addresses the different starting positions and unequal burden sharing among the *Länder*.
Raise participation in lifelong learning. Improve transparency in the adult education market and facilitate access to guidance on adult training. Carefully monitor the outcome of financial support programmes for adult learning and education.	The Alliance for Initial and Further Training (2015-18) aims to strengthen continuous training.
D. Strengthen financial service resilience	
Introduce a leverage ratio requirement as a complement to capital ratios in line with international agreements. Give consideration to introducing a leverage ratio requirement for systemically important banks before 2018.	Germany complies with international agreements and the European Union regulation, in particular the European Union's rules implementing Basel III. These include a leverage ratio requirement from 2018 onwards.
Accelerate loss recognition of impaired assets. Consider requiring valuing impaired loans in line with market prices of underlying collateral and to value bonds according to market values, including those not held in the trading book.	The European Union's rules implementing Basel III apply.
Micro- and macroprudential regulation should address remaining risks emanating from the *Landesbanken*. Continue restructuring the *Landesbanken*, including through privatization, consolidation or focusing on core activities according to a viable business model.	*Landesbanken* have reduced their securities trading business and their foreign activities. This restructuring process is still ongoing. The government considers that further restructuring is key to ensuring the viability of business models.
Improve corporate governance in the *Landesbanken* and savings banks, for example, by requiring members of the board to be more independent from elected regional and local governments.	Governance rules for all banks were revised with the transposition of the Basel III directive in the EU's Capital Requirements Directive IV, to strengthen risk management arrangements. Rules concerning independence of board members from regional and local governments were not changed.
When transposing the European Union's Bank Recovery and Resolution Directive into German law, aim for enabling the authorities to include bank debt as comprehensively as possible in the future bail-in instrument. Clarify the priority for financial stability objectives over creditor rights when the legislation is applied.	The EU Banking Restructuring and Resolution Directive (BRRD) has been transposed in national law. The resulting Recovery and Resolution Act is in force since January 2015 and has been aligned to the European Single Resolution Mechanism (SRMR) As a result the resolution authority has the power to bail in debt. The range of bank debt available for bail-in corresponds to the BRRD provisions. The capacity to absorb losses (through bank equity and bailed-in debt) must be at least 8%. Interbank lending and covered bonds are generally excluded from bail-in.
Consider ways to improve the effectiveness of requirements to separate investment banking activities from retail banking. For example, give consideration to including securities held for market-making purposes in separation requirements and to focusing such requirements on derivatives exposures.	Separation requirements are being considered by the European Union.
E. Increase the efficiency of public finance	
Shift taxation from mobile bases to immobile bases. Phase out reduced VAT tax rates. Reduce social security contributions, notably for low income workers.	Social security contributions rose by 0.1 percentage point in 2015. Personal income taxes were lowered somewhat in 2015 and 2016. Overall the tax wedge on labour income remains broadly unchanged.
Go further in cutting statutory corporate tax rates. Consider lowering or abolishing the local trade tax.	No action taken.
Broaden tax bases by updating real estate tax valuations while protecting low income households.	The *Länder* have agreed to a common model of taxing real estate.
Extend capital gains taxes on residential real estate except for owner-occupied housing.	No action taken.
Raise the tax rates applying to household capital income towards marginal income tax rates applying to other household income.	Changes in taxing capital gains may be considered in the next election period.

Recommendations in previous *Surveys*	Action taken
Equalise the inheritance tax burden for different forms of wealth.	Parliament is discussing inheritance tax reform.
Prioritise government spending on growth-enhancing items such as infrastructure and childcare.	The Federal Government has increased growth-enhancing public spending with focus on public infrastructure as well as education and research. This includes an additional EUR 3 billion for research and development 2014-17. Furthermore, the *Länder* and municipalities will be supported in financing child care, schools and universities with EUR 6 billion 2014-17. EUR 5 billion are made available for public infrastructure investment 2014-17 and EUR 8.1 additionally 2016-18. In the 2016 budget, federal government investment spending will rise by 5.4%, with investment being stepped up in education, research and infrastructure. Investment spending grew by 2.1% in 2015. Federal Government spending on education and research increased by 10.3% in 2015 (target). An additional 5.8% is foreseen in 2016. EUR 21.1 billion will be spent on education and research in the 2016 federal budget. Resources appropriated for investment in transport have also been boosted significantly. While on average around EUR 10 billion per annum was spent on "classic" investment in transport infrastructure in the years 2010 to 2015, the 2016 federal budget assigns around EUR 12.3 billion to measures in the areas of road, rail and inland waterways. EUR 3.5 billion were committed to a municipal investment promotion fund in 2015, which is intended to help municipalities experiencing financial difficulties scale up their investment up to 2018.
Improve public sector efficiency. Cut grants and government consumption expenditures further.	OECD recommendations regarding the improvement of the efficiency of the public sector have been considered in the subsidy policy of the German government. According to the 25th Subsidy Report Subsidies (including tax) are budgeted to remain steady to 0.7% of until 2016 with a rise in priority investment spending, especially support for broadband rollout in rural regions where market-driven rollout is difficult, measures to improve energy efficiency of buildings and the National Climate Initiative.
Further improve the determination of risk-adjusted transfers within the health fund, by considering a larger number of diseases and by ensuring that transfers for higher age groups and diseases with high death tolls are high enough.	The accuracy of the risk-adjustment model has been improved.
Include private insurers in the financing system based on the central health fund.	No action taken.
Consider strengthening the tax autonomy of the *Länder* by allowing them to levy a surcharge to the income tax.	No action taken.
Re-design inter-governmental transfers so as to reduce the disincentive effects for states to develop their own tax base.	The *Länder* have submitted a proposal for reassessment of the financial equalization system which is being examined by the Federal Government.
Re-allocate administration of the collection of taxes which accrue to the federal government or are shared between the different layers of government from the *Länder* to the federal government.	No action taken.
F. Green growth	
Phase out tax expenditures for activities that damage the environment without harming international competitiveness, and better align environmental taxation with negative externalities. To this effect maintain high support for international solutions.	No action taken.
Eliminate exemptions and reduced energy tax rates, except if they are designed to avoid double taxation, notably in sectors covered by the EU ETS.	No action taken.
Consider creating an effective carbon tax in the sectors not covered by the EU ETS and ensure that other, non-carbon related, externalities are adequately priced.	No action taken.
Make feed-in tariffs of renewable energy more cost-effective by linking them to market developments. Consider reforms to move the current support scheme to a competitive auction system.	Legislation in 2014 has reduced the cost of funding new installations, by concentrating subsidies on low-cost onshore wind and solar technologies. Most new installations receive a subsidy which responds to market developments, replacing the fixed feed-in tariff. Auctions have been carried out in 2015 to determine the level of subsidies for ground-mounted photovoltaic installations. The government is preparing legislation so that the support scheme for wind onshore, wind offshore and PV will generally be changed to competitive auctions by 2017. The legal basis for competitive auctions for biomass plants is planned to enter into force by mid-2016.
Provide adequate incentives for the transmission systems operators to invest in the most efficient technologies while extending the grid. Further implement measures which aim at more transparency and public involvement in the decision process of grid extension.	A nationally coordinated system for transmission grid development was set up and the planning and authorisation procedures were shortened. At the same time, far-reaching possibilities for participation and consultation of the public were introduced.

Thematic chapters

Chapter 1

Boosting investment performance

Non-residential investment has fallen over the past 20 years as a share of GDP and is now lower than in several other high-income OECD countries. Business investment growth has been weak since the outbreak of the global financial and economic crisis. Government investment has been low, especially at municipal level. Investment in knowledge-based capital (KBC), which is closely related to long-term productivity performance, has been subdued. Weak growth prospects in the euro area have weighed on business investment and an increasing share of firms invests in distant, more dynamic markets. Policies that strengthen stability and growth prospects in the euro area would raise the attractiveness of Germany as a location to invest, notably steps to strengthen the single market and cross-border infrastructure, and complete the banking union. Steps to liberalise regulation of services, in particular knowledge-intensive professional services, would raise investment and productivity. Policies that encourage the reallocation of resources would also increase investment in KBC. Poor municipalities invest relatively little and there is scope to lower the cost of public investment projects. Better use of e-governance and more performance-oriented budgeting could improve the efficiency and effectiveness of public investment.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Policies to strengthen business and public investment can boost productivity and wellbeing

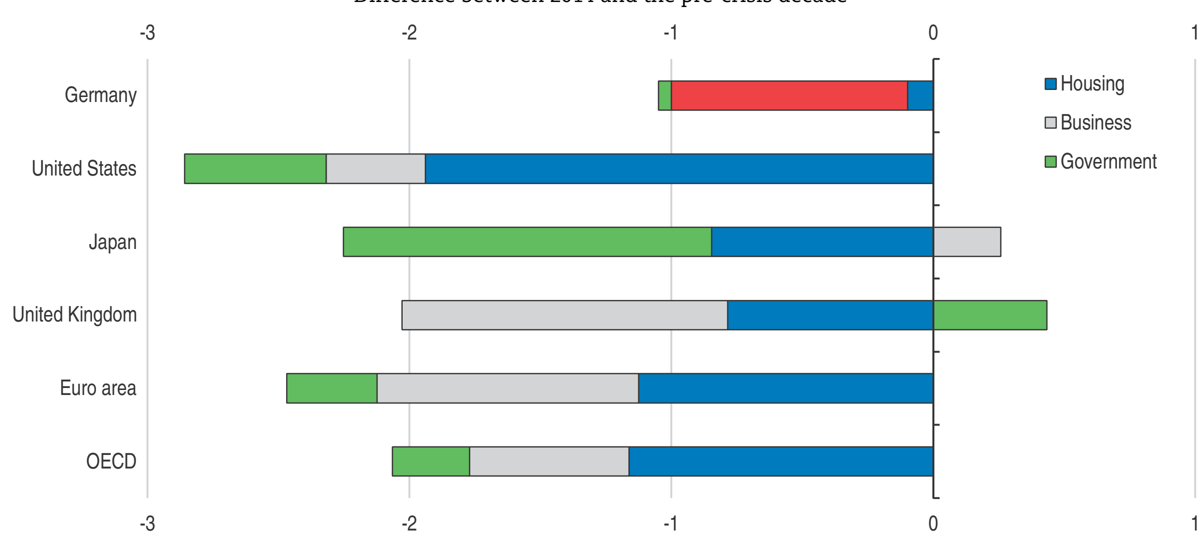
Business investment and public investment have weakened over time and this chapter analyses some driving forces. Investment is a key determinant of productivity, growth and well-being, but the challenges in sustaining momentum have increased in recent years. Policies to eliminate barriers to the development of knowledge-intensive services and the reallocation of resources would foster the transition to a more dynamic economy. Stronger growth prospects in the euro area would also have benefits for investment activity in Germany. As a key player in the euro area, Germany's support for collective action to strengthen confidence in euro area growth is needed. Steps to identify and address public investment priorities in Germany would also improve conditions for further business investment, and can make growth more socially inclusive.

Non-residential investment has weakened

The global financial and economic crisis depressed non-residential investment as it did in the euro area or the United Kingdom (Figure 1.1). But in Germany, this has occurred despite a stronger macroeconomic and financial recovery, high business profitability, strong balance sheets and higher rates of capacity utilisation. Non-residential investment spending as a share of GDP is modest in international comparison (Figure 1.2).

Figure 1.1. **In Germany business investment accounts for most of the decline in investment spending as a share of GDP**

Difference between 2014 and the pre-crisis decade[1]



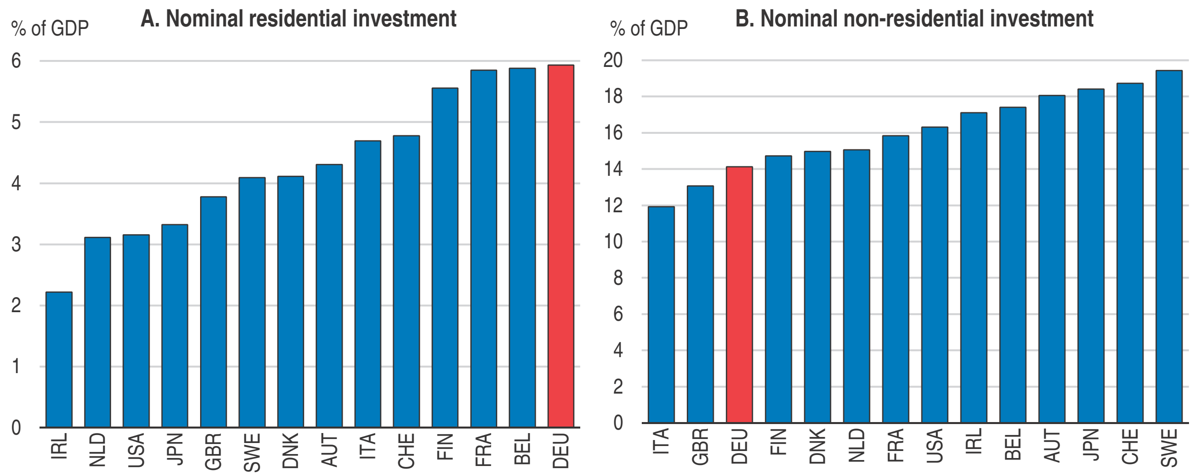
1. Average of investment shares in GDP from 1996 to 2007.

Source: OECD (2015), *OECD Economic Outlook 97 Database* and Eurostat.

StatLink http://dx.doi.org/10.1787/888933345537

Figure 1.2. **Non-residential investment spending is low in international comparison**

2014



Note: 2013 for Japan and Switzerland.

Source: OECD (2015), *OECD National Accounts Database*.

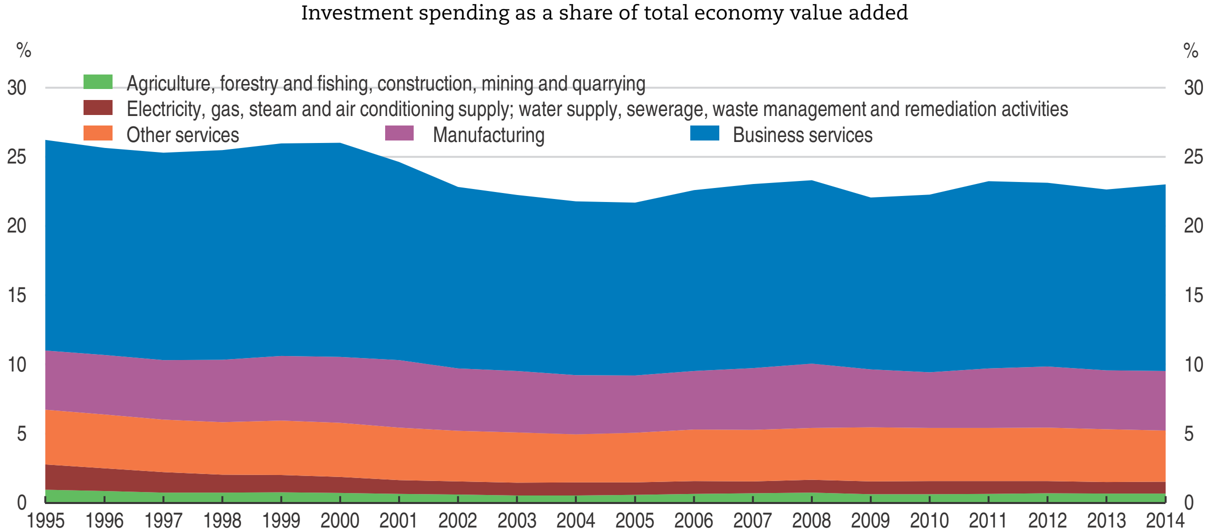
StatLink http://dx.doi.org/10.1787/888933345457

The share of business investment in value-added has fallen the most in business services, which accounts for most of business investment (Figure 1.3). German manufacturing firms have renewed their capital stock more slowly than manufacturing firms in the UK and the US. This observation applies to a broad range of subsectors (Gornig and Schiersch, 2015).

Lower spending on non-residential investment, in international comparison or over time, does not necessarily imply less growth of the capital stock, as investment goods prices and depreciation rates of installed capital may vary across countries and over time. In particular, prices for capital goods have fallen markedly over the past 30 years. ICT

Figure 1.3. **Business services account for most of total investment**

Investment spending as a share of total economy value added



Note: Investment includes only new fixed capital goods. It excludes adjustment for net sales of used capital goods.

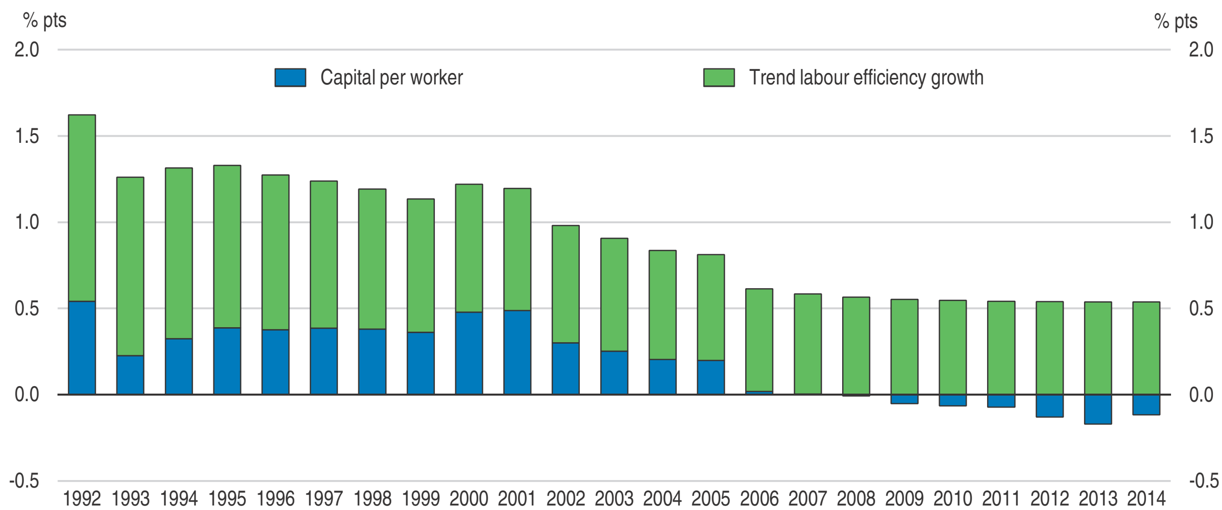
Source: OECD (2015), *OECD National Accounts Database*.

StatLink http://dx.doi.org/10.1787/888933345547

investment has become more important and comprises hardware and software that require frequent updating and replacement. In Germany, the contribution of the accumulation of net non-residential fixed capital to productivity growth has diminished over the past 10 years (Figure 1.4). Among OECD economies, Germany is one of few where the growth contribution of non-residential investment to productivity growth has been negative (OECD, 2015a). Non-residential construction capital and information and communication (ICT) capital growth, notably in software and databases, have been particularly weak in international comparison (Table 1.1).

Figure 1.4. **The contribution of capital to productivity growth has diminished**

Contributions to trend labour productivity growth, percentage points



Source: OECD (2015), *OECD Economic Outlook 98 Database*.

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Weak non-residential investment could reflect substitution from traditional physical capital to intangible forms of capital ("knowledge-based capital", KBC; Box 1.1). In many OECD countries, investment in KBC has risen more strongly than investment in physical capital (Andrews and Criscuolo, 2013). While business expenditure in R&D in Germany is relatively high compared to other OECD countries, investment in KBC, which also includes spending on other intangible assets, is lower than in leading high-income OECD economies and has grown little over time (Figure 1.5). Spending is low on ICT-related KBC (software, databases), intellectual property, organisational capital and training.

KBC is an important determinant of long-term productivity growth. It has been estimated to account for one-fifth to one-third of labour productivity growth in the market sector of the US and EU economies (Andrews and Criscuolo, 2013; Corrado et al., 2013). Investment in knowledge capital boosts productivity especially strongly in countries closer to the technology frontier, such as Germany. For example, manufacturing firms that exhibit a higher level of software investment generate more patents per R&D dollar, and their investment in R&D is more highly valued by equity markets (Branstetter et al., 2015). These also generate global productivity spillovers (Dabla-Norris et al., 2015). Investment in several KBC components, notably business processes or organisational structure ("organisational capital"), are particularly important sources of productivity growth in many services

Table 1.1. **Growth of non-residential capital services**

Average annual growth and growth contributions

Subject	2001-07					2007-13				
	Annual growth	Growth contributions				Annual growth	Growth contributions			
		ICT capital		Non ICT capital			ICT capital		Non ICT capital	
	Total capital services	Total	Software and databases	Total	Non-residential construction	Total capital services	Total	Software and databases	Total	Non-residential construction
Australia	5.2	2.1	0.3	3.1	1.1	5.0	0.8	0.2	4.2	2.3
Austria	2.9	1.2	0.4	1.7	0.8	2.2	0.8	0.5	1.4	0.4
Belgium	3.5	1.5	0.4	2.0	0.3	2.3	0.9	0.4	1.4	0.4
Canada	4.0	1.7	0.5	2.3	0.8	2.6	0.7	0.2	1.9	1.3
Denmark	3.4	1.7	0.5	1.6	0.4	1.5	0.8	0.5	0.7	0.1
Finland	2.4	0.9	0.6	1.5	0.7	1.2	0.3	0.1	0.8	0.6
France	2.9	1.1	0.7	1.7	0.5	1.9	0.7	0.5	1.3	0.5
Germany	**1.6**	**1.0**	**0.2**	**0.7**	**0.1**	**1.0**	**0.4**	**0.1**	**0.5**	**0.0**
Ireland	7.2	1.0	0.3	6.2	1.9	3.6	0.8	0.3	2.8	1.4
Italy	2.7	0.8	0.2	1.9	0.6	0.7	0.3	0.1	0.4	0.1
Japan	2.0	1.2	0.5	0.8	0.4	0.4	0.4	0.1	0.0	0.0
Korea	5.3	1.2	0.6	4.1	1.8	4.1	0.4	0.1	3.8	1.7
Netherlands	3.2	1.6	0.8	1.6	0.7	2.0	0.8	0.5	1.2	0.7
New Zealand	5.2	2.4	0.7	2.8	0.7	3.2	1.7	0.6	1.5	1.0
Portugal	4.6	1.6	0.4	3.0	1.8					
Spain	6.0	1.3	0.6	4.7	1.7	3.0	0.6	0.3	2.4	1.3
Sweden	3.1	1.6	0.6	1.6	0.3	2.2	0.7	0.4	1.4	0.4
Switzerland	3.3	1.5	0.5	1.8	0.3	2.6	1.2	0.7	1.4	0.2
United Kingdom	3.1	1.1	0.6	1.9	1.2	2.2	0.5	0.3	1.7	1.5
United States	3.8	1.7	0.6	2.1	0.3	2.0	0.8	0.4	1.2	0.3

Source: OECD (2015), *OECD Productivity Database*.

Box 1.1. **Knowledge-based capital: Definition and measurement**

Knowledge-based capital (KBC) encompasses all assets that lack physical substance but, like physical capital, generate economic benefits that can be retained by firms at least to some extent, for a period that exceeds one year (OECD 2015h).

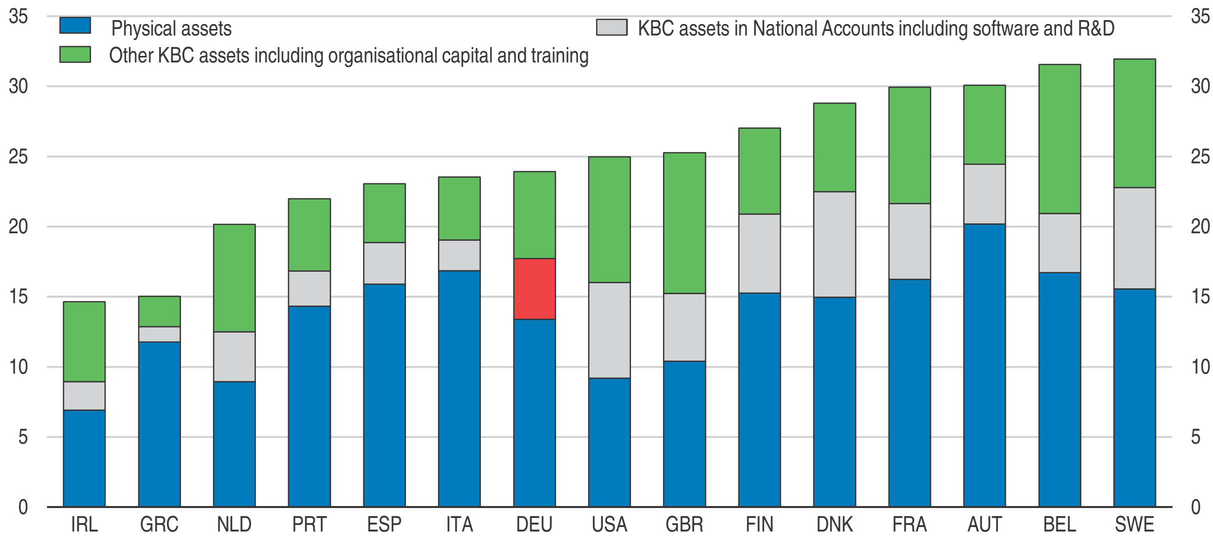
KBC is classified into the following three main categories, following Corrado et al. (2009):

- Computerised information includes software and databases. This is already recorded as investment in the national accounts as a part of gross fixed capital formation.
- Innovative property comprises research and development (R&D) which is recorded in the national accounts definition of investment, mineral exploration and artistic originals, new architectural and engineering designs and new product development in financial services. Spending on the latter is estimated from the compensation of high-skilled workers in the financial sector industry.
- Economic competencies comprise firms' human and structural resources such as firm-specific training, brand equity, and organisational capital. Investment in firm-specific human capital is estimated from firms' expenditure on training and education. Investment in brand equity is estimated from spending on advertising and market research. Finally, organisational capital is estimated from managers' compensation and the gross output of the business and management consultancy industry. The estimation of organisational capital involves particular uncertainty given that countries differ substantially in managers' compensation systems and the extent to which firms rely on external consultancy in their management decision.

Some KBC assets are included in the national accounts definition of investment, notably R&D, software and databases. Components of KBC that are not recorded in national accounts include investment in design, new financial products, advertising, market research, training and organisational capital.

Figure 1.5. **Business investment in physical and knowledge-based capital (KBC)**

Percentage of business sectors' gross value added, 2013



Source: OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society.*

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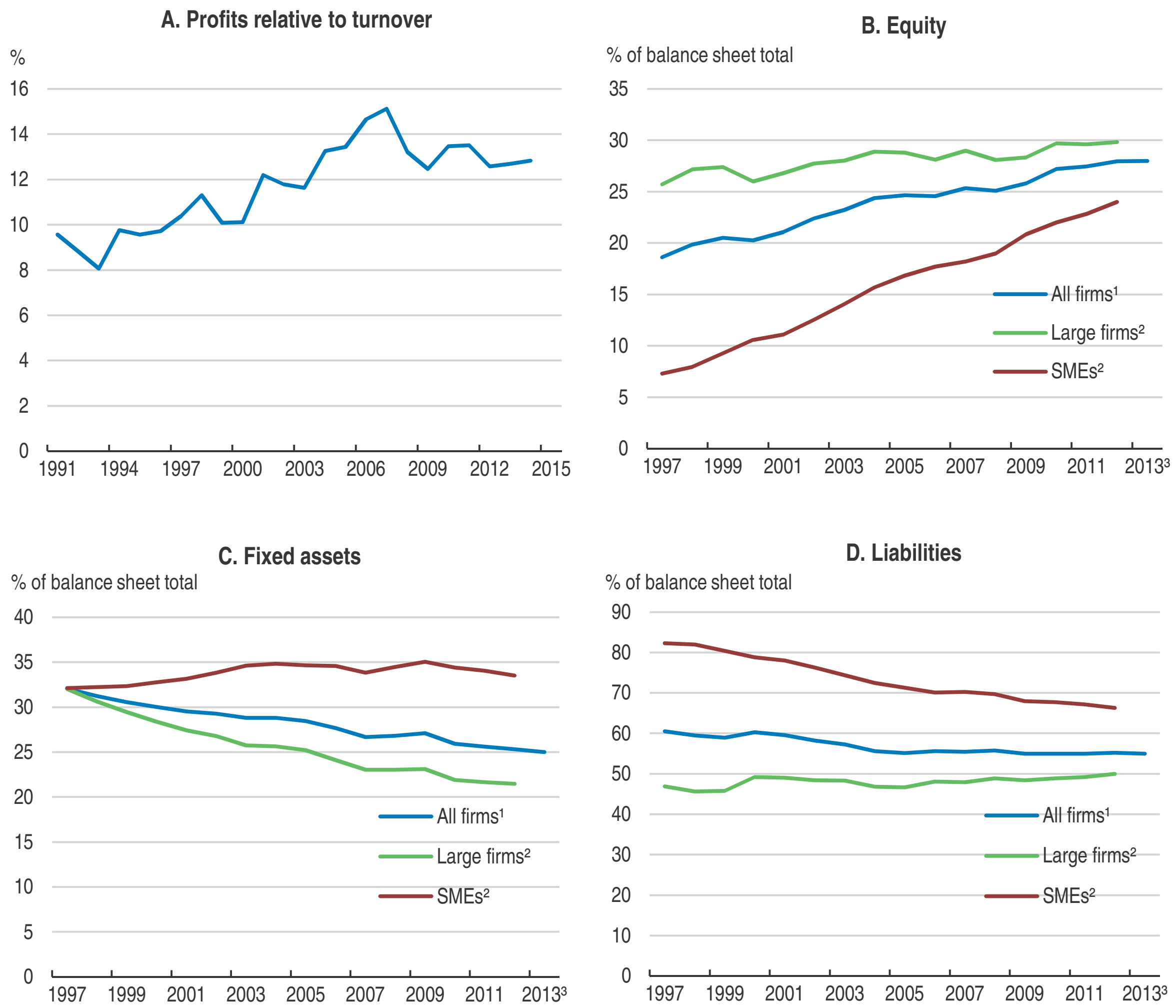
(Dabla-Norris et al., 2015). Investments in KBC, notably in organisational capital also tend to boost the productivity of physical assets, notably in ICT goods, thereby encouraging investment in such physical assets (Andrews and Criscuolo, 2013; Chen et al., 2014).

Weaker demand is the main explanation of weaker business investment

Funding conditions are favourable for business investment. Indeed, profitability is historically high. The retention of profits has resulted in continuously rising equity buffers (Figure 1.6). High levels of retained profits are typically a strong boost to investment (Schiantarelli, 1996). The outbreak of the euro area sovereign debt crisis in 2010 turned Germany into a safe haven, driving long-term real interest rates to historically low levels, below those in other euro area countries. The share of firms reporting limitations in access to external funding remains historically low. The tax-induced cost of capital fell significantly as corporate tax burdens were reduced in 2001 and 2008 (Spengel et al., 2014). So it would appear there's not a lack of funds, but rather a lack of appetite to commit these funds to investment projects.

Weak demand growth can explain to a large extent why business investment has been weak following the outbreak of the global financial and economic crisis, including in Germany (OECD, 2015a). This weakness could have a lasting effect on the capital stock. Indeed, episodes of marked demand weakness can have lasting effects on the capital stock when investment decisions are costly to reverse. For example, firms may not reverse decisions to abandon markets after a period of weak demand (e.g. Dixit, 1992). Weak demand conditions in geographically close export markets, notably in the euro area, are particularly important for domestic investment as these markets can best be served with domestic production. This is confirmed by gravity models, which highlight the importance of geographic proximity for trade (e.g. Boulhol and de Serres, 2008). In addition, the long lasting reduction of economic activity in European emerging markets weighs on investment intentions of German export oriented companies.

Figure 1.6. **Profitability and balance sheet composition of non-financial businesses**



1. Large firms are defined as having sales of EUR 50 million or more. Small and medium-sized enterprises (SMEs) are defined as having sales below EUR 50 million.
2. Estimate in 2013 for all firms.

Source: Deutsche Bundesbank, *National Account Statistics* for Panel A and "Extrapolated results from financial statements of German enterprises from 1997 to 2013", *Corporate Financial Statements Tables* for Panels B-D.

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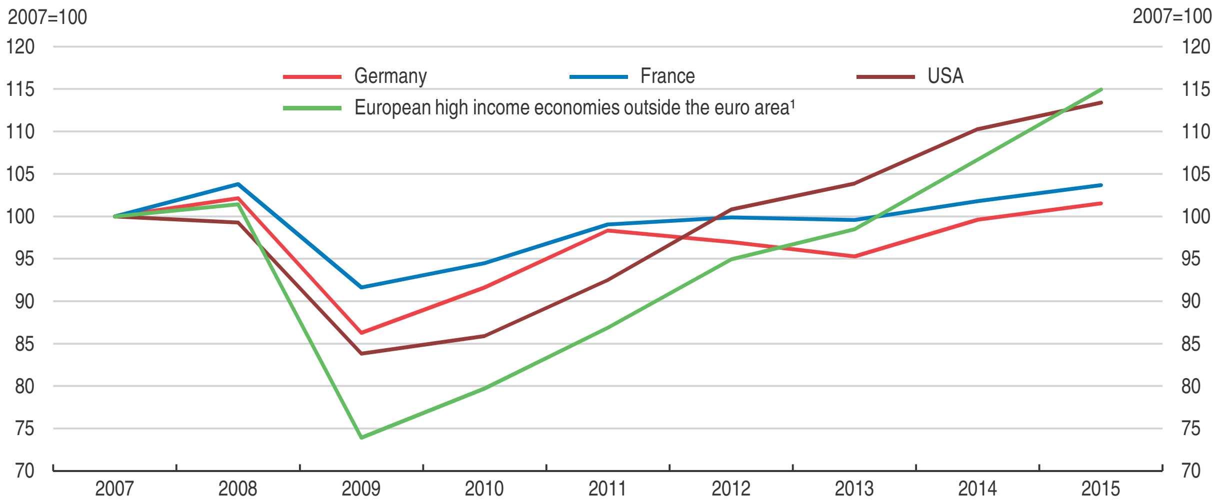
The shift in demand to more distant markets appears to have attracted investment by German firms in these markets. According to a survey of German business leaders (DIHK, 2015), the share of German industrial businesses intending to invest abroad has risen from 42 to 47% since 2008, especially in East Asia and the United States, and they have raised the volume of their fixed investment abroad. Most firms invest abroad to serve foreign demand better, and this share has increased considerably. According to the same survey only 23% of firms invest abroad to benefit from lower costs. This share remains close to historic lows. Weak investment in other euro area countries may also have weighed on investment in Germany because of the geographic integration of value-added chains within the euro and the common exploitation of the knowledge-based assets. Indeed, investment in multinational firms which integrated through value-added chains makes investment across countries complementary to each other (OECD, 2015a). Business

Figure 1.7. **Business investment in euro area countries has grown little in recent years**



1. Includes Denmark, Sweden, Switzerland and the United Kingdom. They are weighted on the basis of investment spending in 2011.
Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections* (database), and OECD calculations based on *OECD Economic Outlook: Statistics and Projections* (database) and on *Main Economic Indicators Database*.

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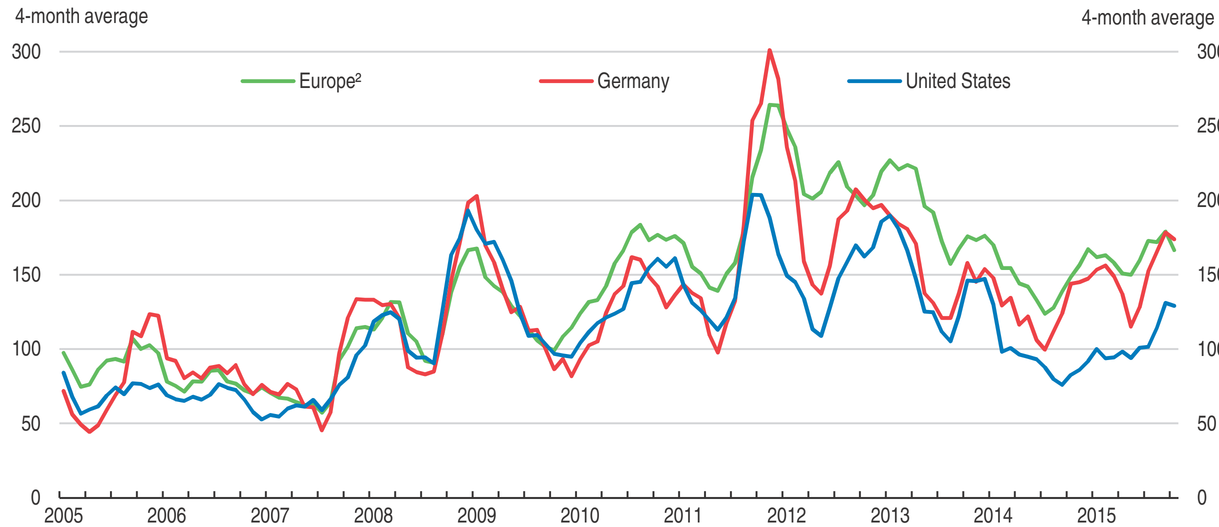
investment has been particularly weak in euro area countries, including Germany, since 2011, contrasting with the United States and European economies outside the euro area (Figure 1.7).

Uncertainty exacerbates the impact of weak demand on investment. It gives agents an incentive to postpone or cancel their investment decisions. In particular, new investment decisions will be the lower the stronger the downside tail risks are (OECD, 2015e, Dixit and Pindyck, 1994). A recently developed news-based index of policy-induced uncertainty rose strongly between 2010 and 2012, especially in European economies, including in Germany, with the eruption of the euro area debt crisis (Figure 1.8). This suggests that euro area developments have been an important driver of increased uncertainty. Higher uncertainty, as measured by this index, has been estimated to have lowered investment across OECD countries (OECD, 2015a), even though the index does not provide a precise measure of uncertainty. A substantial effect of policy uncertainty on investment has been estimated for Germany (Federal Ministry for Economic Affairs and Energy, 2013), even after controlling for the effect of general business confidence. Policy uncertainty in Germany can explain the weakening of investment in 2012. However, the German production of investment goods is used as a proxy for investment, which may also capture the response of foreign investment on uncertainty. A study by the association of German co-operative banks (BVDR, 2013) concludes that the increase in uncertainty in 2011 lowered equipment investment in Germany by 4-6%. Estimates by *Deutsche Bundesbank*, 2016) suggest that uncertainty may have lowered investment in Germany after the outbreak of the global financial and economic crisis in 2009 and after the outbreak of the euro area debt crisis in 2012 and 2013. Since 2007, German non-financial businesses have raised equity buffers, liquid financial assets and stocks, whereas they have reduced fixed assets and short-term financial liabilities (Hüther, 2014). This observed increase in liquidity raises flexibility and makes companies more resistant to shocks as well as more independent from external financing.

Figure 1.8. **Uncertainty remains high in Germany and main European economies**

News based policy uncertainty index[1] normalised to a mean of 100 prior to 2011



1. Index constructed by drawing on two newspapers per country through the count of articles containing the terms uncertain or uncertainty, economic or economy, and one or more policy-relevant terms.
2. Average of ten European newspapers from France, Germany, Italy, Spain and the United Kingdom.

Source: Economic Policy Uncertainty (*www.policyuncertainty.com*).

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European-wide efforts to bolster growth would also strengthen investment in Germany

Policies that strengthen stability and growth prospects in the euro area would raise the attractiveness of Germany as a location to invest. Germany should therefore continue to support efforts to improve growth prospects in the euro area, notably steps to strengthen the single market and cross-border infrastructure, and complete the banking union. These steps will strengthen long-term growth, reduce the risk of financial crises, and strengthen crisis management. Contagion, triggered by capital outflows, played a major role in propagating uncertainty within the euro area (de Grauwe, 2013). To reduce the scope of such contagion effects, currency areas have developed institutions which provide emergency liquidity support. Germany will benefit from a further deepening of the banking union in the euro area through a reduction in uncertainty, which will help to support demand, and in particular business investment.

Weak demand growth cannot fully explain why investment spending is especially low in Germany. Recent empirical research suggests that cross-country differences in cyclical positions, as well as in structural features, including employment, demography and the sectoral structure, do not appear to explain why investment in Germany is relatively low (DIW, HRI, 2014). These findings suggest that there is scope for improved structural policies to boost investment in Germany. The following sections examine several key areas.

Econometric and case study evidence indicates that the relative utilisation of more-skilled workers is positively correlated with capital intensity and the implementation of new technologies at the firm and industry level. Such complementarity seems to be particularly marked for ICT investment and with respect to cognitive and soft skills. Increased computer intensity is associated with increased employment shares of managers, professionals and other highly educated workers (Katz and Autor, 1999). The supply of new skills through the entry of young workers to the labour market is diminishing as a result of population ageing, making life-long learning a key instrument to improve skills. This is discussed in Chapter 2.

Removing barriers to competition strengthens investment

Relaxing product market regulation which harms competition or market entry stimulates business investment and innovation and thereby productivity. More intense competition encourages the adoption of improved management practices and related investment in KBC (notably organisational capital). Such improvements raise the productivity of physical capital, notably in ICT, which encourages ICT investment. The resulting productivity gains are substantial (Bloom et al., 2012). Regulation restricting entry also damps investment in physical capital (IWU, 2015; Alesina et al., 2005; Nicoletti and Scarpetta, 2005). While Germany has made much progress in reforming product market regulation in general over the past 15 years, regulation in some services remains restrictive, especially the professional services and in some network industries (Figure 1.9; see also the *OECD Economic Survey of Germany 2014*, OECD, 2014c). As argued below, since these services are used as intermediate services, regulatory reform in these sectors has important benefits for productivity and investment throughout the economy.

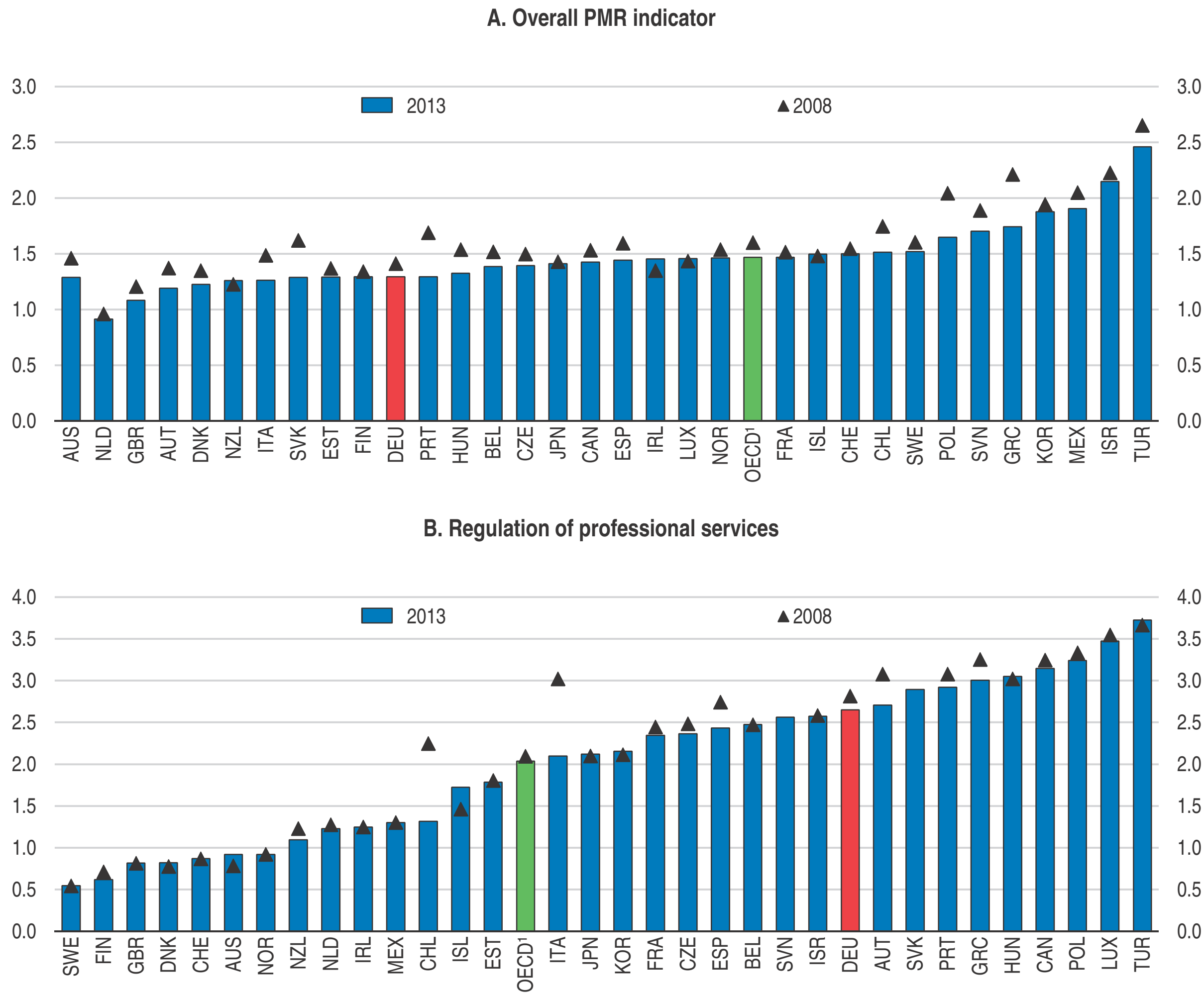
Removing barriers to competition in the services

The potential for regulatory reform to raise productivity performance in the services is particularly large. While most countries have experienced substantial productivity catch-up in agriculture and manufacturing relative to the United States, productivity differences in most services across countries have remained high. Productivity gaps in the services are also particularly large at the firm level, suggesting that there is much scope to raise productivity through the diffusion of knowledge. Investment in knowledge-based capital plays a key role in the diffusion process (OECD, 2015a). In Germany, the productivity gap between manufacturing and services is particularly large (Figure 1.10). Productivity growth over the past 15 years has been low, also in international comparison (*OECD Economic Survey of Germany 2014*, OECD, 2014a). Investment in non-tangibles (e.g. business processes, organisational structure) are particularly important sources of productivity growth in many services (Dabla-Norris et al., 2015). In Germany in the weakness in KBC spending may be attributed to the services (Figure 1.11). In a study comparing 7 European economies, the contribution of investment in KBC to services productivity growth has been estimated to be substantially weaker in Germany than in the United Kingdom, the Netherlands, France and Austria, outperforming only Spain and Italy (Corrado et al., 2014).

Services contribute 70% to economy-wide value-added in Germany and are important intermediate inputs to other sectors, including for manufacturing. The domestic services content of economies' gross exports has risen over time, underscoring the importance of open and efficient markets for services for participation in global value-added chains. Global production networks rely on business services to move goods and co-ordinate production along the value chain (Gornig and Schiersch, 2015).The purchases of intermediate services by industrial firms amount to about 12% of GDP. More productive and innovative services raise productivity in downstream sectors. In export-oriented industries, the value of services inputs relative to their value-added is particularly high. In chemicals (including pharmaceuticals), for example, it amounts to 43% (IWU, 2015).

Figure 1.9. **Product market regulation remains restrictive in professional services**

Index scale from 0 to 6, from least to most restrictive



1. Average of all OECD countries excluding the United States. For Panel B, the Slovak Republic and Slovenia are also excluded to calculate the OECD average in 2008.

Source: OECD (2015), *OECD Product Market Regulation Database.*

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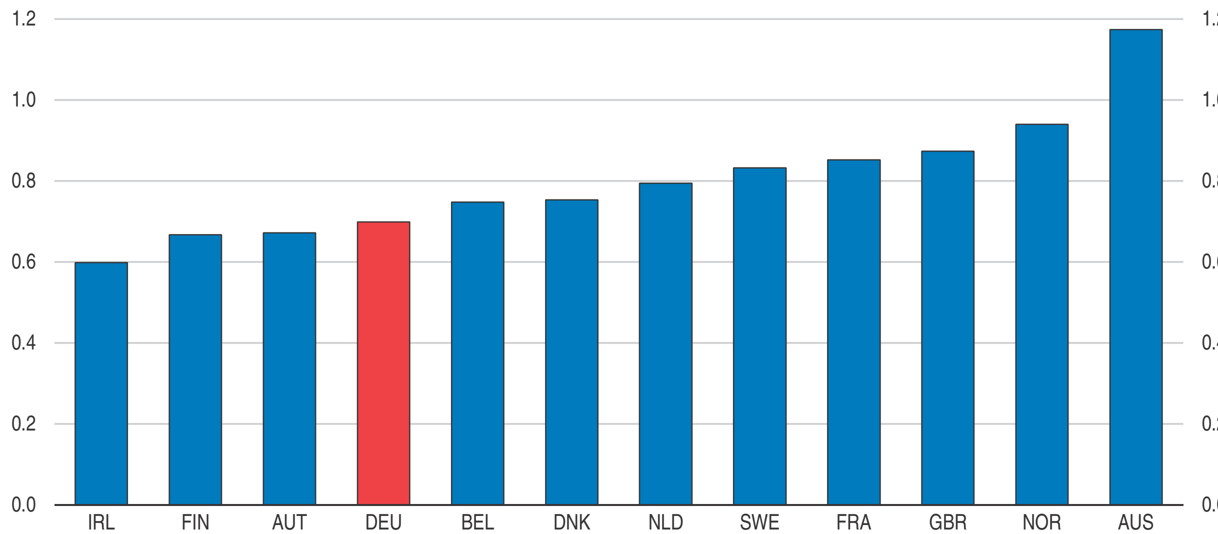
Intermediate service inputs also facilitate the diffusion of new technologies. Technology-intensive firms benefit the most from strengthening competition by reforming the regulation of business services (OECD, 2015a).

Professional services and network industry services play particularly important roles as intermediate inputs. Close to 100% of the services produced by lawyers and notaries, building engineers and architects in Germany are used in downstream sectors. In telecommunications, this share is 50%. The purchases of legal services and services of building engineers and architects by manufacturing firms amounted to close to 10% of their value added in 2010 (IWU, 2015). Past efforts to reduce barriers to competition in the professional services regulation have had important benefits for value added the economy as a whole (IWU, 2015), in particular for manufacturing. Making regulation as competition-friendly to one of the best-performing OECD country in this regard (the United Kingdom)

Figure 1.10. **Ratio of value-added per hour worked in business sector services relative to manufacturing**

2014[1]



1. 2013 for France, 2012 for Australia and the United Kingdom.

Source: OECD (2015), *OECD National Accounts Database*.

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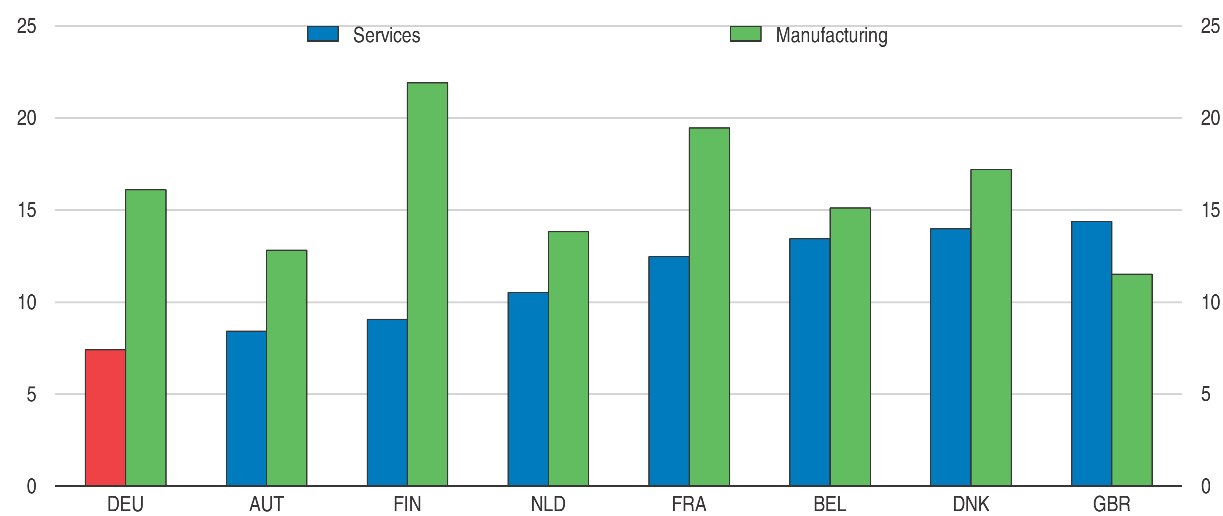
Figure 1.11. **Investment in knowledge-based capital is low in the services**

Percentage of activity-specific value added, 2010



Source: INTAN-Invest (*www.intan-invest.net*).

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suggests that productivity throughout the German economy could rise by 2%, and in manufacturing, by 2.3% (IWU, 2015). These productivity gains would be facilitated by stronger investment, including in KBC.

Germany ranks 25th of 33 countries in the OECD's index of regulation in the professional services (see the 2014 *Economic Survey*, OECD, 2014a, for more detail). Some of the most protected professional services also report among the highest shares of profits relative to turnover, well above the economy-wide average (IWU, 2015). This reflects entry barriers and conduct regulation. The 2014 *Economic Survey* (OECD, 2014c) contains an extensive analysis of regulation that is harmful to competition and economic activity. In particular there are binding price regulations for notaries, architects and building engineers and lawyers (for legal representation in court). Notaries benefit from particularly extensive exclusivity rules. For example, notaries have the exclusive right for legal transactions involving the creation of a new business. This includes in particular the founding agreement. Shareholder requirements in some professional services require that the certified professionals themselves must be majority owners in their businesses. Advertising is restricted in some professional services. The limitations on shareholding and the restrictions on co-operation between different professions limit economies of scale and scope, which are a key driver for investment in KBC.

More competition-friendly regulation of the network industries would also have important benefits for productivity and investment throughout the economy. For telecommunications, the 2014 *Survey* pointed to the large potential for productivity gains in services and manufacturing that lies in breaking up exclusive rights of issuing SIM cards, which remains restricted to holders of mobile telephony spectrum. In postal services, incumbent and competitors need to be put on a level playing field with respect to VAT. In railway services, the implementation of an EU directive will strengthen the incumbent's incentives to reduce infrastructure costs and broadens the range of infrastructure on which the regulator can determine access conditions. Nonetheless, limited investigative powers of the regulator, for example in market surveillance, continue to limit scope to prevent discrimination of market entrants (OECD, 2014a). Divesting government ownership in services which are subject to competition in all these industries would also boost market entry.

In 41 crafts professions, including in the construction industry (painters, plasters, bricklayers, scaffolders and installation of heating and cooling installations) and in some services (e.g. hairdressing) self-employment is restricted to holders of tertiary level vocational degrees. Alternatively, workers in these professions can open a business with a minimum work experience of six years, four of them in a managing position, in addition to the vocational education degree at the upper secondary level required to exercise the profession. These requirements raise entry barriers for self-employment. Self-regulation by sector-specific business chambers, notably in the professional services and the crafts, also risks protecting incumbents.

Fostering the reallocation of resources strengthens productivity in investment in knowledge-based capital

The gains in value that can be obtained from KBC gives rise to increasing returns to scale which makes KBC an engine of long-term growth. This is because the initial cost incurred in deploying KBC does not increase as it is combined with increasing amounts of other inputs (labour, capital) in the production of goods or services. The returns of KBC can best be exploited if other production inputs (capital, labour) are reallocated to the most productive use. For example, KBC is significantly more productive in sectors in which ICT capital is deployed intensively. Firms which invest in management (one component of KBC) also tend to undertake more physical investment (Andrews and Criscuolo, 2013; Chen et al., 2014). To exploit the potential of KBC, barriers to the reallocation of resources must be reduced. The cross-country differences in KBC reflect the fact that some countries are more successful at reallocating resources to underpin the growth of firms that invest in KBC (OECD, 2015a).

Preventing incumbent bias in policy making

Policies to avoid that incumbents' interests disproportionately affect the design of regulation can also improve reallocation, thereby raising innovation and productivity. Germany has made significant improvements to its regulatory policy system over the last years, introducing systematic *ex post* evaluation of regulations in 2013. Nonetheless, the capacity of the administration should focus more strongly on the analysis of the economy-wide impacts of policies, rather than on sector-specific impacts. Germany could benefit from an independent standing capacity to regularly undertake comprehensive in-depth reviews of policy areas to inform large scale regulatory reforms (OECD, 2015j). In the Netherlands, for example, the Bureau for Economic Policy Analysis conducts analysis of economy-wide impacts of regulation for the government. In Australia, such analysis is conducted by the productivity commission.

Germany can also do more to raise transparency of lobbyists' involvement in public decision processes. Transparency in lobbying is important to avoid partial policy decisions by forcing policy-makers to filter out self-interested arguments and allowing the public to take a well-informed view on decision-making (OECD, 2014b).

Germany discloses the contributions of lobbying in parliamentary consultations and has moved ahead of other OECD countries by creating a public list of associations representing interests *vis-à-vis* the federal parliament (*Bundestag*) or the federal government that is kept by the President of the *Bundestag*. This list allows stakeholders to easily access disclosed information on lobbying which also involves the executive branch of government. However, unlike other OECD countries which have created a lobbying register, the information it provides in Germany is limited. (OECD, 2014b; Transparency International, 2015). Some information, such as the lobbyist's employer, the potential beneficiary of the lobbying activity, the government action targeted by the lobbying (such as a legislative proposal), the government department contacted by the lobbyist, government funding received or contributions made to political campaigns, is not provided. Indeed, results from the OECD 2013 *Survey* on lobbying showed that legislators and lobbyists across OECD countries consider such information to be important to raise transparency (OECD, 2014b). Two proven transparency tools in Germany are the Freedom of Information Act and the constitutional right of every single member of parliament to put questions to the government. More information provided by the lobbying register could be an additional tool to strengthen transparency. Steps could also be taken to improve access to information about views taken in advisory and expert groups (Transparency International, 2015). An online electronic filing system would reduce the administrative burden that would result from such steps to improve transparency and public scrutiny (OECD, 2014b).

Extensive government ownership in some business sectors risks hampering the reallocation of resources to more productive sectors or firms. For instance, publicly owned commercial banks have a market share of more than 40% in Germany. As the 2014 *Economic Survey* (OECD, 2014c) pointed out, the regional *Landesbanken*, which are mostly owned by *Länder* governments, have had a poor track record in the efficient allocation of credit, technical efficiency and vulnerability to solvency risk. They have provided lending to support established industries in their respective regions, which in some cases has added to financial risks and can slow the reallocation of resources to new more productive activities. Progress with privatisation is slow, as *Länder* governments are planning to privatise only 1 of 7 *Landesbanken*. Reflecting stricter risk management standards, governance has improved also in the *Landesbanken*, but specific governance problems for the *Landesbanken* resulting from regional government ownership are likely to remain (*OECD Economic Survey of Germany 2014*, OECD, 2014a). Further privatisation would be welcome. Steps to further improve governance might be an alternative option. Since the outbreak of the global financial crisis, the federal government has also kept a minority share in one of the large private, commercial banks.

A regional government also owns just above 20% of one of the biggest car manufacturers. Moreover, a specific law regarding *Volkswagen* stipulates that key business decisions require a majority of at least 80%, which effectively gives veto power to the regional government. The federal government also owns substantial shares in network industry incumbents, notably in telecommunications and postal services. Privatising these shares would help remove perceptions of conflicts of interest between the government's role as owner of these businesses and its role as the regulator of the relevant markets, boosting market entry, competition and investment.

Fostering mobility of workers

In several ways framework conditions are supportive for geographic mobility. A well-developed private, rental housing market covering about 50% of households (one of the largest shares in the OECD) supports worker mobility (Dohmen, 2005). Rental regulation appears to strike a successful balance between the protection of tenants, owners' rights, and responsiveness to market developments, making rented housing attractive for owners and tenants alike (de Boer and Bitetti, 2014). Residential investment is high (Figure 1.2 above) and is generally responsive to changes in demand (Andrews et al., 2011). In view of particularly strong increase in the demand for housing in the context of the refugee inflow the government is also planning to provide tax subsidies for investment in low-cost housing.

The government has recently decided to tighten rental regulation, to give powers to local authorities to limit rent increases on newly rented housing in those geographic areas where rent increases have been particularly large. This could in principle limit the supply of housing and thereby reduce mobility to regions with attractive jobs and high housing demand. However, the impact is likely to be small, provided the measures are applied to urban centers, where the supply is price-inelastic, and newly built housing is exempt from the new rules. However, generally speaking, restrictive housing regulation discourages mobility (OECD, 2015a).

High housing transaction costs raise the costs of mobility for owner-occupiers. In Germany, these transaction costs amount to around 7% of the value, more than in most OECD countries (Andrews et al., 2011), impairing mobility for owner-occupiers. Housing transaction taxes account for more than half of these costs. High costs of notary services further add to these transaction costs (see above).

Conditions are less favourable for worker mobility across jobs and firms. Stringent employment protection legislation (EPL) is associated with lower rates of job reallocation (Davis and Haltiwanger, 2014). It raises the cost of business failure, making it less attractive for firms to experiment with uncertain technologies. Seniority-based compensation for dismissal also affects voluntary job-to-job movements, as a worker who moves to another firm loses cumulated compensation rights. Compensation for unfair dismissal in Germany rises strongly with seniority, reaching 18 months of salary for a worker with 20 years of tenure compared with an OECD average of 12 months. The notice period for workers with long tenure is fairly long; for example, 7 months for workers with 20 years of tenure, compared with an OECD average of 3 months. As argued in previous *Economic Surveys* (OECD, 2010a) legal costs associated to employment protection legislation could be reduced by giving employers the right to choose between paying a severance payment or paying a higher unfair dismissal compensation which would replace the court route. The relatively strict stance of employment protection in Germany has a particularly strong negative impact on productivity in those sectors in which worker turnover is high (Andrews et al., 2015). However, seniority-based employment protection may be part of an institutional framework which has supported a cumulative innovation processes in manufacturing sectors (Fuentes et al., 2004), in which Germany has a long-standing comparative advantage and which have contributed to Germany's strong export performance. The vocational education system, with its emphasis on on-the-job training and the accumulation of firm-specific skills is part of this framework. Long-term relationships between employers and workers support the accumulation of firm-specific skills. Reducing the legal costs associated to employment protection would be one way to facilitate worker mobility without undermining the institutional framework.

Fostering the reallocation of capital across firms and improving framework conditions for start-ups

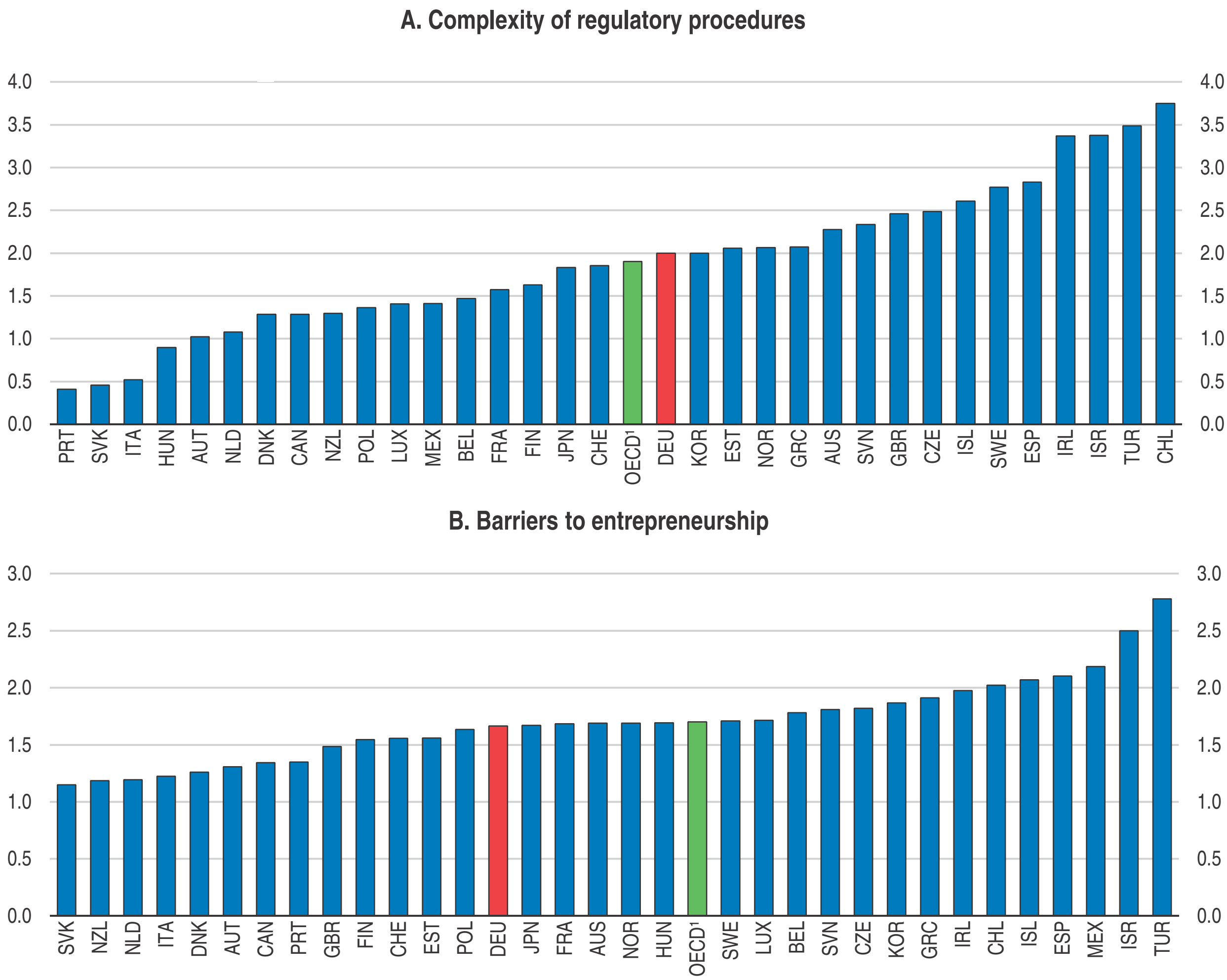
Successful innovative start-ups depend on the reallocation of resources, which is key to foster KBC. Firms that drive one technological wave often fail to continue to do so in the subsequent one, as they then tend to concentrate on incremental improvements, and young firms possess a comparative advantage in commercialising radical innovations (OECD, 2015a).

Bankruptcy regulation, which limits the costs of firm closure and safeguards opportunities for a fresh start, is an important instrument to ensure reallocation of resources (OECD, 2015a). Reform of bankruptcy legislation, most recently in 2012, reduced the stay period after which bankrupt entrepreneurs are cleared from remaining debt ("fresh start") from 6 to 3 years, if they are able to pay at least 25% of their outstanding liabilities, and to 5 years if they are able to reimburse the procedural costs. Bankruptcy procedures are shorter and appear to be more efficient than in most OECD countries (OECD, 2013a). Regulatory requirements for creating a new corporation have been lowered and one-stop shops have reduced administrative costs. Accounting and statistical requirements on small businesses have been lowered. However, restrictive regulation of notaries' services still contributes to excessive costs for the legal transactions required to create a new firm (see above).

Entrepreneurship still suffers from lacking simplification of administrative procedures (Figure 1.12). The "silence is consent" principle is not generally applied in the issuance of licences. Stronger development of e-governance could also help reduce administrative costs (see below). Entrepreneurs also do not generally have access to low-cost public health insurance (OECD, 2014a), which may deter entrepreneurship, especially when income risks are substantial. Entrepreneurs may have to pay relatively high fees for private insurance, which are independent of their income level, and so may be difficult to pay for when income drops.

Figure 1.12. **Complexity of regulatory procedures contributes to barriers to entrepreneurship**

Index scale from 0 to 6, from least to most restrictive, 2013



1. Average of all OECD countries excluding the United States.

Source: OECD (2015), *OECD Product Market Regulation Database.*

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Initial public offerings in stock markets are key instruments to make equity capital available to start-up firms with strong growth potential. Across many OECD countries, initial public offerings have declined, notably of small firms (Isaksson and Çelik, 2013) and particularly so in Germany. This decline started before the global financial crisis. It has occurred in the context of important changes in the governance and operation of stock markets, which have become for-profit institutions, and the increasing importance of high-frequency trading in generating profits for stock market operators. While the causes for the decline in initial public offerings are not yet well-understood, declining spreads between bid and ask stock prices for small firms have reduced profit margins for market making activities, which help channel information about new firms in the stock market to market participants. Regulatory changes which have reduced the interval at which stock prices have quoted ("tick size") appear to have played a role in reducing initial public offerings.

Tax regulation hampers the reallocation of capital to most productive use

Inheritance tax exemptions with respect to family firms lock in capital in these firms, harming reallocation. Moreover, managerial quality in these firms tends to be lower than in other firms. Reducing such exemptions could therefore raise aggregate productivity and improve intergenerational social mobility (Andrews and Westmore, 2014). Inheritance tax exemptions could also create barriers for firm growth, as capital raised through the stock market, for example, would not benefit from the exemptions. Growth of small firms with high potential is a key driver of productivity growth (OECD, 2015a). Reforms to remove these exemptions have been held back by concerns that this would raise firm liquidations. As recommended in previous *Economic Surveys* steps to give more time for family-owned businesses to pay inheritance tax liabilities and to treat the inheritance tax liability as subordinate debt in the balance sheet can help deal with any liquidity problems that could result from capital market frictions (OECD, 2003, 2014a). Removing inheritance tax exemptions would strengthen the inclusiveness of the German tax system, in view of the strong concentration of wealth, as argued in the 2014 *Economic Survey* (OECD, 2014c). The 2014 *Survey* also argued that the inheritance tax has particularly low economic efficiency and administrative costs. The government and parliament are considering reform of inheritance taxation.

The tax treatment of venture capital and of workers in the venture capital industry is in some respects less favourable than in other European countries (FISI, 2012). Venture capital is an important instrument to finance growth of start-up firms. Much less venture capital is made available to entrepreneurs in Germany than in leading OECD economies (OECD, 2015a). Tax provisions which reduce the carrying forward of losses when a business is sold may be particularly harmful for the provision of venture capital, as start-ups often generate losses in their early years and the sale of shares by venture capitalists to a broader set of financial investors often serves to finance the growth of start-up firms. However, the limitations to the carrying-forward of losses have been effective in limiting tax avoidance through base evasion and profit shifting of multinational enterprises.

As in many OECD countries, taxation of business profits generates a bias towards debt financing of investment because interest payments can be deducted from taxable profits. By contrast, dividends are exempt from tax. This tax advantage for debt financing of businesses is reduced by several rules. Germany limits the deductibility of interest from the corporate tax base to 30% of profits. However, amounts exceeding these limits can be carried forward, so these limits are not usually binding and are mainly targeted at reducing tax avoidance by multinational enterprises (German Council of Economic Experts, 2015). Interest expenditure is included in the base of the local business tax (*Gewerbesteuer*) and capital gains are subject to lower tax rates.

While equity buffers have risen strongly in the German non-financial business sector (see above) debt bias in business profit taxation could be harmful for the financing investment in KBC in particular, as typically physical assets can be used as collateral for loans, but not intangible assets. Debt bias may damp firm creation, as newly created firms need equity. Overcoming this bias could therefore help firms with growth potential to expand (OECD, 2015a). Introducing a tax allowance for the opportunity cost of equity (ACE) could be one way of further reducing the tax bias in favour of debt-financed investment. Model simulations presented by the German Council of Economic Experts suggest that a tax allowance for equity could raise the capital stock by 5.5%, even if such an allowance were introduced in revenue-neutral terms (Council of Economic Experts, 2015). However, further research on the debt-equity bias itself and on the effectiveness of an ACE in removing this bias is still needed. Several issues need to be addressed for implementing an ACE tax system, including minimising tax revenue loss and evasion including through base erosion and profit shifting of multinational firms or windfall profits (FSB, 2015).The empirical evidence on the impact of the introduction of an ACE for corporations in Belgium is conflicting (Princen, 2012, aus dem Moore, 2014).

Reductions in the taxation of business profits along the lines discussed above would have costs in terms of inclusiveness of the tax system and foregone tax revenue. These effects could be offset by including households' interest income, dividends and capital gains in the taxation of personal income. This income is currently taxed at a flat tax rate, which is in most cases lower than the personal income tax rate. Taxing such income at the household level at a higher rate would have little impact on investment, as international capital mobility separates saving from investment decisions. Indeed the taxation of household dividend income appears not to reduce investment. It also appears not to reduce the efficiency of investment decisions. This evidence is robust (Yagan, 2015). Improved international co-operation of tax administrations also mitigates concern that the elimination of these tax exemptions could lead to tax evasion through capital flight. Eliminating such exemptions strengthens the inclusiveness of tax systems substantially, as such income concentrated in top income households (Joumard et al., 2012).

Improving the roll-out of high-speed broadband infrastructure

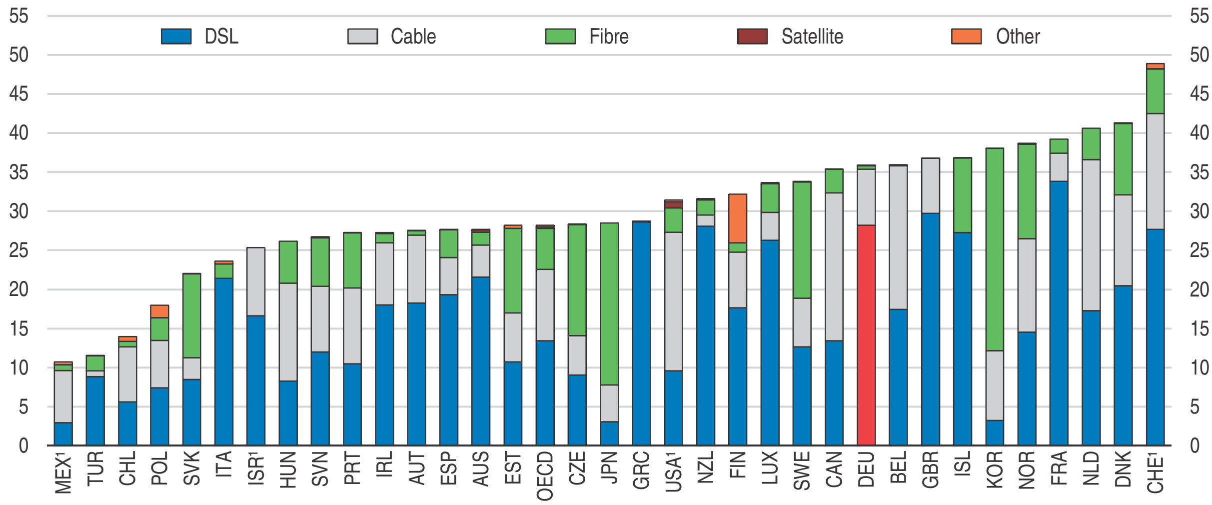
Fast broadband boosts productivity growth substantially (Czernich et al., 2011). For example, a 1 percentage point increase in broadband penetration raised annual per capita GDP growth by 0.9-1.5 percentage points between 1995 and 2007 including through fostering investment to exploit opportunities generated by the infrastructure, in particular, investment in ICT, such as software (Egert et al., 2009). High-speed Internet is important for spurring Internet-related services as well as for technological advances in manufacturing, notably through machine-to-machine communication (OECD, 2014c). Moreover, broadband access also improves ICT skills, and, because of the complementarity of skills and fixed assets, investment in ICT capital (Falck and Wiederhold, 2015).

In Germany wired broadband has been rolled out less than in leading OECD economies and technologies which supply the fastest speeds, notably fibre ("fibre to the home", FTTH), have barely been deployed (Figure 1.13). This reflects the decision of the incumbent operator not to invest in FTTH und upgrade its existing copper network instead at much lower cost, but providing lower speeds than fibre. Prices for high-speed fibre-based broadband services (100 Mbit per second or more), are high according to OECD statistics (OECD 2014c). There are scale economies in the deployment of high-speed fibre networks (OECD, 2014c). This creates a case for providing government support for the roll-out these networks.

The federal government plans to spend EUR 2.7 billion (0.1% of annual GDP) over three years to subsidise broadband deployment in order to ensure broadband speeds of 50 Mbit per second. These subsidies are allocated through competitive tender. However, the federal government's support is not targeted to the roll-out fibre networks, which ensures the highest speeds. The *Monopolkommission* (2015), an independent expert body in charge of competition policy assessment, has voiced some concern that part of the subsidies can be

Figure 1.13. **Rollout of broadband by type of technology**

Fixed broadband subscriptions per 100 inhabitants, December 2014



1. Estimates for Israel, Switzerland and the United States. Preliminary data for Mexico.

Source: OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society.*

StatLink http://dx.doi.org/10.1787/888933345619

taken up by the incumbent operator to modernise its copper networks. The federal government owns 32% of the incumbent operator, which may generate perceptions of conflicts of interest. Such perceptions can hold back entry of alternative operators.

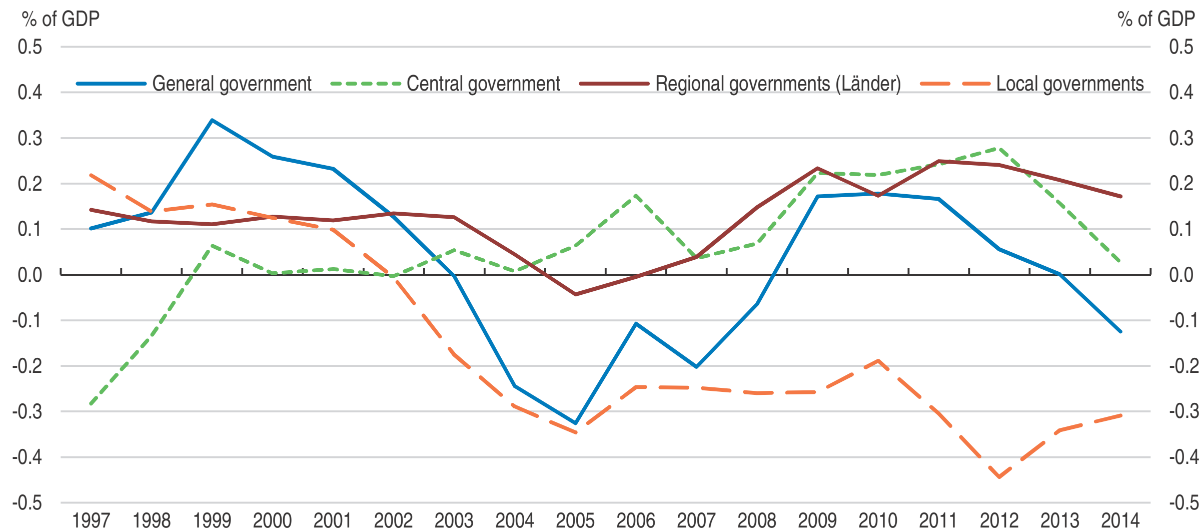
Since there are scale economies in the rollout of high-speed broadband development the costs of rollout per user will be the lower the more users there are. More demand for high-speed Internet services can therefore reduce average costs, which can then further raise demand, setting in motion market dynamics which are favourable for roll-out. To strengthen demand, the government can start intensifying the use of electronic communications (see below). More effective competition policy for Internet-based services could also help. In particular, current merger control rules appear insufficiently adapted to competition issues in digital markets. In particular, to determine whether mergers should be prevented to safeguard completion, the competition authority investigates whether market share would exceed critical thresholds based on past turnover data, which must be met for the competition authority to intervene. However, such turnover data are ill-suited to capture the future potential of market dominance by Internet service providers. Broadening the criteria for the assessment of market dominance would help. For example, the competition authority could include the value of merger transactions (Monopolkommission, 2015).

Raising public investment to strengthen inclusive growth

Government investment has been low in the past 10 years, often falling short of depreciation, especially in municipalities, and declined markedly at the level of the municipalities in the first half of the 2000s (Figure 1.14). As outlined below, higher public investment into fixed and human capital in selected areas would have substantial returns in terms of inclusive economic growth.

Population ageing is unlikely to damp government investment needs over time, despite the expected decline in population (Chapter 2). Demographic change and internal migration will have vastly differing implications for the population and its age composition

Figure 1.14. **Net government investment has fallen, especially by local governments**



Source: OECD (2015), *OECD National Accounts Database*.

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across regions. Adjusting public infrastructure to population developments increases investment demand (KfW, 2015). As the share of the elderly increases, the public infrastructure needs to be adjusted accordingly. For example for investment into age-appropriate infrastructure investment needs are estimated to amount to 1.8% of GDP (Köller, 2013).

Investment in full-day care and education for children has high returns

Investments in childcare and early childhood education have long term benefits and support inclusive growth. Gaps remain in the quantity and quality of supply (OECD 2014b). The enrolment in childcare of children under the age of 3 increased strongly in recent years (Federal Statistical Office, 2015; *OECD Economic Survey of Germany 2014*, OECD, 2014c). Nonetheless, only 29% of children under the age of 3 were enrolled in day care in 2013 compared to 50% or more for Denmark, the Netherlands or France. Enrolment rates remain low in international comparison and access to full-day care is limited (OECD, 2014f; Kultusministerkonferenz, 2015). Also Kindergarten hours are often short or part-time and enrolment rates are below the OECD average. The quality and quantity of early child care facilities varies strongly across regions (the *Länder*; Bock-Famulla et al., 2015). Day-care can not only improve labour market participation of second earners, but can also improve educational outcomes and social skills of children, especially for those with weak socio-economic background (StEG, 2010). The federal government decided to support municipalities with the expansion of childcare with one billion euro per year between 2015 and 2017, following similar investment programmes between 2008 and 2014.

In 2014 only 53.3% of elementary schools offered full-day schooling, catering for 33.1% of all primary school children (KMK, 2015). In most full-day schools participation in afternoon is not mandatory (KMK, 2015). They are only required to open at minimum 3 days a week for seven hours. The afternoon hours mostly consist of care, foregoing the educational benefits full-day schooling can provide (Autorengruppe Bildungsberichterstattung, 2014; OECD, 2015). For only 6.0% of primary school children attendance in the afternoon was mandatory in 2013

(KMK, 2015). More time spent in formal teaching improves education outcomes especially for students with weak socio-economic background (OECD, 2015) and strengthens intergenerational upward mobility in terms of education and income.

The quality of transport infrastructure is high but standards are at risk

The survey based indicator (LPI) of the World Bank ranks Germany as the country with the best quality of trade and transport related infrastructure worldwide since 2010. In the same time period the (also survey based) assessment of the World Economic Forum of overall transport infrastructure fell from rank 2 to rank 8. Decreases in the rankings in all areas of transportation (roads, air, train, ship) contributed to this (World Economic Forum, 2015; International Bank for Reconstruction and Development/World Bank, 2014). Maintenance standards of federal infrastructure have fallen somewhat over the past 20 years (BMVI, 2015). However, most transport infrastructure is the responsibility of subnational governments. At the municipal level, in particular, infrastructure endowments are likely to have deteriorated more substantially.

Additional annual investment needs to maintain transport infrastructure across all levels of government are estimated to be between EUR 3.8 billion (Kunert and Link, 2013) and EUR 7.2 billion (Daehre-Kommission, 2012). The federal government has budgeted additional investment for federal transport infrastructure of EUR 5 billion spread over four years (2014-17). In 2015 the federal government announced an additional "future investment" package of EUR 10 billion which includes EUR 3.1 billion for transport infrastructure between 2016 and 2018. Additional funding for transport infrastructure will come from the extension of the highway toll for heavy goods vehicles to a broader range of roads and vehicles.

Investment gaps are increasing especially at the local level

Municipalities have reported cumulated investment needs of EUR 132 to EUR 156 billion (3-5% of GDP; KFW, 2015; BMWi, 2015). The biggest needs are seen in transport infrastructure, schools and other educational facilities. The three most important reasons for the investment gap reported by the municipalities are insufficient funding, high maintenance needs, and high social spending (Alm and Zettelmeyer, 2015; BMWi, 2015). The municipalities play a substantial role in contributing to transport infrastructure as well as in social transfer spending (Box 1.2).

Municipalities which invest less tend to be those with weak budgetary positions, are in relatively poor regions, and have relatively high spending on social cash transfers, which are often mandated at the federal level, but are largely the responsibility of municipalities (Arnold et al., 2015a, 2015b). Since these social cash transfers are means-tested, such spending is correlated with poverty risk. Fiscal federal transfers broadly equalise tax revenues per capita across the *Länder*, and across municipalities within each *Land*, but do not take into account differences in federally mandated social cash transfer spending. This reduces budgetary space for investment spending in municipalities where such transfer spending is high. The federally-mandated social cash transfers account for 55% of their social spending (Statistisches Bundesamt, 2015). One example for such transfers are housing benefits for the long-term unemployed. For these, data are available across municipalities. As Figure 1.15 shows, municipalities with high spending on these transfers invest less. While municipalities in aggregate generated budget surpluses between 2012

Box 1.2. **The role of municipalities in revenue and task sharing between federal levels**

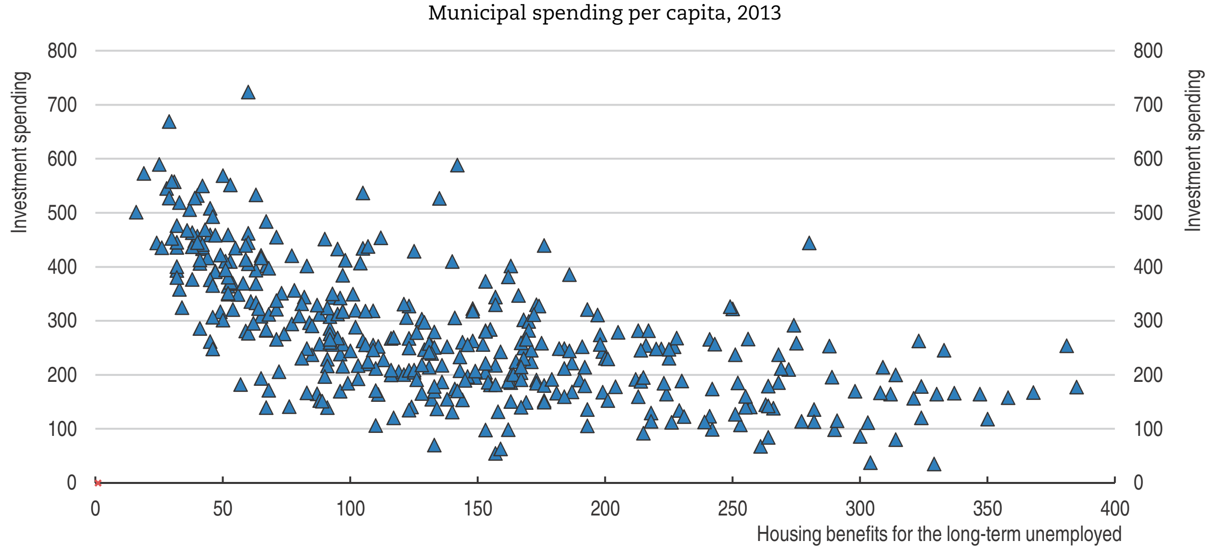
The German federal system consists of broadly three government levels: central government, *Länder* and municipalities. *Länder* and municipalities are closely interlinked. The *Länder* have a discretionary power to delegate a range of tasks to their municipalities. Therefore the division of tasks between a *Land* and its municipalities varies across *Länder*. Municipalities are generally responsible for child care and early childhood education. *Länder* and municipalities share the responsibility for primary, first and secondary education while municipalities are mainly responsible for administrative tasks, buildings and equipment. Municipalities perform a large part of public social transfer spending notably in the context of social assistance, support for asylum seekers, which are regulated by federal law, and assistance for youth. In the area of infrastructure municipalities are responsible for almost 80% of German roads, for local public transport as well as sport and healthcare facilities and they are also responsible for sewage and waste.

Municipalities have three sources of funding: taxes, allocated funds from the respective *Land* and fees. Municipalities receive the local business tax (Gewerbesteuer) as well as the tax on land and buildings and they receive a share the joint taxes, namely of income taxes (15% of total income tax revenues) and VAT (2% or total VAT revenues). Each *Land* has its own system of redistributing funds among municipalities. The central government cannot make transfers to the municipalities directly, except to co-finance capital spending. The central government and the *Länder* can agree to increase the municipalities' share of joint taxes (income tax or VAT). The federal government can also agree to make transfers to the *Länder* which they pass on to municipalities.

Generally municipalities are only allowed to use loans for investments. Cash credits are allowed for short term use only. Limits to the use of cash credits can be set by the *Land*.

Figure 1.15. **Municipalities with high social transfer spending invest less**

Municipal spending per capita, 2013



Source: Arnold, F. et al. (2015a), "Large and lasting regional disparities in municipal investments", *DIW Economic Bulletin 2015*, Vol. 5, Issue 42/43, pp. 568-576.

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and 2014, the budgetary situation is diverse across the *Länder* (Arnold et al., 2015b). The municipalities' short-term borrowing more than doubled between 2004 and 2013, although it remains low on aggregate (2% of GDP, BMF 2014).

The central government introduced a special fund in 2015 which supports financially weak municipalities with EUR 3.5 billion between 2015 and 2018. It funds up to 90% of investment projects in hospitals, noise protection, urban development, broadband infrastructure, energy efficiency, clean air and modernisation of education facilities. However, by linking transfers to outstanding debt, this scheme risks harming incentives for sound budgetary policies.

The federal government has taken over some of the federally-mandated social transfer spending from the municipalities in recent years to create budgetary leeway for higher municipal investment. It is considering to take some further steps in this direction (Bertelsmann Stiftung, 2015; BMWi, 2016). The federal government also provides financial support structurally weak regions in Eastern Germany in the context of its programme *Improving the Regional Economic Structure* (*Gemeinschaftsaufgabe "Verbesserung der regionalen Wirtschaftsstruktur" – GRW*), which supports close-to-business investments. The government is also considering to extend this programme to Germany as a whole starting in 2020 (BMWi, 2016). The new system could be broadened to include more measures which serve the higher demand for public investments in certain areas, such as transportation, child-care or education. The federal government should provide more support for investment in municipalities where federally-mandated spending on cash transfers is high. Alternatively federal government support for municipal investment could be based on income and demographic indicators, which are correlated with higher social spending needs, such as age composition or the share of the immigrant population.

The long-term benefits of local investment of *Länder* and municipalities in childcare, early childhood education and full-day schooling are likely to accrue nation-wide, generating positive economic externalities for other jurisdictions. Therefore there is a case for the federal government to play a role in fostering the supply of such services, in particular by contributing to their funding. Constitutional rules limit federal government funding for child care facilities to capital spending and prevent the federal government co-funding for compulsory education services. Considering the long-term and nation-wide benefits of investments into education, including investments beyond physical capital, there is a case for reviewing these barriers. As proposed in the 2014 *Economic Survey* (OECD, 2014c), the central government could finance vouchers which parents could use to pay for childcare in accredited childcare facilities. Such vouchers would provide incentives for the service providers to meet parental demand, for example, with respect to opening hours.

Tax autonomy gives subnational government levels leeway to fund investment projects desired by the local population. Revenue decentralisation also tends to improve GDP growth in lagging regions (OECD, forthcoming). The *Länder* have no significant tax-setting powers. Municipalities can set local business and real estate tax rates. However, the local business tax base is highly geographically mobile, limiting the scope to raise tax rates. Moreover these revenues are highly cyclical and volatile. Real estate tax revenues are held back by outdated valuations of real estate. In order to make room for more fiscal autonomy, *Länder* should be allowed to levy a surcharge on the income tax (OECD, 2006; BMF, 2015). A reform of the taxation on real estate, in which the tax base is determined according to market prices – as proposed in the *OECD Economic Surveys* since 2006 (see especially OECD, 2010) – could improve the financial leeway of municipalities.

More leeway could also be given to municipalities to set real estate tax rates to encourage infrastructure deployment in an environmentally-friendly way. Depending on its design, tax on land and buildings can influence urban sprawl which is a key issue on the German environmental policy agenda (European Environment Agency, 2015; BMUB, 2013). Therefore, a revised tax on land and buildings should allow for leeway to set higher rates on land than on buildings, as this sets incentives to develop relatively less land, and set higher rates for single-family houses compared to multi-family houses (OECD, 2014b; Brandt, 2014; Slack and Bird, 2014).

Making public procurement more efficient

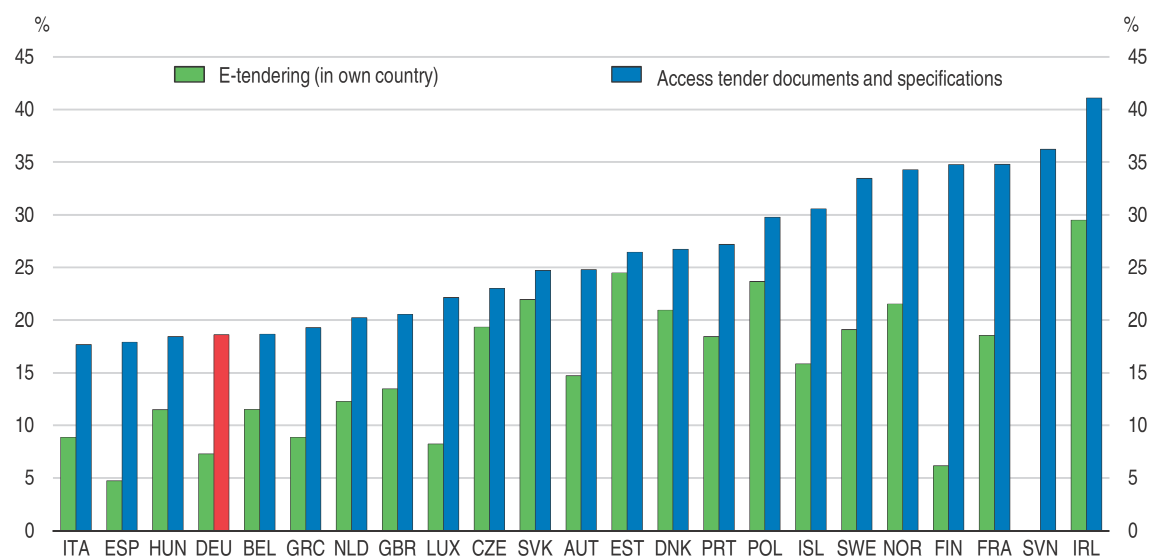
Well-designed public procurement is important for the efficient use of public money in public investment projects. Using electronic means in procurement (e-procurement) promotes the diffusion of innovation, investment in knowledge-based capital and investment in ICT, with spillovers throughout the economy (OECD, 2013b; OECD, 2015c; OECD, 2011). This is because governments can pull demand through their procurement activities because of their large purchasing power. This can help reduce costs where scale economies can be exploited, for example, in the use of electronic communication through Internet. The German public procurement legislation will be completely overhauled in 2016 in response to three new EU directives on public procurement and concessions.

Fostering e-procurement

Germany lags behind in the use of information and communication technologies in public procurement (Figure 1.16). The central government's spending on ICT is one of the lowest among OECD countries (OECD, 2013c). The new EU public procurement directives require all member governments to start conducting procurement electronically from 2016. The government's plans to implement a comprehensive e-procurement system (Federal

Figure 1.16. **Electronic procurement is scarcely used**

Businesses using electronic procurement systems



Source: OECD (2015), *Government at a Glance 2015*.

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Government, 2015) and to promote the smart digital interconnectedness of public services are welcome (Federal Ministry of Economic Affairs and Energy, 2015). These initiatives should also include measures to make sure that relevant infrastructure is provided.

E-procurement raises the skill-requirements for procurement officials, including for ICT skills. Concerns exist about a lack of ICT skills within procuring entities, especially at the local level. For instance, civil servants are not trained for data analysis and re-use (OECD, 2013b; OECD, 2015b; Wegweiser, 2009). Incentives need to be designed for procurement officials to consider strategic goals in their decision making, especially because they are operating in a risk-adverse culture. The impact of procurement policies on strategic objectives, notably innovation, is not monitored (OECD, 2015b; OECD, 2013b).

Spreading best practices within Germanys federal structure

Germany's federal structure generates considerable diversity in the procurement and the implementation of investment projects across municipalities. This yields valuable lessons about best practices which need to be spread across all jurisdictions. The federal government should play an important role in co-ordinating this learning process in view of the substantial innovation opportunities. At present, it does not co-ordinate training for public procurement officials or establish policies for contracting authorities, unlike in many other OECD countries (OECD, 2015b). There are also concerns that the substantial decline in local public investment has resulted in a lack of expertise by municipalities to implement complex infrastructure projects or sophisticated financing arrangements. The share of government contracts acquired by SMEs is low, which argues for simplified administrative procedures (OECD, 2013c).

Support for local governments in improving procurement and implementing investment should be strengthened, as envisaged by the government. It should support municipalities in improving procurement procedures and planning and realising complex investment projects (Academic Advisory Board of the Federal Ministry for Economic Affairs and Energy, 2015). The regional consultancy units should be regarded as a two-way communication channel to spread best practices within Germany's federal system. E-procurement can help to ensure a well-informed consultation process (see above).

Reform of budgeting can help ensure priority investment projects are carried out

Effective budgeting procedures help identify costs and benefits of public investment projects, helping to ensure appropriate budget allocation for investment and optimal choice of investment projects. Regular reviews of expenditure are being introduced to support evidence-based priority-setting. The first cycle of these spending reviews is about to finish in spring/summer 2016. This is welcome, but there is scope for improvement (OECD, 2014d):

- The federal parliament focuses on micro-level management of budgetary allocations. The parliament's role in monitoring the strategic orientation of budgeting and procurement procedures should be strengthened, for instance by raising its analytical capacity. The collaboration with independent research institutions could be expanded or an independent parliamentary budget office, like recently established in Austria, be created.
- The use of performance information in budgeting processes is increasingly popular among OECD countries to promote the efficient use of public resources and improve the accountability of the government. In Germany such practices are used little. For

instance, poor performance of spending programmes is made public only selectively and rarely has negative budgetary implications (OECD, 2013c). Several line ministries have started improving their evaluation methodology.

Involving the public more effectively

A key impediment for carrying out large-scale, complex public investment projects in Germany is strong resistance of the local population, which makes it unattractive for local governments to even contemplate such projects (Bertelsmann Stiftung, 2012). Resistance at a late stage of the planning phase can also result in higher costs, which can be avoided if the public is involved early in decision-making. Complex infrastructure projects often yield important benefits for society as a whole, but can also generate negative local externalities, for instance pollution or noise. Moderating such conflicts requires involvement of the public in the planning and realisation of investment projects.

There is scope to involve the public more effectively in realising complex investment projects in Germany (OECD, 2014b). Ninety-eight per cent of citizens want to be involved more in the planning of infrastructure projects (Bertelsmann Stiftung, 2015a). The recent advances in electronic media and communication technologies offer much scope to improve the way public administrations, citizens and civil society can interact. E-governance, if used as a two-way communication tool, can be particularly useful in raising citizen participation (European Institute for Public Participation, 2009; OECD, 2014b). However, currently the German government uses advanced communication tools mainly to provide information (OECD, 2013c). More efforts are needed to involve the public in planning and realising investment projects, including through advanced communication tools. Such efforts would also result in an improvement of civic engagement and public governance, which is one of the key OECD wellbeing indicators, and the only one in which Germany scores below the OECD average (OECD, 2015o).

Harnessing private funding for public infrastructure

Governments of OECD countries are increasingly considering Public-Private Partnerships (PPPs) as a means to finance and raise the quality of infrastructure in light of increasing fiscal constraints (Araujo and Sutherland, 2010). PPP arrangements can improve efficiency, but only if based on a sound analysis of their suitability and careful contract design (Box 1.3). Germany has so far engaged little in PPPs (Partnerschaften Deutschland, 2015).

The central government's PPPs conform well with the OECD Principles on Public Governance of PPPs (OECD, 2014d). There is scope to strengthen framework conditions for PPPs, especially at subnational levels of government (OECD, 2014d; OECD, 2010). Sub-national governments are not required to disclose the long-term financial risks associated with particular PPP projects to the federal government, even though they have to prove that every PPP project improves value for money compared to other procurement methods so it is not merely used as an alternative to borrowing. Nonetheless, risks can arise for example because the *Länder* can give minimum revenue guarantees to the private party, unlike the federal government. Raising the transparency of the various risks associated with PPPs realised by subnational levels of government may become increasingly important in the future as the debt brake could make off-budget borrowing more attractive.

Some sector specific regulatory obstacles hold back PPPs. For instance, different municipal funding rules apply for construction, maintenance and operation of investment projects in some areas, including roads, hospitals and schools. This makes it more difficult

Box 1.3. **Opportunities and challenges of PPPs**

Public-private partnerships (PPPs) typically constitute a specific agreement between a public entity and the private sector for the provision and operation of a public service. PPPs typically are based on a long term, risk sharing contract between public and private parties. The contract covers the bundling of design, construction, operation and/or asset maintenance, together with a major component of private finance (Kappeler, 2012).

PPPs can be a superior solution to traditional public procurement (Araujo and Sutherland, 2010). Efficiency gains arise from increased competition and innovation, more efficient risk allocations and access to private sector skills and technology transfer. The bundling of procurement and operation provides incentives for the private partner to account for life-cycle costs of the project more comprehensively. Also, the likelihood of cost overruns in the construction phase is lower for PPPs than for traditional public procurement (Blanc-Brude and Makovsek, 2013).

However PPPs can increase costs and financial risks (Araujo and Sutherland, 2010; Weichenrieder, 2014). Whether efficiency gains are fully reaped depends, for instance, on the proper allocation of risks to the party better equipped to deal with them. The option of contract-renegotiation needs to be carefully designed to allow adjustments to changing external conditions, while avoiding bargaining power is abused once the infrastructure is put in place (hold-up problem). The design of pricing policies is important to avoid overinvestment; and effective performance monitoring is needed to ensure service quality and avoid under-investment. Rapid technological change may make it more difficult to specify outputs or to quantify risks over the contract life-cycle. Moreover, the temptation to use PPPs as a means to circumvent budgetary pressures can lead to large contingent liabilities affecting long-term fiscal and macroeconomic sustainability and inter-generational equity.

to include all phases of infrastructure projects in a single PPP contract. (OECD, 2014c; OECD, 2010). Sector specific regulation should be reviewed to eliminate unnecessary barriers to PPPs.

Data on the performance of PPPs is limited. Sharing experience spreads best practices. It is therefore welcome that a federal and some regional PPP advisory units have been put in place (OECD, 2010b). These should cover all *Länder*. Germany should also promote the international exchange of experience about PPPs. Harmonizing procedures within Germany's federal structure and among OECD and EU countries can also help strengthen competition and lower costs.

Some OECD countries explore new instruments to facilitate public-private co-operation, for instance, social impact investment in the US and the UK. Investors engage a contractual obligation to improve a social outcome. If the social outcome reaches an agreed performance threshold, investors receive a financial return. For this instrument to be successful, the social outcome needs to be measurable (OECD, 2015d). Sharing experiences with other countries is essential should this comparatively new instrument be considered.

Project bonds are another instrument increasingly used to raise private money to finance infrastructure (Della Croce and Gatti, 2014). They are issued by the private partner engaged in an infrastructure project. Project bonds are attractive to institutional investors because they can more easily be issued with long maturities, which match the long-term horizon of infrastructure projects. However, bond investors need to be sufficiently informed about the risks involved. This is especially true if project bonds are used to engage pension funds.

User fees can raise the efficiency of infrastructure

Usage-dependent charges are powerful instruments to internalise emission and non-emission costs of public infrastructure use (OECD, 2014c). Such charges contribute to an effective use of existing infrastructure and reduce congestion if differentiated by location and time. Such congestion charges can signal infrastructure needs, helping to direct investment in transport infrastructure to where it is most needed. By reducing the net budgetary cost of the infrastructure investment, they can also help overcome budgetary limitations in deploying needed infrastructure. Experience of other countries shows that user charges are more easily accepted if infrastructure is provided in collaboration with private partners (Academic Advisory Board of the Federal Ministry for Economic Affairs and Energy, 2014).

Plans to establish an independent agency in charge of the federal road infrastructure investment, which would raise revenues from road use charges, can be a useful step in this direction. This improves and the long-term sustainability of road projects (Academic Advisory Board of the Federal Ministry for Economic Affairs and Energy, 2015). Germany has extended usage-based charges for trucks to a broader range of freight transport vehicles and federal long-distance roads. However, the planned user charge for passenger cars is not usage-dependent. Germany should consider extending usage-based charges for passenger cars. Such charges could also be differentiated by location and time. The required infrastructure for usage-dependent charges is already in place to a large extent because of the existing digital toll system to operate the usage-dependent charges for trucks.

Recommendations to raise investment performance

Strengthening competition in services

- Reduce restrictive regulation in the professional services.
- Ease requirements of a tertiary level vocational degree or job experience for self-employment in some crafts.
- Strengthen the role of the railways regulator by improving its investigative and interventional competences.
- Provide equal treatment in value added taxation for all postal service providers.
- Liberalise the issuance of SIM cards.

Foster the reallocation of resources

- Improve governance or privatise government stakes in the *Landesbanken*, car manufacturing, telecommunications and postal services.
- The administration should strengthen the analysis of the economy-wide impact of regulation.
- Strengthen transparency on the role of lobbies in the design of new legislation and regulation, for example, by providing more information in the lobbying register, such as the potential beneficiary and the targeted government action.

Recommendations to raise investment performance *(cont.)*

- Remove exemptions for family businesses in inheritance tax.
- Lower taxation of real estate transactions.
- Remove limitations on the carrying forward of losses when a start-up firm is sold while taking measures to prevent tax evasion.

Strengthen local government investment

- Provide more support for good municipal investment projects, including by strengthening administrative capacity, especially in municipalities burdened with high social spending mandates (such as cash transfers).
- Invest more in full-day schooling, raise the supply of formal childcare and improve the quality of childcare and early childhood education. To this end, introduce vouchers for childcare and remove constitutional barriers to federal government co-funding of education expenditure by subnational governments.
- Introduce regional advisory units in all *Länder* to provide technical support for local governments in carrying out investment.

Improve efficiency in public investment

- Promote e-procurement by improving skills of procurement officials. Involve the public more effectively in investment projects through electronic communication tools.
- Improve priority setting in budgeting, for example by enhancing the analytical capacity of parliament and by making poor performance of budget programmes public.
- Improve assessment and disclosure of long-term financial risks of PPPs of subnational governments. Share experience across levels of government and national borders and harmonise procedures.
- Give consideration to introducing usage-dependent and congestion-dependent road tolls for cars.

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Chapter 2

Raising well-being in Germany's ageing society

Population ageing is setting in earlier in Germany than in most other OECD economies and will be marked. It could lead to a substantial decline in employment, weighing on GDP per capita, and will raise demand for health-related public services. Germany has already implemented far-reaching reforms to mitigate the implications of ageing for per capita income, well-being and the sustainability of public finances. Nonetheless, continued efforts are needed to help older workers to improve their work-life balance and adjust their working hours to their ability and desire to work. Moreover, stressful working conditions and unhealthy lifestyles contribute to poor self-reported health and reduce the ability and willingness to work at higher age. There is scope to promote life-long learning. As the generosity of the public pension system will diminish, the contribution of private pensions to ensure pension adequacy needs to be strengthened.

Well-being outcomes are good in international comparison but weaken with age

Well-being outcomes for Germany are above the OECD average and particularly strong for income, jobs, work-life balance and education (OECD, 2014n; OECD, 2011b). However, well-being outcomes are lower for individuals at higher age, and evolve less favourably with age than in other OECD countries. For instance, subjective health outcomes decrease with age (OECD, 2014n; Gerstorf, 2010). There is also some evidence that subjective well-being decreases with age, though it temporarily rises around pensionable age (Enste and Ewers, 2014; Gwozdz and Sousa Poza, 2009; Wetzel, Huxhold and Tesch-Römer, 2015).

Inequalities in well-being outcomes are fairly high in Germany, as shown in the 2014 *OECD Economic Survey for Germany* (OECD, 2014a); and these inequalities tend to increase with age. Education outcomes, self-perceived health and life expectancy strongly depend on socio-economic background, more so than in many other advanced economies (*OECD Economic Survey for Germany 2014*; Jagger et al., 2011; European Commission, 2013; Kroll and Lampert, 2014; Unger and Schulze, 2013; Kroh et al., 2012). These gaps in well-being outcomes between individuals with different socio-economic background tend to widen with age. For instance, differences in health outcomes and subjective life satisfaction across skill levels increase with age (Schöllgen et al.; 2010; Wetzel, Huxhold and Tesch-Römer, 2015). The relevance of wellbeing of the elderly will increase with population ageing.

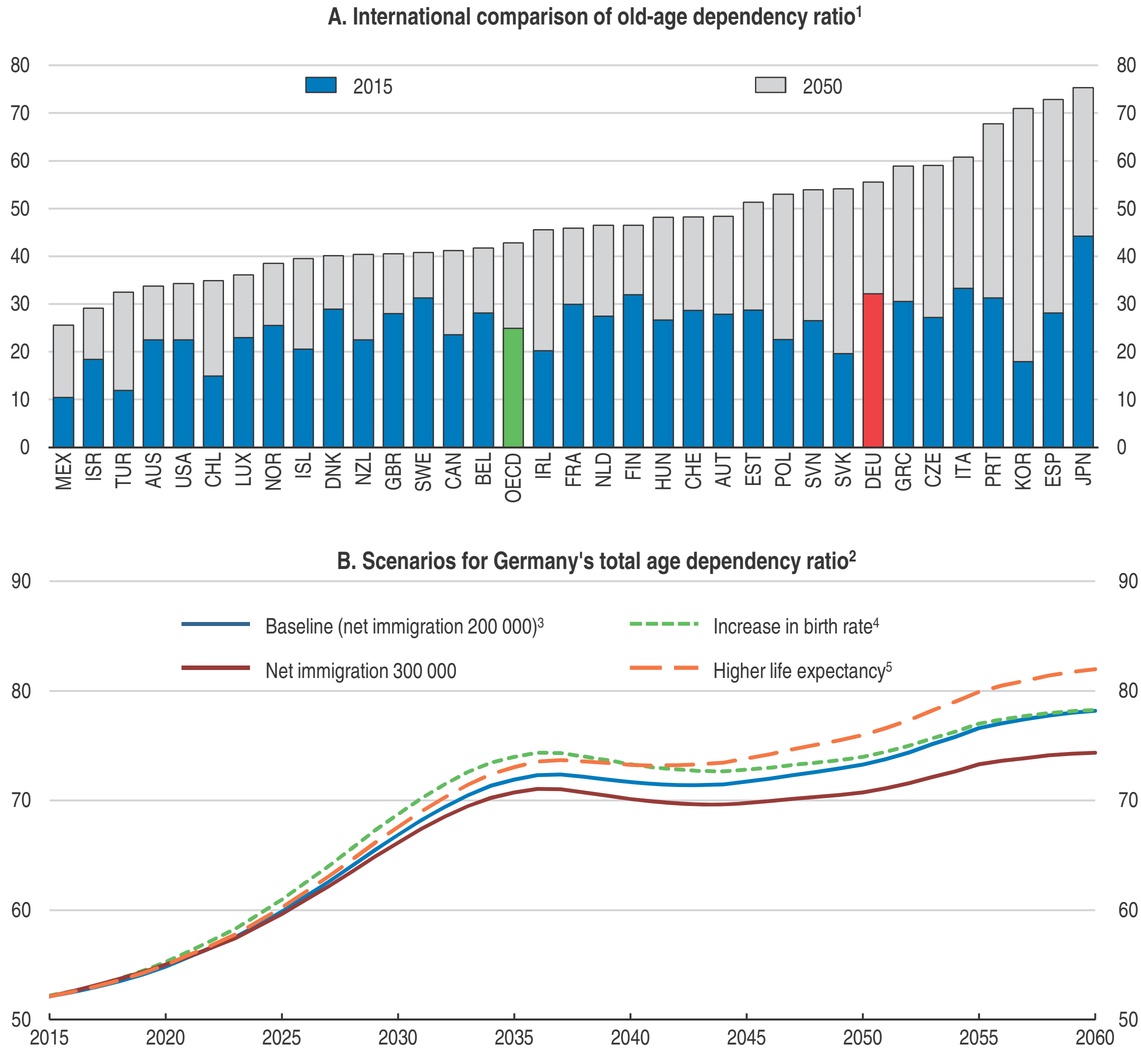
Population ageing is setting in more rapidly in Germany than in most other OECD economies

According to OECD projections, the total population will decline by 14.9 million or 18% until 2060 if current trends persist. The working age population (16-75) is projected to contract by 28% as the total dependency ratio is rising fast (Figure 2.1). These projections assume net immigration to reach 500 000 in 2015, considerably less than the actual net inflow, which could reach 1 million. In the baseline scenario, the projections also assume that net immigration falls to 200 000, somewhat above the historic average, by 2021. A sustained larger inflow would delay rather than offset population ageing (see below). Strong integration policies are required for the large inflow of humanitarian immigration to boost labour supply and GDP and minimise risks of poverty and social exclusion from rising, as discussed further below.

Demographic trends between 2020 and 2035 will be strongly affected by the baby boomer generation approaching pensionable age, though this effect is limited to one generation. In the long-term, life expectancy is the most important driver of the rise in the dependency ratio:

- Life expectancy is projected to increase continuously, by seven years for men and six years for women until 2060. If life expectancy increased by an additional two years by 2060, the population would increase by two million and the total dependency ratio by four percentage points compared to the base-line scenario.

Figure 2.1. **The dependency ratio will rise**



1. Population above 65 years old relative to population aged 15-65.
2. Population below 15 and above 65 years old relative to population aged 15-65.
3. The assumptions of the "baseline (net immigration 200 000)" scenario include a constant birth rate of 1.4 children per woman, a moderate increase in life expectancy at birth to 84.8 years for men and 88.8 for women in 2060, and a gradual adjustment of net immigration from 500 000 in 2014 to 200 000 in 2021.
4. The "increase in in birth rate" scenario assumes the birth rate to gradually increase to 1.6 children per woman in 2028.
5. The "higher life expectancy" scenario is based on a sharp increase in life expectancy at birth to 86.7 years for men and 90.4 for women by 2060.

Source: OECD (2015), *OECD Population Statistics: Historical population data and projections (1950-2050)* (database) and Statistisches Bundesamt.

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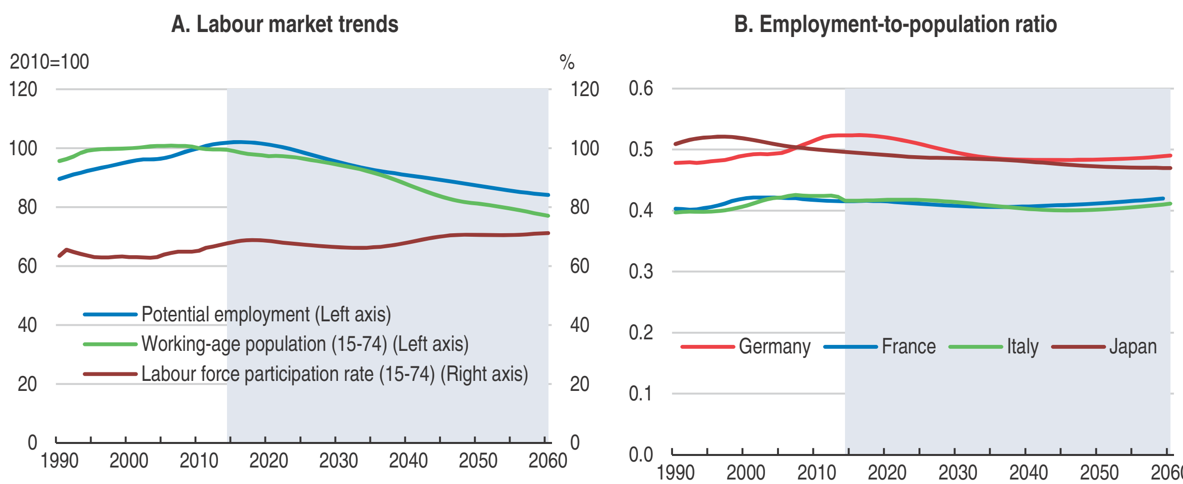
- A durable, substantially higher migration inflow can delay demographic developments. However, since fertility tends to adapt to local patterns over time, the impact of immigration flows on demography is ultimately temporary. One hundred thousand more immigrants per year than assumed in the baseline would imply a population that is 5 million higher by 2060. Migration patterns are highly volatile and therefore difficult to project. Over the last 20 years (1994-2013), net migration was on average 175 000 per year. With a surge in refugees, net migration increased from 128 000 in 2010 to around 600 000 in 2014 and could exceed 1 million in 2015.

- The fertility rate in Germany is one of the lowest in the OECD, at around 1.4 children per women. An increase in the fertility rate by 0.2 percentage points would slightly raise the dependency ratio initially, on account of a larger population of children and youth in education. This temporary effect would last until around 2060.

Ageing will weigh on employment and GDP per capita and will raise government spending

On the basis of current population projections and policies, employment is projected to drop by 23% by 2060. This is less than the projected drop in working age population, as labour force participation is projected to increase (Figure 2.2, Panel A). The employment to total population ratio would decline until 2030 (Figure 2.2, Panel B), a result of the retiring baby boom generation.

Figure 2.2. **Impact of demographic ageing on labour**



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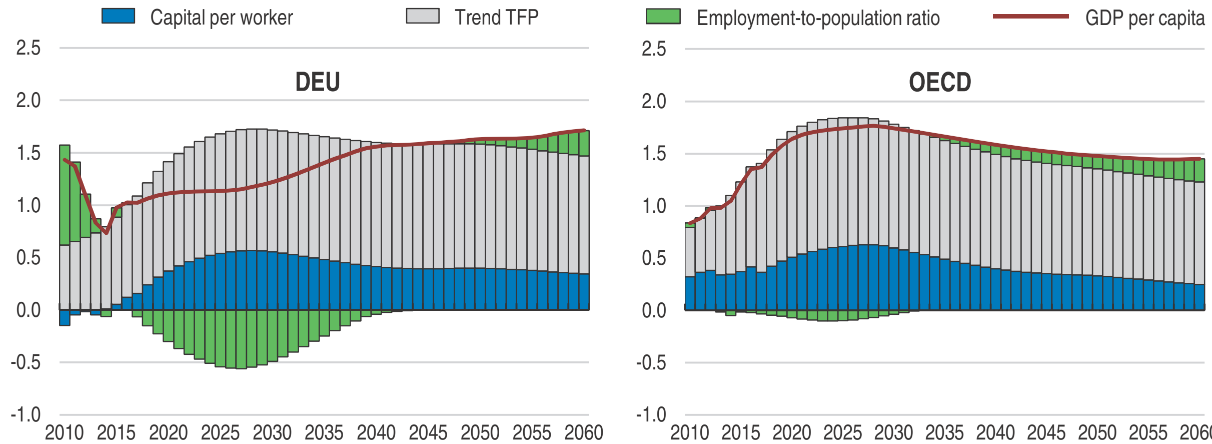
The shrinking labour force will reduce GDP per capita growth (Figure 2.3). This will be partly offset by an assumed acceleration of productivity at the beginning of the projection horizon, to catch-up with top-performing OECD countries. This may, however, not be achieved without substantially stronger investment (Chapter 1). Projections about potential GDP growth per capita by the OECD are above those of the European Commission and the German Council of Economic Experts (Box 2.1).The impact of demographic ageing on productivity is small. The average level of qualifications is not expected to change substantially. Longer life expectancy raises the return on human capital, which encourages investment in human capital, but an ageing society tends to be less innovative in the long-term (*OECD Economic Survey for Germany*, 2012; Aksoy et al., 2015).

Ageing-related increases in pension and health spending will increase government spending (Figure 2.4). Net public pension expenditure is projected to increase by 2 percentage points by 2060 (European Commission, 2015). Ageing could raise the cost of health and long-term care by up to 0.9% of GDP by 2060, although cost containment measures could slow this increase (de la Maisonneuve and Martins, 2013; European Commission 2015). Education spending will decline by 0.7% of GDP (European Commission, 2015). Adjustments to pensions and extending employment of older workers would

Figure 2.3. **Shrinking labour supply will weigh on long-term growth**

Percentage point increase, 2010-60



Note: Trend total factor productivity (trend TFP) includes the effect of human capital.

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mitigate the effect of these costs. Most of the overall increase in pension and health care spending cannot be pre-financed through government saving but requires adjustments to pension systems and labour market participation of older workers (see below).

Reforming the pension system to improve the work-life balance of the elderly

Germany's public pension system is a single tier, earnings-related pay as you go system. To improve pension adequacy, the government promotes voluntary individual private and occupational pension plans (see below). If individual old-age income is not sufficient, additional means-tested social assistance can be claimed (OECD, 2013f). The labour market and output effects of ageing are exacerbated by policies that encourage individuals to withdraw from employment prematurely. These policies include early retirement schemes and features of pensions systems that penalise working.

Labour market participation of 55-64 year olds in Germany remains below best performing countries (Figure 2.5), despite an impressive increase over the past 10 years. The upwards trend have slowed down lately, partly because of the recent reforms of public pensions, which have facilitated early retirement for some workers (see below). The employment rate among individuals aged 65-74 remains well below the OECD average (Figure 2.5). Enabling elderly to adjust their working hours to their ability and desire to work is essential for their work-life balance and subjective well-being (Reday-Mulvey, 2005; Barnay, 2014; Nikolova and Graham, 2014). This includes options to combine an old-age pension with paid employment. Steps to remove barriers to employment at higher age can also help to reduce old-age poverty risks (OECD, 2015m).

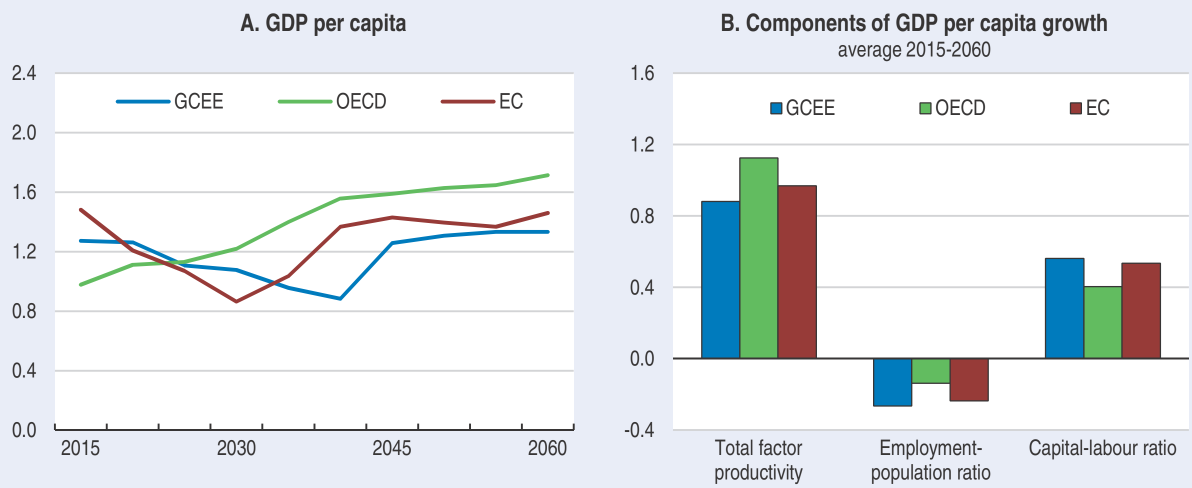
Indexing the pensionable age to life expectancy

Indexing mandatory pension systems to life expectancy is important for ensuring the long-term affordability of public pensions for government finances as life expectancy increases (OECD, 2011d; OECD, 2014e; Johansson et al., 2013). Around half of OECD countries have an automatic link between pension entitlements and life expectancy. Germany's public pension system is indirectly linked to life expectancy. An increase of

Box 2.1. **Long-term economic projections compared**

Unlike the OECD, the European Commission (EC) and the German Council of Economic Experts (GCEE) project growth of GDP per capita to weaken substantially over the next 15-30 years (Figure B1, left panel). The OECD projects GDP per capita to growth by 1.4% on average between 2015 and 2060, 0.1% and 0.2% points higher than the EC and the GCEE, respectively.

Figure B1. **Long-term projections of growth rates of GDP per capita vary substantially**
Annual percentage changes



Note: OECD employment- projections include workers aged 15-74. The projections by the German Council of Economic Experts (GCEE) and the European Commission (EC) include workers aged 15-64.
Source: European Commission (2015), "The 2015 Ageing Report", and German Council of Economic Experts (2011), *Herausforderungen des demografischen Wandels*.

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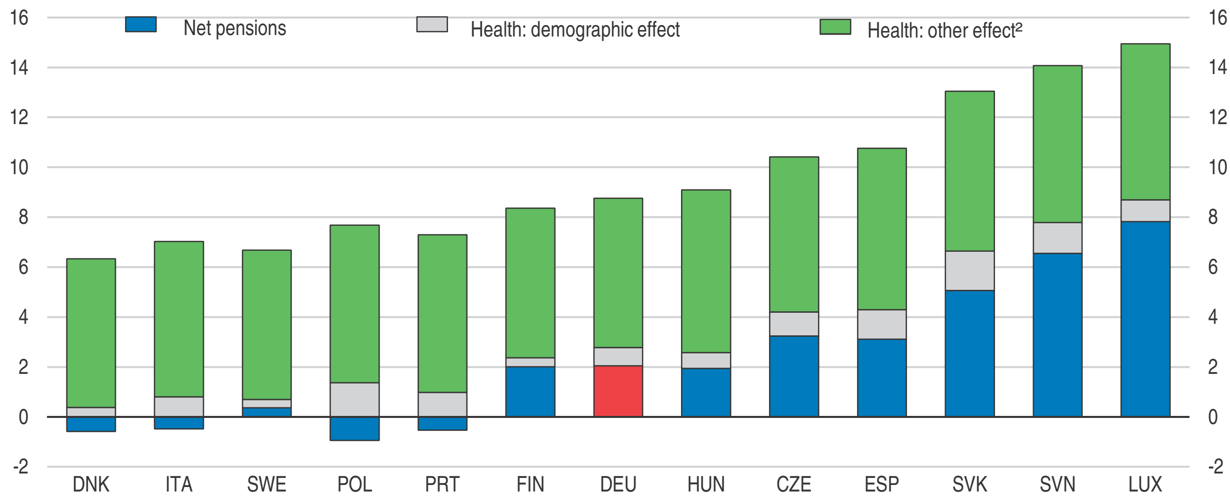
More optimistic assumptions about total factor productivity in OECD projections explain most of the differences (Figure B1, right panel). EC and GCEE also expect the labour force to shrink more. Unlike the OECD, they factor in a reduction in hours worked per worker, in part reflecting rising participation of women, who, on unchanged policies, would continue to work fewer hours than men. By contrast, the contribution of capital accumulation to GDP growth is stronger in projections of the EC and the GCEE than in the OECD's projections.

pension contribution rates will reduce pension claims to share the fiscal cost of ageing among workers and pensioners. Moreover, a "sustainability factor" inversely links pensions to the ratio of pensioners to contributors (OECD, 2013d; OECD, 2011d). The increase of the contribution rate is limited by law to 22%.

Automatic adjustments in the pensionable age tend to reduce the political cost of implementing discretionary adjustments in pension benefits in response to changes in life-expectancy projections (OECD, 2011d). Some OECD countries, including Italy and Denmark, index the pensionable age to life expectancy, such that the ratio of retirement to working years remains constant for workers retiring at the pensionable age (Johansson et al., 2013; OECD, 2011d). In Denmark, the resulting changes in the pensionable age need to be legislated every 5 years. Italy and Greece will link the pensionable age to life expectancy from 2015 and 2020 respectively. The Pensions Commission in the United Kingdom proposed steps in that direction (OECD, 2011d).

Figure 2.4. **Projected changes in public spending on health[1] and pensions for selected OECD countries**

Percentage of GDP, 2015-60



1. Health- and long-term care spending projections based on "cost-pressure scenario".
2. Includes income effect, relative prices, technological change and health policies.

Source: OECD calculations based on de la Maisonneuve, C. and J.O. Martins (2013), "Public Spending on Health and Long-term Care: A new set of projections", *OECD Economic Policy Papers*, No. 06, and European Commission (2015).

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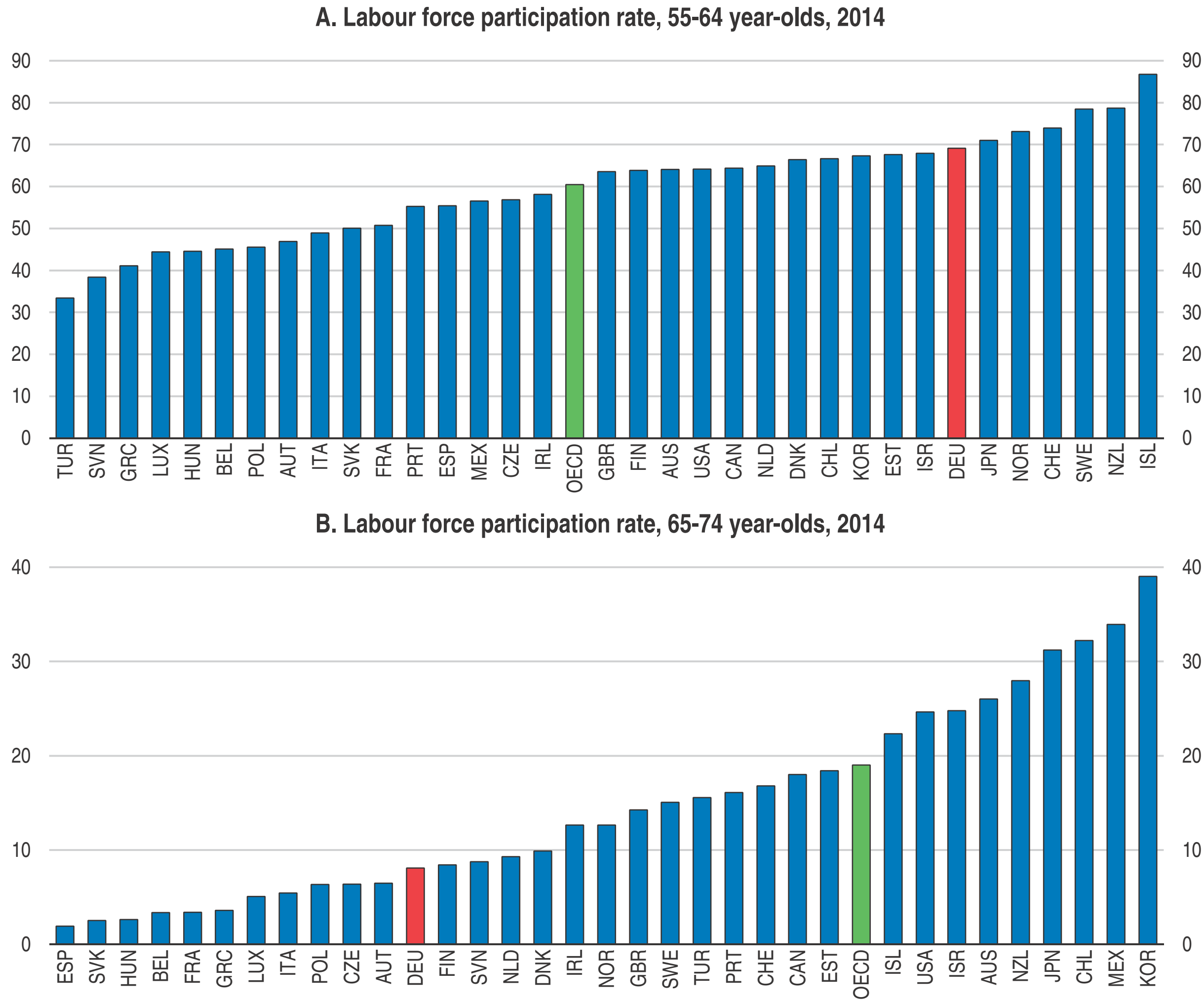
In Germany, the pensionable age is gradually rising from 65 to 67 years by 2029, but no further adjustment is foreseen. Without further increases in the pensionable age, increases in life expectancy after 2029 would raise the government deficit, increase the tax burden on labour and lower the level of pensions relative to average income, which would tend to increase old-age poverty risks (OECD, 2013d; OECD, 2015k). Germany should index the pensionable age to life expectancy.

Promoting flexibility in combining work and pension income

Reducing barriers for older workers to find a job reflecting their skills and physical requirements is important to help those who want to work beyond retirement age (see below). Moreover, flexibility in combining work and pension income is important to help older workers improve their work-life balance and adjust their working hours to their ability and desire to work (Reday-Mulvey, 2005; Barnay, 2014). Germany has also taken steps to promote employment beyond pensionable age. Working while receiving an old-age pension is possible. The pension reform in 2014 allows employers and employees to easily extend an existing contract beyond the pensionable age. The employee can either draw their full pension entitlements while continuing to work or continue to contribute to the pension system and accrue corresponding entitlements.

These new rules do not apply to workers who decide to draw their pension before the pensionable age, but would like to continue to work. For them, pensions are cut by up to two thirds, depending on earnings. Moreover, employers pay unemployment insurance contributions and continue to pay pension contributions for retired workers, who have reached the pensionable age or receive a full pension and start new employment relationships. However, the worker does not accrue any benefits from these payments. In Germany, pensioners lose pension wealth if they postpone their decision to draw old-age pensions beyond the age of 60 (OECD, 2015m). A parliamentary working group has proposed

Figure 2.5. **The labour force participation rate remains low for 65 to 74 year-olds**



Source: OECD (2015), *OECD Labour Force Statistics* (database).

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allowing working pensioners to accrue the benefits from pension insurance contributions paid by employers, provided they also pay the employee's share. They also propose abolishing unemployment insurance contributions for these workers, although this measure would be limited to a period of 5 years in the first instance. These steps are welcome.

The pension reform in Norway in 2010-11 provides an interesting example for such a fully flexible retirement scheme (Box 2.2). A fully flexible retirement scheme needs to be actuarial neutral to allow older workers to achieve their desired work-life balance without providing incentives for early retirement (Börsch-Supan et al., 2015). Therefore, contributions paid by workers who already reached the pensionable age need to result in higher pension claims (see above). Moreover, the pension premium for drawing old-age pensions later in life should be raised, as also argued in the 2012 *OECD Economic Survey for Germany*, and pension benefits should not be withdrawn when pensioners work.

Box 2.2. Flexible retirement rules – the 2010-11 pension reform in Norway

In 2010-11, Norway implemented a pension reform establishing flexible retirement between the ages of 62 and 75. The pension benefit is actuarially neutral and adjusted to changes in life expectancy over time. The pension may be drawn fully or partly (at least 20%). Pension and work income can be combined without any restrictions. Employment income for pensioners generates additional pension rights. Nearly 65% of workers aged 62-66 combine old age pensions with work

The same rules and conditions for unemployment insurance contributions and entitlements apply to workers up to the age of 67. Workers older than 67 cannot receive unemployment benefits. Unemployment benefits in Norway are financed by general tax revenues (OECD, 2013g; OECD, 2014m).

Reviewing the separate pension system for civil servants

Like most countries Germany has a separate pension scheme for civil servants. This is usually justified as means to guarantee the security, integrity and independence of the employees and to make a civil service career more attractive. The system covers all civil servants who are appointed for life, as well as judges and soldiers.

The public sector labour contract foresees a larger share of deferred compensation after retirement than in the private sector. A civil servant who decides to switch to a private sector job foregoes the more generous benefit entitlements accumulated in the civil servants' scheme, although this loss has recently been limited for some groups of civil servants (see below). For a 50 year old civil servant with 25 years of service and average earnings, the loss can be substantial. This cost rises with age (Palacios and Whitehouse, 2006). Some researchers have estimated that the net present value of accumulated pension claims is more than twice as high for civil servants than in the general scheme (Frick and Grabka, 2010).

The above-mentioned loss in pension claims associated with switching from civil service to private sector employment severely constrains the labour mobility of civil servants. The government introduced an old-age payment (*Altersgeld*) for civil servants who switch into a job covered by the general public pension scheme in 2013. The *Altersgeld* limits the loss in entitlements accrued before the switch to 15%. However this only applies to civil servants with at least 7 years of public service and only to federal civil servants, federal judges and soldiers. Many *Länder* do not have equivalent rules for remaining civil servants. Remaining barriers to the portability of civil servant pensions should be lowered further, for example, by applying the new limit to the loss of pension entitlements to all civil servants, including at sub-national levels of government. In the long run, barriers to the portability of civil servant pensions could be eliminated by merging or harmonising the pension scheme for civil servants and the general public pension system, as most OECD countries have done.

Ensuring pension adequacy

Past pension reforms already in place in response to demographic ageing will reduce public pension entitlements relative to wages. The ratio of pensions to average wages is projected to drop from 45% in 2013 to 36% in 2060 (German Council of Economic Experts, 2013; Bach et al., 2014). Net public pension replacement rates for future retirees are already among the lowest across OECD countries and redistribution in the public earnings-related pensions' scheme is limited. While old-age poverty is not a major concern in Germany today, poverty risks among the elderly might therefore increase (Geyer, 2014; Martens, 2014). The federal government is monitoring the situation carefully. Continuous employment records and avoiding barriers to employment are important to reduce poverty risk. Moreover, individuals systematically undersave when planning for retirement due to myopia (Holmes, 2011; Börsch-Supan, 2005). Also workers with physically stressful jobs, who often earn low wages, tend to face a higher risk of partial or full disability before reaching retirement age. Extending working lives, as recommended above requires additional efforts to address the risk of old age poverty and poor wellbeing for vulnerable groups.

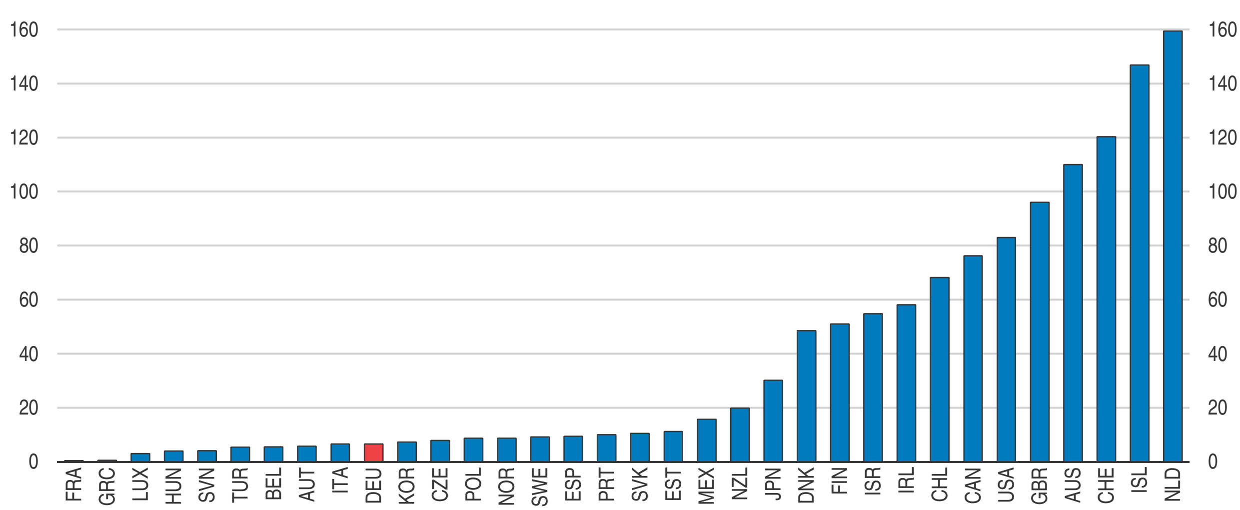
To improve pension adequacy the government introduced state-subsidised voluntary individual private pension plans (*Riesterrente*) in 2001 and encouraged the expansion of occupational pensions. The share of households with supplementary pensions increased from 27% a decade ago to 61%. Nonetheless, coverage gaps remain substantial, especially among low-income households (Börsch-Supan et al., 2014). There is considerable scope to reform and expand supplementary private pensions, as argued below.

Expanding occupational pensions and raising transparency

Occupational pensions are the most common form of supplementary private pensions in Germany which are encouraged by the government. However, occupational pension assets ("*Pensionskassen*" and "*Pensionsfonds*") amount to only about 6% of GDP, less than in most other high income OECD countries (Figure 2.6). These ratios would be somewhat higher if schemes are added which are funded from the employers' own assets (see below) and occupational pensions provided in the form of insurance contracts, which are not included in Figure 2.6. Workers have the legal right to subscribe to an occupational pension plan, but need to take an active decision to do so. Many workers may not be aware of this

Figure 2.6. **Occupational pension plan assets**

Percentage of GDP, 2014



Source: OECD (2015), *Pension Markets in Focus 2015.*

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(Lamla and Coppola, 2013). Occupational pensions are less common in small firms, also because the administrative costs involved. Operating costs in the occupational pension funds are low, amounting to 0.2% of assets under management in 2012 (OECD, 2013i). One reason is that occupational, unlike individual, pension plans are negotiated for a group (Berthon et al., 2014).

The government plans to promote occupational pensions through collective agreements among social partners. A number of countries have chosen a broader approach, by introducing automatic enrolment with an option to opt out within a specified timeframe to increase participation (Table 2.1). Automatic enrolment aims at overcoming individuals' myopia in retirement and pension saving decisions, while preserving

Table 2.1. **Automatic enrolment in occupational pension schemes in selected OECD countries**

	Description	Target group	Opting-out window	Contributions
Canada	The Pooled Registered Pension Plan, introduced in 2012 at the federal level, will be fully in place across Canada pending provincial enabling legislation.	Full-time employees and part-time employees with at least 24 months of continuous employment.	60 days. The decision to opt out or stay is irrevocable.	Employer: voluntary. Employee: chosen freely, with a default rate at the beginning.
Chile	The system was phased in between 2012 and 2014 with an increasing share of earnings covered. During this period, contributions were funded via tax rebates owed to the workers.	Self-employed. Exempt are self-employed above 55 (for men) and 50 (for women) or those subscribed to other pension plans.	Until before the submission of the income tax declaration in each respective tax year.	Employee: 10% of covered earnings.
Italy	Automatic enrolment was introduced in January 2007.	All private sector employees in January 2007. All first-time employees afterwards.	Six months. The decision to opt out or stay is irrevocable.	Employee: voluntary. Employer: 6.91% of gross wages plus a matching contribution if employee contributes.
New Zealand	KiwiSaver was introduced in 2007. Existing employees not subject to the automatic enrolment rule can also join (opt in) the KiwiSaver plan on a voluntary basis.	New employees aged from 18 to 64 years.	2 to 8 weeks. Contributions already made are refunded. The decision to opt out or stay is irrevocable.	Employee: 3% of earnings or more. Employer: 3% of salary. The government matches employees' contributions by 50%, up to NZD 521 annually.
United Kingdom	Automatic enrolment was introduced in 2012 for workers not yet covered by a private pension plan. The duty on employers is being staged in between 2012 and 2018, starting with the largest employers.	Employees aged at least 22 and under state pension age, and earning over GBP 10 000 in 2014/15 terms.	One month. Employers must automatically re-enrol eligible jobholders who chose to opt out on a three-yearly cycle.	Employer, employee and state contributions are being phased in until 2018 to a minimum total contribution of 8% of qualifying earnings.
United States	Automatic enrolment in 401(k) pension plans was introduced in 1998 for newly hired employees. In 2000, it was extended to current workers not yet enrolled.	Typically employees over the age of 21 employed for at least one year.	90 days. Opt-out decisions can be reconsidered at regular intervals.	Employer voluntary for the basic contribution. Employee: automatic contribution rate depending on exact scheme.

Source: OECD (2014), *OECD Pensions Outlook 2014*, OECD Publishing, Paris.

individual choice. Evidence from Italy, New Zealand and the United Kingdom shows that automatic enrolment improves coverage (OECD, 2014e). The German government should consider introducing automatic enrolment of all employees in occupational pension plans, with a possibility to opt out. Automatic enrolment would boost occupational pensions especially among workers in small firms. The small firms could co-ordinate and provide occupational pension schemes collectively, for instance at sector level, as is done, for example, in Switzerland, and in some sectors of the German economy.

According to the Deutsche Bundesbank, book reserve schemes (direct commitments of employers) represent 59% of total occupational pension entitlements (Deutsche Bundesbank, 2013). These schemes are defined benefit and worker contributions are often not invested outside the employing firm. Instead, their employer retains the funds inside the firm and is liable for meeting pension promises when they fall due. According to the Bundesbank the present value of such pension commitments amounts to at least 10% of GDP (Deutsche Bundesbank, 2013). It is substantially higher if calculated at current market interest rates, given that regulatory discount rates are still above the currently low market interest rates. One reason for the popularity of book reserve schemes is that they benefit from higher tax advantages than funds invested outside the firm (Berthon et al., 2014). Also, externally invested funds face higher costs due to regulatory solvency and liquidity requirements for external providers. These costs have risen recently.

The book reserve schemes may generate some systemic financial risks, which could materialise in the context of a macroeconomic or financial crisis in which many firms go bankrupt at the same time. Employees' pension claims are insured through a mutualisation scheme. A wave of bankruptcies may lead to increasing contributions which could feed back to bankruptcy risk. The government may be pressured to step in in such an event (Deutsche Bundesbank, 2013). Moreover, demographic change will raise liquidity risks among firms providing such pension schemes, because the firms' pension pay-outs will rise over time as workforces age, forcing firms to have sufficient financially liquid assets, including in periods of weak sales, so the risk of a crisis of the scheme will rise over time. The systemic risk is also aggravated by adverse selection. Since the contribution rates firms pay into the mutualisation scheme do not vary with their bankruptcy risk, book reserve schemes are relatively attractive for firms with high bankruptcy risks. Book reserve schemes also harm the efficient reallocation of capital, as they will tend to retain capital in established firms, and in particular, in firms with relatively weak solvency prospects.

Supervision of direct pension commitments of employers is needed to better understand the macroeconomic and microeconomic risks they entail, including for firms' solvency and credit rating. The systemic risk from direct commitments could be reduced by obliging firms to invest part of employees' pension contributions outside the firm. Also, contributions to the mutualisation scheme could be made dependent on risks, which could be assessed on the basis of the firm's equity.

Reducing costs of state subsidised individual private pensions and making them more targeted

Individual voluntary private pension plans (*Riester* Rente) are heavily subsidised (Box 2.3).

Box 2.3. **The *Riester* pension plan**

The *Riester* voluntary private pension scheme was introduced in 2001. Certified *Riester* products include private pension insurance plans, bank savings plans, investment fund savings plans and real estate savings agreements. Up to 30% of the accumulated savings can be paid out as a lump sum.

Eligible for the *Riester* subsidy are employees and their spouses. The self-employed are typically not eligible. The minimum annual individual contribution to be eligible amounts to EUR 60. To receive the maximum subsidy (EUR 154 per individual) a contribution of 4% of the households annual income before taxes is required, with a maximum threshold of EUR 2 100. Additional subsidies are paid for each child (EUR 185, or EUR 300 for children born after 2007). Alternatively, *Riester* savings up to EUR 2 100 can be deducted from the annual income if this is more profitable for the *Riester* saver than receiving the subsidy.

Some research suggests that operating costs charged by financial intermediaries offering *Riester* contracts are high, reducing real returns for clients. Estimated costs amount to nearly one half of nominal interest earned (Balodis and Hühne, 2014), though differences among contracts are substantial. However, there are no comprehensive data to assess costs. The collection of comprehensive data on operating costs is desirable to design policies to minimise costs. Net real returns of Riester pensions are estimated to be around 1.3%; guaranteed returns are often below inflation. In comparison, real returns of occupational pensions are estimated to be between 1.6% and 2.8% (Berthon et al., 2014; Hagen and Kleinlein, 2012; OECD, 2014e).

One reason for high costs of *Riester* products is limited comparability. Legislation has obliged providers to provide binding and comparable performance measures (*Produktinformationsblatt*) from 2017 onwards. There are concerns that the new document may not present all information in a standardised way, may not include a comprehensive and transparent disclosure of total costs, and may not include performance measures of other providers. Also, the vast variety of products on the market makes it difficult to compare products (Balodis and Hühne, 2014).

Making products of different providers easily comparable could be achieved through a single information platform, as planned by the government (*Produktinformationsstelle Altersvorsorge*). Also, providers should be required to publish comparable performance indicators of a low-cost benchmark fund selected by the government in the product information sheet. Such steps may also help to push low-performing product types out of the market and thereby make the market less complex. It also needs to be ensured that the *Produktinformationsblatt* provides a comprehensive and transparent disclosure of total costs.

Low income earners often do not compensate the foreseeable decline in public pensions through individual or occupational pension plans (Börsch-Supan et al., 2014), raising concerns about rising old age poverty in the future (OECD, *Pensions at a Glance*, various issues, and Lüg and Schwark, 2014). Subsidised private pensions like the *Riester* scheme tend to be better able to reach out to low-income households than occupational and unsubsidised private pension plans (OECD, 2013f). Demand for *Riester* products is strong among parents with more than two children as *Riester* subsidies increase linearly with the number of children. The tax allowance, which can be claimed as an alternative to the subsidy, tends to favour high-income households. Abolishing this option would therefore tend to reduce income inequalities.

One reason for low enrolment of low income households in the *Riester* scheme is that they are often not aware about eligibility for the subsidy (Coppola and Gasche, 2011). More efforts are needed to target the *Riester* subsidies to low-income households, including by making information more easily available (Coppola and Gasche, 2011; Hagen and Kleinlein, 2012; Börsch-Supan et al., 2012; Kolerus, Koske and Hüfner, 2012). Moreover, the subsidy should be extended to all low-income individuals, provided the operating costs they bear are low. For instance, the low-income self-employed should also be allowed to participate in the *Riester* pension plan (Lüg and Schwark, 2014).

Reforming disability benefits

Disability benefits and occupational accident insurance are the principal instruments to limit poverty risks among disabled individuals. Thereby also make an important contribution to lowering old-age poverty risks (Sternberger-Frey, 2014; OECD, 2010b). Disability benefits should be designed such that they ensure recipients stay attached to the labour market, according to their ability to work. In the absence of appropriate reassessments of work capacity and activation measures, generous disability benefits risk being used instead for early retirement (OECD, 2009b; Faik and Köhler-Rama, 2013).

Germany implemented far-reaching reforms to raise employment of individuals with disabilities in 2001 (Box 2.4). Disability benefits in Germany decreased gradually from EUR 763 per month on average in 2000 to EUR 633 in 2012 in nominal terms (Sternberger-Frey, 2014). This partly reflects discounts from disability benefits for claiming the benefit before the age of 64 (Sternberger-Frey, 2014). Poverty increased among the disabled and is substantially higher than for individuals without disabilities (Figure 2.7; Kemptner, 2014), although Figure 2.7 does not include the steps taken in 2014 to increase disability pension entitlements somewhat (Box 2.4). Individuals with weak socio-economic background face a higher risk of disability (Hagen and Himmelreicher, 2014). The share of disability benefits recipients with mental ill-health increased substantially in recent years, especially among those aged 55 to 60 (OECD, 2015c).

Further efforts are needed to ensure disabled individuals receive the support they need, while ensuring they stay attached to the labour market. Such steps could complement the indexation of the pensionable age recommended above, as they would provide better protection for workers with physically demanding careers or weak socio-economic background. Such workers face a bigger risk of not reaching pensionable age in good health. Such steps could therefore also make reform to index the legal retirement age more acceptable for a larger segment of society. One possibility is to eliminate the discount from disability benefits for claiming the benefit before the age of 63 years and ten months. Pension discounts for early retirement are supposed to make voluntary retirement actuarially neutral, which is different from health-related pension benefits. Moreover, discrete cuts of benefits as other income rises should be reconsidered. Such cuts make it unattractive for disabled individuals to work more, especially when marginally exceeding the earnings thresholds.

Germany subsidises private disability insurance to offset the decline in public disability benefits. Additional tax subsidies for contracts guaranteeing a life-long pension were introduced in 2014 (*Altersvorsorge-Verbesserungsgesetz*). Nonetheless, only 40% of employees have a private insurance (Sternberger-Frey, 2014). Eighty-one percent of applicants report coverage below their desired level; two-hundred-thirty-five thousand insurance applications are rejected every year (ÖKO-TEST, 2014). One reason is that private

Box 2.4. **Disability benefits in Germany**

Occupational accident insurance covers occupational health risks, such as work accidents, including on the way to and from work. Individuals who suffer from a reduction in their ability to work not covered by occupational accident insurance can apply for disability benefits (*Erwerbsminderungsrente*) before reaching pensionable age. Roughly 1.6 million individuals received disability benefits in 2011, compared to 1.9 million in 2000. Individuals who can only work less than three hours a day are entitled to receive full disability benefits. Individuals able to work three to six hours per day are entitled to receive partial disability benefits. Partial disability benefits are topped-up if the regional labour market does not provide sufficient opportunities to work part-time. Labour income during the last five years prior to disability determines the level of the benefit. Disability benefits are cut by discretionary steps as income of the beneficiary rises; by one third, one half or two thirds depending on earnings thresholds. Full disability benefits cannot be lower than subsistence benefits plus a top-up of 17%. Disability benefits are financed via the mandatory public pension system.

To raise employment of individuals with disabilities, Germany, as one of the first countries, introduced temporary disability benefits, which are reassessed at periodic intervals (OECD, 2010b; Sternberger-Frey, 2014). Spending on activation measures for disabled individuals is higher than in most other OECD countries, reaching 0.3% of GDP (OECD, 2010b). Moreover, workers with health problems are entitled to receive assistance from their employers, such as an adapted workplace, preferential selection and support for training, and part-time employment. As a result of successful activation the employment rate of disabled individuals is one of the highest among OECD countries (OECD, 2009b).

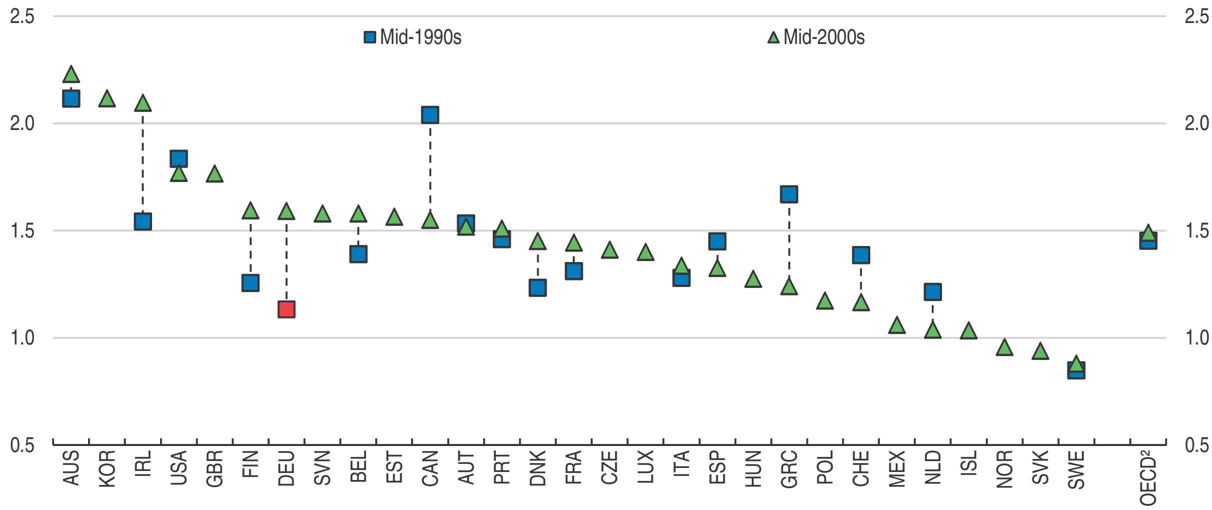
Disability benefit recipients continue to automatically acquire public pension claims as if they continued working until reaching the pensionable age. A discount is applied to disability benefits if received before age of 63 years and ten months. The discount amounts to 0.3% for each month of benefit entitlements before that age up to a maximum discount of 10.8% (OECD, 2013f; Krause, Ehrlich and Moehring, 2013).

The government increased old-age pension entitlements for disability benefit recipients somewhat in 2014. The benchmark age for accumulating public pension claims for disability benefit receivers was raised from 60 to 62. Moreover, the period of earnings prior to disability is shortened for the calculation of disability benefit if this is more favourable for the disabled individual.

providers can select clients based on their occupational risk. But there is also a risk that individuals with low disability risks do not buy an insurance policy. As a result, private insurance fees are extremely high for some occupations. Moreover, insurance coverage ends well before pensionable age for some occupations (Sternberger-Frey, 2014). There are also concerns about the high number of legal cases about whether an insured event occurred, suggesting that insurees face difficulties in claiming benefits. Limited information about the number of cases and benefits paid by private providers are available (ÖKO-TEST, 2014). One way to reduce the number of legal cases would be to require providers to acknowledge the disability assessment of public pension authorities.

Figure 2.7. **Trends in poverty rates[1] of people with disability**

Relative to poverty rates of the working-age population, mid-1990s and mid-2000s



1. Poverty rates are defined as percentages of people with disability in households with less than 60% of the median adjusted disposable income.
2. OECD refers to unweighted averages of countries for which data are available. Estonia and Slovenia are not included in the OECD average.

Source: OECD (2010), *Sickness, Disability and Work: Breaking the Barriers: A Synthesis of Findings across OECD Countries*.

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Improving health outcomes in the light of demographic change

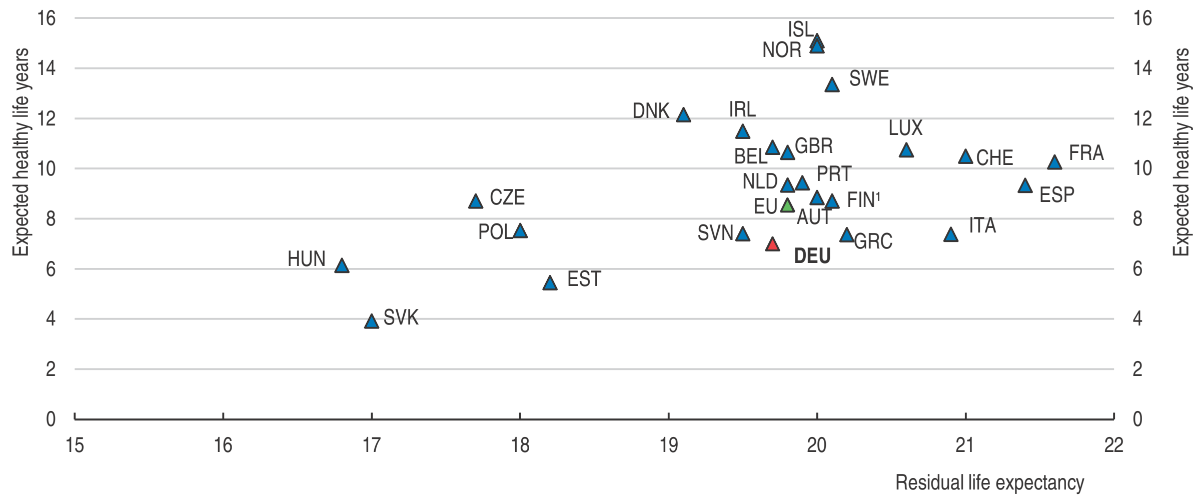
The German health care system offers a high quality of infrastructure and excellent access to care for the whole population, according to OECD health data. Nonetheless, Germany faces a range of ageing related health challenges (OECD, 2014j). The number of expected healthy life years at age 65 is low compared to other countries with comparable life expectancy (Figure 2.8). Also self-reported health is comparatively low, including among the elderly (OECD, 2014j). The share of individuals aged 50-65 with serious health problems is high compared to Germany's peers, with notable differences across individuals with different socio-economic background (OECD, 2014j). The incidence of some chronic diseases, including cardiovascular diseases, cancer and diabetes, is comparatively high and the cost of mental ill-health to society is above the EU average (OECD, 2015c; OECD, 2014j). Also dementia among those aged 65 or older is more widespread than on average in EU countries (OECD, 2015a).

The high observed incidence of chronic diseases and high cost of mental ill-health to society may partly reflect good diagnostic systems. But it also results in higher demand for health and long-term care services. Poor health reduces life quality and constrains labour market participation, including by older individuals. Germany can do more to strengthen health at the workplace and discourage unhealthy lifestyles, as argued below.

Continuing to improve job quality

Employment is not only a major driver of material living standards but it is also one of the most powerful determinants of wellbeing. However, work can also be an important source of stress and poor health, especially if job quality is low (OECD, 2013e; OECD, 2014k; OECD, 2010b). Stress, created by low job quality accumulates over time and can lead to poor health and reduce the motivation to work especially at higher age (OECD, 2014b). The OECD assesses job quality based on three dimensions: earnings quality; labour market security;

Figure 2.8. **Residual life expectancy and expected healthy life years at age 65, 2013**



1. Expected healthy life years in 2012 for Finland.
Source: Eurostat (2015).

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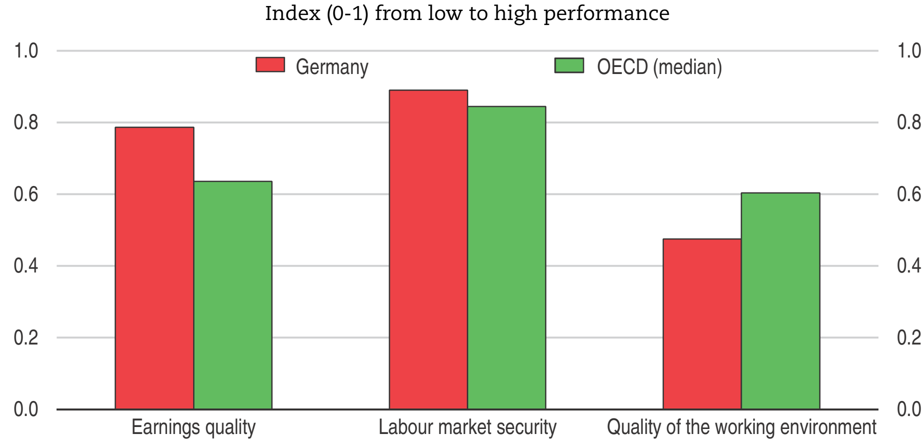
and quality of the working environment (Figure 2.9). Germany performs comparatively well in terms of earnings quality and labour market security. This is also reflected in a fairly high job satisfaction (OECD, 2013e). Also, old-age discrimination in Germany is comparatively low and is expected to fall, as the labour market continues to remain tight (OECD, 2015g).

Figure 2.9. **Job quality and job opportunities, 2010**
Index (0-1) from low to high performance



Note: The earnings quality indicator captures the level of earnings and degree of inequality. It corresponds to the weighted mean of individual earnings, calculated with higher weights attributed to the bottom part of the earnings distribution. The labour market security dimension reflects the expected earnings loss associated to unemployment, as a function of the risk of becoming unemployed, the expected duration of unemployment and the degree of income protection provided by unemployment benefit systems. The quality of the working environment captures the incidence of jobs that involve high demands with few resources through the nature and content of the work, working time and workplace relationships.
Source: OECD (2014), *OECD Employment Outlook 2014*.

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Germany falls below the OECD average in terms of quality of the working environment (OECD, 2014b). For example, 19% of German workers report difficult and stressful working conditions, which is more than twice as high as for Denmark and the Netherlands. Low quality of the working environment and high stress contribute to poor self-reported health and to sickness absence and raise the risk of mental illness and early retirement (Argaw et al., 2013; Barnay, 2014; OECD, 2015c). Aggregate data for Europe show that a poor working environment is associated with lower self-reported health (OECD, 2014b; Eurofound, 2012).

Employers are well placed to reduce stress and help ensure employees stay physically and mentally healthy (OECD, 2014b; Bundesregierung, 2012; OECD, 2015c; Federal Ministry of the Interior, 2011). The cost of mental ill-health for the German economy is comparatively high (OECD, 2015c). Mental ill-health accounts for most of new disability benefit recipients in recent years (Sternberger-Frey, 2014).

With 65%, the share of enterprises which already supports sick employees to return to work after a long-term sickness absence is above the EU average (OECD, 2015c). Also, the integration of disabled individuals in the labour market is high (see above). However, only few employers routinely analyse the causes of sickness absence (OECD, 2015c). Also, the percentage of enterprises using psychologists is one of the lowest in the EU (OECD, 2015c). Efforts are underway to strengthen workplace health. For instance, the public health insurance funds have been required to raise workplace health promotion spending. In addition, safety-at-work regulation has been strengthened. However, there is scope for improvement:

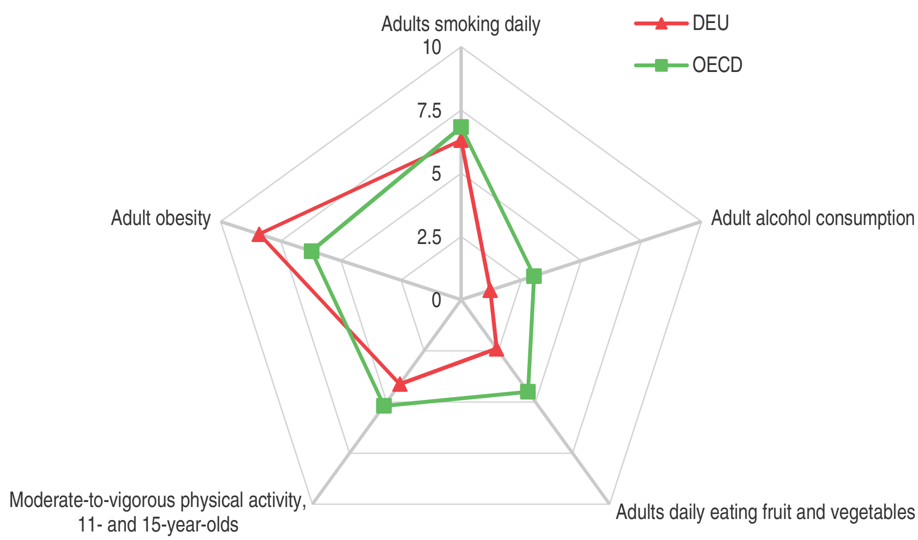
- Financial incentives for enterprises to engage in prevention should be raised. Firms engaging in prevention can be awarded premia and certificates through the accident insurance scheme, which is welcome (IAG, 2010). Some countries, including Switzerland and the Netherlands, introduced experience rating in employer contributions to disability insurance, obliging employers with many former employees on disability benefits to pay higher contributions. In Germany, employers' contributions to the accident insurance depend on the share of former employees on disability benefits, but penalties are small, with notable regional differences (see Box 2.3; OECD, 2010b; Koning, 2005; IAG, 2010). Accident insurance and disability benefits should be financed more via experience rated contributions of employers. This could also help to raise incentives for companies to support stressed staff at risk of mental ill-health and train managers accordingly.
- There is scope to improve monitoring and make collaboration between authorities and employers more effective (Ahlers, 2015; Kohte, 2015; OECD, 2015c). The number of staff of the occupational health and safety inspectorate declined from roughly 4 500 in 1995 to 3 000 in 2013. Regional units could be introduced to support small firms; serve as a platform for an exchange of information among the private sector, researchers, health insurance providers and the government; and monitor progress. This would also help to build up experience by regional authorities to keep the quality of inspections high. These units could be introduced in close collaboration with health insurance providers who already dispose over a regional network.
- Existing regulation may not always be applied to individuals in precarious employment, for instance because their bargaining position is weak, which makes it less likely that they sue their employer; or they are less informed about their rights (Becker and Engel, 2015; *OECD Economic Survey for Germany 2014*). Effective collaboration between authorities and firms is needed to enforce existing law in a way that also accounts for the specific needs of individual companies.

Discouraging unhealthy lifestyles

Unhealthy lifestyles raise the risk of chronical diseases, including a range of cancers, stroke, diabetes, asthma and hypertension, and also contribute to mental ill-health (Sassi et al., 2009; OECD, 2013b; OECD 2015f; OECD, 2015i). The prevalence of unhealthy lifestyles is high in Germany, despite improvements in recent years. Germany scores comparatively low in adult smoking, adult alcohol consumption, diet and physical activity (Figure 2.10).

Figure 2.10. **High adult alcohol consumption impairs the healthiness of lifestyles, 2012 (or nearest years)**

Normalised values from 0 (unhealthy) to 10 (healthy)



Source: OECD (2013b), *Health at a Glance 2013*, OECD and EU (2014), *Health at a Glance: Europe 2014*, and OECD and WHO (2014), *Health at a Glance: Asia/Pacific 2014: Measuring Progress towards Universal Health Coverage.*

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Preventive measures can substantially reduce unhealthy lifestyle choices (Box 2.5; OECD, 2015f; OECD, 2015i; Sassi et al., 2009; Lunn, 2014). Prevention is also a powerful instrument to reduce differences in health outcomes by socio-economic background (Advisory Council on the Assessment of Developments in the Healthcare System, 2012; Advisory Council on the Assessment of Developments in the Healthcare System, 2007). Preventive interventions often entail low costs and are generally found to have a favourable cost-effectiveness ratio (Box 2.5). Many individuals might welcome interventions that make it easier to control their own behaviour and make daily decisions consistent with long-term goals. For instance, the decision framework can be designed such that it makes physical exercise more likely or reduces the probability of tobacco or alcohol consumption, while preserving free choice (Lunn, 2014).

Spending on prevention and public health services is above the OECD average (Figure 2.11) and the German government is planning to further increase it. The German Prevention Act, which entered into force in July 2015 obliges public health insurers to double their spending on prevention to seven euro per insured persons per year. Nonetheless, as argued below, more can be done to promote effective prevention in Germany, notably by reviewing regulation and strengthening research.

Box 2.5. **Effectiveness of preventive interventions – some evidence**

Cost-effectiveness analysis (CEA) is becoming increasingly widespread to assess the impact of prevention programmes on chronic diseases. Unlike cost-benefit analysis, CEA assesses benefits also in non-monetary terms. (Sassi and Hurst, 2008). CEA of preventive measures typically includes quality-adjusted life years, subjective assessments, or simply life years gained. An alternative is cost-minimisation analysis. It assesses the cost of alternative programmes to achieve a pre-determined objective.

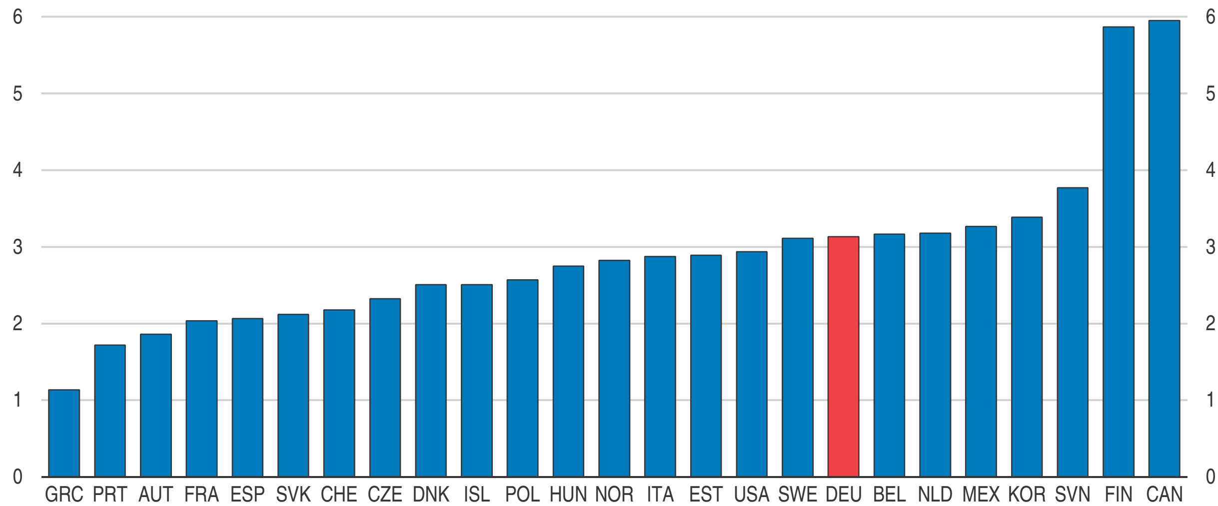
The OECD has conducted comprehensive studies to assess the effectiveness of prevention for alcohol consumption and obesity (OECD, 2015f; Sassi et al., 2009). Preventive measures are generally found to be cost effective.

- *Alcohol consumption:* Policies to increase the price of alcoholic drinks, regulation and enforcement policies, education programmes and health care interventions are all effective instruments to curb alcohol-related harms and improve health, based on OECD analysis on Canada, the Czech Republic and Germany (OECD, 2015f). According to this report, there is scope for Germany to raise prices of alcohol through taxes and restrict advertisement regulation (see main text). These have low costs and substantial yields in terms of reducing health costs and increasing disability-adjusted life years. Individual assistance to reduce or stop excessive consumption of alcohol are also expected to produce the largest reductions in health care expenditures, but also entail high implementation costs (OECD, 2015f).
- *Obesity:* Interventions aimed at tackling obesity generally have favourable cost-effectiveness ratios Sassi et al., 2009). Intervention costs exceed health care cost savings for most interventions, but the interventions also entail non-monetary benefits in terms of life expectancy. Tax and regulatory measures yield cost savings and are moderately effective in raising disability-adjusted life years. Counselling has the strongest positive impact on disability-adjusted life years but also entails comparatively high costs. School based campaigns entail comparatively high costs but yield fairly low benefits in terms of disability-adjusted life years. The use of multiple-intervention strategies may significantly enhance overall impacts while retaining a favourable cost-effectiveness profile. Preventive measures were also generally found to be effective in reducing differences in life expectancy and disability-adjusted life expectancy across socio-economic groups (Sassi et al., 2009).

There is scope to use regulatory measures and price incentives more to reduce alcohol consumption in Germany (see Box 2.5; OECD, 2015f). For instance, taxes on alcohol are lower in Germany than in many OECD countries, especially for beer, although the reduction in harmful drinking triggered by a tax increase is estimated to be particularly high in Germany. Moreover, the introduction of a minimum price for alcohol is estimated to raise prices in the cheaper segment of the alcohol market by 10%. This would reduce health costs and reduce disability adjusted life years, according to OECD analysis (OECD, 2015f). Regulation of advertising alcohol products would yield particularly high benefits in terms of more healthy life-years in Germany, at fairly low cost (OECD, 2015f). Germany has a comparatively low legal minimum age for purchasing alcohol (16, 18 for spirits). There is also scope to reduce tobacco consumption in Germany by raising taxes and introducing stricter regulation, for instance on smoke-free areas in public places (OECD, 2015i).

Figure 2.11. **Spending on prevention and public health services**

Percentage of current health expenditure, 2013



Note: Prevention and public health services include services designed to enhance the health status of the population as distinct from the curative services which repair health dysfunction. Typical services are vaccination campaigns and programmes.
Source: OECD (2016), *OECD Health Statistics* (database).

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Effectively identifying, implementing and monitoring preventive measures to reduce unhealthy lifestyles requires a systematic research effort. Major research gaps continue to prevail (Advisory Council on the Assessment of Developments in the Healthcare System, 2007; Lunn, 2014). This is also reflected in the government's action plan for research on prevention and diet (Federal Ministry of Education and Research, 2013). One reason for research gaps on prevention is that basic research on prevention is a public good, which makes it unattractive for private actors. The government provides up to EUR 125 million for research- and development projects in the period from 2013 to 2016.

Prevention of unhealthy life styles may benefit substantially from behaviourally informed research, including through the use of local policy trials and experiments (Behavioural Insights Team, 2010; Lunn, 2014). The Behavioural Insights Team in the UK, which also acts as an internal consultancy for UK policy makers, is a good example. It works, among others, on public health, with a focus on promoting healthy diets and reducing smoking and alcohol consumption. Similar research efforts to promote healthy lifestyles are undertaken by the French Centre d'Analyse Strategique and the Joint Research Centre (JRC) of the European Commission (Lunn, 2014). The newly established behavioural advisory unit to the German government could play a similar role in providing useful insights on how to promote healthy life styles through behaviourally informed policies.

More efforts are also needed to target preventive measures to individuals with weak socio-economic background, including homeless individuals, unemployed or specific professions associated with elevated health risk (Advisory Council on the Assessment of Developments in the Healthcare System, 2007). Preventive measures tailored to elderly with weak socio-economic background will be of increasing importance in light of demographic ageing. Personal contact with elderly is particularly important because they tend to be less prone to use advanced communication tools (Heinrich Böll Stiftung, 2013). The newly enacted German Prevention Act which focuses on the further development of health-promoting structures is a step toward reducing inequalities in health.

Reforming the financing of health and long-term care

Public health and long-term care are mainly financed via social security charges levied on labour income. This raises the cost of labour and reduces incentives to work. Public health insurance contributions have increased from 13.2% in 1995 to 14.6% in 2015, excluding income specific surcharges which health insurers can levy; long-term care contributions increased from 1% to 2.35%, with a surcharge of 0.25% for childless employees. The projected increase in social spending, mostly due to technological change and some contribution from demographic change, could further raise the labour tax burden, although employers contribution rates have been frozen at 7.3% since 2011 by law. The share of labour taxes in total tax revenues is among the highest in the OECD, with harmful consequences for long term growth (OECD, 2015j).

The federal government is gradually increasing the share of spending financed from general tax revenue, which accounted for 5% of total financing in 2014, up to EUR 14.5 billion in 2017. Continued efforts are needed to make the financing of health insurance less dependent on the taxation of labour income, as also argued in the 2008 *OECD Economic Survey for Germany*. To this end health insurance contributions could be assessed on the basis of all household income and the number of adults who are insured. For example, in Switzerland, adults, rather than families, pay a lump sum fee for compulsory health insurance and low-income households receive a transfer from the government to cover for all or for part of the fees.

The segmentation of health and long-term care insurance into a private sector, which covers about 10% of the population, and a public sector, which covers 90% of the population, hampers equity. Low and middle income earners and individuals with poor health status are generally covered by public health and long-term care insurance, where contributions are independent of health risks and proportional to wage income (up to a ceiling). Employees with a wage income above EUR 56 250 per year can choose private insurance. Allowing high-income earners with low morbidity risk to withdraw from the system makes risk sharing among the remaining social health and long-term care insurance members costlier, resulting in higher contributions (*OECD Economic Survey for Germany 2014*).

Private health insurance providers do not participate in the central health fund. The health fund redistributes insurance contributions of public insurers on the basis of risk-adjusted transfers and thereby reduces selection on the basis of risk. Unlike public providers, private providers calculate insurance premia independent of income but based on individual health risks. Private health insurers compete on the basis of risk selection rather than on the basis of efficiency (*OECD Economic Survey for Germany 2014*). Removing incentives for insurers to compete on risk would improve equity and efficiency, as argued in the 2014 *OECD Economic Survey for Germany*. It should be considered to require all insurance companies, private and public, to provide mandatory health insurance packages to all individuals on equal terms, as public insurance companies already do, including participation in the central health fund.

Improving skills in the context of demographic change

Population aging underscores the need for a continuous acquisition of new skills by workers of all ages and policies that enhance lifelong learning. The decline in the size of young age cohorts entering the labour market has reduced the supply of new skills, while working lives lengthen. At the same time, technological change, including the rapid advance in computer capacity and ICT renders some skills obsolete while increasing the demand for skills that complement the new technologies (Autor et al., 2003). Population aging can thus result in skill shortages that could limit the scope to which Germany can exploit new technologies, thereby constraining productivity growth. Skill shortages can also widen income inequality, given that skilled-biased technological changes are a major driver of the polarisation of household incomes (Brynjolfsson and McAfee, 2011). Steps need to be taken to increase the opportunity for workers to upgrade their skills throughout their career.

57% of 25-64 year-olds have an upper secondary vocational qualification as their highest degree and Germany's vocational education and training (VET) plays a key role in the high employability and the successful integration of young workers in the labour market. However, the employment rates of graduates from upper-secondary and tertiary vocational education and training drop more strongly with age from the peak in their late 30s early 40s, compared to graduates from academic tertiary education (Table 2.2). Also, earnings of vocational training graduates grow considerably less with age than those of academic tertiary education (Table 2.3). Furthermore, the risk of long-term unemployment is shown to be relatively high for older graduates of the vocational education system in the 2014 *OECD Economic Survey of Germany* (OECD, 2014a). These observations suggest that VET graduates are subject to a larger risk of skill obsolescence at older age. This may limit their life-cycle earning and employment prospects, resulting in their relatively early exit from labour market (Hanushek et al., 2011). High specialisation of skills and the low general education content of VET degrees may limit the workers' ability to acquire new skills or switching professions at the later stage of their careers (*OECD Economic Survey of Germany 2010*).

Table 2.2. **Employment rates by educational attainment and age group, 2013**

Age group	Below upper secondary education	Upper secondary education	*Of which:* Vocational education	Vocational tertiary education	Academic tertiary education
25-34	55.4	80.2	85.2	90.9	86.9
35-44	64.7	86.2	86.9	93.5	90.7
45-54	65.7	84.6	84.8	92.6	92.6
55-64	45.8	61.3	61.3	74.6	78.7

Source: *NEAC (National Educational Attainment Classification) database.*

Table 2.3. **Relative earnings of employed adults by educational attainment and age-group, 2012**

Upper secondary education, 25-34 age group = 100

Age group	Below upper secondary education	Upper secondary education[1]	Vocational tertiary education	Academic tertiary education
25-34	84	100	145	149
35-44	97	121	169	225
45-54	115	131	194	240
55-64	105	121	171	274

1. Mostly vocational education.
Source: OECD (2014), *Education at a Glance 2014*, OECD Publishing, Paris.

Cognitive skills such as numerical proficiency are central in developing skills and complement ICT skills in increasing a worker's competency in new jobs and occupations in the digital economy. The numerical proficiency of youth in upper secondary vocational education is significantly lower than the OECD average among youth in vocational education. And only 13% of graduates from upper secondary VET continue into post-secondary education (OECD, 2015l). Furthermore, while youth in Germany are relatively well endowed with ICT skills, they have fewer opportunities of using cognitive and ICT skills at work compared to prime-age workers (the Survey of Adult Skills, 2012). This can limits their chance to develop those skills that define their employability in the later stage of career.

Life-long learning is likely to be particularly important to support life-long employability of vocational education graduates. The participation rate of workers with upper-secondary VET degrees in life-long training has increased from 38% in 2010 to 47% in 2014 (BMBF, 2014). Yet, they are observed to participate relatively little in lifelong learning, either in form of on-the-job training or informal learning, compared to university graduates (Behringer and Schönfeld, 2014). As argued in previous *Economic Surveys*, steps to reduce the variety of VET qualifications could improve flexibility of future VET graduates. The general education content of VET should also be given more weight in examinations. Steps can also be taken to provide life-long learning opportunities in general skills (mathematics, German, foreign languages, computer skills). Policies to encourage life-long learning could include tax incentives (Brenke and Zimmermann, 2005) and should encourage the provision of better programmes. For instance, Spain recently opened provision of publicly funded training programmes to competition while strengthening the quality control.

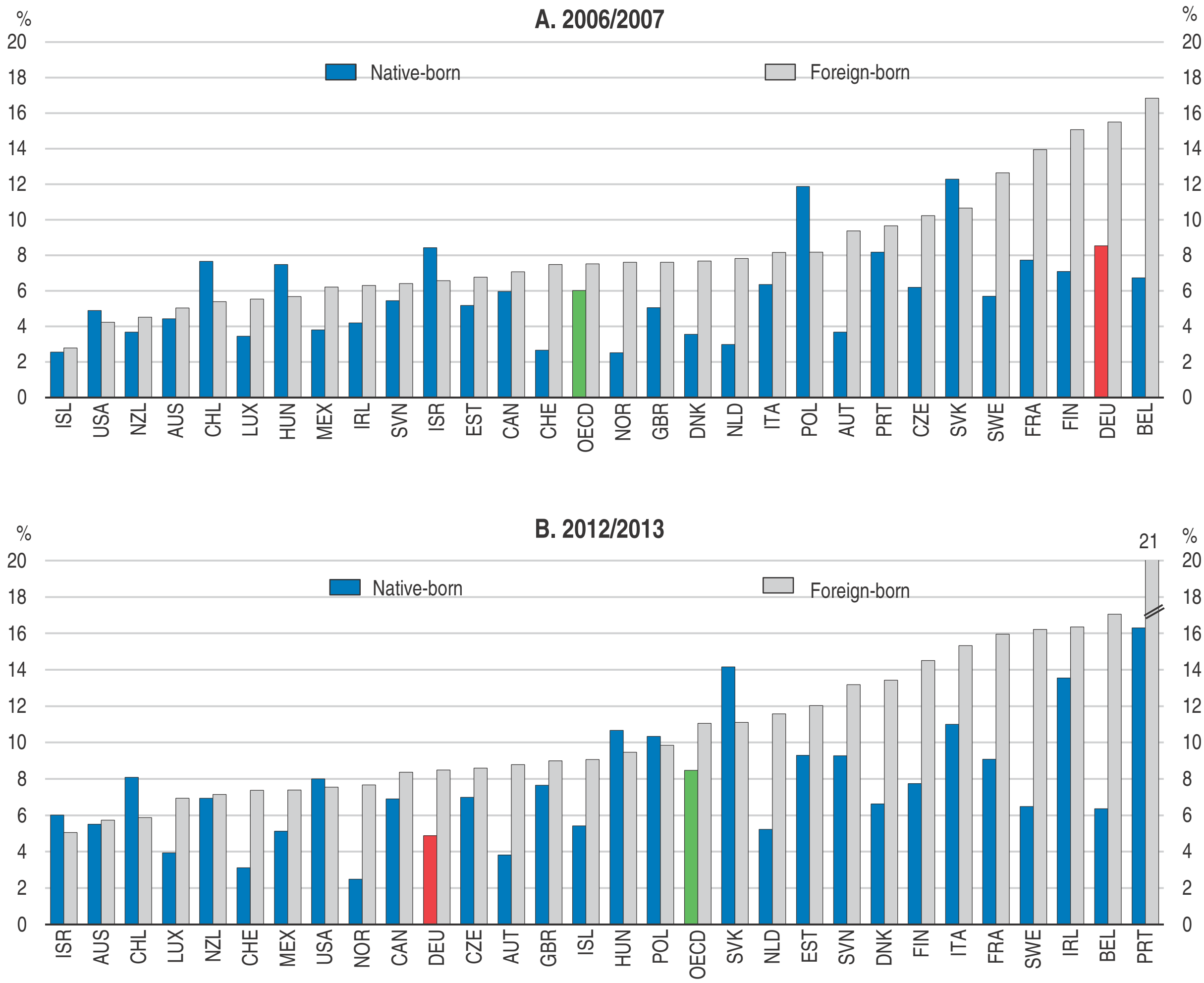
A large inflow of refugees has raised immigration to historically high levels

Germany has received substantial immigration flows in the past 25 years, from within the European Union as well as from outside. In 2014 approximately 20% of the population had a migration background (BMI, 2016). Germany has increased its efforts to attract skilled immigrants, for example by introducing special visas for high skilled workers and workers with qualifications in short supply. Germany has also introduced a number of policies to improve integration in the labour market. Migrants raised in Germany can apply for dual citizenship and measures were implemented to certify foreign qualifications. Labour market and educational outcomes for migrants have improved. The unemployment rates of immigrants decreased in absolute terms and in comparison to native Germans (Figure 2.12). Education outcomes in compulsory education (PISA results) also improved (Figure 2.13). Nevertheless the gap between migrants and natives in unemployment and education remains larger than in best performing OECD countries, which shows scope for improvement in integration (OECD/European Union, 2015; OECD, 2013a).

Immigration has recently accelerated, most recently driven by humanitarian migrants seeking asylum (Figure 2.14). Most humanitarian migrants are from the Middle East, the West-Balkans and East Africa (BAMF 2015). The number of asylum requests reached 440 000 in 2015. However, due to the large inflow and limited administrative capacities, there is a significant time lag between arrival and the application for asylum. The total number of humanitarian immigrants in 2015 seeking asylum is probably around 1 million (1.2% of the population; BAMF, 2016).

Figure 2.12. **The unemployment rate has fallen, especially for immigrants**

Percentage of labour force (15-64 years old)



Source: OECD (2015), *Indicators of Immigrant Integration 2015: Settling In.*

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Of the asylum seekers in 2014 more than half were 25 years old or younger. 67% are male (BAMF, 2014).The education level of most refugees appears to be low, although information on the qualification structure of the refugees is still scarce (Hinte et al., 2015; IAB, 2015; SVR, 2015).

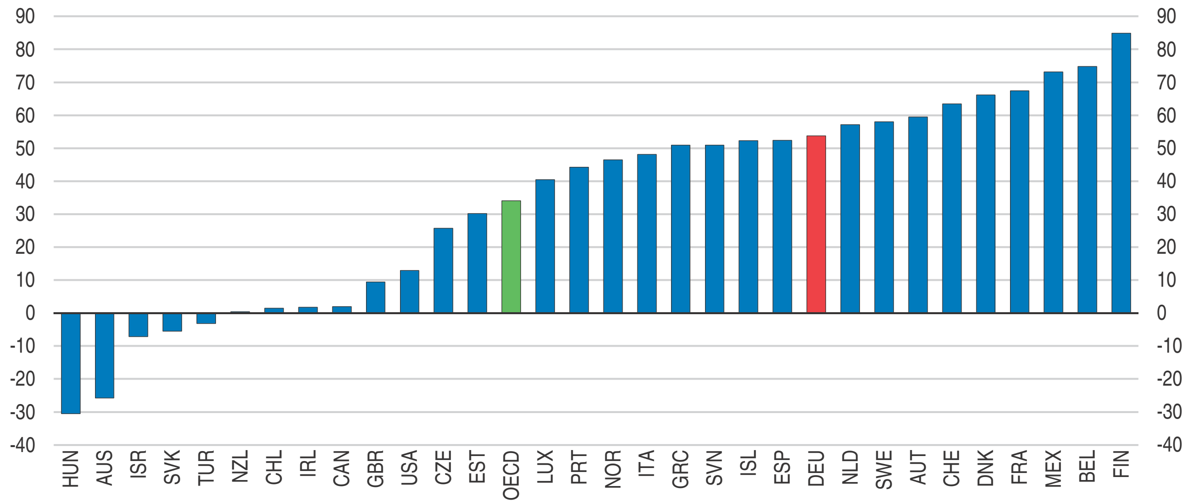
The following sections will discuss evidence on the economic impact of immigration and policies to improve labour market performance of immigrants, both in the short term, to ensure rapid progress with the integration of the large number of humanitarian immigrants, and in the medium and long term.

Strong integration policies have large benefits for immigrants and the established population

The economic impact of the refugee inflow are highly debated, but there seems to be a consensus that benefits increase substantially with successful integration (OECD, 2015h; SVR, 2015; Gemeinschaftsdiagnose, 2015; Fratzscher und Juncker, 2015; Bonin, 2015). Research shows that immigration flows have no or only weak short-term negative labour

Figure 2.13. **The difference in learning outcomes between immigrant and non-immigrant youth is substantial**

Difference in mathematics score before accounting for socio-economic status



Source: OECD (2013), *PISA 2012 Results: Excellence through Equity (Volume II): Giving Every Student the Chance to Succeed.*

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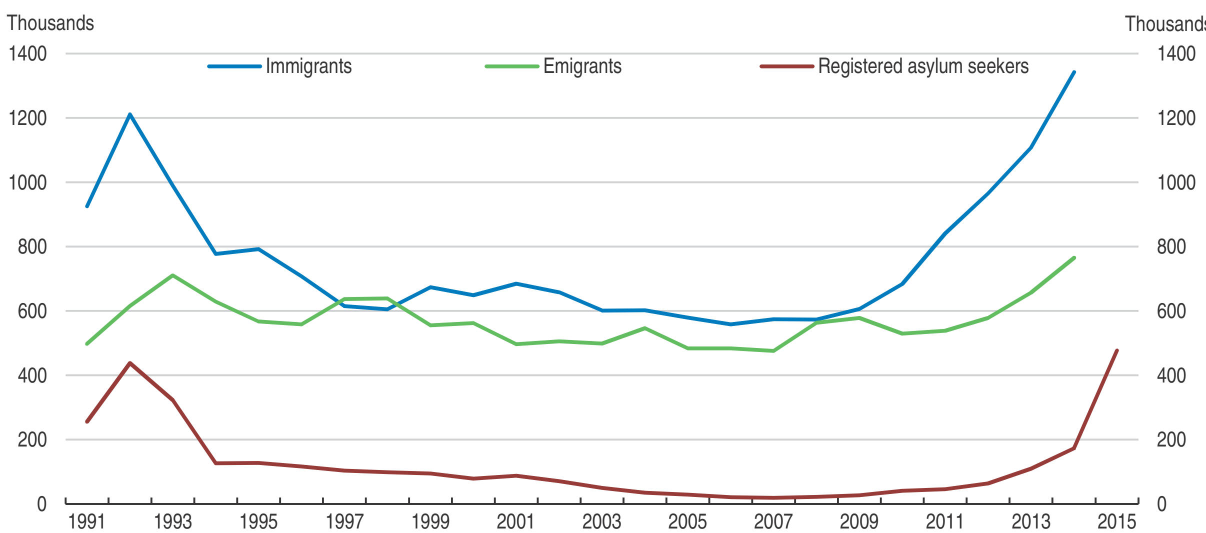
Figure 2.14. **The number of immigrants and registered asylum seekers has risen**



Source: Federal Statistical Office and Federal Office for Migration and Refugees.

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market effects among the native population, although the low-skilled population is at highest risk. Indeed, migrants tend to improve the productivity and wages of more skilled workers (Glitz, 2012; IAB, 2015; Jean and Jimenez, 2007, Okkerse, 2008). A recent study shows that inflows of low-skilled refugees in Denmark led to an upskilling of native low-skilled, which prevented negative wage or employment effects (Foged and Peri, forthcoming).

Sufficient up-skilling opportunities are needed for vulnerable native workers, notably the unskilled and the long-term unemployed, as well as for immigrants. Therefore, active labour market policies should be intensified and combined with incentives to acquire qualifications, as argued in the *Economic Survey 2014*. The federal government increased its budget for active labour market policies for 2016 by 3.8% based on OECD statistics. In view of the large number of newly arrived refugees this increase seems small to provide adequate support for the long-term unemployed and the large number of newly arrived refugees. Sufficient public funds should be ensured to improve employability on currently disadvantaged groups on the margin of the labour market as well as the future successful asylum seekers.

Many refugees have no documentation certifying their qualifications and therefore need a quick but precise assessment of skills. In some professions such assessments by practitioners have already been introduced. If a migrant is not granted recognition in the form of a degree or allowance to perform the job for which they have skills, there should be affordable training to provide the missing skills, ideally on the job (OECD, 2014c). In order to avoid drop-outs from qualification programmes migrants need to receive advice to raise their awareness of the benefits of the additional qualification (OECD, 2016). Migrants who have acquired qualifications in their country of origin need to be able to have them recognised in Germany. The recognition act of 2012 allows for standardised recognition of professional qualifications, but the regulations differ by *Land*. Furthermore the recognition process is costly for applicants (Bundesministerium für Bildung und Forschung, 2015). Moreover, migrants are particularly likely to be unaware of the value of certified skills. For some migrants with lower qualification in unregulated jobs, as compared to for examples doctors, the immediate revenue of a certification might be lower, but a certification would open opportunities to continued education. Therefore especially these migrants need funding for the recognition of their qualifications as well as for possible additional training if the qualification is only recognised in part. The Employment Agency can fund the recognition procedure for refugees under certain conditions. Training measures are for example provided by the nationwide Network "Integration through Qualification (IQ)". There also are regional financial assistance programmes. However, a broad coverage of funding should be ensured.

There are a large number of measures and initiatives to help integrate asylum seekers and refugees that have been implemented by various public or private actors. There is no overview of programmes and measures. A transparent collection and presentation of these measures on the Internet could help migrants make the best use of the offered support according to their specific needs. It could also be used to assess coverage and evaluation to show best practices or benchmarking.

Newly arriving asylum seekers are currently distributed among the *Länder* according to a formula that takes into account population and income levels. Each *Land* distributes asylum seekers among municipalities according to their discretion. They have often been placed according to available housing, reflecting the large number of refugees. However, evidence from Sweden and Denmark shows that housing refugees where local labour market conditions are the most favourable improves employment rates and wages (OECD, 2016). Furthermore specific skills of a refugee for which there is a higher demand in certain regions, could be taken into account in the decision where to settle an asylum seeker (OECD, 2015b).

Germany has changed many regulations recently to improve access of asylum seekers to the labour market. The duration of the asylum process between the formal request for asylum and the decision on this request is short in OECD comparison and the government aims at reducing the average duration of the asylum seeking process further from currently five months. However, due to the large number of asylum seekers there is a time lag between the first registration when entering the country and the formal request for asylum. The asylum seekers can enter the labour market three months after the formal request for asylum. Highly qualified asylum seekers and those with qualifications for jobs with skill shortages can then apply for jobs without further restrictions. Asylum seekers pursuing a vocational training do not require an approval of the Federal Employment Agency. All other asylum seekers can requests for labour market entrance, but can only be hired if there is no domestic worker available for the job and if the conditions of employment are equivalent with that of domestic employees. 15 months after the request for asylum all asylum seekers can be hired without restrictions. Between January and July 2015, 30% of the requests for labour market entrance were denied, mostly because domestic workers had priority (Deutscher Bundestag, 2015b). Employment in a temporary work agency is open after 3 months for the highly qualified, but is subject to a waiting period of 15 months for other asylum seekers. Remaining out of employment for too long can stigmatise workers and this scarring may lead to persistent unemployment and over-qualification (OECD, 2014c). Indeed, the probability of scarring is much higher for migrants than for natives (Immervoll et al., 2015; König, 2013). In order to reduce scarring labour market access of asylum seekers who have high prospects of staying should be facilitated earlier (OECD, 2016). The labour market testing for this group of asylum seekers could be dropped, allowing them to enter temporary work generally after 3 months. At the same time precautions should be taken to prevent negative consequences for currently long term unemployed.

Reducing barriers of entry

Regulation which keeps labour and product markets open to entry can improve integration (Jean et al., 2007). In Germany employment in the public sector is significantly lower for immigrants. A higher share could improve their visibility in everyday life and serve as a role model for the private sector, which, as experience across OECD countries shows, improves integration outcomes in the medium- and long-term (OECD, 2014c). Evidence shows that strong equal employment policies, such as employment targets, diversity recruitment plans or affirmative action can improve the employment rates, including for migrants from lower-income origin countries (OECD, 2011a; 2014c). This also improves the representation of the needs of immigrants in the decision making processes of the public administration (OECD, 2015d). Changes in the civil service law to ease entrance restrictions for non-Europeans could support this.

Foreigners are more likely to create a new business than the established population. 40% of new enterprises are started by foreigners. Measures to facilitate business creation would also help. There are still a number of restrictive regulations, such as in some service occupations and crafts, which could hold back self-employment (Chapter 1). Complex and long procedures set a particularly high burden for immigrants, who are less knowledgeable of German bureaucracy (OECD, 2014d).

Improving integration through education

Germany has recently improved access to language and integration courses for asylum seekers with a high probability to gain the status of a refugee. However, 25% of migrants who were eligible for an integration course before the recent improvements did not participate, partly because of the financial burden (Deutscher Bundestag, 2015a).

Language courses should be offered comprehensively and as early as possible (OECD, 2014c). Participation fees, should be eliminated. A fast assessment of who is likely to stay in Germany would reinforce incentives to invest in education, both by private and public suppliers of services and the refugees themselves (OECD, 2016).

Migrant children under 3 years are less than half as likely to enrol in formal child care as children of native families (Beauftragte der Bundesregierung für Migration, Flüchtlinge und Integration, 2014). However, young children with a migrant background especially benefit from early childhood education and care, because they can prevent gaps in cognitive, linguistic and social abilities. Such gaps may otherwise appear due to the limited help immigrant parents can provide to their children (Schneeweis, 2011; OECD, 2015e). Therefore, early childcare needs to include educational aspects, including language training, as soon as possible. Since refugees may not be aware of the benefits of early childhood education and are less likely to be employed, they should be supported in order to strengthen awareness and improve incentives to send their children to child care (Beauftragte der Bundesregierung für Migration, Flüchtlinge und Integration, 2014; OECD, 2015e; OECD, 2014c). Experience, for example from the United Kingdom, shows that such steps also often encourage parents to participate in a language course, training or in the labour market.

Some refugees aim to bring their families to Germany by family reunification. Evidence shows that a later arrival in the host country increases the performance gap in education, especially in reading skills, and the probability of early school leaving. This late arrival penalty seems more pronounced the larger the distance between the native and host country with respect to language and economic development (Heath and Kilpi-Jakonen, 2012; Corak, 2011; OECD, 2013c). Since young migrant children benefit from an early start (OECD, 2015e) reunification of families should be done quickly and with priority for families with young children (OECD, 2014c; OECD, 2016).

Efforts are needed to improve education prospects for all children with difficult socio-economic background. Early tracking has negative effects on the mobility in the education system and disadvantages especially students with a low socio-economic background, including immigration background (Schleicher, 2014; OECD, 2015e). For newly arriving immigrant students limited mobility through early tracking can be even more harmful as a first assessment of skill may not be correctly done due to lacking language competencies (OECD, 2015e; OECD, 2014a). It is important that students attend mainstream classes as soon as possible after arrival rather than segregating them, as this has been shown to improve their education outcomes. To this end, all teachers should be trained to accommodate migrant children's educational needs (OECD, 2015e) and adequate support should be available for individual counselling. For adolescent and young adult refugees language training during school holidays have proven the most effective (OECD, 2015e). Schools and municipalities should work closely together with the parents and help them support their children (Beauftragte der Bundesregierung für Migration, Flüchtlinge und Integration 2014, OECD, 2015e, Schleicher 2014).

Foreign-born 25 to 64 year olds participate much less in education and training than the native population (OECD/European Union, 2015). Adults with a low socio-economic background should be encouraged to participate in continuous training. Information about training offers should be further improved and financial support programmes monitored (OECD, 2014a). Migrants special needs need to be taken into account such as more time for questions due to language difficulties (Bethscheider, 2008).

Recommendations to raise well-being in Germany's ageing society

Reforming the public pension system to lengthen working lives

- Index the legal pension age to life expectancy.
- Raise the pension premium for starting to draw old-age pensions later in life and do not reduce pensions for old-age pensioners who work. Allow working old-age pensioners to accrue benefits on social security contributions employers pay on their behalf.
- Strengthen insurance against disability, for example by making it easier to claim legitimate private disability insurance benefits.
- Remove barriers to the portability of civil servant pensions.

Improving the private pension system

- Enroll all individuals in occupational pensions by default, allowing them to opt out.
- Strengthen supervision of direct pension commitments of employers. Make contributions to the risk-pooling scheme dependent on risk indicators.
- Reduce operating costs of subsidised, individual pension plans by improving comparability among providers.

Improving health and education outcomes at high age

- Promote workplace health by improving monitoring and the collaboration between authorities and employers.
- Strengthen enforcement of workplace regulation for workers on non-standard contracts.
- Strengthen experience-rating in employer contributions to work accident and disability insurance.
- Encourage healthy life-styles by raising taxes on alcohol and tobacco and reviewing regulation.
- Broaden the contribution base for the funding of health and long term care beyond wage income to all household income.

Improving life-long learning

- Strengthen life-long learning opportunities especially to provide general skills for graduates of vocational education.

Improving the integration of immigrants

- Improve training and the recognition of immigrants' skills.
- Ease labour market testing requirements for asylum seekers who are judged likely to stay and include them in active labour market programmes. Ease restrictions on their employment in temporary work agencies.
- Decide quickly who will be allowed to stay and reunite families quickly, especially those with young children.
- Take stock of all available integration measures and evaluate their effectiveness.
- Improve access of immigrants to public sector jobs.
- Integrate migrant children in mainstream schooling while providing specific language support.
- Provide financial incentives and advice to parents to encourage refugees to make use of childcare and early childhood education.

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