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Table of contents

Thematic chapters

Tables

Figures

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 Hungary were reviewed by the Committee on 30 March 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 13th April 2016.

The Secretariat's draft report was prepared for the Committee by Jens Høj and Gabriel Machlica from the OECD secretariat, and Edit Huszár, seconded from the Hungarian Ministry of the National Economy, under the supervision of Pierre Beynet. Statistical research was provided by Taejin Park with general administrative support provided by Anthony Bolton. The previous Survey *of Hungary was issued in January 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 THE HUNGARY, 2014

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

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	9.8		Population density per km^2	105.8	(34.9)
Under 15 (%)	14.4	(18.1)	Life expectancy (years, 2013)	75.7	(80.5)
Over 65 (%)	17.6	(16.0)	Men	72.2	(77.8)
Foreign-born (%, 2013)	4.5		Women	79.1	(83.1)
Latest 5-year average growth (%)	-0.4	(0.6)	Latest general election	April 2014	

ECONOMY

Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	139.4		Primary sector	4.5	(2.5)
In current prices (billion HUF)	32 373		Industry including construction	31.2	(26.9)
Latest 5-year average real growth (%)	1.3	(1.9)	Services	64.4	(70.6)
Per capita (000 USD PPP)	24.9	(39.0)			

GENERAL GOVERNMENT

Per cent of GDP

Expenditure	49.5	(42.3)	Gross financial debt[b]	99.0	(114.4)
Revenue	47.3	(38.5)	Net financial debt[b]	71.3	(72.6)

EXTERNAL ACCOUNTS

Exchange rate (HUF per USD)	232.2		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	132.0		Machinery and transport equipment	54.1	
In per cent of GDP			Manufactured goods	10.5	
Exports of goods and services	88.7	(53.8)	Chemicals and related products, n.e.s.	10.4	
Imports of goods and services	81.5	(49.8)	Main imports (% of total merchandise imports)		
Current account balance	2.3	(0.0)	Machinery and transport equipment	44.5	
Net international investment position	-65.2		Manufactured goods	13.6	
			Mineral fuels, lubricants and related materials	12.1	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate for 15-64 year-olds (%)	61.8	(65.7)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	7.7	(7.3)
Men	67.8	(73.6)	Youth (age 15-24, %)	20.4	(15.0)
Women	55.9	(57.9)	Long-term unemployed (1 year and over, %)	3.8	(2.5)
Participation rate for 15-64 year-olds (%)	67.0	(71.2)	Tertiary educational attainment 25-64 year-olds (%, 2013)	22.5	(33.3)
Average hours worked per year	1 858	(1 770)	Gross domestic expenditure on R&D (% of GDP, 2013)	1.4	(2.4)

ENVIRONMENT

Total primary energy supply per capita (toe)	2.3	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2013)	4.0	(9.6)
Renewables (%)	8.5	(9.1)	Water abstractions per capita (1 000 m^3,2012)	0.6	
Fine particulate matter concentration ($PM_{2.5}$, µg/m^3, 2013)	15.8	(13.8)	Municipal waste per capita (tonnes, 2013)	0.4	(0.5)

SOCIETY

Income inequality (Gini coefficient)[c]	0.288	(0.308)	Education outcomes (PISA score, 2012)		
Relative poverty rate (%)[c]	10.1	(10.9)	Reading	488	(496)
Median equivalised household income (000 USD PPP, 2010)	9.3	(20.4)	Mathematics	477	(494)
Public and private spending (% of GDP)			Science	494	(501)
Health care, current expenditure (2013)	7.4	(8.9)	Share of women in parliament (%, November 2015)	10.1	(27.8)
Pensions (2011)	10.5	(8.7)	Net official development assistance (% of GNI)	0.11	(0.36)
Education (primary, secondary, post sec. non tertiary, 2012)	2.6	(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.

Acronyms

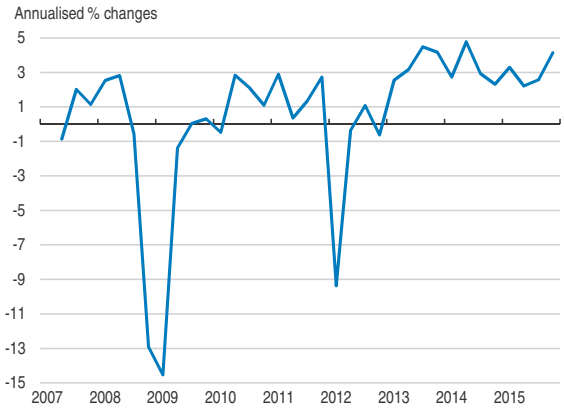
ALMP	Active labour market policies
EBRD	European Bank for Reconstruction and Development
EEA	European Economic Area
FDI	Foreign direct investment
FGS	Funding for Growth Scheme
GDP	Gross domestic product
GNI	gross national income
GSP	Growth Supporting Programme
GVC	Global value chain
ICT	Information and communications technology
MARK	Hungarian Restructuring and Debt Management Ltd
MFB	Hungarian Development Bank
MVM	Electricity company
MVNO	Mobile virtual network operator
OLAF	European Commission's Anti-Fraud Investigation Office
R&D	Research and Development
RIA	Regulatory Impact Assessments
SME	Small and medium enterprise
VAT	Value added tax
VET	vocational education and training

Executive summary

- *Strong economic growth has returned*
- *Investment has started to pick up*
- *Low-skilled have weak labour market outcomes*

Strong economic growth has returned

GDP growth



Source: OECD (2016), *OECD Analytical Database.*
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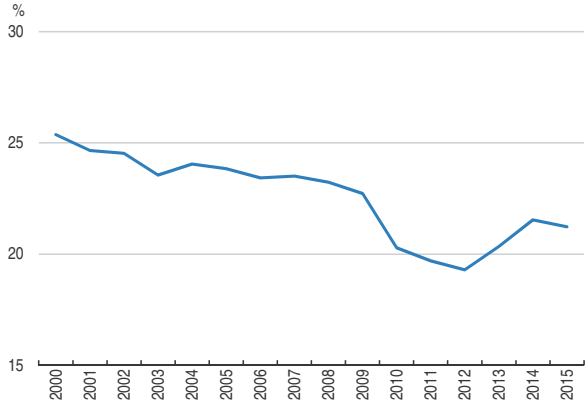
Macroeconomic imbalances are being corrected with the public debt-to-GDP ratio falling and the current account moving to a surplus. Financial vulnerabilities have been reduced, but non-performing loans still hamper bank lending. Growth has been strong since 2012. However, income levels are still well below those in more advanced economies and as economic slack disappears, sustaining growth will require structural reforms to strengthen the business sector and upgrade skills.

Investment has started to pick up

Total investment as a share of GDP



Source: OECD (2016), *OECD Analytical Database.*
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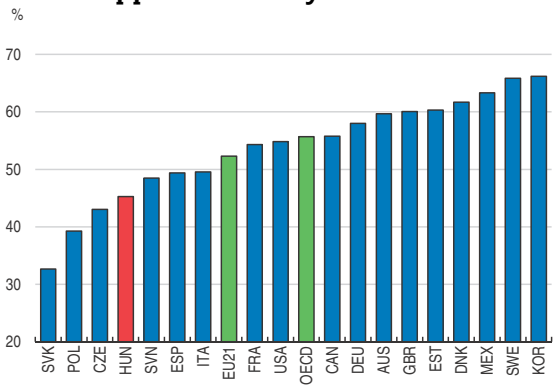
A key driver behind faster growth is more rapid business capital accumulation. Inward FDI and EU structural funds are strong investment drivers. On the other hand, domestic business investment, particularly by SMEs, is held back by a frequently changing regulatory environment and entry barriers in network industries. Reforms on these fronts could increase the integration of domestic firms, which are overwhelmingly SMEs, into global value chains.

Low-skilled have weak labour market outcomes

Employment rates of people with below upper-secondary education



Source: OECD (2015), *Education at a Glance 2015.*
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Skill requirements in the labour market are changing rapidly as the economy becomes increasingly knowledge based. The education system has reacted slowly, leaving many graduates without needed skills and unprepared to apply knowledge in novel and unfamiliar settings. Training in public work schemes has not been effective enough in generating relevant labour market skills. Women's skills are underutilised, as many do not participate in the labour market.

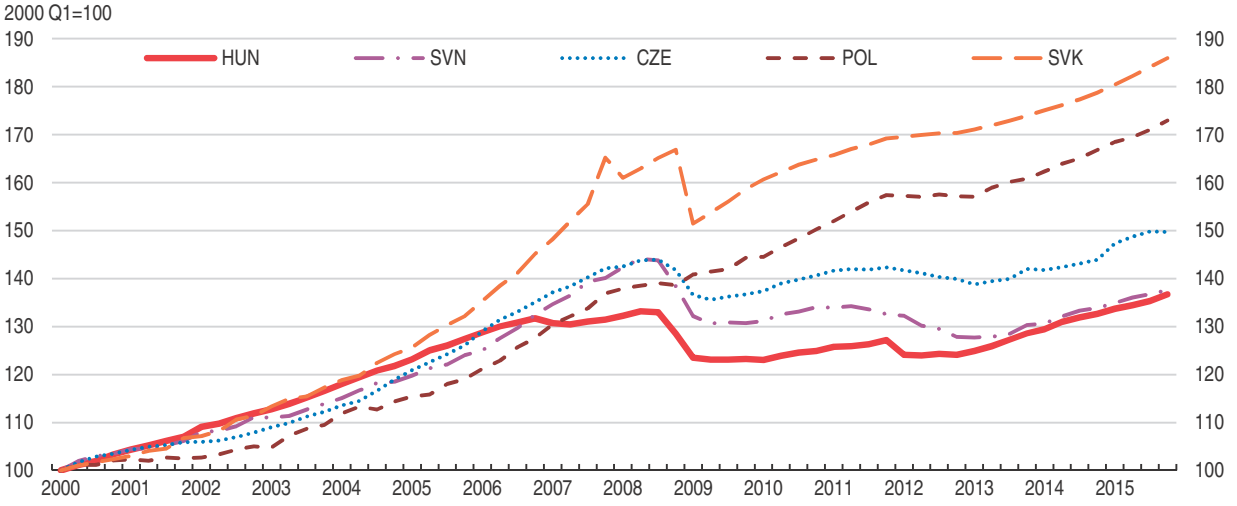
MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic policies	
Public debt is still high, considering the openness and vulnerabilities of the economy. Public spending is high, especially given Hungary's income level.	Gradually reduce spending over the medium-term to further lower the structural deficit. Monitor and limit contingent public liabilities in the electricity sector.
Non-performing loans are high and credit growth remains subdued, particularly to domestic SMEs.	Implement a strategy for the asset management company to step-up offloading of non-performing assets. Expand capital surcharges on non-performing loans detained by banks beyond a certain period. Bolster competition in the banking sector by selling stakes in state-owned banks.
The tax system still relies a lot on labour taxation, which is distortive.	Step up the fight against VAT fraud. Rely more on non-distortive consumption taxes while monitoring the income distribution consequences.
Bolstering private investment and the business environment	
Frequent changes in the regulatory framework undermine investment incentives.	Improve transparency, stability and formulation of regulatory policies. Continue efforts to cut red tape and make better use of regulatory impact assessments.
The effectiveness of the competition framework is reduced by exemptions to the application of competition policy and entry barriers in network industries.	Remove sector exemptions to apply the modern competition policy framework as widely as possible. Systematically review mergers that might reduce competition and only allow competition limiting mergers on clear public interest grounds. Secure non-discriminatory third party access in network sectors.
Enhancing skills to boost growth	
Public work schemes aim at increasing labour market inclusiveness. However, few participants find jobs on the primary labour market.	Increase the focus on training and identify programmes that get workers into the primary labour market.
Women with younger children have low labour market participation.	Expand early childhood care. Reduce the effective length of parental leave and provide incentives for paternity leave.
Changing technologies are increasingly making workers' skills obsolete.	Creating a tool set, including individual learning accounts, to promote lifelong learning.
Graduates from the vocational training programmes face high unemployment.	Assess recent reforms and continue integrating the vocational training programmes into secondary vocational schools.
Enrolment in tertiary education has increased sharply over the past decades, while graduation rates remain low and labour market outcomes are uneven.	Increase funding and expand means-tested support for disadvantaged students. Provide incentives to tertiary institutions to better respond to labour market needs.

Assessment and recommendations

Resuming inclusive growth

Prior to the 2008 global crisis, the Hungarian economy was performing well compared with other countries in the region, partly due to unsustainable external lending, which led to macroeconomic imbalances (Figure 1). Subsequently growth was slower than in most other countries in the region, before accelerating strongly more recently. Moreover, imbalances have been reduced, notably the current account deficit was turned into a surplus and exposure to foreign currency denominated loans was sharply reduced. Nonetheless, the level of real GDP only surpassed its pre-crisis level in 2015. In addition, there has been no significant income convergence vis-a-vis the five richest European countries since the crisis, leaving Hungarian per capita incomes among the lowest in the OECD (Figure 2).

Figure 1. **Growth has recovered recently**



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

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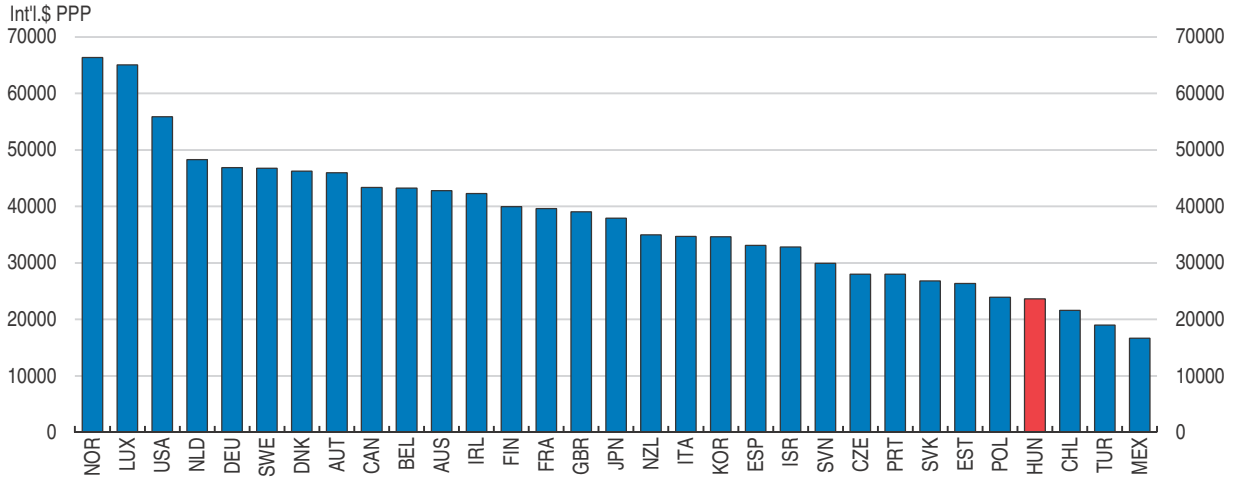
Since 2012, the economy has expanded strongly on the back of stronger exports and macroeconomic policy stimulus (Figure 3, Table 1). The associated strong job creation has moved employment to its highest level in two decades and the unemployment rate has been cut by more than a third, in part because of an expansion of public works schemes. In addition to achieving a current account surplus, the public debt-to-GDP ratio has been declining since 2011 (Figure 4). The major potential financial vulnerability posed by a sizeable stock of household loans (notably mortgages) that had been denominated in foreign currency has been eliminated through a new law that required banks to convert those loans to domestic currency. At the same time, the share of foreign currency loans in public debt has been markedly reduced to one-third.

Figure 2. **Income levels are still low**

GNI per capita, 2014



Source: World Bank, *International Comparison Program Database*.

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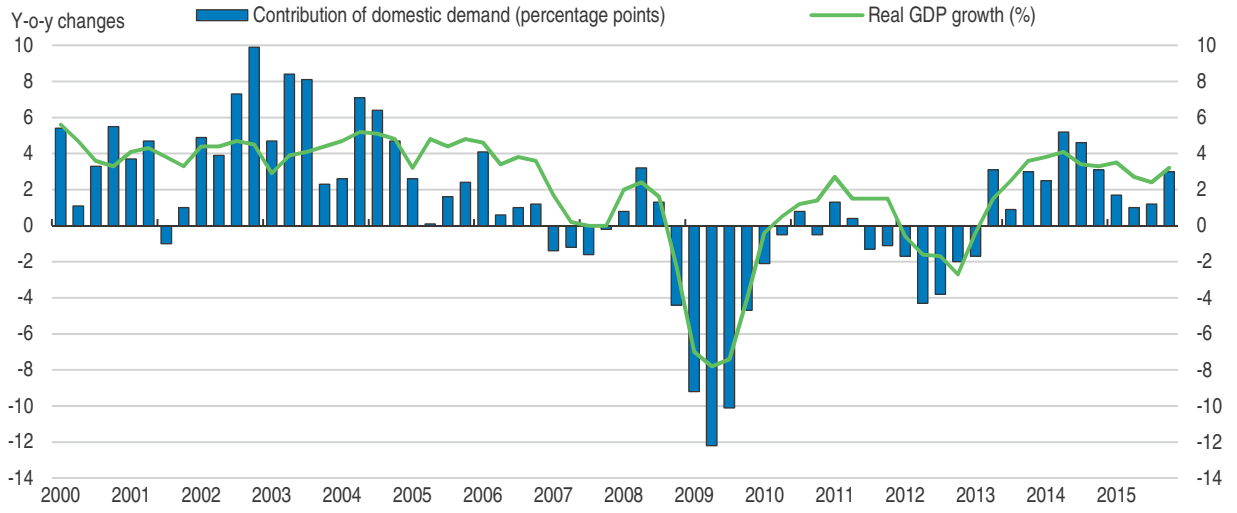
Figure 3. **Growth has resumed**

GDP growth and domestic demand



Source: Hungarian Central Statistical Office (2016), *National Accounts Database*.

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Compared with the OECD average, Hungary is performing well on many aspects of well-being, particularly work-life balance, but also in terms of personal security and environmental quality (Figure 5, Panel A). Despite having a relatively good income distribution, particularly in terms of addressing poverty through the tax and transfer system (Figure 5, Panel B), the areas where Hungary is doing relatively poorly are linked to low incomes, a lack of affordable quality housing, low health status and low self-reported well-being. This picture is broadly consistent with the UN Sustainable Development Goals for Hungary (United Nations, 2015).

Table 1. **Macroeconomic indicators and projections**

Annual percentage change, volume (2005 prices)

	2012 Current prices (billion HUF)	2013	2014	2015	2016 (projected)	2017 (projected)
GDP	**28 744**	2.0	3.6	2.9	2.5	3.0
Private consumption	**15 363**	0.3	1.8	3.0	3.7	3.7
Government consumption	**5 756**	2.4	2.9	0.6	0.2	0.6
Gross fixed capital formation	**5 548**	7.3	11.2	1.9	-1.8	6.9
Housing	**581**	-27.0	16.8	-4.2	10.6	18.5
Final domestic demand	**26 666**	2.2	4.1	2.2	1.6	3.7
Stockbuilding[1]	**154**	-0.6	0.1	-0.3	-0.0	0.0
Total domestic demand	**26 820**	1.6	4.2	1.9	1.6	3.7
Exports of goods and services	**24 855**	6.4	7.6	8.4	4.6	5.6
Imports of goods and services	**22 931**	6.3	8.5	7.8	4.1	6.7
Net exports[1]	**1 924**	0.5	-0.2	1.2	0.8	-0.4
Other indicators (growth rates, unless specified)						
Potential GDP	. .	1.1	1.5	1.8	1.8	1.9
Output gap[2]	. .	-3.4	-1.4	-0.3	0.4	1.5
Employment	. .	1.7	5.3	2.7	2.2	1.6
Unemployment rate	. .	10.1	7.7	6.8	5.8	5.3
GDP deflator	. .	3.3	3.2	1.7	1.7	2.3
Consumer price index	. .	1.7	-0.2	-0.1	0.7	1.7
Core consumer prices	. .	3.8	2.3	2.0	1.7	2.0
Household saving ratio, net[3]	. .	3.9	4.9	5.9	6.5	6.5
Current account balance[4]	. .	4.0	2.0	4.4	5.4	5.1
General government fiscal balance[4]	. .	-2.6	-2.3	-2.0	-1.9	-2.5
Underlying government fiscal balance[2]	. .	-0.8	-1.9	-2.2	-2.8	-3.3
Underlying government primary fiscal balance[2]	. .	3.3	1.8	1.2	0.5	-0.1
Gross government debt (SNA definition)[4]	. .	96.1	99.0	97.7	96.8	95.9
Gross government debt (Maastricht definition)[4]	. .	76.2	75.7	74.9	74.0	73.1
General government net debt[4]	. .	70.0	71.3	69.0	68.1	67.2
Three-month money market rate, average	. .	4.2	2.2	1.2	1.1	1.4
Ten-year government bond yield, average	. .	5.9	4.8	3.4	3.3	3.7

1. Contributions to changes in real GDP, actual amount in the first column.
2. As a percentage of potential GDP.
3. As a percentage of household disposable income.
4. As a percentage of GDP.

Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections Database*.

Against this backdrop, the main messages of this *Survey* are:

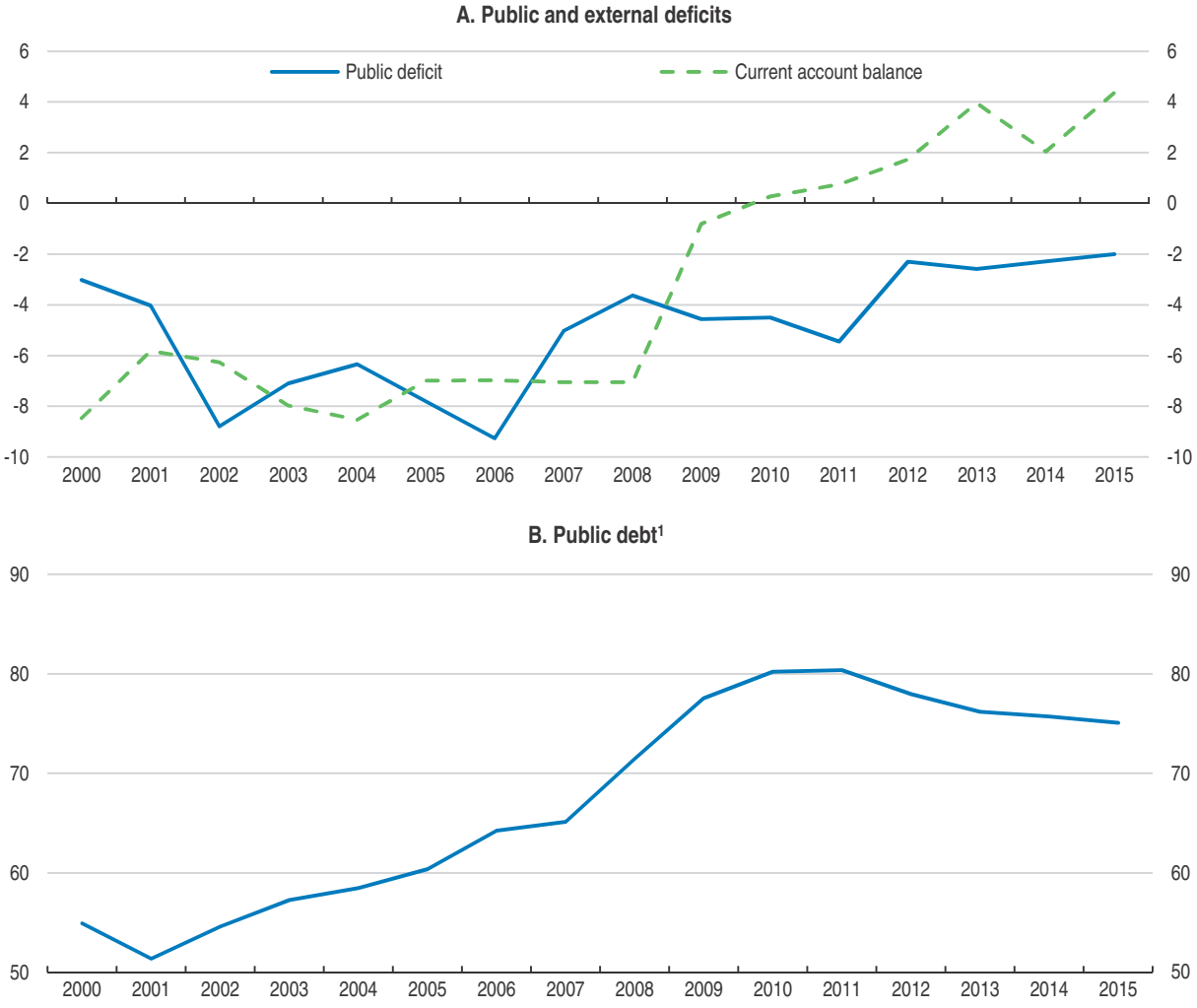
- Strengthening medium-term growth with an emphasis on securing inclusiveness is key to sustainably raising living standards and well-being.
- Raising business sector investment, particularly among domestic small and medium-sized enterprises, would raise incomes and well-being by raising productivity (Chapter 1).
- Improving skill formation and better matching of skills to job requirements would also raise productivity and would make growth more inclusive by ensuring that more people benefit (Chapter 2).

The recovery is broadening

The recovery is being supported by domestic demand and, more recently, a sharp improvement in exports. Domestic demand growth has been underpinned by monetary

Figure 4. **Macroeconomic imbalances are falling**

As a percentage of GDP



1. Maastricht definition.

Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections Database*.

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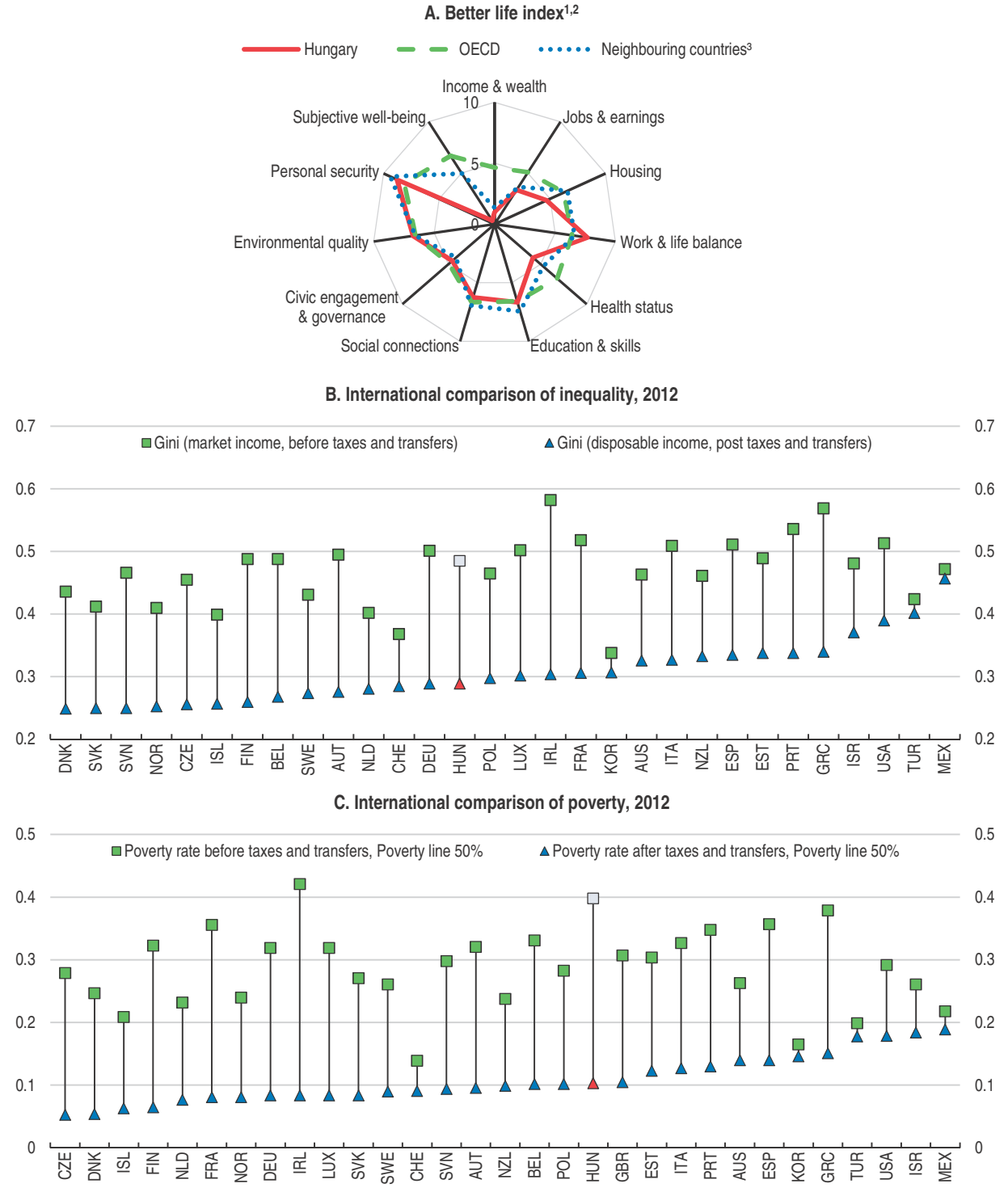
easing, which started in 2012 (Figure 6). This also led to a depreciation of the currency that improved exports. Non-orthodox monetary policy in the form of the Funding for Growth Scheme (FGS), by which the central bank directed liquidity to the funding of SMEs (see below), has strengthened firms' balance sheets and, to a lesser extent, business sector investment. Fiscal policy has also been expansionary since 2013, but the fiscal stance is set to become broadly neutral in 2016 before becoming expansive in 2017. Nonetheless, this suffices to maintain the downward trend of the public debt-to-GDP ratio.

The remarkable turnaround in the current account balance after 2010 reflects improving external cost competitiveness as the effects of rising unit labour costs were more than offset by a weaker currency (Figure 7, Panels B and C). Exporters started to gain market shares (Figure 7, Panel A) and the rising trade surplus sharply strengthened the current account balance – a development reinforced by a slowly narrowing deficit on the investment income balance. Contributing factors were strong inward FDI in the automotive sector, which bolstered car exports after 2013.

Figure 5. **Well-being indicators are mixed**



1. Each well-being dimension is measured using one to three indications from the *OECD Better Life Indicator* set with equal weights.
2. Indicators are normalised by re-scaling to be from 0 (worst) to 10 (best).
3. Unweighted average of Czech Republic, Poland and Slovak Republic.

Source: OECD (2015), "Better Life Index 2015", *OECD Social and Welfare Statistics Database*; OECD (2015), "Income Distribution", *OECD Social and Welfare Statistics Database*.

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Figure 6. **Monetary policy has been easing**

Interest rates

Source: OECD (2016), *OECD Analytical Database*; Magyar Nemzeti Bank.

StatLink http://dx.doi.org/10.1787/888933349312

Private consumption is supported by higher personal incomes, arising from real wage growth and employment growth, including the strong expansion of public work programmes. Also, household financial positions were improved by legal measures that required banks to compensate households for past unilateral interest rate hikes and costly foreign exchange transactions, which were ruled unfair by the Supreme Court, In addition, foreign exchange risks were eliminated by the conversion of foreign-exchange denominated household loans to domestic-currency loans.

Investment has been rising in recent years. Nonetheless, as a share of GDP investment is lower than before the crisis (Figure 8, Panel A). This reflects partly a surge in public spending on infrastructure as the funding cycle for EU structural funds ended and projects had to be put in place. Housing investment has just started to recover from the collapse that resulted in a one-third drop in real house prices following a curbing of credit and a banking crisis. A relatively large share of corporate investment is by foreign companies (Figure 8, Panel B). As in the Czech Republic and Slovakia, this inward FDI has been particularly directed towards the automotive and electronic sectors (Chapter 1).

Despite the stronger economy, the toll of the recession in terms of foregone output, measured as the differences between continued trend growth and actual output in early 2014, is nearly 25 percentage points (OECD, 2015). This reflects a sharp deceleration in productivity growth (Figures 9 and 10) from a level that was already lower than in other countries in the region. The very weak labour productivity growth reflects partly the inclusion of more low-skilled workers in the workforce. Faster productivity growth requires stronger investment in the business sector and better trained workers. Unless this materialises, there is little prospect of faster sustained growth as the working-age population is set to continue its decline.

Employment creation accelerated early in the recovery and subsequently labour participation increased. The unemployment rate has fallen markedly after a sharp run-up in the recession (Figure 11). This is partly reflecting a large increase in public work schemes (Figure 12). Subsequently, job growth has increasingly been underpinned by the private sector,

Figure 7. **Export market gains reflect improved competitiveness**

1. Ratio between actual export volume and the country's export markets.
2. Competitiveness-weighted relative unit labour costs for the overall economy in dollar terms. Competitiveness weights take into account the structure of competition in both export and import markets of the goods sector of 53 countries. An increase in the index indicates a real effective appreciation and a corresponding deterioration of the competitive position. For details on the method of calculation, see Sources & Methods of the OECD Economic Outlook (*www.oecd.org/eco/sources-and-methods.htm*).

Source: OECD (2016), *Analytical Database*; Eurostat.

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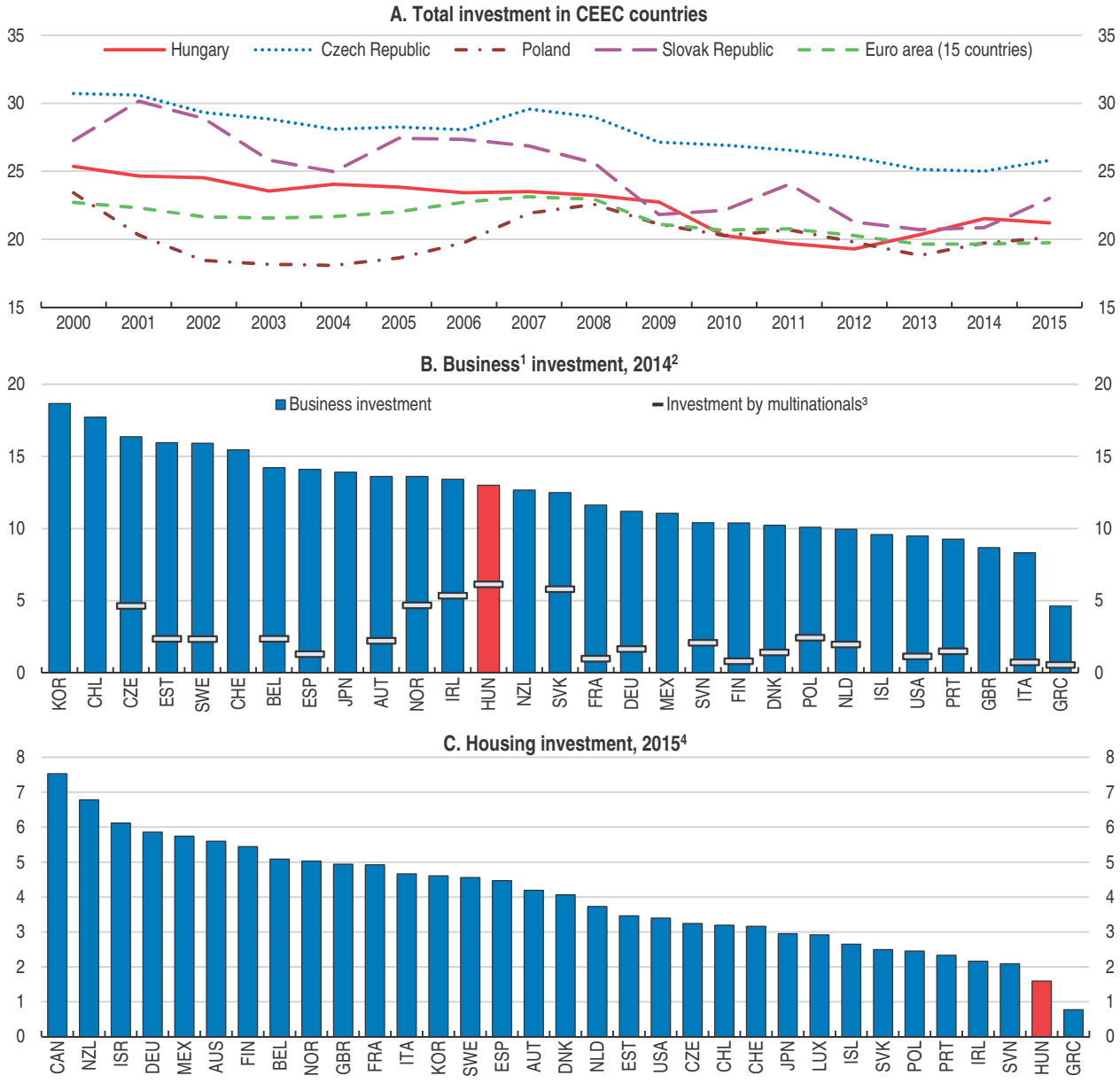
Figure 8. **Investment is recovering**

As a percentage of GDP



1. Non-financial corporations.
2. 2013 data for Chile, Iceland, Korea, Mexico, New Zealand and Switzerland.
3. Gross investment in tangible goods by multinationals in % of GDP in 2012.
4. 2014 data for Hungary and Poland; 2013 data for Chile and Switzerland.

Source: OECD (2016), *Analytical Database*; OECD (2016), *OECD National Accounts Statistics Database*; OECD (2015), *OECD Statistics on Measuring Globalisation Database*.

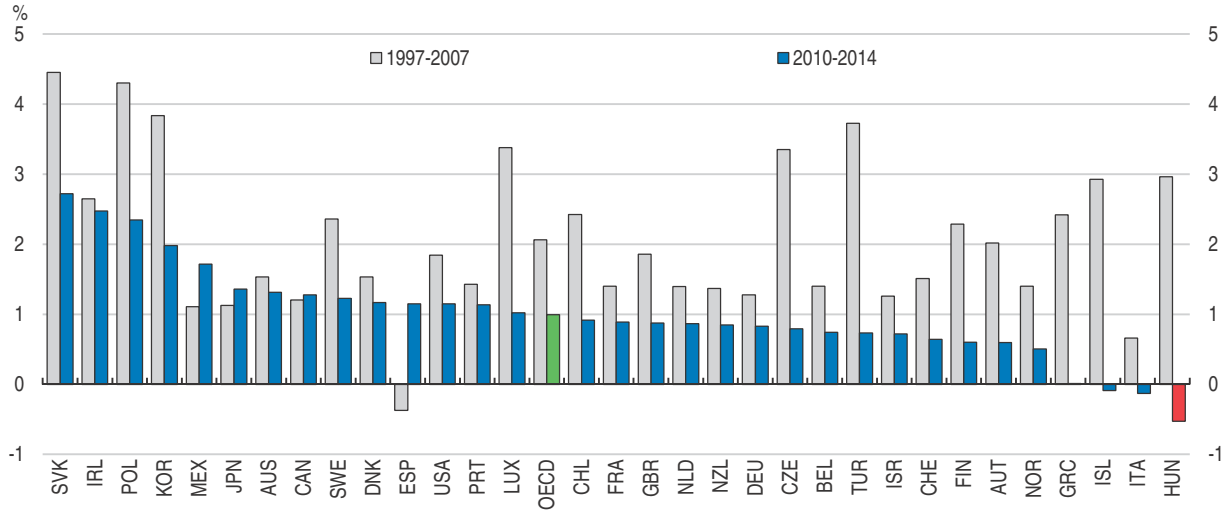
StatLink http://dx.doi.org/10.1787/888933349330

although the public work schemes have continued to expand. Female employment is picking up, but is still well below male employment, despite being less affected by the downturn.

The priority of the public work schemes is to ease the depressed labour market prospects for vulnerable groups, notably Roma, in the poorest (eastern) part of the country to facilitate inclusiveness. Nonetheless, the strong employment growth has still left holes in terms of inclusiveness (Figure 13). The overall poverty rate and income inequality (as

Figure 9. **Labour productivity has fallen markedly since the crisis**

Average annual growth rate, percent[1]



1. Productivity is defined as real gross domestic product (GDP) divided by total employment. The OECD aggregate is calculated as an unweighted average of the data shown.

Source: OECD (2015), *OECD Economic Outlook: Statistics and Projections Database*.

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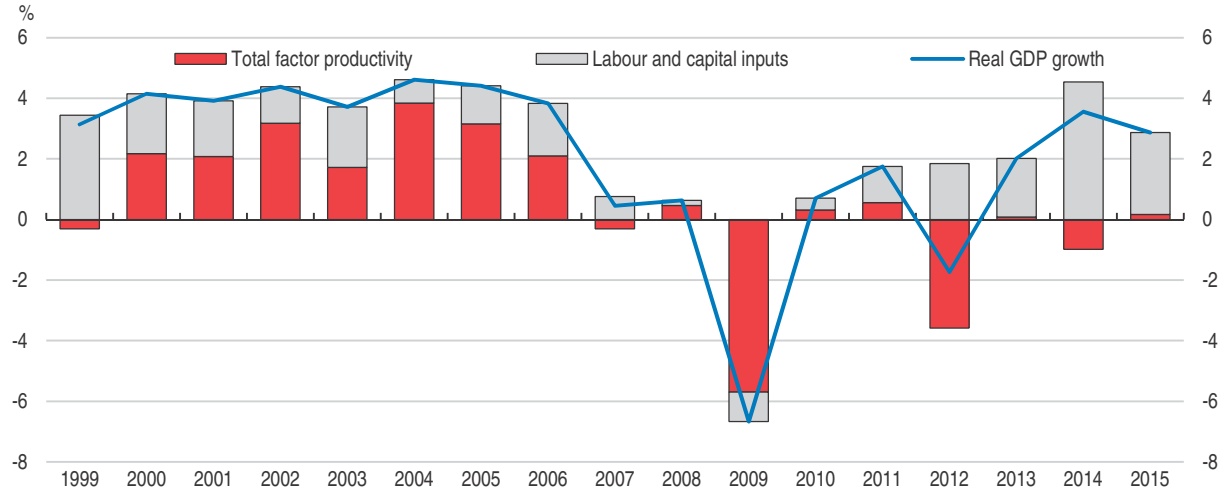
Figure 10. **Total factor productivity remains low**

Decomposition of GDP growth into input factors and TFP

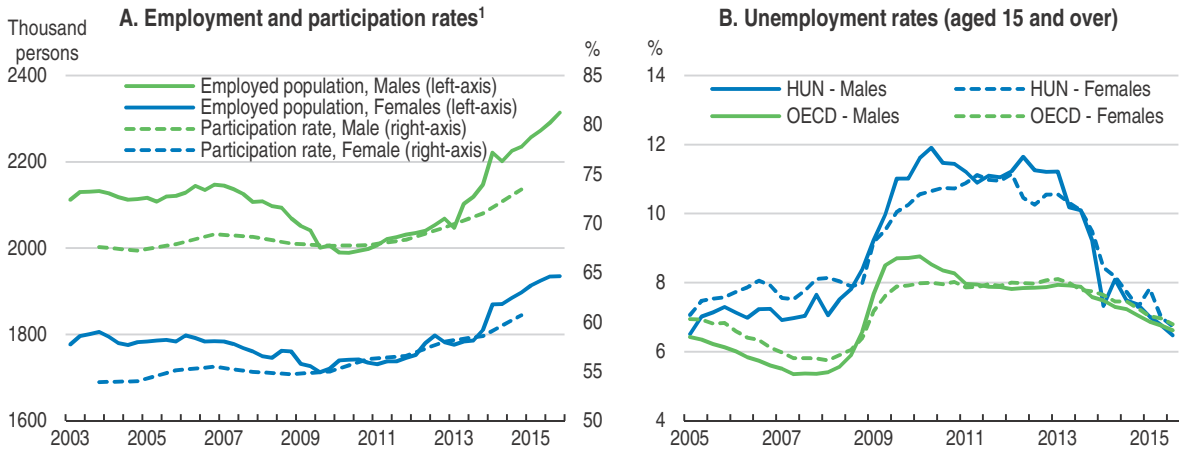


Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections Database*.

StatLink http://dx.doi.org/10.1787/888933349359

measured by the Gini coefficient, which situates the income distribution between full equality – everyone has the same income – and full inequality – all income goes to one household) are around the OECD average, and the gender wage gap is relatively small. However, long-term and youth unemployment remain high despite recent progress and there is widespread poverty in rural areas in eastern and southern Hungary. This concentration of problems reflects low geographical mobility (OECD, 2014). Moreover, the Roma population, which has nearly three times the probability of poverty of the non-Roma population (European Union Agency for Fundamental Rights, 2014) and much weaker

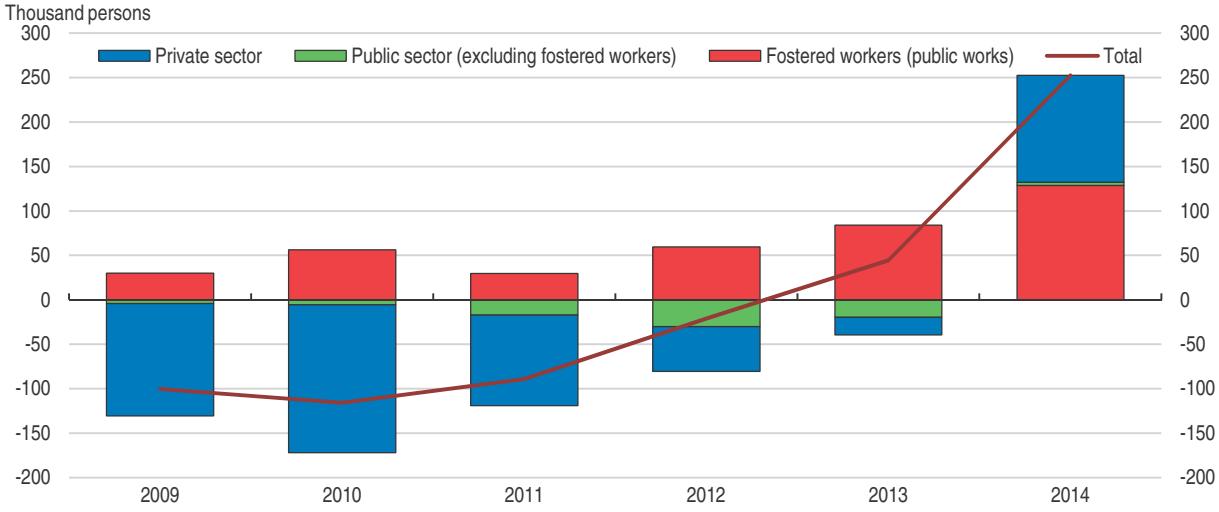
Figure 11. **The labour market is improving**



1. Employment for those aged 15 and over; participation rates for 15-64.
Source: OECD (2016), *OECD Employment and Labour Market Statistics Database*.

StatLink http://dx.doi.org/10.1787/888933349362

Figure 12. **Public work schemes have underpinned the expansion of employment**
Decomposition of the cumulative change of employment since 2008



Source: Hungarian Central Statistical Office, *Labour Market Statistics*, Tables 2.1.6, 2.1.33 and 2.1.60; Hungarian Central Statistical Office (2012), *Statistical Reflections* 9/2012.

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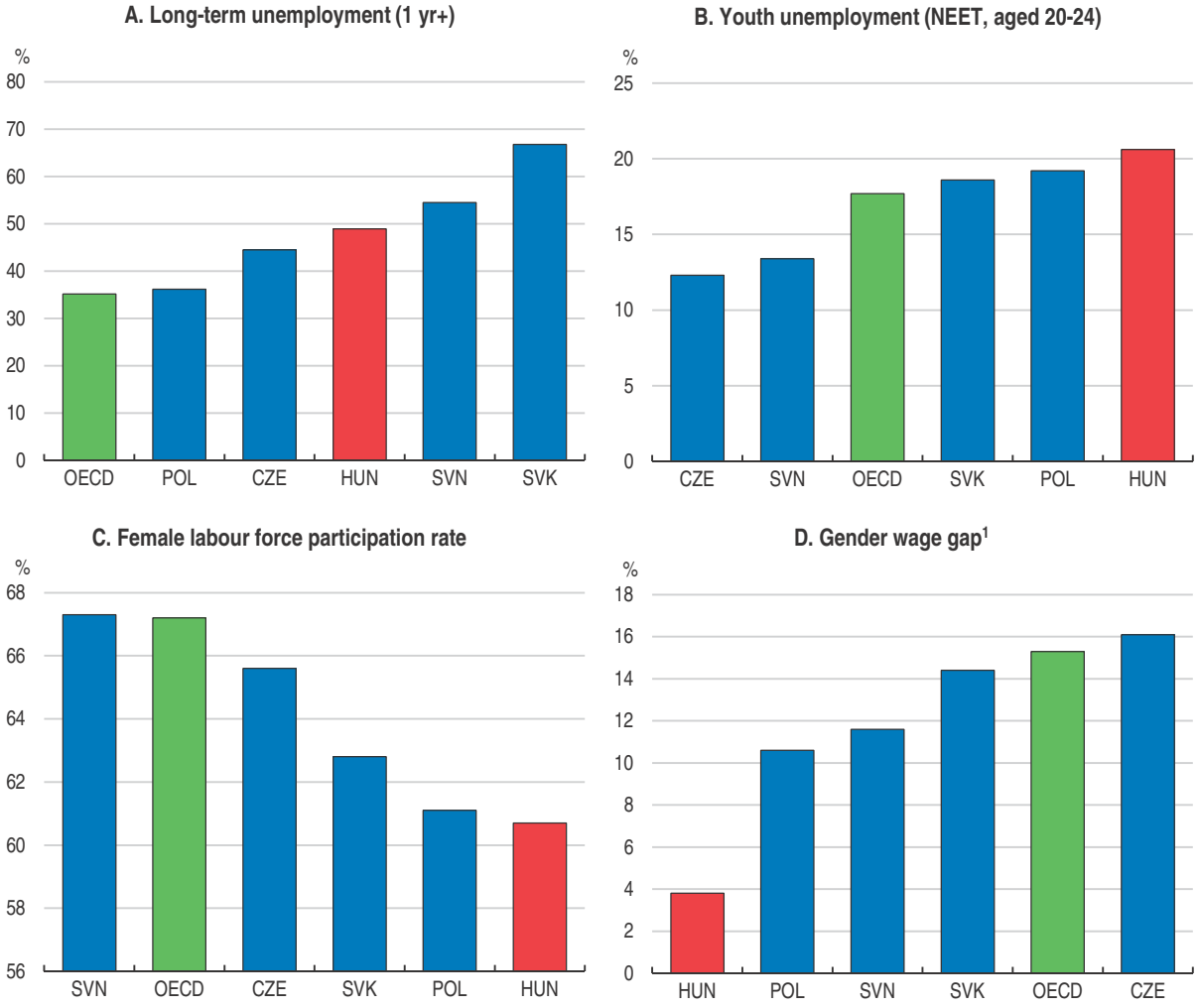
labour-market outcomes, tends to live in disadvantaged rural areas. Such social and economic problems need special attention across a broad range of policies, including educational measures (Chapter 2).

The government's Job Protection Act uses wage subsidies, in the form of cuts in employers' social security contributions, to reduce the tax wedge, covering nearly 900 000 workers to bolster demand for young, old, and long-term unemployed and low-skilled workers, those returning from childcare benefits as well as, more recently,

Figure 13. **The labour market lacks inclusiveness**

2014 or latest year available



1. The gender wage gap is unadjusted and defined as the difference between male and female median wages divided by the male median wages.

Source: OECD (2016), *OECD Social and Welfare Statistics Database*.

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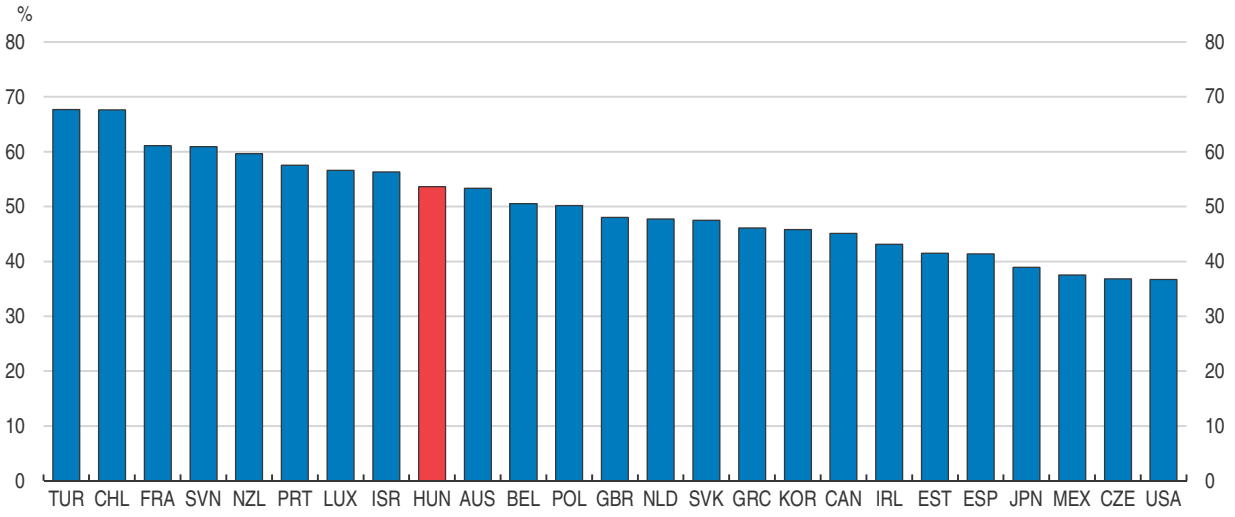
agricultural workers (Government, 2015b; Chapter 2). This complements the youth guarantee programme that uses targeted personalised counselling to provide qualifications or work experience to young unemployed. At the same time, however, relatively high minimum wages depress employment of the low skilled (Figure 14). The minimum wage is paid to nearly 10% of employees, but an additional 25% to 30% of employees are affected by increases in the minimum wage, making further increases in 2016 (by 4.5%) a concern in terms of employment outcomes. Employment opportunities for low-skilled workers could be enhanced by temporarily letting minimum wages grow at a slower pace than other wages to increase the gap between the minimum and the median wage. As a complementary measure, the government could introduce entry wages for young low-skilled workers, as Denmark and Netherlands have for example, with the

Figure 14. **Minimum wages are high relative to median wages**

Gross minimum wage relative to median wages of full-time workers, 2014



Source: OECD (2015), "Earnings: Minimum Wages Relative to Median Wages", Edition 2015, *OECD Employment and Labour Market Statistics Database*.

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initially low minimum wage increasing to the regular minimum wage with job experience, contributing to the high youth employment rates in those countries.

Economic growth is projected to slow temporarily in 2016 as public investment contracts, reflecting lower disbursement of EU structural funds at the beginning of a new funding cycle (Table 1). Private consumption will continue to be strong. Higher employment and lower personal income taxes will, together with the new family housing subsidy programme, boost disposable incomes. Exports will also remain vigorous, pushing the current account surplus higher. Unemployment will continue to decline in response to the extensive use of public work schemes and sustained private employment growth. Inflation is projected to continue to edge up as economic slack disappears, reaching the central bank's 3% target in 2017.

Domestic risks to the projections are broadly balanced. If the employment content of growth surprises on the upside, private consumption could accelerate further. Real incomes could also be boosted if energy prices remain low. If the effects of supportive monetary policy prove stronger than expected, the recovery in business and housing investments could be faster than projected. On the downside, a return to ad hoc and difficult to predict policies could have a negative impact on investor confidence. External risks are tilted towards the downside. Hungary remains vulnerable to shocks to the automotive sector until the government's new industrial plan succeeds in diversifying industrial production. If the growth pause in China induces a slower-than-expected recovery in world trade, this would also depress Hungary's export growth. Financial turmoil in Europe or a faster-than-expected monetary policy normalisation in the United States could force the central bank to tighten its policy rate earlier than expected.

In addition to these risks, the economy may suffer some shocks, the effects of which are difficult to factor into the projection (Table 2).

Table 2. **Possible shocks to the Hungarian economy**

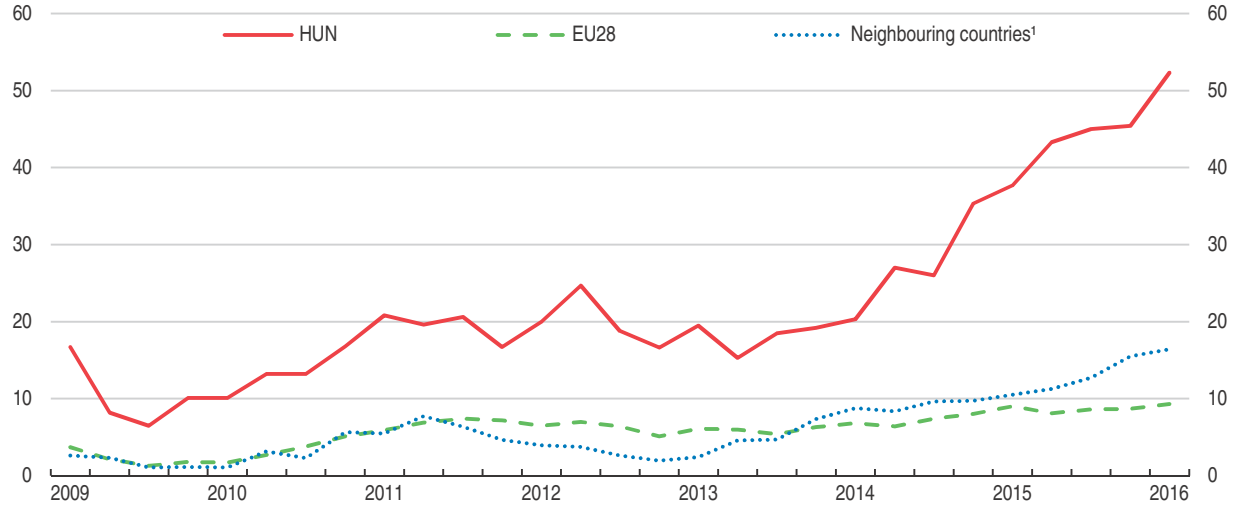
Shocks	Possible impact
Decline of free movement of goods and labour in the EU	Hungary is strongly involved in global value chains, particularly with Germany, and the imposition of any trade barriers and border identity checks would therefore have an impact.
Sharp increase in refugee flows	If a renewed increase in refugees to Europe hampered the free movement of goods and cross-border labour, this would have negative economic impacts as shown above. It can also entail significant fiscal costs.

Monetary policy is still supporting the recovery

Bottlenecks have started to appear in the labour market, including for some less-skilled groups (such as truck drivers) and in some regions (MNB, 2015) (Figure 15). To some extent, bottlenecks reflect shortcomings in the education system, increasing emigration of younger skilled workers (Chapter 2) and low geographical mobility, which has opened wide regional gaps in economic performance and well-being. Nonetheless, nominal wage growth has remained subdued. Consumer prices fell early in the second half of 2015, reflecting the temporary effects of falling energy prices, and started to accelerate at the end of the year. Core inflation, by contrast, has trended upwards to about 2%. Nonetheless, the real exchange rate remains broadly in line with medium-term fundamentals (IMF, 2015). In early 2016, the central bank resumed its easing cycle to bring inflation back to its 3% target. Looking forward, if the economy evolves as projected by the OECD with economic slack disappearing and inflation going up, the central bank may need to consider at the end of the projection period moving towards to a more neutral policy stance.

Figure 15. **Labour shortages have been increasing**

Percentage of manufacturing firms pointing to labour shortage as a factor limiting production



1. Unweighted average of Czech Republic, Poland and Slovak Republic.

Source: Eurostat (2016), *Industry Database*.

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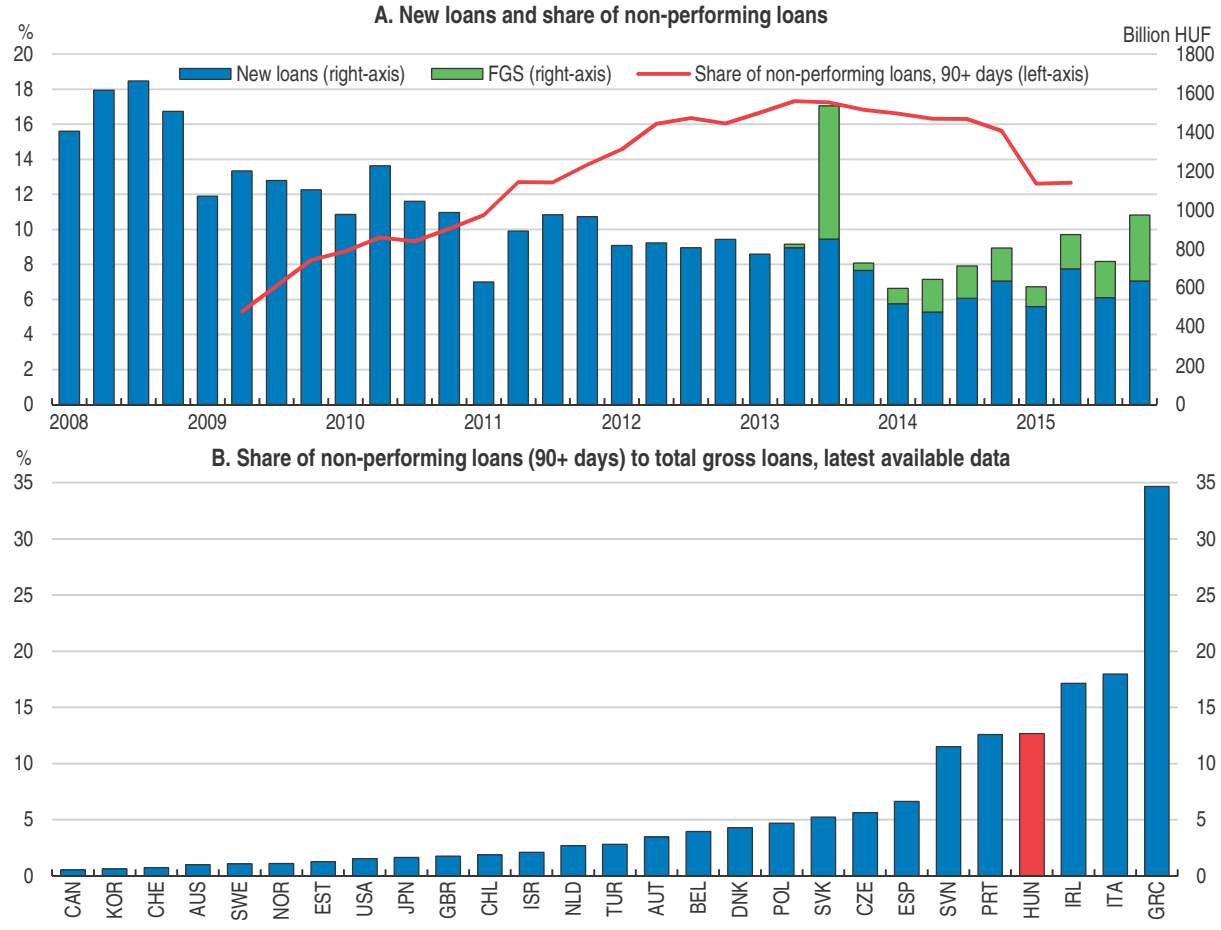
During 2015, monetary easing was accompanied by new policy measures, including switching the key policy rate from a two-week to a three-month deposit rate and creating a 10-year interest rate swap facility to put downwards pressure on short- and long-term

market rates (MNB, 2015a). In addition, the unorthodox monetary policy instrument the Funding for Growth Scheme that provides liquidity at zero cost to banks for lending to SMEs at a maximum rate of 2½% was complemented by "Funding for Growth Scheme Plus" to ensure financing for riskier borrowers that had not benefited from the first scheme. The first and second phases of the schemes provided more than 30 000 SMEs with financing, amounting to more than HUF 2 100 billion (6% of GDP). Nonetheless, the effectiveness of monetary policy is hampered by a still high share of non-performing loans (Figure 16).

Figure 16. **Monetary policy transmission is hindered by a high share of non-performing loans**



Source: Magyar Nemzeti Bank (2016), Trends in Lending 2/2016; IMF (2016), *Financial Soundness Indicators Database.*

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In the longer run, the central bank lending cannot substitute for the market. Therefore, at end-2015, the central bank announced the gradual termination of the Funding for Growth schemes, beginning in 2016, and a new Growth Supporting Programme to help banks to return to market-based financing through a Market-Based Lending Scheme. Under this scheme, the central bank will: assume some of the interest rate risks of banks' loans to SMEs; reduce supervisory risk weights on loans to SMEs; and provide banks access to credit data so they can better assess risks. These measures should increase credit to SMEs, and to that extent have merit as a structural measure to raise inclusive growth. However, the associated macroeconomic stimulus may no longer be needed given robust economic growth. Moreover, the reduction in risk weights may raise financial

stability concerns to the extent the reduction leads to systematic underestimation of actual risks. As a monetary policy institution and as a supervisor, the central bank will have to monitor both issues closely.

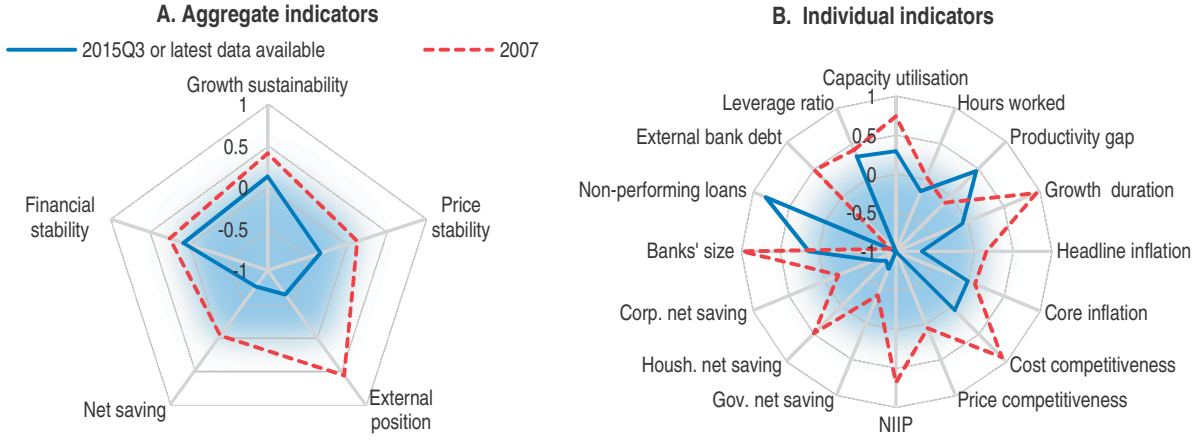
The Hungarian capital market is under-developed and does not provide financing to complement bank lending. In addition, the falling number of new issuances and turnover has endangered the viability of the exchange. In late 2015, the central bank bought the Budapest Stock Exchange from the Vienna Stock Exchange and the Austrian Kontrollbank AG to revitalise capital markets. As the central bank is also the financial market regulator, the purchase may raise a perception of a conflict-of-interest between its ownership and regulatory functions. Thus, the ownership of the stock exchange should be temporary and the stock exchange should return to private ownership over the medium-term.

Financial stability has improved

Macro-financial vulnerabilities have receded considerably (Figure 17), particularly in terms of the external position (the current account and the international investment position have both improved dramatically) and, relatedly, net saving by households, corporations and the government (the fiscal deficit has declined). Less progress, however, has been made in terms of financial stability and growth sustainability. Particular concerns in these areas are the high level of non-performing loans, which rose sharply in the wake of the global crisis, and low productivity.

Figure 17. **Macro-financial vulnerabilities have diminished significantly since 2007**

Deviations of indicators from their real time long-term averages (0), with +1 representing the greatest vulnerability and -1 (the centre point) the least



Note: Each aggregate macro-financial vulnerability indicator is calculated by aggregating (simple average) normalised individual indicators. Growth sustainability includes: capacity utilisation of the manufacturing sector, total hours worked as a proportion of the working-age population (hours worked), difference between GDP growth and productivity growth (productivity gap), and an indicator combining the length and strength of expansion from the previous trough (growth duration). Price stability includes: headline and core inflation. External position includes: the average of unit labour cost (ULC) based real effective exchange rate (REER), and consumer price (CPI) based REER (cost competitiveness), relative prices of exported goods and services (price competitiveness) and net international investment position (NIIP). Net saving includes: government, household and corporate net saving. Financial stability includes: banks' size as a percentage of GDP, share of more than 1 year overdue loans of households (non-performing loans), external bank debt as percentage of total banks' liabilities, and capital and reserves as a proportion of total liabilities (leverage ratio). Due to data availability data for non-performing loans refer to 2009 instead of 2007 and the deviation from long-term average is not calculated in real time.

Source: OECD calculations based on OECD (2015), *OECD Economic Outlook: Statistics and Projections Database*; and Datastream.

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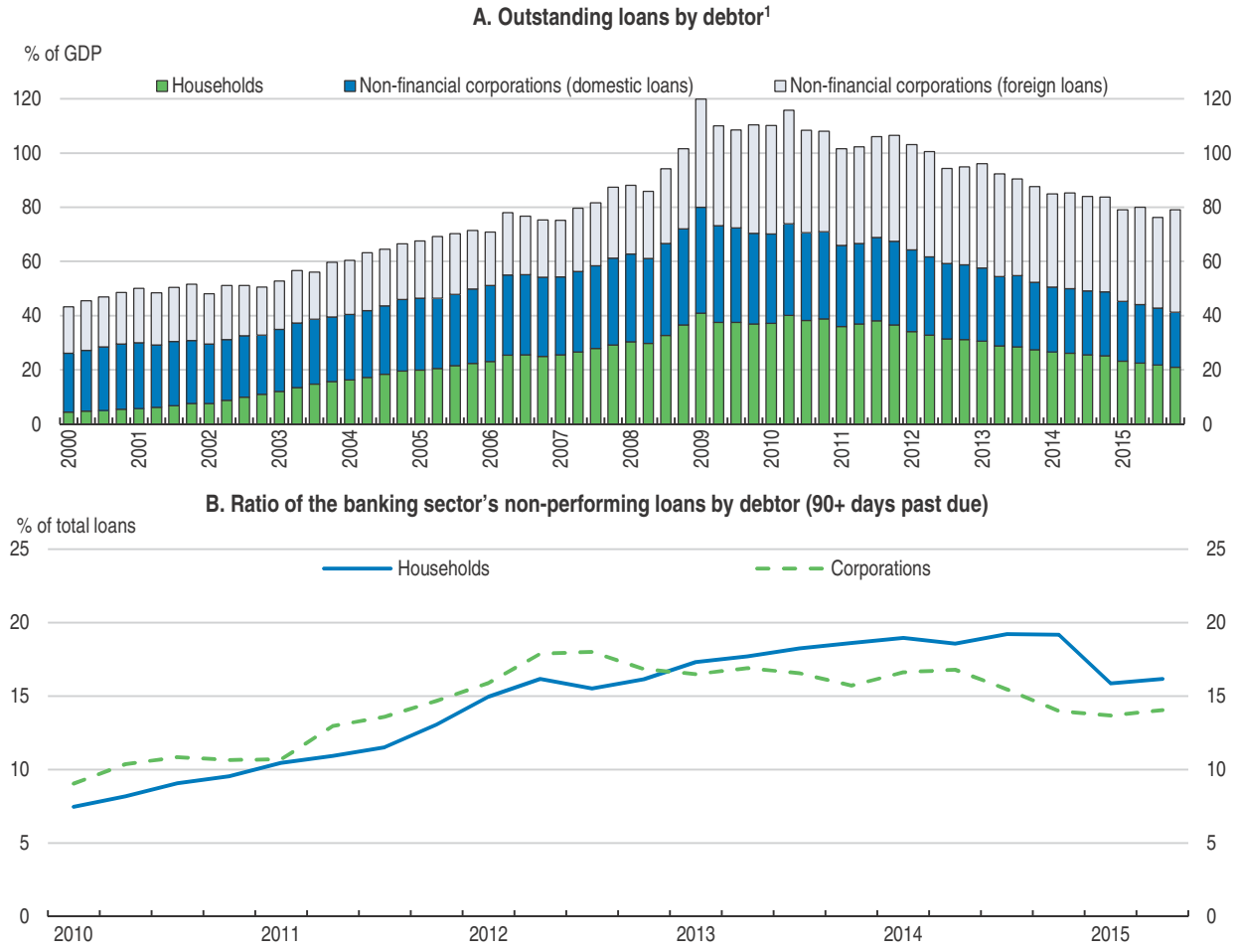
Banks have improved their capital adequacy ratio to more than 20% – well above international requirements. In addition, the loan-to-deposit ratio has been reduced from above 150% in early 2009 to below 100% today, making banks less reliant on market funding. The underlying private sector deleveraging has lowered the sector's indebtedness somewhat (Figure 18). Nonetheless, financial losses in the banking sector were substantial in 2010-14, before the sector became barely profitable. Indeed, the ratio of non-performing loans remains high, representing a significant risk to the financial system. The commercial estate sector accounts for half of the all distressed corporate loans.

Figure 18. **Financial sector vulnerability has declined**



1. Non-financial corporation loans exclude inter-company loans and loans from households and government.
Source: Magyar Nemzeti Bank.

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Several measures have strengthened the banking system. In addition to the Funding for Growth schemes and the reduction in loans denominated in foreign exchange, the central bank established the Hungarian Restructuring and Debt Management Ltd. (MARK) with a 10-year mandate to purchase bad commercial real estate loans and properties at market prices to the tune of HUF 300 billion (of an estimated total bad debt of HUF 800 billion). MARK started its activities via a bridge loan from the central bank. Its reliance on the central bank is expected to diminish gradually through a market refinancing of the bridge loan.

This works similar to other asset management companies dealing with impaired loans, although there is no explicit strategy for offloading of non-performing assets, and will reduce the large stock of non-performing loans. Developing a strategy for selling assets would increase transparency and reduce public sector contingent liabilities.

Sales of impaired assets could be encouraged by imposing capital surcharges on banks that keep their impaired loans beyond a certain duration and threshold – effectively increasing capital requirements for holding on to non-performing loans. The effect of this measure would be to give banks incentives for selling impaired loans to the asset management company at market prices, facilitating the restructuring of the banks' balance sheet. Such charges are already in place in the Euro area for global systemically important institutions. The central bank already imposed such a systemic risk buffer to commercial real estate loans as of 1 January 2017. For mortgages, the government has introduced personal bankruptcy (Chapter 1) and the central bank introduced regulation on payment-to-income and caps on loan-to-value ratios. The central bank also published guidelines for financial institutions on sustainable restructuring of non-performing households loans. In addition, the government lowered the levy on larger banks, from 0.53% to 0.24% of assets, although the tax on small banks, of 0.15% of assets, remains unchanged.

The government has reached a Memorandum of Understanding with the EBRD in early 2015 to sell public stakes in large banks within three years, which will improve the functioning of the banking sector. The government should implement the sell off as rapidly as possible as state-owned banks can hamper the financial sector's ability to contribute to growth. Particularly in cases where state-owned banks are required to finance loss-making (state-owned) enterprises, provide financing on non-commercial terms to regions or sectors, or extend credit based on other factors than risk assessments (Andrews, 2005). Such problems can be further compounded if state-owned banks have a cost advantage in terms of funding, arising from an implicit or explicit government guarantee.

Putting the debt-to-GDP ratio firmly on a downward path will require further consolidation efforts

Since Hungary left the European Union's excessive deficit procedure in 2013, the public debt-to-GDP ratio has continued to decline (OECD, 2015). For 2016, the stance of policy is set to be broadly neutral, before becoming expansive in 2017 (Table 3). Given the projected strength of the economy and diminishing slack the 2016 stance is appropriate. In 2017, the stance is set to be expansionary despite the rapid disappearance of economic slack.

Hungary's debt-to-GDP ratio has been falling since 2011 and is lower than the European Union average. Moreover, general government contingent liabilities amount to a quarter of GDP – a relatively low level by European standards (Eurostat, 2015). However, it is high compared to similar countries, and it is prudent for small open economies like that of Hungary to have relatively low levels of public debt to ensure resilience (Fall and Fournier, 2015). Indeed, Hungary was out of international bond markets for almost two years until early 2013, when a large US dollar denominated bond issuance took place. The government's commitment to gradually reduce the debt-GDP ratio is therefore welcome, but ensuring it will, in the medium term, require a lower deficit than today.

Assuming a medium-term fiscal deficit of 1.7% of GDP (which corresponds to Hungary's medium-term objective under the Stability and Growth Pact) and that nominal GDP over the long-term grows at 3.8% (consistent with OECD estimate of potential growth

Table 3. **Fiscal indicators**

Per cent of GDP

	2013	2014	2015	2016[1]	2017[1]
Spending and revenue					
Total revenue	46.7	47.3	48.4	46.9	46.0
Total expenditure	49.3	49.5	50.5	48.9	48.6
Net interest payments	4.3	3.8	3.5	3.3	3.2
Budget balance					
Fiscal balance	-2.6	-2.3	-2.0	-1.9	-2.4
Cyclically adjusted fiscal balance[2]	-0.9	-1.6	-1.9	-2.1	-3.3
Underlying fiscal balance[2]	-0.8	-1.9	-2.2	-2.8	-3.3
Underlying primary fiscal balance[2]	3.3	1.8	1.2	0.5	-0.1
Public debt					
Gross debt (Maastricht definition)	76.2	75.7	74.9	74.0	73.1
Net debt	70.0	71.3	69.0	68.1	67.2

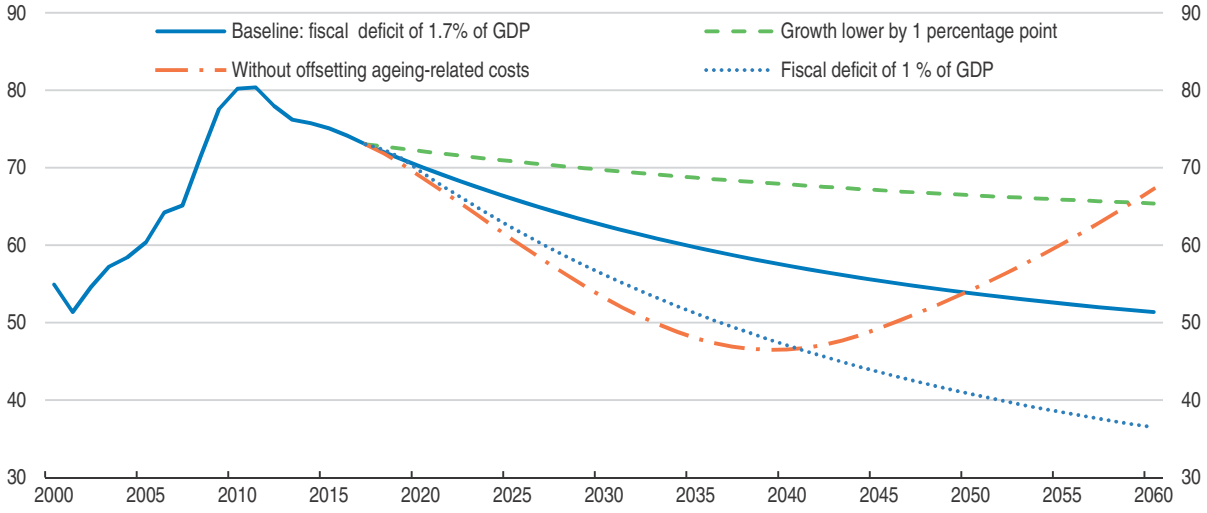
1. Projections.
2. Per cent of potential GDP. The underlying balances are adjusted for the cycle and for one-offs. For more details, see *OECD Economic Outlook* Sources and Methods.

Source: OECD (2016), *OECD Economic Outlook: Statistics and Projections Database*.

and a technical assumption that inflation gradually reaches 2%), the debt-GDP ratio will fall gradually (Figure 19, baseline scenario). But if growth were 1 percentage point lower, perhaps because productivity growth does not recover fully, then debt would only decline slightly ("lower growth scenario" in Figure 19). On the other hand, a sustained deficit of 1% of GDP would sharply reduce debt ("higher fiscal consolidation" scenario in Figure 19). Aging costs will rise in Hungary as elsewhere, and these will have to be dealt with by

Figure 19. **Durably reducing public debt will require further reforms**

General government gross debt, Maastricht definition, percent of GDP[1]



1. The baseline scenario shows projections is based on the *OECD Economic Outlook: Statistics and Projections Database* until 2017, and subsequent real GDP growth of 1.8% during 2018-60, in line with OECD estimates for long-term potential growth, and nominal GDP growth of 3.8%. Baseline fiscal policy assumes a deficit of 1.7% of GDP from 2018 onwards, which corresponds to the country's medium-term objective (MTO) as required by the Stability and Growth Pact. The "lower growth" scenario assumes real GDP growth of 0.8% over 2018-60. The "without offsetting ageing-related costs" scenario adds changes relative to 2017-levels of net public pension costs, health costs and long-term care costs to the baseline budget deficit. The "higher fiscal consolidation" scenario assumes a fiscal deficit of 1% over 2018-60, which is the lower limit for the structural deficit set by EU budgetary rules.

Source: OECD calculations based on OECD (2016), *OECD Economic Outlook;* and European Commission (2015), *The 2015 Ageing Report*.

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raising revenues or cutting spending (in age-related programmes or elsewhere). To illustrate the problem, if the estimated changes in aging-related spending were entirely deficit financed, under the baseline growth assumption the debt-GDP ratio would fall until the late-2030, as these expenditures are initially projected to fall, but then increase unsustainably (the "without offsetting ageing-related costs" scenario in Figure 19).

Public spending is relatively high, at half of GDP, especially considering Hungary's relatively low income (Figure 20). The government plans to lower overall spending as a share of GDP by more than offsetting the effects of higher wage for public employees through a freeze on social spending. A relatively large share of spending goes to general public services, reflecting high interest payments on public debt and the relatively high share of the labour force employed by the public sector (including those in the public works programme) (OECD, 2015a). By contrast, relatively low spending on health (Figure 20, Panel B) may contribute to low health status and to emigration of health-care workers (Chapter 2; OECD, 2015a). Education spending is also relatively low (Chapter 2).

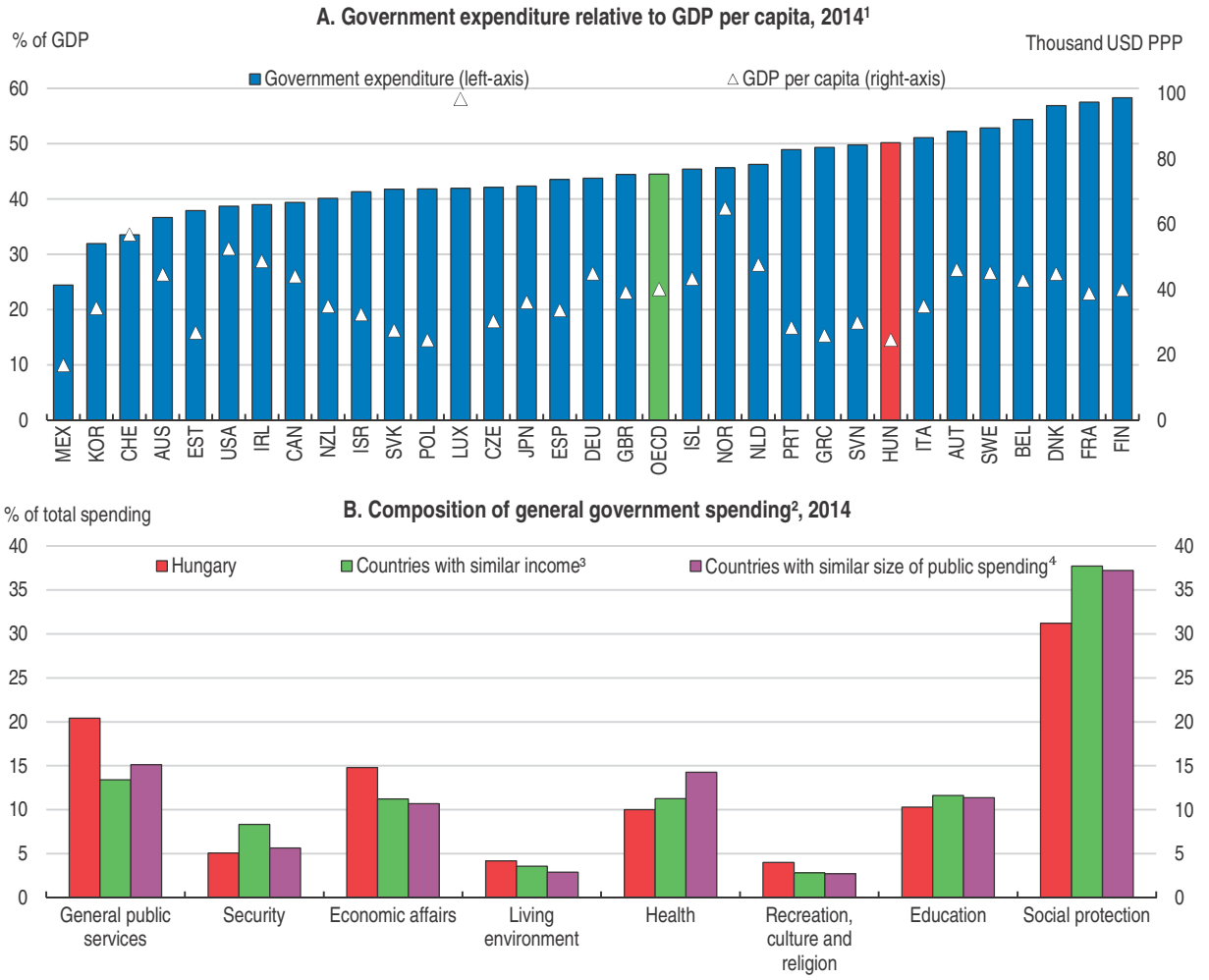
The government's emphasis on debt reduction is welcome and to ensure a durable decline in public debt, the structural budget deficit should gradually be reduced. This would bring the structural deficit closer to the 1% of GDP commitment for Euro and aspiring Euro members under the European Union's Stability and Growth Pact (European Commission, 2013). The size of government is ultimately a political and social decision, but the relatively large size of government suggests there is room for spending restraint to achieve a lower deficit. This should, of course, go hand in hand with efforts to improve the efficiency of both spending and taxation. The government has initiated steps in both directions. Further progress in these areas, as well as in debt reduction, needs to take place within a long-term strategy. A medium-term budgeting framework with a three year time horizon has already been adopted. Nonetheless, a longer time horizon for spending and debt reductions should be considered, including well-specified policy objectives.

Tax revenues are highly reliant on consumption taxes and social security contributions (Figure 21). The government is continuing to reduce the tax burden with a planned reduction in taxes and social security contributions by three percent of GDP, to below 36% of GDP by 2019 (Government, 2015c). At the same time, it is shifting the tax burden from labour to consumption. The flat income tax rate of 16% was reduced by 1 percentage point in 2016 and the family tax allowance in the case of two children will double between 2016 and 2019. Revenue increasing measures are mostly related to higher fees for public health and environmental taxes.

The VAT rate, at 27%, is the highest in the OECD. On the other hand, tax collection is well below what it should be (Figure 22), in large part because of evasion. The European Commission estimates imply that with full compliance at the current tax rate the VAT would raise an additional 3% of GDP in revenue.

Since 2013, the government has implemented anti-fraud measures, particularly mandatory use of online cash registers and an electronic system to track routes of goods. These measures have already boosted VAT revenues by 0.6% of GDP in 2014 and the government is extending them to some services (such as taxis, wellness-fitness, automotive repairs and medical services) (Government, 2015b). The authorities could consider introducing electronic invoicing, as Slovakia has done. The scope for boosting VAT revenues further is relatively large as the informal economy accounted for between 10%-17% of the economy in the 2000s and possibly more thereafter (Benedek et al., 2013; Semjén et al., 2010; Svraka et al., 2013).

Figure 20. **Hungary's public sector is relatively large and tilted towards general public services**



1. 2013 for Australia, Israel, Japan, Mexico, New Zealand, Switzerland, United States. The OECD aggregate is an unweighted average excluding Chile and Turkey.
2. Sectors based on Classification of the Functions of Government 99 (COFOG) at 2-digit level of which two sectors are aggregated: Security includes defence and public order and safety; Living environment includes environment protection and housing and community amenities.
3. Unweighted average of Poland, Slovakia, Czech Republic, Estonia and Greece.
4. Unweighted average of Austria, Greece, Iceland, Italy, Netherlands, Norway, Portugal, Slovenia and Sweden where government spending takes 45~55% of GDP as of 2014.

Source: OECD (2015), *OECD National Accounts Statistics Database*; Eurostat (2016), *Annual Government Finance Statistics Database*.

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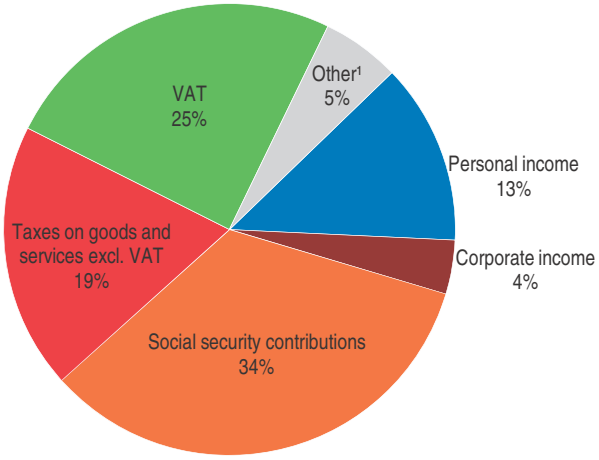
Avoidance could be further limited and revenues increased if reduced VAT rates for selected food, health and cultural products were abolished, particularly as such reduced rates do not typically improve equity much, or at all.

These changes to the tax system should make it less distortive and thereby stimulate long-term growth. However, social security contributions (35% for a single full-time worker on the minimum wage) tend to reduce equity because they damage the employment prospects of low-skilled workers, and are levied on labour income alone. This is partially offset by the Job Protection Act's provision which reduces employers' social security contributions. Equity would be further improved by, for example, substituting these taxes for a broader income tax, which would tax capital income at the personal level as well.

Figure 21. **Tax revenues are reliant on consumption taxes and social security contributions**

Distribution of tax revenues, 2014



1. Includes payroll tax, property tax, income taxes not allocable to either personal or corporate income.

Source: OECD (2015), "Revenue Statistics: Hungary", *OECD Tax Statistics Database*.

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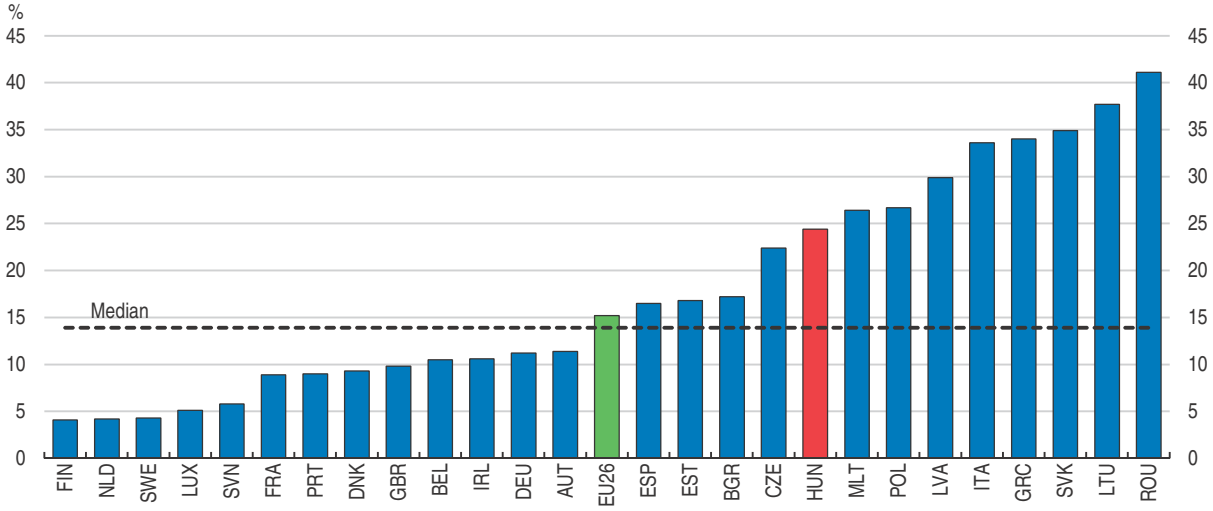
Figure 22. **VAT revenue loss due to tax avoidance and evasion is above the EU average**

VAT gap as a percentage of liability, 2013



Source: European Commission (2015), *Study to Quantify and Analyse the VAT Gap in the EU Member States*.

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Likewise, shifting to consumption taxes can improve economic growth, but its immediate distributional effects can be somewhat regressive when expressed as a percentage of income, as those on lower incomes spend more of their money on consumption (Johansson et al., 2008; OECD, 2014b). These factors, together with the plans to freeze social spending, may result in a deterioration of Hungary's relatively low income inequality.

Population ageing increases spending pressures

In the longer run, ageing will be the main driver of spending. Current long-term projections suggest a fall in ageing-related spending until 2030 and thereafter increase by 3.75% of GDP by 2060 (Table 4). Population ageing is more advanced in Hungary than in other countries; indeed, the population peaked in 1981 at nearly 11 million and the fertility rate is one of the lowest in Europe (Figure 23). The population is projected to fall to 9.2 million by 2060 (European Commission, 2015). Until now, the prime age population has been relatively stable, but it is projected to fall to the smallest in Europe as a share of total population, leading to one of the highest old-age dependency ratios. These projections assume an annual inwards migration of 20 000. If income convergence continues to disappoint, inwards migration may fail to materialise and the emigration of young skilled workers may accelerate (Chapter 2).

Table 4. **Long-term projections for ageing related spending (% of GDP)**

	Total ageing spending[1]			Gross public pension spending			Health care spending			Long-term care spending		
	2013	2030	2060	2013	2030	2060	2013	2030	2060	2013	2030	2060
Czech Republic	19.1	20.4	22.5	9.0	9.0	9.7	5.7	6.3	7.0	0.7	1.0	1.5
Hungary	20.8	18.2	21.9	11.5	8.9	11.4	4.7	5.2	5.7	0.8	0.9	1.2
Poland	20.9	20.5	22.3	11.3	10.4	10.7	4.2	4.8	5.6	0.8	1.1	1.7
Slovenia	24.7	26.7	31.6	11.8	12.3	15.3	5.7	6.5	7.1	1.4	1.9	2.8
Slovak Republic	17.7	17.9	21.8	8.1	7.6	10.2	5.7	6.6	7.9	0.2	0.4	0.6
EU28	25.6	26.4	27.3	11.3	11.6	11.2	6.9	7.5	8.0	1.6	2.0	2.8
Euro area	26.8	27.7	28.5	12.3	12.9	12.3	7.0	7.5	7.9	1.7	2.1	3.0

1. Total ageing spending includes spending on gross public pension, health care, long-term care, education and unemployment benefit
Source: European Commission (2015), "Economic and Budgetary Projections for the 28 EU Member States" (2013-2060), *The 2015 Ageing Report*, 3/2015, Brussels.

Public pension spending is projected to remain around 11.5% of GDP with a nearly unchanged replacement rate of 45%, which is close to 10 percentage points higher than the EU average in 2060 (Table 5). However, pensions are indexed to prices, not wages, leading to a decline in benefits relative to wages by 9 percentage points to 32.5%. This implies increasing inequality between pensioners and a higher risk of older pensioners not having sufficient incomes. This may eventually increase political pressures to raise the benefit ratio, which would lead to higher spending than now assumed.

Other ageing-related spending, such as health care, may also increase faster than projected. Current health spending per capita is lower than the average in the region and less than half of the OECD average. Per capita health spending could therefore increase relatively rapidly as Hungarian incomes catch up to those of richer OECD countries. The emigration of health professionals accelerated in 2000s and a rising number of doctors are leaving the profession. Significantly higher wages may be needed to stem these developments (OECD, 2015b; Varga, 2015). Moreover, low health care investment spending has led to unfavourable working conditions and outdated medical equipment. Such under-investment is not sustainable. Finally, the bulk of long-term care is currently provided informally by family and friends, but as in other countries this may change, and an increasing institutionalisation of long-term care would raise public spending.

Figure 23. **Demographic prospects are unfavourable**

1. Ratio of 65+ to 15-64 year-olds.

Source: European Commission (2015), *The 2015 Ageing Report*.

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Table 5. **Benefit ratios and replacement rates in Europe**

	Benefit ratio[1]		Replacement rates[2]	
	2013	2060	2013	2060
Czech Republic	42.6	40.7	43.3	49.3
Hungary	41.4	32.6	45.5	45.2
Slovenia	37.8	32.9	36.1	34.1
Slovak Republic	46.0	30.4	51.7	49.4
EU28[3]	46.5	38.4	43.8	36.0
Euro area[3]	49.6	40.3	53.0	44.2

1. The "Benefit ratio" is the average benefit of pensions as a share of the economy-wide average wage.
2. The "Replacement rate" is calculated as the average first pension as a share of the average wage at retirement.
3. Weighted average.

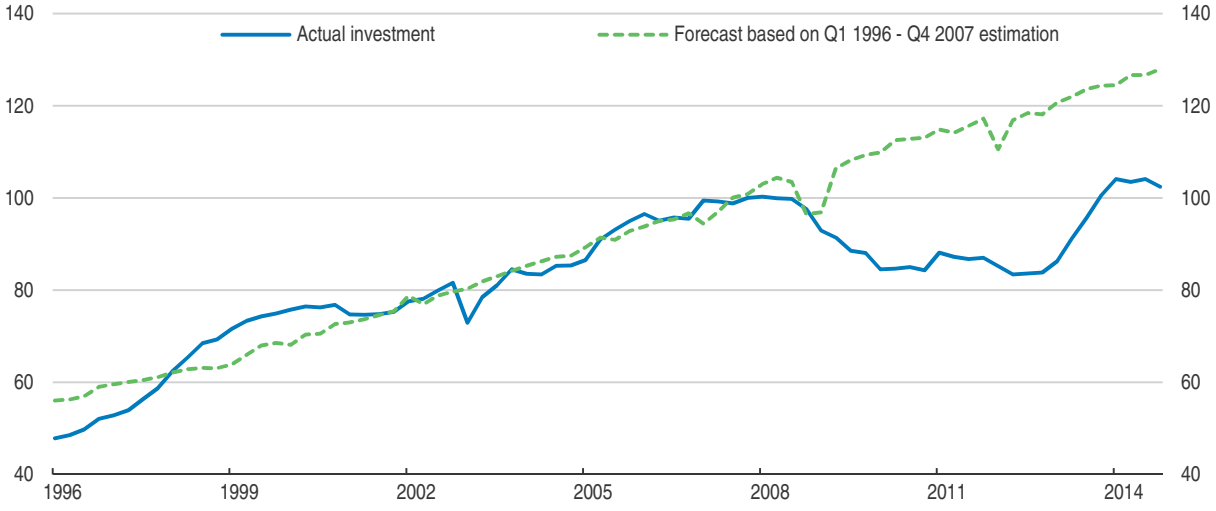
Source: European Commission (2015), "Economic and Budgetary Projections for the 28 EU Member States" (2013-60), *The 2015 Ageing Report*, 3/2015, Brussels.

Bolstering business investment

Higher business investment would bolster productivity growth and deepen integration into global value chains. Prior to the crisis, there was a relatively close relationship between economic activity and business investment. During the crisis, this relationship was eroded, leaving today's level of business investment well below what economic growth would suggest (Figure 24). This downwards shift can be explained by a number of factors. The crisis induced a sharp reduction in business profits, which have not yet recovered (Government, 2015c; Bauer, 2014). The fall in profitability was compounded by the introduction of sector specific taxes, which together with frequent changes, particularly in the aftermath of the crisis, in the regulatory environment (see below) reduced predictability and risk tolerance, further dragging down investment (Martonosi, 2013).

Figure 24. **Investment is lower than expected**

Simple accelerator model of non-residential investment, value of actual investment in 2007 Q4 = 100[1]



1. In real terms. 4-quarter moving average applied. Actual GDP and capital stock series are used to calculate the forecast based on 1996 Q1-2007 Q4 estimation. In the estimations, the level of investment is explained by current and lagged changes in real GDP and replacement investment. For more information on the methodology: OECD (2015), *OECD Economic Outlook*, Vol. 2015 Iss. 1, June, Annex 3.1.

Source: OECD (2015), OECD calculations based on *OECD Economic Outlook: Statistics and Projections Database*.

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In addition, financing sources dried up as the banking crisis sharply reduced bank lending. This particularly affected domestic SMEs as multinational companies relied on international financial markets for their funding. The Funding for Growth schemes have resulted in some new investment, particularly by smaller firms, and have also been used to refinance older and more expensive loans (Endresz et al., 2015). Other funding sources, such as equity or corporate bonds, play only a minor role in Hungary, as in other eastern European countries.

Developing capital markets would provide new sources of funding, but it is a slow process that requires improving transparency, reliability and comparability of information (Jäger-Gyovai, 2014). In particular, a critical mass of floated firms will be needed to secure a well-functioning stock market (Adarov and Tchaidze, 2011). In this respect, developing common rules and standards for accounting, corporate credit, insolvency and other capital market regulations could foster capital markets in the region, which could possibly clear the way for making the Budapest stock exchange part of a larger regional stock exchange, as in the Baltic area (Véron and Wolff, 2015). Such a larger stock exchange would be more viable than the Budapest exchange alone. New financing sources should be promoted by adjusting existing or adopting new regulation to new financial technologies. At the same time, investor confidence needs to be strengthened, pointing to the need for creating a more stable regulatory framework that promotes the competitiveness of the business sector.

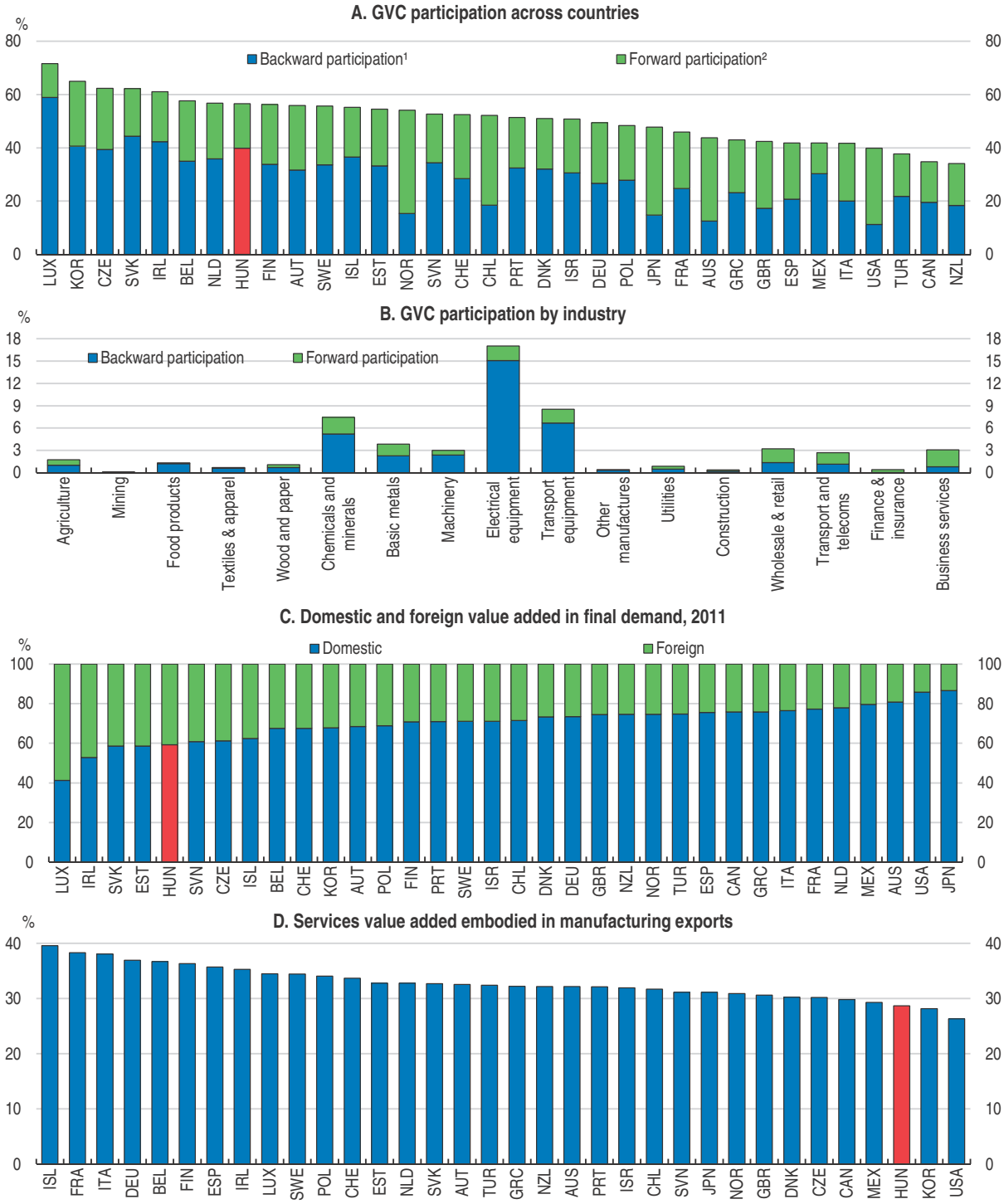
Global value chains benefit relatively few

Hungary's participation in the global value chains is among the highest in the OECD (Figure 25, Panel A). This success is linked to the large presence of foreign firms in the (intertwined) electrical and transport equipment producing sectors, which are characterised by high inflows of inward FDI and intensive links with manufacturing in other countries, especially Germany (Figure 25, Panel B; Chapter 1). The multinational companies behind this inward FDI typically use a high share of foreign produced intermediates in their production or rely on inputs from foreign-owned producers in Hungary.

In contrast, domestically-owned producers of intermediate inputs have been less successful than in other countries in integrating themselves into the production chain of the large foreign-owned exporters, which means that the value added in exports is relatively low. In addition, producers of intermediate inputs have a relatively low contribution to the production of other countries' exports (known as low "forward participation" in GVCs). Moreover, services contribute less to manufacturing exports than in any other European country (Figure 25, Panel D). As a consequence, Hungary has missed out on direct services provision, such as communication, but also indirect services that help to differentiate and upgrade products (such as design, development, and marketing). Better use of such services would help firms to capture more value in the global value chains (OECD, 2013a).

Inward FDI accounts for a substantial part of business investment and over time the inflows have been concentrated in a few sectors. The high concentration in the vehicle production (22% of industrial production and 13% of total exports) and the dominant position of a few German firms involve some exposure to firm, sector and country specific risk. Moreover, there is little investment in intangibles, such as R&D, digital economy and other elements of knowledge-based capital that are needed to foster potential growth and move up the value added chain (OECD, 2015c). Finally, the firm structure is dominated by

Figure 25. **Hungary's participation in the global value chains (GVC) is very high**



Note: 2009 data unless specified.

1. The indicator measures the value of imported inputs in the overall exports of a country (the remainder being the domestic content of exports). This indicator provides an indication of the contribution of foreign industries to the exports of a country by looking at the foreign value added embodied in the gross exports.
2. The indicator provides the share of exported goods and services used as imported inputs to produce other countries' exports. This indicator gives an indication of the contribution of domestically produced intermediates to exports in third countries.

Source: OECD (2013), *Global Value Chains Indicators Database*.

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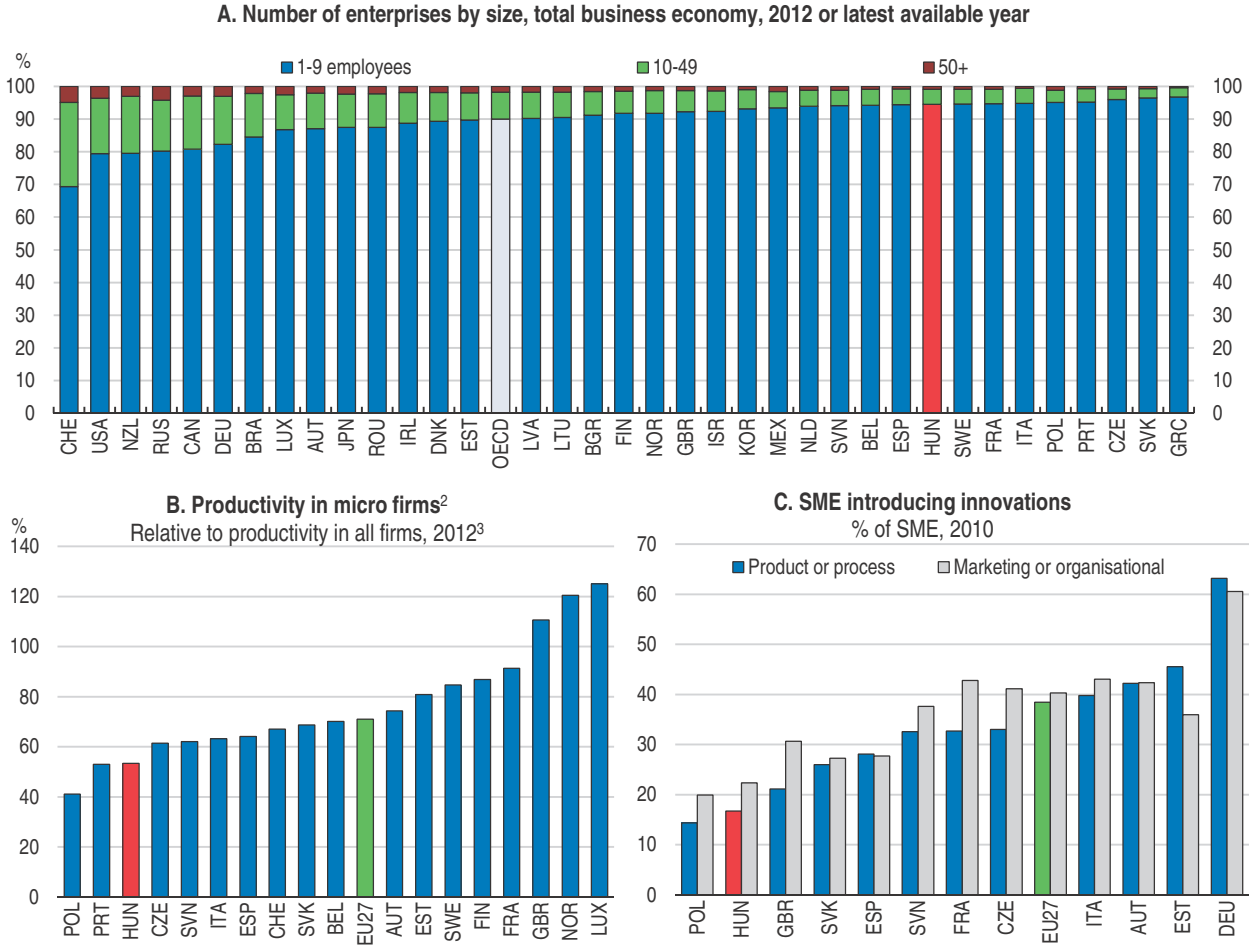
Figure 26. **Many small and medium-sized enterprises (SME)[1] have low productivity and innovative activity**



1. Enterprise size classes are based on the number of persons employed: a SME employs 0-249 persons and a micro firm employs 0-9 persons.
2. Productivity is defined as value added at factor cost (in euros) per person employed. The sector covered is the total business economy (including repair of computers, personal and household goods; excluding financial and insurance activities). 2010 data for Germany, Switzerland and the EU aggregate.
3. 2010 data for Switzerland and the EU aggregate and 2011 data for France.

Source: OECD (2015), *Entrepreneurship at a Glance 2015*, Fig. 2.1; Eurostat (2015), "Structural Business Statistics – Industry Trade and Services", *Eurostat Database*, April; and European Commission (2014), "SBA Fact Sheets 2014" for each country, *DG Enterprise and Industry*.

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SMEs and many of them are not very competitive, as they suffer from low productivity and innovative activity, hindering their involvement in GVCs (Figure 26).

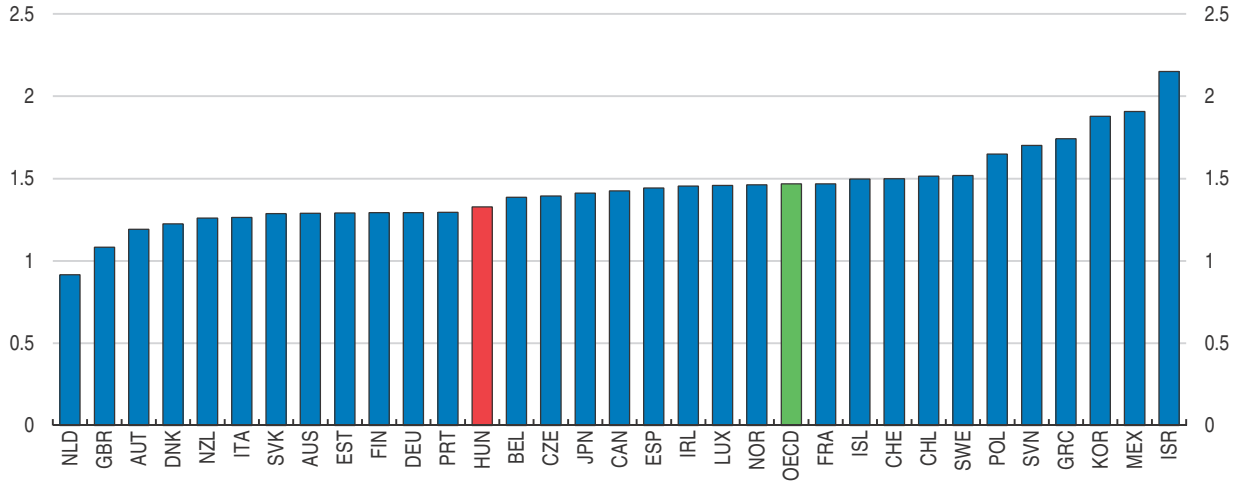
Broadening participation to other sectors is difficult to achieve through inward FDI, as the comparative advantages in terms of attracting inward FDI have been eroding over time (Chapter 1). Thus, promoting participation of other industries must rely on removing entry barriers and other pro-competitive regulatory reforms (Chapter 1), and by building an education system that is better at matching the needs of a labour market that can support increasingly sophisticated economic activities (Chapter 2).

Frequent changes in the regulatory framework holds back business investment

OECD's PMR indicator shows that on average regulation is not particularly strict and the government has a programme to simplify regulation (Figure 27). However, regulation has often changed and at times there has been a lack of coordination across policies, creating regulatory uncertainty and high compliance costs that weigh on investment (OECD, 2015a; World Bank, 2015). The government should strengthen the role of Regulatory Impact Assessments (RIA) to improve the quality and stability of regulation and policies (OECD, 2014d). The general knowledge and transparency of RIA would be enhanced by publishing the government's annual RIA report that is currently for internal consumption. In addition, standardised and more transparent RIA guidelines should be adopted. Charging a body to evaluate and improve RIA processes and to develop a common methodology for measuring the effects of policy initiatives across all proposals would facilitate better regulatory policy making.

Figure 27. **Product market regulation is below average in the OECD**

Product market regulation indicator, Index scale of 0-6 from least to most restrictive, 2013



Source: OECD (2014), "Economy-Wide Regulation", *OECD Product Market Regulation Statistics Database*.

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Tax policies weigh on investment incentives as the tax system is subject to frequent changes and has high compliance costs for SMEs (OECD, 2014a). Moreover, the sector taxes complicate the tax system, which is otherwise relatively simple, and are often based on turnover, which itself tends to distort activity. In addition, the rates in the sector taxes tend to increase with their tax bases. As a result, the tax incidence is higher for larger and typically foreign-owned companies and incentives for FDI, entry and expansion incentives are reduced. Fostering investment incentives requires a simpler and more predictable tax system for SMEs, while the distortive sector taxes should preferably be phased out or at least have identical rates across competitors in the same sector.

Better public procurement would enhance the efficient use of EU structural funds. These funds are facilitators for economic growth and business investment (MFB, 2015). The funds are dedicated to underdeveloped part of the country rather than the high growth areas in the middle and western part of the country. Hungarian financed public infrastructure investment should complement the EU funds by promoting agglomeration

effects in the high growth areas. This should include upgrading secondary and tertiary networks as well as other measures to promote communication.

However, not all public procurement has been open to tendering. The government has introduced a new public procurement framework, which should ensure that all public procurement follows EU rules in this area. Also, corruption has been a recurrent issue. The National Anti-Corruption Programme could be bolstered with the establishment of a dedicated anti-corruption agency as done in other countries in the region, Australia and Spain. A noticeable example in this area is the success of Hong Kong's anti-corruption agency in reducing corruption (OECD, 2013b).

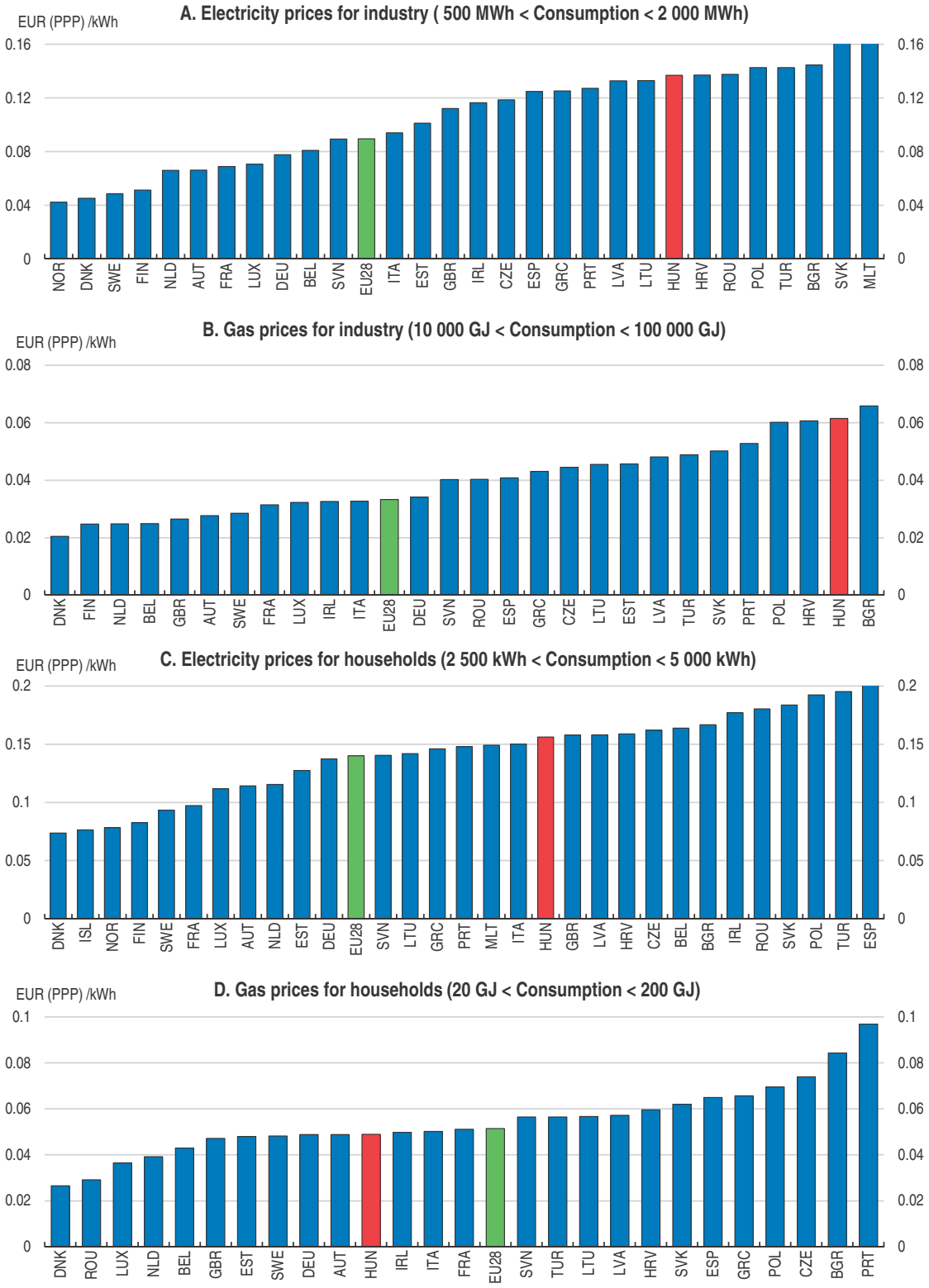
The role of the competition framework could be strengthened. Not all bills from the government and parliamentarians are submitted to the competition authority for commenting on the competition aspects of the bills. The quality of regulation could be strengthened if the competition authority systematically commented on all relevant proposals. Moreover, a number of sectors are exempted from various elements in the competition law. The agriculture sector is exempt from the competition act's ban on restrictive practices – the exemption is only applicable to local markets where EU-trade is not affected (European Commission, 2014). Nonetheless, the exemption increases regulatory uncertainty with detrimental effects on investment incentives and should be removed. Another area that reduces investment incentives is the government's wide scope for using decree to exempt whole sectors from merger regulation on public interest grounds. This means that market participants in that sector do not know what forces are shaping future market structures. In contrast, the European standard is that governments only after a full merger review can permit the competition decreasing mergers on clear and limited public interest grounds, preserving competition as the main shaper of market structures. Hungary should follow the European merger standard.

Entry into network sectors has become more difficult. State-owned energy companies have taken over energy retailing and the energy regulator imposes universal service obligations and price regulation. The energy market is characterised by low gas and electricity prices for households, but high prices for firms, which reduce competitiveness and investment incentives (Figure 28). Moreover, the state-owned retailers may bear a cost of up to nearly ½% of GDP for providing low retail prices, and if energy prices rise again this cost will rise too. This situation is likely to result in higher government contingent liabilities, as the retailers may eventually have to be bailed out. The government should introduce market-based energy prices by giving the responsibility for regulating prices to the sector regulator, using clear competition-friendly pricing principles. Public service obligations should be met through explicit and transparent compensation to providers. This would reduce distortions and, by increasing transparency, perhaps lead to better decisions regarding public service provision.

Regulation of the retail sector has increased, reducing entry, ICT investment and inward FDI incentives. Permissions are required for opening outlets larger than 400 m^2. However, the permission granting powers have been moved from a ministerial committee to one single local government official with ample room for discretion in giving derogations from the rule (LawNow, 2015). Media reports that for food outlets, derogation has seldom been granted to foreign-owned outlets, but larger Hungarian owned chains and, less frequently, smaller independent shops have benefited from derogations (Tldr.444; 2015). Transparency could be improved by clarifying the rules for derogations, increasing

Figure 28. **Energy prices are high for firms and low for households**

Prices excluding taxes and levies, 2015 S1



Source: Eurostat (2016), *Energy Price Statistics*.

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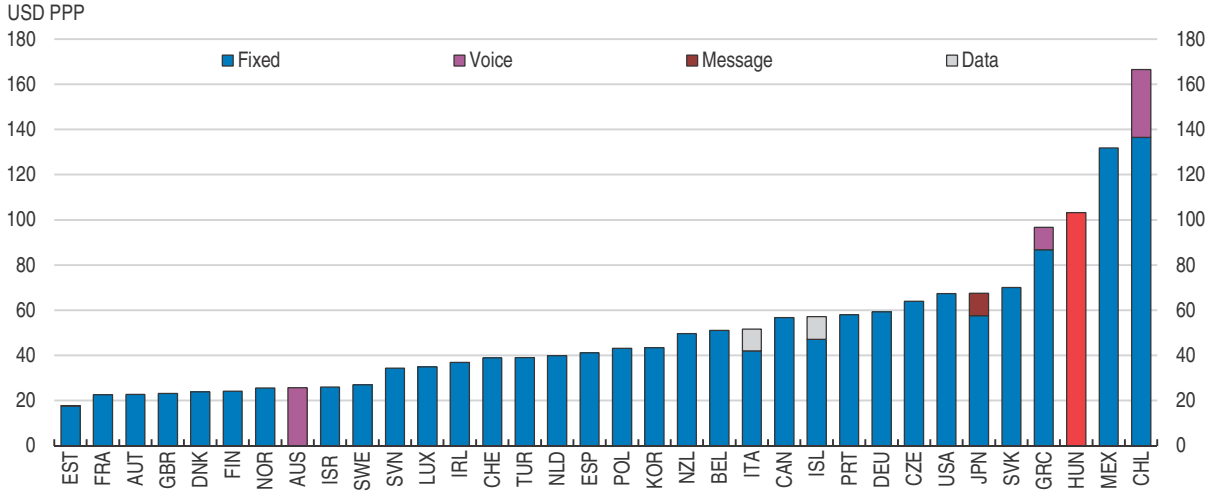
the ceiling on surface area, establishing secure clear guidelines, and move permission granting powers to local municipalities. For public policy reasons, Sunday opening hours were restricted to smaller shops and, tourist areas. However, such regulation reduces investment incentives for creating larger and more efficient outlets. The Sunday opening hour restrictions were repealed in spring 2016. Retail efficiency is also hampered by a sector tax (a food chain supervisory fee) which previously had rates that increased with turnover. The sector tax should be reconsidered. Revenue shortfalls could be secured through the broader and less distortionary VAT system.

The telecommunication sector is highly concentrated. The regulatory framework is in line with EU recommendations. Nonetheless, local loop unbundling is not in place and non-discriminatory third party access for MVNOs to networks is not secured. As a result, telecommunication prices are the highest among European member states (Figure 29). This weighs directly on investment incentives both in the sector and in the wider economy (OECD, 2015), and hurts especially poor households. Indeed, Hungary has low telecommunication investment per capita and relatively few households have access to broadband networks or even have a computer at home. A new mobile network operator is entering, but it will have less network capacity and weaker financial backing than the incumbents (BMI Research, 2014). Liberalising the sector and boosting investment incentives requires that the government award a spectrum with full band width to a new mobile network operator and that mobile virtual network operators (resellers of bulk purchases) have non-discriminatory access to networks. The government's effort to have country-wide broadband coverage by 2018 through the Digital Hungary Programme to stimulate broadband penetration would be enhanced by securing local loop unbundling.

Figure 29. **Telecommunication prices are high for high-usage consumers**



Note: 900 calls + 2 GB mobile basket, August 2014, VAT included.
Source: OECD (2015), *OECD Digital Economy Outlook 2015*, Table 2.92.

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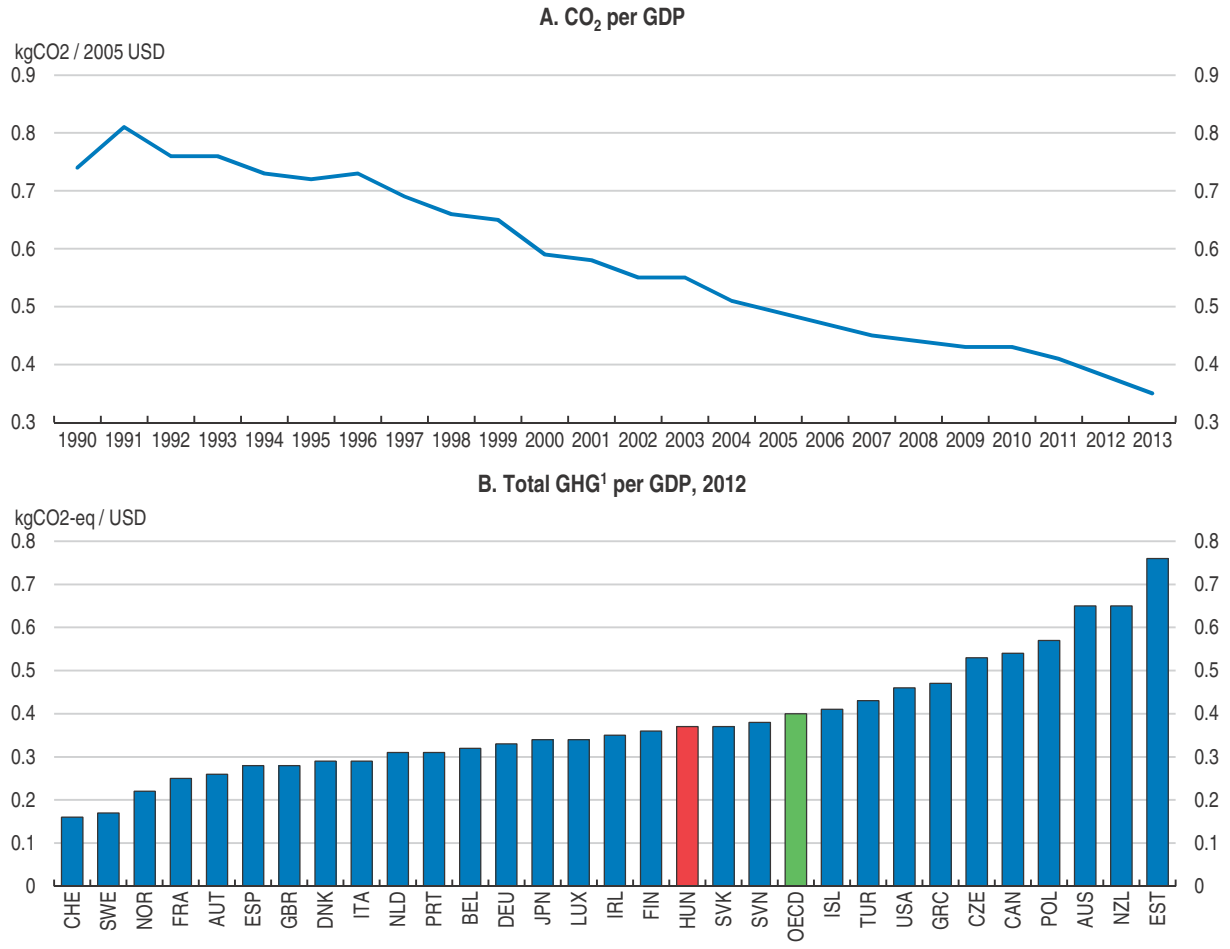
More investment is needed to achieve environmental objectives

Hungary has made considerable progress in reducing CO_2 emissions over the past couple of decades (Figure 30). This has allowed greenhouse emission intensity to be lower than many of the other countries in the region, although the intensity remains higher than

Figure 30. **Emission intensity is declining**



1. Total emissions of CO_2 (emissions from energy use and industrial processes, e.g. cement production), CH_4 (methane emissions from solid waste, livestock, mining of hard coal and lignite, rice paddies, agriculture and leaks from natural gas pipelines), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).

Source: IEA (2015), "Indicators for CO_2 Emissions", *IEA CO_2 Emissions from Fuel Combustion Statistics Database*; OECD (2015), "Greenhouse Gas Emissions by Source", *OECD Environment Statistics Database*.

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elsewhere in Europe. Thus, there is a need further reduce emissions. Current policies to reduce emissions are mostly focused on renewable energy, with the objective of boosting its share from less than 10% to nearly 14% by 2020. Thereafter more ambitious targets are likely in response to the COP21 agreement. The main instrument in place is feed-in tariffs (with time-varying rates), but other instruments include investment financing and guarantees, and biofuel obligations. The feed-in tariffs tend to be lower than in other European countries and favour smaller plants. The parameters of the electricity grid, including limited capacity to accept wind power (and other weather dependent technologies), may have contributed to the instalment of smaller and less efficient wind mills. As a result, the support system is not always promoting scale effects in the provision of renewable energy. Investments in renewable energy generation could be stimulated by implementing a feed-in tariff system that is not biased in terms of technology, scale, and time of generation. Another approach could be to use competitive auctions for renewable energy projects.

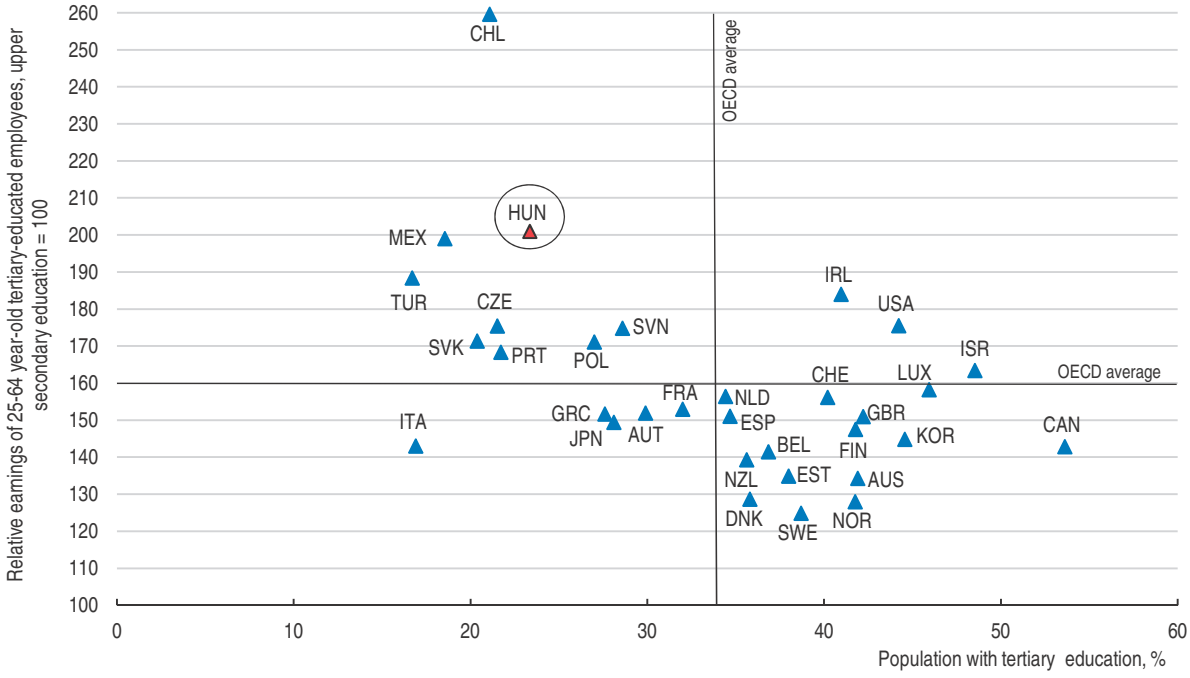
Enhancing skills to boost growth

Economic restructuring over the past decades has changed the labour market's skill requirements raising demand for high skilled workers as integration in GVCs has shifted manufacturing production towards sectors with more technology content. This dynamic will continue as Hungary continues to catch up to the richer OECD countries, as the associated move up GVCs is likely to create new job opportunities for well-educated professionals (EC, 2015a). Workers with poor and obsolete skills suffer from high unemployment. At the same time, many companies are experiencing growing shortages of labour with relevant technical skills (Manpower Talent Shortage survey, 2015).

However, the education system has not responded at the same pace. Enrolment in secondary education has increased substantially, although graduates have difficulties finding a job; the employment rate for youth age 20-24 is below the OECD average. Enrolment in tertiary education has also increased over the past decades, but graduation rates, while rising, remain low. Thus, relatively few adults have tertiary education, but those who do command one of the highest wage premia in the OECD (Figure 31). Moreover, graduation rates are increasing in fields where employment growth is relatively low, leading to growing mismatches with many workers in occupations that are not directly related to their field of study, weighing on wages and productivity (OECD, 2014a; OECD, 2015a).

Figure 31. **The room for further expansion in tertiary education remains high**

Relative earnings of tertiary-educated workers and their share in the population, 2013 or latest available data



Note: Tertiary education includes short cycle tertiary, bachelor's, master's, doctoral or equivalent degrees. Data on educational attainment refers to year 2014 or latest available year.

Source: OECD (2015), *Education at a Glance 2015*, Tables A1.3a and A6.1a.

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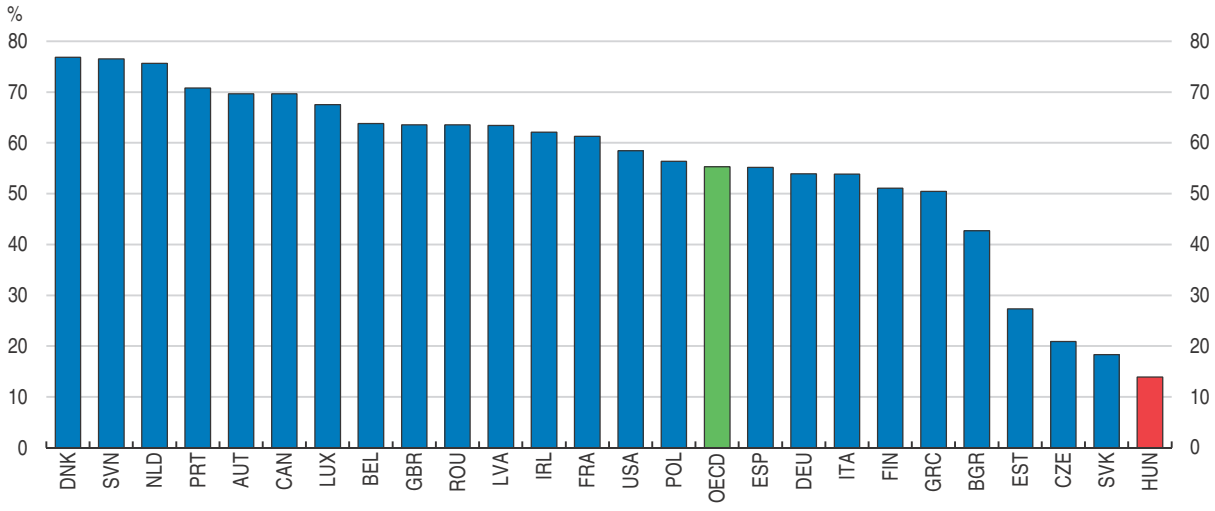
Despite progress, still few women with small children work in the labour market, even though they often have tertiary education. Parental responsibilities keep mothers with two children out of work for one of the longest periods in the OECD (Figure 32). This reflects

Figure 32. **The impact of motherhood on employment is very high**

Employment rates for mothers with youngest child aged 0-2, 2013[1]



1. 2012 data for Denmark and Finland.

Source: OECD (2015), *Pensions at a Glance 2015*, Fig. 3.7.

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long parental leave and insufficient availability of care facilities for young children. The government has taken steps to improve women's options to gain paid employment, including tax relief for employers hiring parents with young children, permitting parents to work without losing parental benefits, the introduction of measures that oblige employers to allow returning mothers to work part-time until their children reach the age of three (potentially discouraging the hiring of young women), and expanding nursery capacity. But allowing more mothers to work will require better possibilities for reconciling work and family life. Further expansion of child care for 0-3 year-old children would increase parents' options regarding the choice between jobs and care. Private provision of such services could be promoted by transforming part of the parental leave benefits to a voucher linked to the purchase of childcare services (OECD, 2007). Reducing parental leave would keep women more in touch with the labour market; better transforming part of maternity leave into paternity leave would allow fathers to share in the care of their young children and even the playing field in this respect between women and men.

Only 42% of older workers (55-64 years) are working – one of the lowest figures in the OECD. Older workers are much more exposed to a risk of depreciation of their qualification and skills, as the demand for different skills is subject to constant change. Nonetheless, only few older workers participate in lifelong learning, contributing to the low employment rate (OECD, 2012a). To bolster lifelong learning, the government has introduced an adult training programme for acquiring a second vocational qualification. Experience in other OECD countries, such as Canada, Netherlands and Spain, indicates that creating tool sets, including individual learning accounts, can be effective in facilitating lifelong learning. The accounts could be financed through the vocational training contribution (1.5% of wages) and they would provide older workers with more responsibility and control of their own training to match their needs. This could be complemented with training vouchers to older workers, as is done in Austria (OECD, 2005).

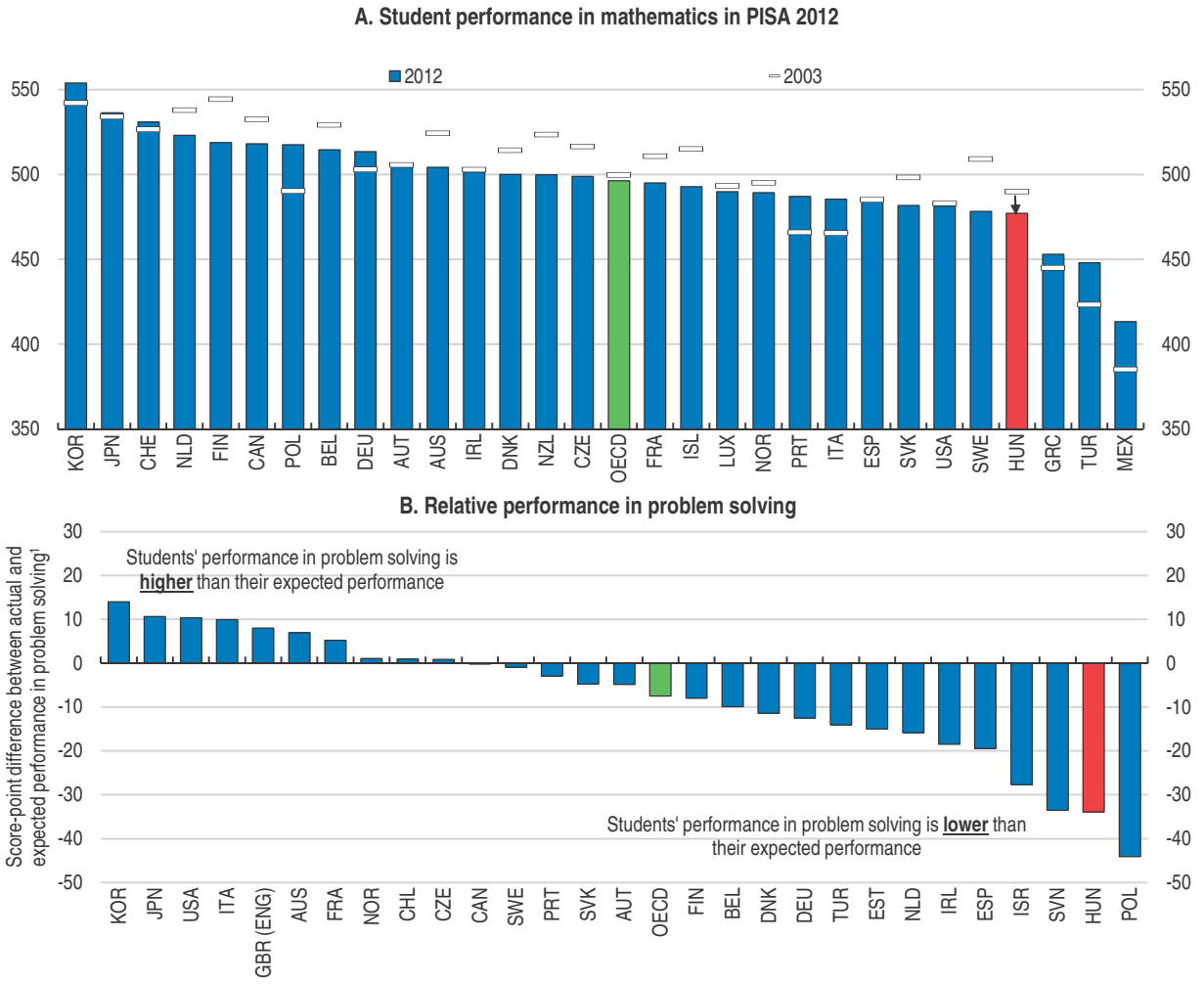
Emigration of young and skilled workers contributes to labour shortages in some professions, such as in the health care sector. Since 2008, the stock of emigrants has tripled to 3% of the labour force. The government is trying to attract skilled young expatriates through the recently launched "Come Home, Youth!" programme, which covers part of resettlement costs and provides a monthly wage subsidy for one year (of EUR 320). Uptake has been limited. Other countries, for example, Denmark, Finland, Ireland, and the Netherlands, have also granted tax concession for returning high-skilled workers (OECD, 2011). Further easing of visa and work permit requirements can help attract skilled labour from outside EU. Special attention in this respect should be given to (the relatively few) international students, who have studied in Hungary and are thus familiar with the language, institutions and culture. These students should be allowed to look for a job after graduation and automatically provided with work permit if they find a job.

Regarding low-skilled workers, the scaling up of public work schemes has provided temporary relief from unemployment of people who have long been excluded from the labour market through mostly menial jobs, notably benefitting low-skilled workers in poor regions with weak labour market prospects. Ideally, public works jobs would lead to jobs in the primary labour market. However, less than 14% of participants have found employment in the primary labour market after terminating work in the scheme, and most participants return to the scheme after another spell of unemployment. This is in line with experiences in other countries, indicating that skills gained in public work schemes are seldom relevant for private sector employment. Indeed, participation in public work schemes can even lower subsequent employment probability as enrolees are prevented from job search or training activities (Card et al., 2015).

To address this issue, the authorities are bolstering the schemes' training component to include one-fifth of participants – an approach that holds the promise of making growth more inclusive by bringing those who have been excluded from the labour market into regular work. A problem is that training has not markedly increase employment probabilities, reflecting large uncertainties concerning the effectiveness of different types of training. Thus, the scaling up of training should be combined with careful evaluation to identify training programmes that favour subsequent employment. Increased transit from the schemes to the private labour market should be the success criterion for the schemes. The effectiveness of the schemes might be bolstered if they were closely coordinated with other job programmes, such as job search assistance and mentoring. Indeed, the new profiling system could be a step in this direction. If such measures were successful, the public works schemes could be scaled back as over time fewer people would need this sort of support.

PISA scores have been deteriorating, including in mathematics, and are now below the OECD average in all assessed subject (Figure 33, Panel A). More worryingly, the education system falls short in preparing students to perform tasks required in today's labour market, such as solving non-routine problems in unfamiliar situation. Indeed, the PISA tests show that problem solving skills are among the weakest in the OECD. Particularly, students perform significantly worse in problem solving than students in other countries with similar performance in core subjects, suggesting that Hungarian teaching remains too content-centred with little space for knowledge application (Figure 33, Panel B). In contrast, the rapid changes in the economy and technology require the ability to adapt to new circumstances and learning in unfamiliar contexts. Empirical research confirms that those with the highest level of proficiency in problem solving also find employment in the occupations with the strongest employment creation (OECD, 2014c).

Figure 33. **Student performance in PISA 2012 has deteriorated**



1. Each student's expected performance is estimated, using a regression model, as the predicted performance in problem solving given his or her score in mathematics, reading and science.

Source: OECD (2014), *PISA 2012 Database*, Tables I.2.3b and V.2.6.

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Good learning requires highly qualified and motivated teachers. However, teacher salaries are among the lowest in the OECD and teachers tend to face high administrative workloads. The government has introduced a new career model and promotion system for teachers to increase their salaries. This is step in the right direction. In addition, in countries where teachers have relatively low pay, an element of performance-based pay can improve student performance (OECD, 2012b). This should be complemented with measures to ensure continuous professional development. Recent reforms in Hungary have centralised responsibilities for schools teachers' salaries and career system. In this context, the authorities should restore school autonomy to allow school to adapt to local context (OECD, 2014a). In addition, administrative burdens should be reduced to give teachers more time to teach and prepare as well as enable principals to engage more in pedagogical leadership.

Vocational education has two pathways: vocational training for less academically inclined students and vocational secondary schools with a higher element of general

education with the possibility for accessing tertiary education. Vocational training provides practical workplace training, with limited general education content, to prepare students for direct access to the labour market. However, quality is low and vocational training has become the education path for children with weak socio-economic background (Keller and Mártonfi, 2009). Graduates are faced with high unemployment rates, difficulties in finding a first job, and wages that are 25% lower than other secondary school graduates (Hajdu et al., 2015). In addition, the limited general education content reduces graduates' adaptability to changing labour market needs, leading to increasing wage dispersion over time vis-à-vis general education graduates (Hajdu et al., 2015).

The government is reforming VET training by introducing a two-year study extension that leads to the upper secondary degree that gives access to tertiary education. This study programme starts with three years to acquire practical skills followed by two years of general skill studies, rather than an integrated study programme. Integrated study could be achieved by merging the vocational training and vocational school systems. This would increase the emphasis on general skills and improve the reputation of vocational training, helping to close the gap in labour market outcomes between training schools and vocational secondary schools.

Such a reform should be complemented with systematic assessments of students to ensure a basic minimum level of skills and identify those in need of targeted support. A factor behind the poor outcome of workplace training is that often students are allocated to unskilled tasks or only trained in firm-specific skills. To improve the quality of workplace training, subsidies should be introduce to reward companies which have high training quality standards. Also, contractual arrangements should define obligations of trainee and employer to achieve learning objectives, which should be developed by employers and schools.

Tertiary graduates enjoy a favourable labour market situation, but the supply of tertiary graduates remains stubbornly low as less than half of the students are able to finish studies within the required time as completion rate is one of the lowest in the OECD. In addition, labour market outcomes of different tertiary graduates differ greatly. For example, graduates with degrees in informatics and engineering earn more than twice the earnings of graduates in social science or agriculture. Moreover, one in four graduates in tertiary education works in a job that do not need their tertiary degree – a problem also observed in other countries (Nyusti and Veroszta, 2013). This mismatch is the strongest in the fields of social science, agriculture and humanities.

Relatively few financial resources are devoted to higher education. However, both public and private returns to tertiary education are among the highest in the OECD, providing strong incentives for investing in tertiary education. Thus, the government should increasing funding in this area. Moreover, there is a need to enhance incentives for institutions to better respond to labour market needs. This could include better career counselling and strengthen partnership between tertiary education institutions and private companies to facilitate the labour market transition of students (OECD 2014a). Moreover, for equity reasons, means tested support for disadvantaged students, including academic mentoring and financial aid, should be expanded.

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ANNEX

Progress in structural reform

The objective of this Annex is to review action taken since the previous Surveys *(January 2014) main recommendations.*

Recommendations in previous *Surveys*	Action taken since January 2014
A. Recommendations on monetary policy and financial stability	
Assess the effect of the Funding for Growth Scheme on credit and investment before extending it further. Consider linking the refinancing rate to the policy rate, or the quantity and price of funds available to participating banks to changes in their net lending to SMEs. The banks' allowed interest rate margin could also be re-assessed.	The Scheme on investments was assessed in September 2014 and again in end-2015. The cap on the interest rate margin is unchanged. However, the cost of guarantee may increase beyond the cap since May 2015.
To clean up bank portfolios, tighten reporting and provisioning requirements for restructured loans and lending to the riskiest sectors, and take further steps to ease and stimulate collateral liquidation.	Banks' cleaning of the household portfolio is enhanced by National Asset Management Company (NET) MARK's purchases of non-performing commercial real estate loans using a market based pricing model as well by the annulment of the extraordinary eviction moratorium and the new personal insolvency scheme.
Improve banks' operating environment and profitability, notably by reducing instability and tax burdens, and improving tax design.	The upper rate of the banking tax was reduced from 0.53% to 0.24% from 2016. In 2016, the base of the banking tax will be calculated based on the adjusted balance sheet of 2009.
Unless the economy slows significantly, consider any further cuts in the central bank policy rate with extreme caution.	The Monetary Council cut the interest rate in 2014-15 from 3 per cent to 1.35 per cent gradually.
Improve targeting of foreign currency mortgage relief on those debtors most in need.	FX mortgage, personal and vehicle loans were converted into HUF loans. The NET program initially helped 25 000 debtors and was broadened in 2015 to a further 10 000 home purchases.
B. Recommendations on fiscal policy	
Gradually scale down the special taxes introduced over recent years. Instead, rely on more growth, equity and environmental-friendly instruments, such as recurring municipal property taxes and taxation of energy use, and reform family benefits.	The upper rate of banking tax was reduced from 0.53% to 0.24% from 2016. The advertisement tax rate was reduced to a single 5.3% rate with a reduced exemption threshold of HUF 100 million. From 2014, a tax allowance was introduced in public utility tax for small taxpayers in telecommunication sector to reduce administrative burden and market-entry barriers. From July 2015, the exemption of the advertisement tax base was decreased from HUF 500 million to HUF 100 million and only two brackets were applied, 0% and 5.3%.
Ensure that the planned fiscal expansion in 2014 remains moderate. Take gradual consolidation steps over the medium term to put public debt on a firmly declining path, in accordance with the fiscal rule.	Deficit in 2014 remained unchanged before decreasing slightly. Debt decreased gradually between 2013 and 2015.
Broaden the mandate of the fiscal council to medium-term issues, but reconsider its veto power over budget laws.	
C. Recommendations to enhance competition and the business environment	
Improve regulatory quality and stability, introduce mandatory consultation with experts and stakeholders for parliament-initiated legislation, and further build capacity for high-quality regulatory impact assessment (RIA) of government-initiated legislation. Ensure timely and transparent related implementing regulations. RIA outputs and opinions delivered in consultations should be made public.	No action taken.
Promote simplification and stability in taxation, curb tax expenditures and other special provisions, and consolidate several related taxes into fewer and broader ones.	Tax authority introduced the terms "reliable" taxpayer, who are eligible to reduced deadlines for refund of the reclaimed VAT decreases and tax audit deadline. The tax liability of taxes and customs duties are registered on a single account, reducing compliance costs.
Promote greater co-ordination among government agencies. Fully implement the inter-operability of databases and ensure appropriate safeguards for data privacy and security.	With the integration of National Development Agencies into the government in 2014, databases and monitoring process are available for the different policy actors. In 2015, a new regulatory framework has been adopted by the Hungarian Parliament on electronic and trust services. The regulation focuses on electronic services provided by all governmental and non-governmental organisations, and on cooperation between state and municipal institutions.
Foster systematic stakeholder involvement in the monitoring of administrative simplification programmes, the results of which should be made public.	Several authorisation procedures were transformed into notification procedures enabling entrepreneurs to commence certain business activities early.
Do not restrict the scope of competition law and ensure vigorous antitrust enforcement.	Introduction of a legal presumption that companies with more than HUF 100 billion in turnover from daily consumption product has a significant market power.
Systematically consult the Competition Authority, as well as relevant sectoral regulators, in draft legislation.	Submissions and draft legislation for comments to Competition Authority has not significantly increased since 2013.
Extend to all loans, both new and outstanding, rules to curb unilateral contract modification by banks.	Since 2015, the fair banking act has strict and detailed rules on unilateral contract modifications by banks.
Further deepen information in credit bureaus, by including data from non-bank sources and imposing mandatory disclosure and storage of positive credit information on individuals.	No action taken.

Recommendations in previous *Surveys*	Action taken since January 2014
Increase the targeting of public venture capital programmes to innovative firms.	No action taken.
Ease market exit and foster entrepreneurship by shortening corporate insolvency procedures and introduce a personal insolvency framework.	The personal insolvency framework was set up in 2015.
Decrease barriers to entry in retail through administrative simplification and by substantially raising the surface threshold for the regulation of large outlets (currently at 300 square meters).	The threshold was increased to 400 m^2 and the permit competency was transferred to the Hajdu-Bihar County Government Office.
Reconsider training requirements and exclusive rights in professional services with a view to reducing them. Curb the right of professional chambers to make price recommendations.	As a result of the overall supervision of the industrial, commercial and tourism and catering qualifications, 51 qualification requirements are abolished, 96 remained in effect and a further 39 simplified in the first half of 2015.
Liberalise the pharmacy sector by abolishing geography and demography-based entry barriers as well as ownership requirements by pharmacists.	No action taken.
Move towards market-based pricing in electricity and gas by vesting the right to set regulated prices in the sectoral regulator.	No action taken.
Promote regional energy market integration through better cross-border interconnections and market coupling.	In 2015, the Hungarian-Slovakian natural gas interconnection started commercial operation.
Increase energy use taxation, together with stepped up efforts at individual metering and consumption control in district heated flats and the provision of consumer information about the benefits of energy saving investments.	Energy tax rate was increased following EU regulations (minimum tax) due to changes in the HUF/EUR exchange rate.
In mobile telecommunications, ensure that mobile virtual network operators can buy full wholesale access to the existing physical networks on competition-enabling conditions.	No action taken.
Launch a new spectrum auction to enable market entry by an additional mobile network operator.	The National Media and Info-communications Authority published the tender documentation for the utilisation of several frequency bands.
D. Recommendations to enhance labour market participation and mobility	
Reduce the tax wedge on low salaries to stimulate low-skilled employment. Target existing cuts in social security contributions (Job Protection Act) exclusively on low salaries.	The scope of people entitled to family allowance broadened from 2015, so that foster parents and legal guardians also become entitled. Another measure is doubling the child tax allowance for families with two children between 2016 and 2019. From 2015, also part-time workers with children are entitled to receive the total amount of the Job Protection allowance on social contribution tax and vocational contribution.
Refrain from increasing the minimum wage by more than warranted by inflation and productivity developments, and consider even freezing it for some time. Consider moving towards a lower minimum wage in disadvantaged regions.	No action taken.
Enhance reintegration of public workers through evaluation of training, co-operation between municipalities, job centres, non-governmental organisations and private firms, and support to micro-entrepreneurship. Give municipalities financial incentives to reintegrate participants to the labour market.	A new large-scale training programme was launched in early 2016 which aim to involve 85 thousand low-skilled and public work participants until 2018.
Scale up the capacity of the Public Employment Service in terms of staffing and efficiency. Increase the duration of unemployment benefits. Monitoring and enforce job search requirements.	No action taken.
Evaluate the efficiency of training programmes for the unemployed, publish the results, and involve the unemployed more in the choice of their training provider.	No action taken.
Tackle school segregation by sending pupils in small rural schools to more socially diverse schools in larger towns. Target resources to disadvantaged schools and give teachers financial incentives to work in disadvantaged areas.	Special allowance teachers working in disadvantaged towns and villages in terms socio-economic and infrastructural situation and to teachers working in kindergartens and schools located in villages with a high share of unemployment.
Preserve the functional and pedagogic autonomy of schools, but reinforce benchmarking to enhance accountability.	New assessment and evaluation systems of the public education institutions were introduced. In vocational education, 44 regionally organised centres with considerably higher level of pedagogical and operational autonomy were set up in 2015.
Postpone tracking to enhance the general skills of pupils and their future adaptability to change jobs.	A mandatory kindergarten age of 3 year was introduced in 2015.
Encourage participation of disadvantaged students by extending the state financing of studies to all disadvantaged students meeting admission criteria	No action taken.
Use the information collected on labour market outcomes of students more intensively in the allocation of state-financed (no tuition fees) positions across fields of study.	The list of tertiary qualifications has narrowed the list of programmes to focus better on labour market relevant programmes.
Combine easier visa requirements, language courses, support for administrative procedures and possibly tax incentives to attract high-skilled immigrants.	No action taken.

Recommendations in previous *Surveys*	Action taken since January 2014
Encourage the development of the rental market by gradually phasing out mortgage interest subsidies and increasing recurrent municipal property taxes.	The number of local governments levying building tax, land tax and communal tax has grown so by 2015 over 85% of municipalities has introduced such taxes.
Improve the regulatory environment of rental contracts by simplifying and shortening eviction procedures.	From September 2015, the extraordinary eviction moratorium has ended.
Finance the public transport companies transparently with pre-determined annual subsidies in exchange for an agreed level of service. Gradually reduce subsidies over the coming years to push for efficiency gains.	Expenses regarding public passenger transport have decreased in the last period, e.g. the cost claims of MÁV-START Ltd. was HUF 163 billion in 2009 which decreased to HUF 144 billion by 2015.
Assess the costs and benefits of keeping low-traffic train lines open and publish the results. Where justified, replace them by bus services, which would be cheaper.	No action taken.
Reassess public transport discounts to specific groups, so as to reduce transport costs for other travellers.	No action taken.

Thematic chapters

Chapter 1

Bolstering business sector investment

Strong investment is key for accelerating productivity and income growth. The current business investment-to-GDP ratio is not high enough to markedly accelerate the current low potential growth rate. Moreover, a relatively large share of business investment comes in the form of FDI. This reflects comparative advantages in areas, such as a skilled work force, favourable regulation and taxation. These advantages are challenged as neighbouring countries adopt similar FDI regimes. This means that looking ahead boosting business investment must increasingly rely on stimulating domestic firms' investment incentives. This could arise through more stable regulation and a more pro-competitive business environment. To that aim, the policy formulation process should be strengthened, exemptions from the competition framework limited, and non-discriminatory access to networks should be secured.

Introduction

Accelerating income convergence requires bolstering growth. To achieve this, production needs to be moved towards best international production practises by improving the economy's international connectedness, ability to allocate skills, and boosting investments in knowledge based capital, including R&D and other intangibles (Saia et al., 2015). Policies for stimulating business investments are very broad in scope, but have in common that they have to be stable, non-biased, and facilitate new entry. The chapter starts by describing investment developments and the importance of inward FDI. This is followed by an assessment of FDI policies, before considering policies that can make domestic firms more competitive by stimulating their incentives for investing in new products and technologies. Subsequently, network sectors are considered in terms of how they better can support investment opportunities in upstream markets. The chapter ends with an analysis of how investment in renewable energy can be stimulated.

Investment has fallen due to a lack of opportunities and financing

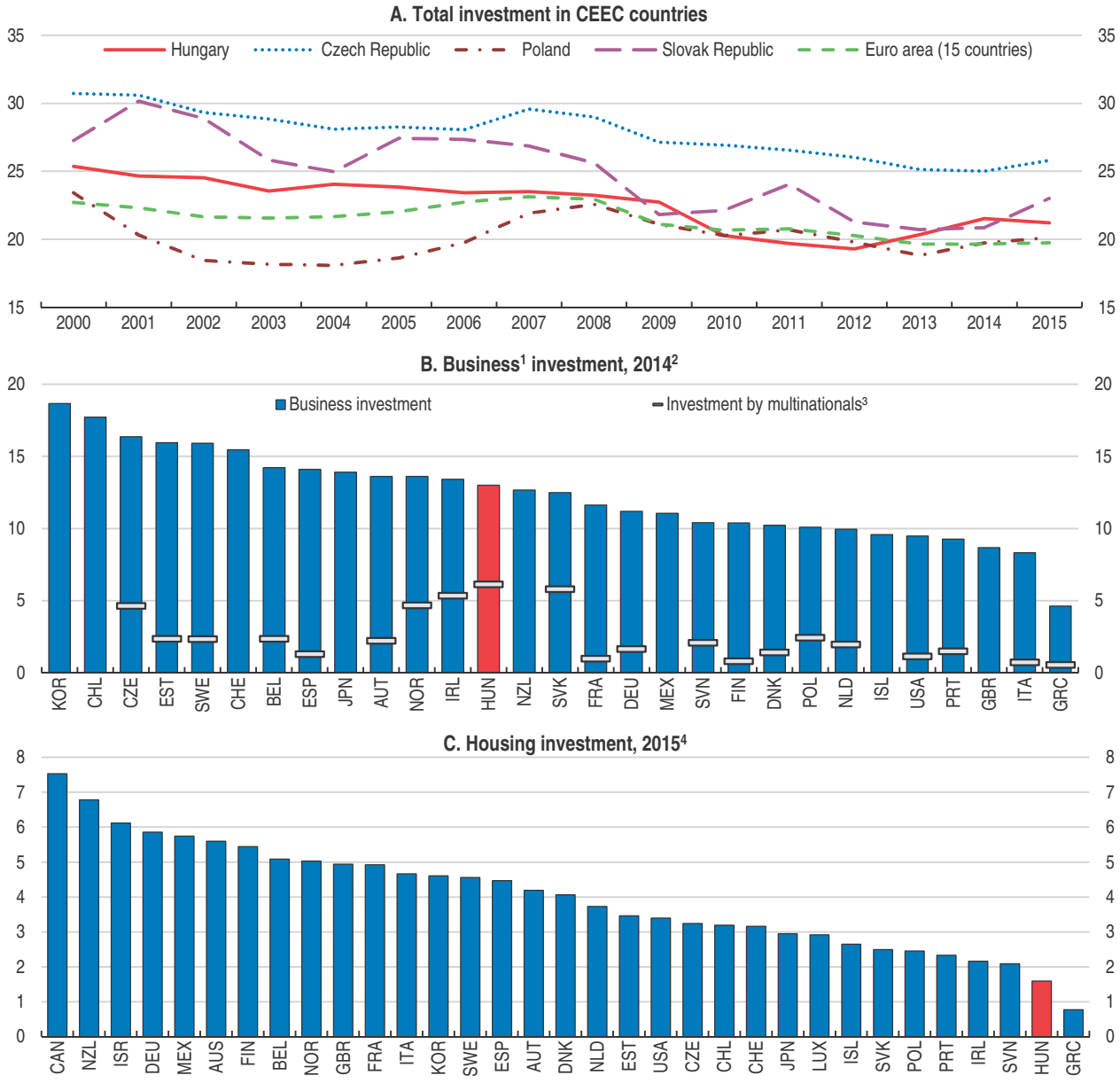
Prior to the crisis in 2009, total investment hovered around nearly a quarter of GDP, before falling by some five percentage points. This was mostly driven by a large contraction in business sector investment. This was accentuated by housing investment falling to an internationally low share of GDP as house prices collapsed (Figure 1.1). On the other hand, public investment was boosted by EU structural funds. The contraction in investment was more severe than in most other countries, but has since recovered (Figure 1.2). Moreover, the relatively close relationship between economic activity and business investment that could be observed prior to the crisis has eroded in the 2010s. As a result, the level of business investment is well below what economic growth would suggest (Figure 1.3). While the current business investment-to-GDP ratio suffices to support the current potential growth rate of around 2%, the rate is insufficient to markedly accelerate income creation and reduce the income gap *vis-à-vis* the Euro area (OECD, 2015a).

The decline in business investment can be explained by a number of factors. The crisis induced a sharp reduction in current and expected demand. In addition, financing of new investments became more difficult as profits of domestic firms fell and bank financing became scarce (Government of Hungary, 2015a). Domestic firms' profits still have to return to their pre-crisis level (Bauer, 2014).

The fall in profitability reflects the crisis as well as the introduction of sector specific taxes, which together with frequent changes (particularly in the aftermath of the crisis) in the regulatory environment (see below) reduced predictability and risk tolerance, dragging down investments (Martonosi, 2013). The banking crisis together with the implementation of additional taxes on banks sharply reduced bank's willingness to lend.

Figure 1.1. **Investment is picking up**

As a percentage of GDP



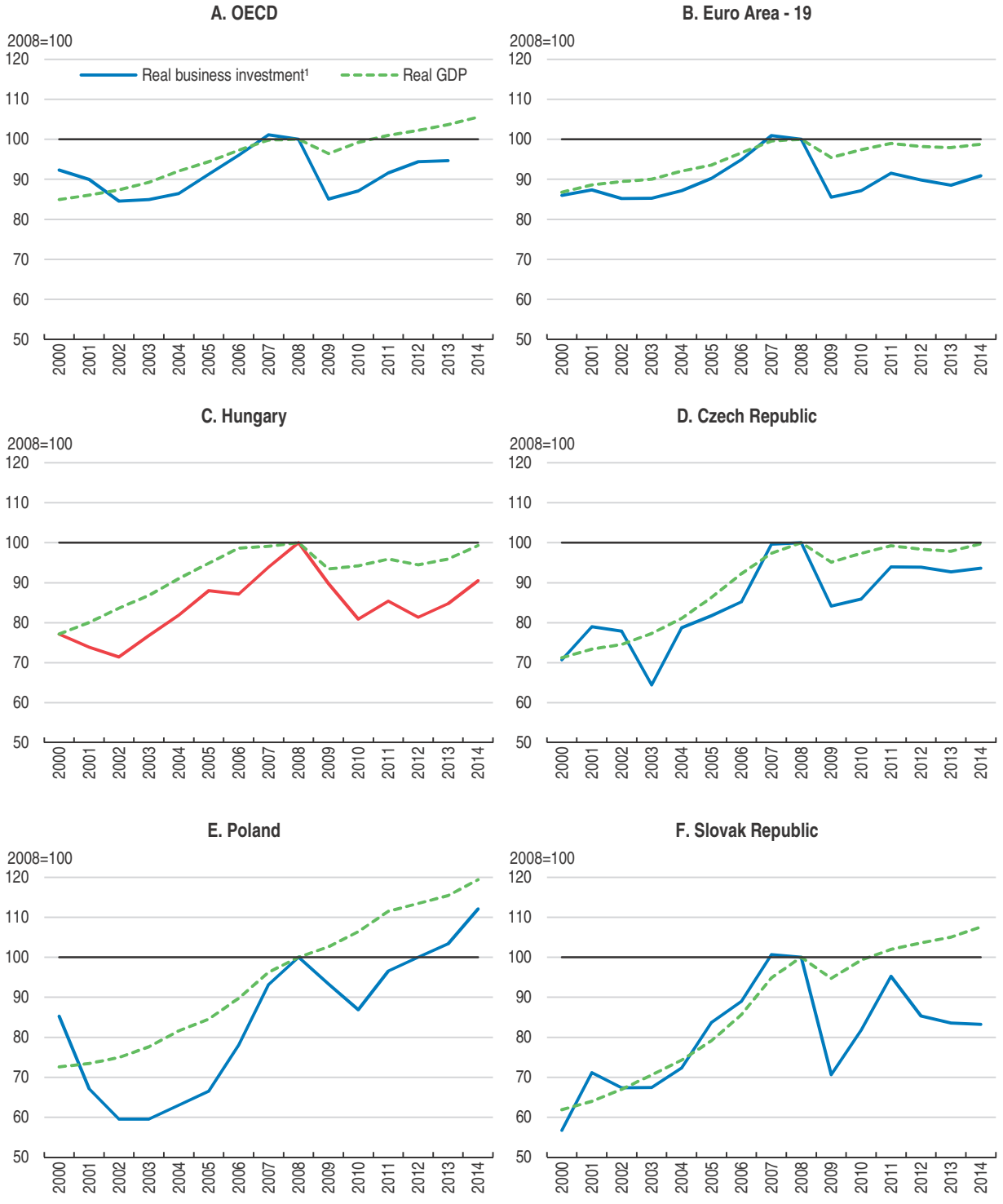
1. Non-financial corporations.
2. 2013 data for Chile, Iceland, Korea, Mexico, New Zealand and Switzerland.
3. Gross investment in tangible goods by multinationals in % of GDP in 2012.
4. 2014 data for Hungary and Poland; 2013 data for Chile and Switzerland.

Source: OECD (2016), *Analytical Database*; OECD (2016), *OECD National Accounts Statistics Database*; OECD (2015), *OECD Statistics on Measuring Globalisation Database*.

StatLink http://dx.doi.org/10.1787/888933349330

Even when firms get sufficient demand and potential financing for new investment, they may still be reluctant to invest owing to their high debt (Table 1.1; Lewis et al., 2014). Debt is coming down, but remains above its pre-crisis level (OECD, 2015a) which constitute a drag on investment as long as firms want to improve their balance sheet.

Figure 1.2. **Real business investment contracted relatively more than in many other countries**



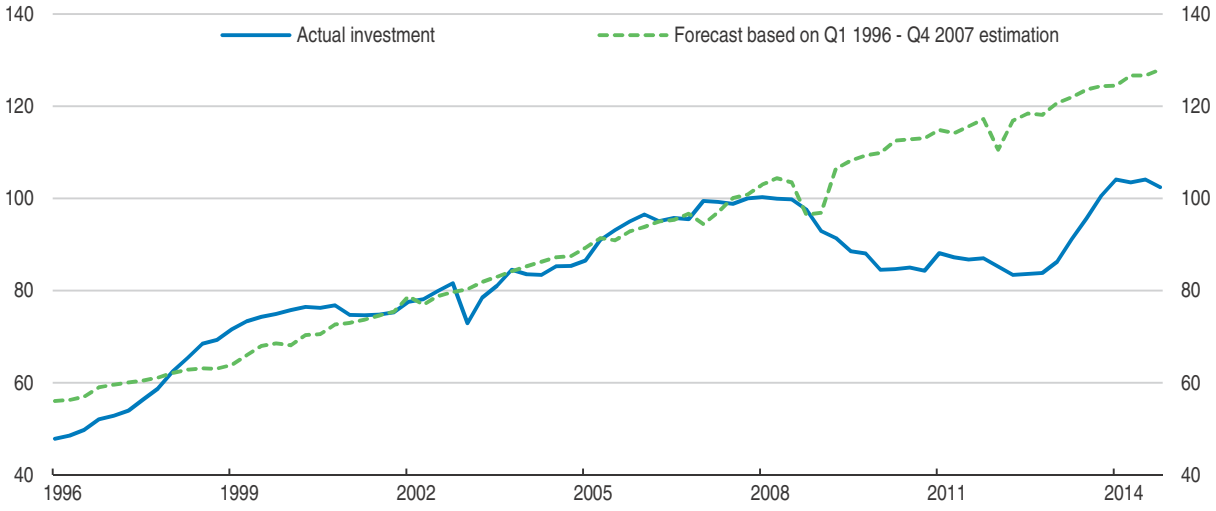
1. Non-financial corporations.

Source: OECD calculations based on OECD (2015), *National Accounts Statistics Database*; Eurostat (2015), *National Accounts Database*.

StatLink http://dx.doi.org/10.1787/888933349597

Figure 1.3. **Investment development is lower than expected**

Simple accelerator model of non-residential investment, value of actual investment in 2007 Q4 = 100[1]



1. In real terms. 4-quarter moving average applied. Actual GDP and capital stock series are used to calculate the forecast based on 1996 Q1-2007 Q4 estimation. In the estimations, the level of investment is explained by current and lagged changes in real GDP, and replacement investment. For more information on the methodology: OECD (2015), *OECD Economic Outlook*, Vol. 2015, Iss. 1, June, Annex 3.1.

Source: OECD (2015), OECD calculations based on *OECD Economic Outlook: Statistics and Projections Database*.

StatLink http://dx.doi.org/10.1787/888933349490

Table 1.1. **The corporate sector has a high level of debt leverage**

	Debt-to-equity ratio			Share of cash & deposits in total assets (%)			Share of debt securities in debt (%)		
	Average 99 Q1-07 Q4[1]	2008 Q4	2014 Q3[2]	Average 99 Q1-07 Q4[1]	2008 Q4	2014 Q3[2]	Average 99 Q1-07 Q4[1]	2008 Q4	2014 Q3[2]
Hungary	**0.912**	**1.165**	**1.033**	**15.3**	**12.8**	**12.2**	**1.0**	**1.0**	**1.6**
United States	0.62	0.87	0.58	8.88	7.81	9.21	24.25	20.80	25.84
Euro area	1.09	1.30	0.94	10.15	11.77	11.80	5.31	4.87	8.57
Japan	1.65	2.04	1.14	23.10	24.52	24.15	12.03	10.52	9.60
Germany	1.29	1.57	1.12	10.24	11.76	10.91	3.80	5.05	5.29
France	0.67	0.90	0.70	4.36	6.20	7.47	12.85	9.89	16.70
United Kingdom	0.86	1.30	0.89	22.20	21.58	31.01	16.21	13.00	17.27
Italy	0.80	0.88	1.20	21.12	24.72	17.73	4.24	4.42	8.40
Canada	0.87	1.09	0.90	15.20	20.69	20.82	24.00	18.20	21.90
Australia	0.57	0.91	0.71	35.40	41.75	44.19	28.80	22.48	22.25
Belgium	0.94	0.95	0.75	9.71	8.08	9.49	2.91	2.75	6.08
Greece	0.94	2.65	1.47	63.72	57.84	57.31	7.28	16.78	1.23
Ireland	1.19	1.75	1.00	20.14	19.12	8.25	2.98	1.51	2.86
Korea	3.41	2.75	1.37	3.41	2.75	1.37	3.41	2.75	1.37
Norway	1.22	1.25	0.94	10.91	10.97	10.10	8.99	6.77	11.46
Portugal	1.48	1.76	1.51	12.92	10.70	10.21	6.34	8.86	10.57
Spain	1.01	1.41	0.87	9.93	11.15	11.19	1.44	0.66	1.71
Sweden	0.79	1.01	0.57	6.13	7.41	5.90	7.11	7.41	10.19

Note: Main differences with Table 2 in Lewis et al. (2014) refer to changes in classification of non-financial corporations in the new system of national accounts.

1. Average ratio is for the period 2001 Q2 to 2007 Q4 for Japan and Ireland.
2. Latest date is 2014 Q2 for Japan, Canada, Korea and Norway.

Source: *OECD Financial Accounts Database*, SNA2008; Eurostat ESA2010; *OECD Financial Accounts*, SNA1993 and OECD calculations.

A remarkably large share of business investment comes in the form of inward FDI (Figure 1.1, Panel B), reflecting large foreign-owned multinational firms adjusting production capacity to the needs of their global supply chains and world demand for their goods rather than domestic developments. Thus, the international economic crisis meant that inward FDI flows have slowed as foreign firms reduced green field investments (i.e. fewer new production sites) and focussed more on relocating production (i.e. opening new production lines within existing production facilities) to Hungary (Hunya and Sass, 2014; Figure 1.4, Panel A). An additional likely factor behind this development is that the comparative advantages of choosing Hungary for inward FDI are challenged by other countries in the

Figure 1.4. **Trends of foreign direct investment in Hungary**

As percentage of GDP

1. 2013 data for Poland.

Source: Magyar Nemzeti Bank; OECD (2015), *Foreign Direct Investment Statistics Database*; UNCTAD (2015), *World Investment Report 2015*.

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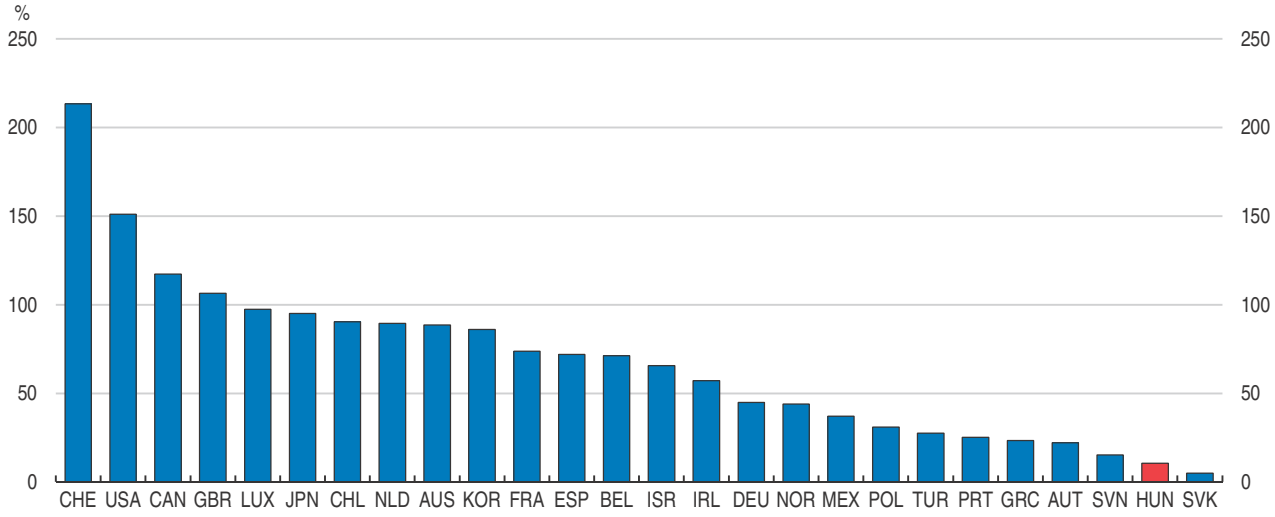
region, which have adopted attractive FDI regimes, as discussed below. Despite the slower inflow of FDI, the stock of inward FDI is high (Figure 1.4, Panel C). This reflects both high investments over the years in productive capacity and the fact that Hungary is one of the largest recipients of inward FDI through special purpose entities, which typically are used for tax purposes with no or little effect on the real economy (Figure 1.4, Panel B; OECD, 2015b).

Business investment has been held back by lack of private funding

Multinationals' business investment is financed on international credit market conditions. On the other hand, domestic business investors, particularly SMEs, rely on domestic credit markets, which for all practical purposes mean banks. Other sources of financing, such as issuance of corporate bonds and equity funding, continue to play only a small role (Figure 1.5). On the other hand, innovative start-ups have more access to venture capital than in many other countries, although the volume is limited (Figure 1.6).

Figure 1.5. **Stock market capitalisation is low**

As percentage of GDP, 2014



Note: Market capitalisation (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic companies. Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded. Data are end of year values.
Source: World Bank (2015), *World Development Indicators Database*.

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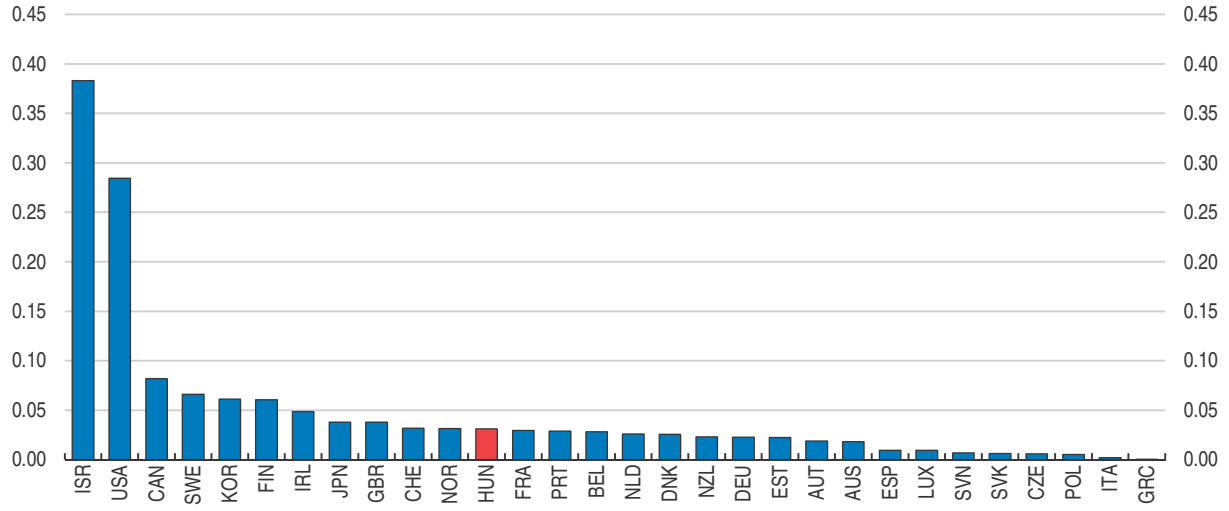
The relatively high cost of financing business investments has also been a factor behind the slow expansion of credit. Bank lending rates were relatively high before the crisis, partly as the result of internationally large spreads with short-term government bonds (Figure 1.7). After the crisis, lending rates came down, but remain relatively high. Relatively high interest rates have, together with tighter credit standards as the result of increasing shares of non-performing loans, led to declining credit to firms (Figure 1.8).

To compensate for the lack of bank credit, the central bank is easing credit constraints on SMEs through the Funding for Growth Scheme (FGS). The scheme provides liquidity (within a funding framework of nearly HUF 500 billion – 1½% of GDP) at zero % interest to credit institutions on the condition that the liquidity is used for lending to SMEs within a fixed interest margin of a maximum 2½% interest rate. The SME funding is both for new capital investment and for refinancing existing loans. First estimates indicate that the FGS scheme in 2013 generated nearly a third of new investment, with a proportionally larger

Figure 1.6. **Venture capital is relatively well developed**

Venture capital investments as a percentage of GDP, 2014 or latest available year



Source: OECD (2015), *Entrepreneurship at a Glance 2015*, Fig. 7.1.

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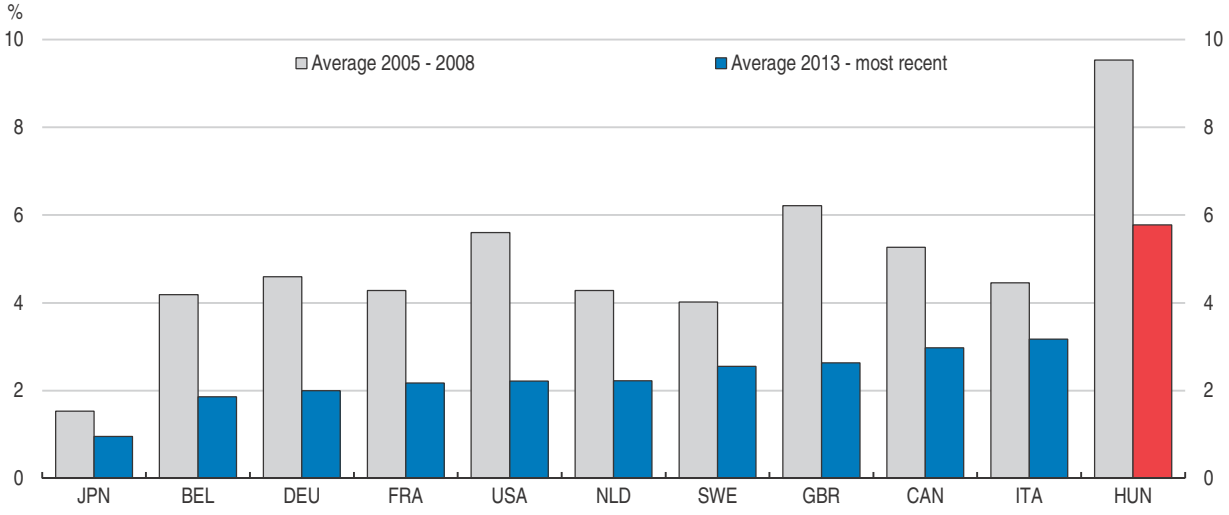
Figure 1.7. **Bank lending rates have declined**

Bank lending rates



Note: Weighted average across all maturities. Average maturities may differ across countries. Data are lending rates (all maturities) for loans to non-financial corporations for the United States, rates for new loans to non-financial corporations and averages across member countries for the euro area, rates for new loans to non-financial corporations and households for Japan, rates for new loans to non-financial corporations for the United Kingdom, rates for new prime loans to non-financial corporations for Canada, rates for new loans to non-financial corporations for Sweden.

Sources: Bank of England; Bank of Japan; Datastream; European Central Bank; Riksbank; US Federal Reserve; and OECD calculations.

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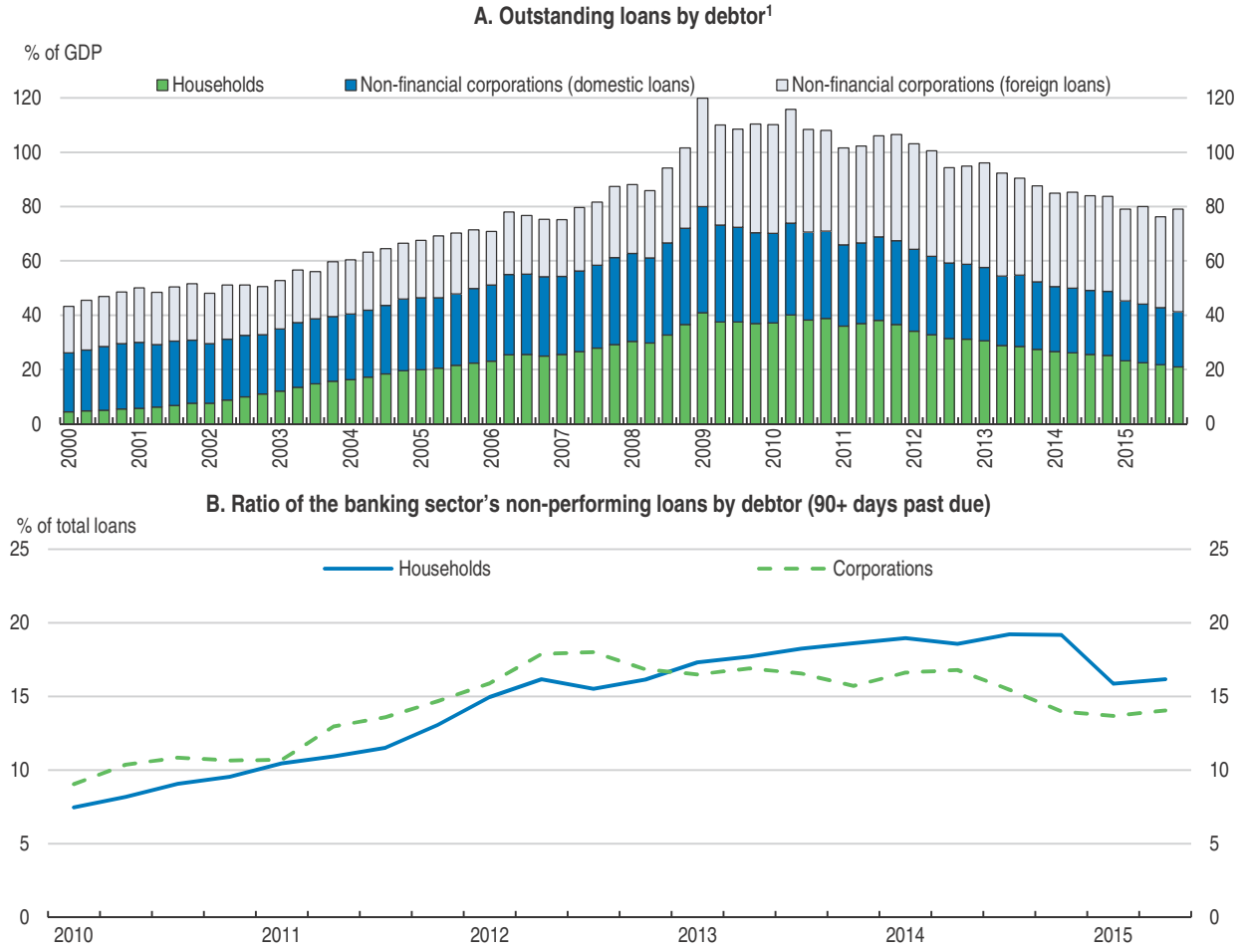
effect for smaller firms, while larger firms seem to have used the scheme as an alternative and cheaper funding (Endresz et al., 2015).

Nonetheless, lending outside the scheme continued to decrease, reflecting continued high risk aversion among financial institutions (Government of Hungary, 2015b). Thus, in March 2015, a FGS+ scheme was introduced (with a funding framework of 2% of GDP) to

Figure 1.8. **Credit has fallen amidst high shares of non-performing loans**



1. Non-financial corporation loans exclude inter-company loans and loans from households and government.
Source: Magyar Nemzeti Bank.

StatLink http://dx.doi.org/10.1787/888933349645

extend credit to riskier borrowers that had been unable to obtain funding under the first scheme for new capital investment loans. A new element in the new scheme is that part of the lending risk is moved to the Central Bank which assumes half of the credit losses within a five-year period and up to a (annual) maximum of 2.5% of individual credit institutions' outstanding loans. The first and second phases of the FGS and FGS+ have provided HUF 2 100 billion (6% of GDP) in finance to more than 30 000 enterprises.

In the longer run, central bank lending cannot substitute for the market. Therefore, the central bank plans to start reducing the scope of these temporary schemes from 2016 onwards as part of a move to re-establish banks as the main source of SME financing. In late 2015, the central bank announced the introduction of a Growth Supporting Programme (GSP) to help domestic banks to return to market-based financing by introducing a new market-based lending scheme with participants committing to an explicit quantity of lending (MLS) (MNB, 2015). The new programme contains:

- Reducing the scope of the FGSs by limiting the maximum of loans to HUF 1 billion to focus lending on smaller firms, while extending financing support to enterprises with mainly foreign currency revenues that did not have access to the FGS.

- Stimulating SME lending via the MLS through:
  - the introduction of an interest swap conditional on lending to SMEs by a quarter of the allocated capital and with the central bank assuming part of the interest rate risks;
  - a bolstering of lending incentives by attaching a lower risk for sustainable lending to SMEs in banks' capital adequacy requirements;
  - an enhancement of banks' ability to map credit risks by giving them access to the central bank's corporate credit reporting system.

The government is also providing funding to SMEs, mainly through the Hungarian Development Bank. After reaching a total of HUF 605 billion in disbursed loans in 2014 (nearly 2% of GDP), the bank's loan activity began to shrink as FGS loan conditions were more favourable (Government of Hungary, 2015b; Hungarian Development Bank, 2015).

The government is implementing additional measures to enable the financial sector to resume market based corporate lending, including:

- Lowering the levy on financial institutions' assets from 0.53% to 0.24% (the lower rate on smaller institutions remains unchanged at 0.15%) to be aligned with prevailing European Union norms in 2019 (Government of Hungary, 2015b).
- Help contain the high level of non-performing loans (18% of all retails loans and 10% of all corporate loans by end-2015) by: a) eliminating exchange rate risks through the conversion of foreign exchange mortgage and consumer loans; and b) purchases of distressed residential property by the National Asset Management and of non-performing loans by Hungarian Restructuring and Debt Management (MARK) which was established by the central bank with a 10 year mandate.
- Introducing personal bankruptcy on mortgage debt so household debtors can seek a mortgage debt settlement agreement with their banks. Additional measures in this area include the central bank's introduction of caps payment-to-income and on loan-to-value ratios. The central bank also published guidelines for financial institutions on sustainable restructuring of non-performing household loans.

These measures to restore the banking sector as the main provider of credit for business investments are important to ensure allocation of capital to foster productivity growth. This should be supplemented with measures to reduce the internationally high cost and lengthy procedure of resolving corporate insolvency (World Bank, 2015). The purchases of distressed property will reduce the large stock of non-performing loans, a key remaining banking-sector vulnerability. This works similar to other asset management companies dealing with impaired loans, although there is no explicit strategy for rapid offloading of non-performing assets. Developing such a strategy would increase transparency and reduce possible public sector contingent liabilities. Moreover, the scope of purchases could be extended. In addition, a capital surcharge should be imposed on banks that keep impaired loans beyond a certain duration and threshold. In early 2017, the central bank will impose such a systematic risk buffer to commercial real estate loans.

The Hungarian capital market is under-developed and does not provide financing to complement bank lending. In addition, the falling number of new issuances and turnover has endangered the viability of the Budapest stock exchange, leading the central bank to buy the exchange. Developing capital markets would provide new sources of funding, but is a slow process of improving transparency, reliability and comparability of information as well as addressing financial stability problems (Jäger Gyovai, 2014). In addition, a relatively high

number of floated firms are needed for having a well-functioning stock market. In this respect, developing common rules and standards for accounting, corporate credit, insolvency and other capital market regulation could foster capital markets in the region, possibly clearing the way for a regional stock exchange as in the Baltic area (Véron and Wolff, 2015). Such a larger stock exchange would be more viable than the Budapest exchange alone. At the same time, investor confidence needs to be strengthened, pointing to the need for creating a more stable regulatory framework that promotes the competitiveness of the business sector and reduces regulatory and political uncertainties (Adarov and Tchaidze, 2011). In this respect, the central bank ownership should be temporary and the stock exchange should return to private ownership over the medium-term.

A potential SME financing source is new financial technologies, such as crowd-funding and other financing instruments from non-financial institutions. These technologies are generally not well-developed in Europe. In 2014, Amsterdam, London and Stockholm accounted for two-thirds of the USD 1.5 billion invested in European financial technology companies – equivalent to a bit more than 10% of world-wide investments in such companies. In Hungary, new wireless transfer technologies, such as Vodafone wallet, have been introduced, but their use seems very limited (GSMA, 2015; Telenor, 2014).

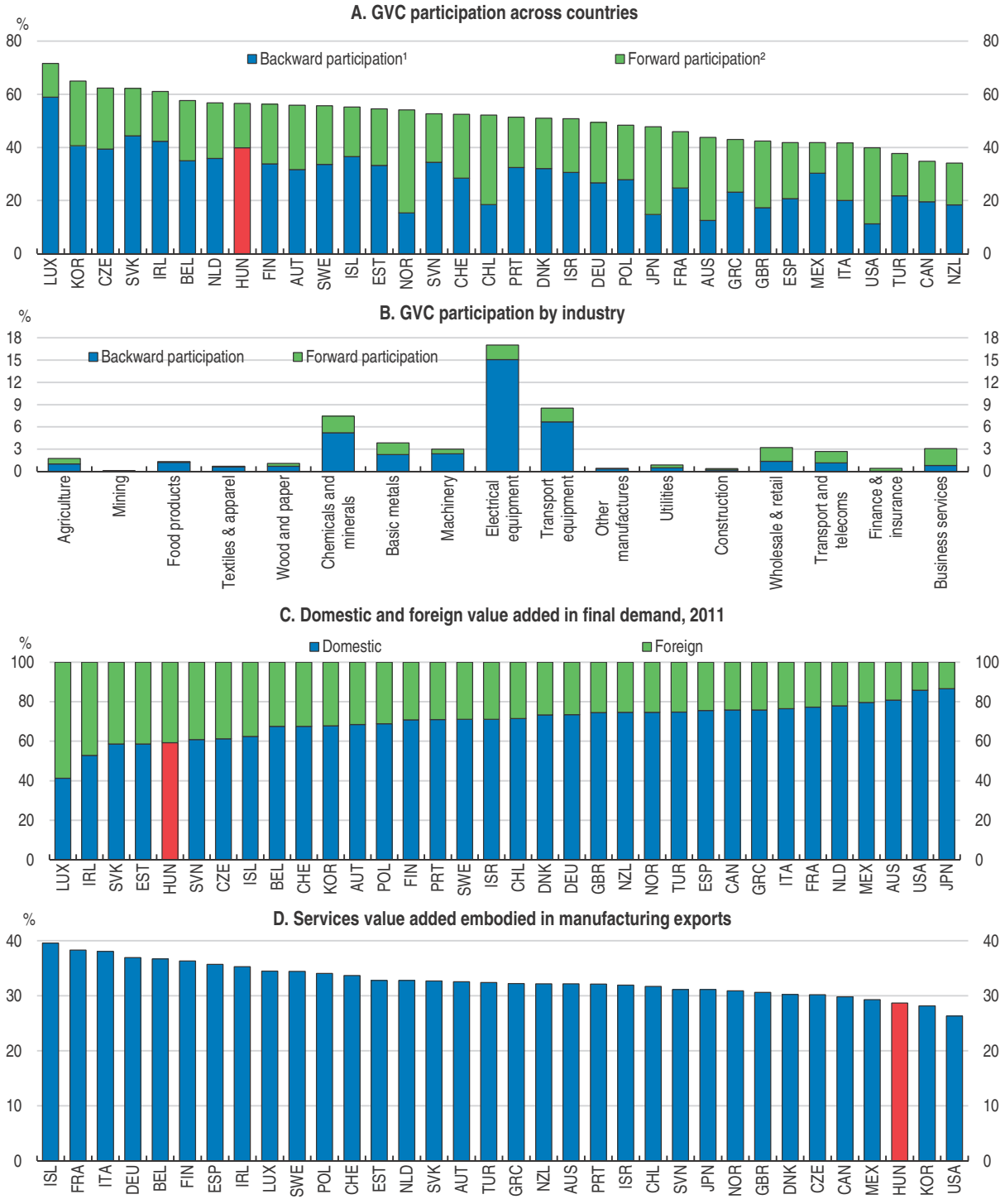
A couple of crowd-funding platforms have been launched, although they have secured financing for only a few projects (Bethlendi and Vegh, 2015). Such platforms offer new financing opportunities as well as new risks for investors. Using crow-funding for small-scale issuance of shares is relatively expensive in terms of emission costs per share, but much less so for bond issuance. Both are subject to authorisation and thus requiring regulation with respect to investor protection, money laundering, terrorist financing, platform operation, etc. Going forward, the issue for the financial market regulator with this nascent funding source is whether to adjust existing regulation to accommodate the new financing platform or adopt separate regulation (Kinstellar, 2013). Either way, financial education should include information to customers as well as to firms using new platforms to help them to make their products comply with existing regulation already at the initial stages.

The large inflow of inward FDI has reflected favourable policy settings

Inward FDI reflects the ongoing fragmentation of international production as multinational enterprises stages production and tasks across different countries in the global value chains. Hungary's ability to attract individual stages of the fragmented production depends on relative costs, including low taxes and fiscal support, and production factors' endowments (OECD, 2015a). Hungary has been particularly successful in attracting inward FDI in the (often intertwined) electronics and the automotive sectors, which is often originating from German companies (Hunya and Sass, 2014). Particularly, inward FDI in the automotive sector has continued in recent years to the point where vehicle manufacturing accounts for 13% of Hungary's exports and 22% of industrial production, exposing the economy to firm, sector and country specific shocks.

As a result, Hungary's participation in the global value chains is among the highest in the OECD (Figure 1.9, Panel A). In particular, the electrical and transport equipment producing sectors are characterised by high GVC participation, including a high use of foreign produced intermediates (Figure 1.9, Panel B). The multinational companies behind these inward FDIs are typically either using a high share of foreign produced intermediates in their production or rely on inputs from foreign-owned producers in Hungary. As a result, domestic firms are much less integrated into the global value chains, leading to relatively low

Figure 1.9. **Hungary's participation in the global value chains (GVC) is very high**



Note: 2009 data unless specified.

1. The indicator measures the value of imported inputs in the overall exports of a country (the remainder being the domestic content of exports). This indicator provides an indication of the contribution of foreign industries to the exports of a country by looking at the foreign value added embodied in the gross exports.
2. The indicator provides the share of exported goods and services used as imported inputs to produce other countries' exports. This indicator gives an indication of the contribution of domestically produced intermediates to exports in third countries.

Source: OECD (2013), *Global Value Chains Indicators Database*.

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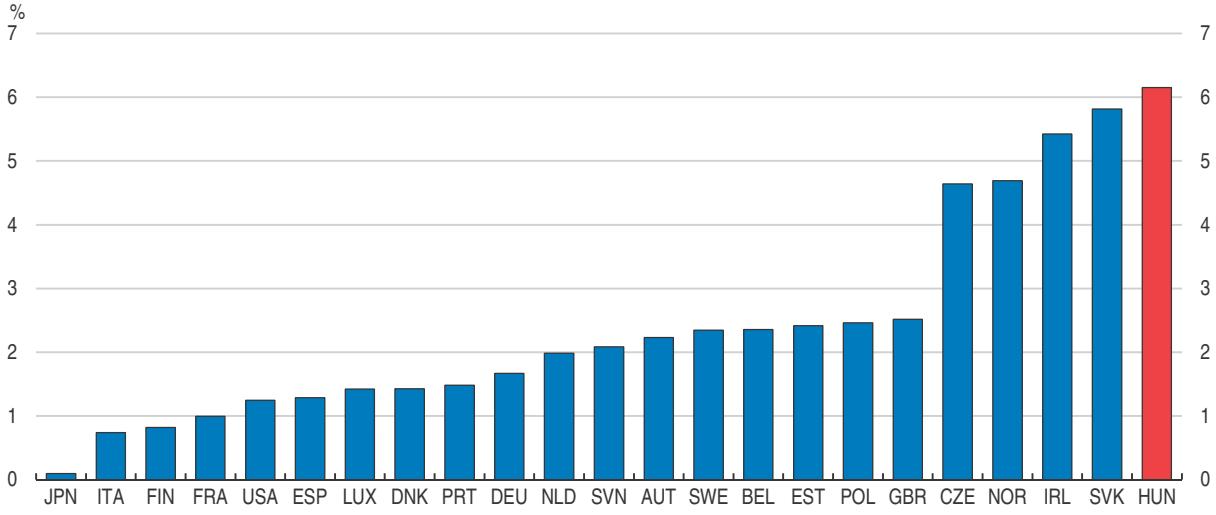
value added in final demand (Figure 1.9, Panel C). This is reflected in an internationally low forward participation in global value chains. This is particularly pronounced in services, which contribute less to manufacturing exports than any other European country (Figure 1.9, Panel D), and which are needed so firms are able to capture more value (OECD, 2013a).

While inward FDI has boosted production and employment, spill-over effects have been limited as direct suppliers are mostly foreign owned companies, reflecting that Hungarian SMEs are relatively less productive, innovative and export-oriented (Altomonte et al., 2014; Békés et al., 2011). In addition, empirical evidence suggests that most small exporters cease exporting after a few years (Halpern and Muraközy, 2011).

In addition, inward FDI has been more directed towards tangibles than in other countries, reflecting that the manufacturing sector has been the principal recipient of inward FDI (Hunya and Sass, 2014) (Figure 1.10). On the other hand, foreign firms invest much less in intangibles than are needed for accelerating the move up the value added chain. Moreover, the slack is not picked up by higher intangible investments by domestic firms, as these also have a focus on investment in manufacturing (Figure 1.11). The relative low investment in intangibles, such as R&D, technological progress, software and other aspects of digital economy, design, and other elements in knowledge-based capital, implies a slower adaptation of new technologies and innovations, and thus slower potential growth.

Figure 1.10. **Foreign-owned firms are substantial investors in tangible capital**

Domestic tangible capital investment by foreign-owned funds, as percentage of GDP, 2012



Note: 2011 data for Japan.

Source: OECD Activity of Multinational Enterprises (AMNE) database; Bureau of Economic Analysis; Eurostat; and OECD calculations.

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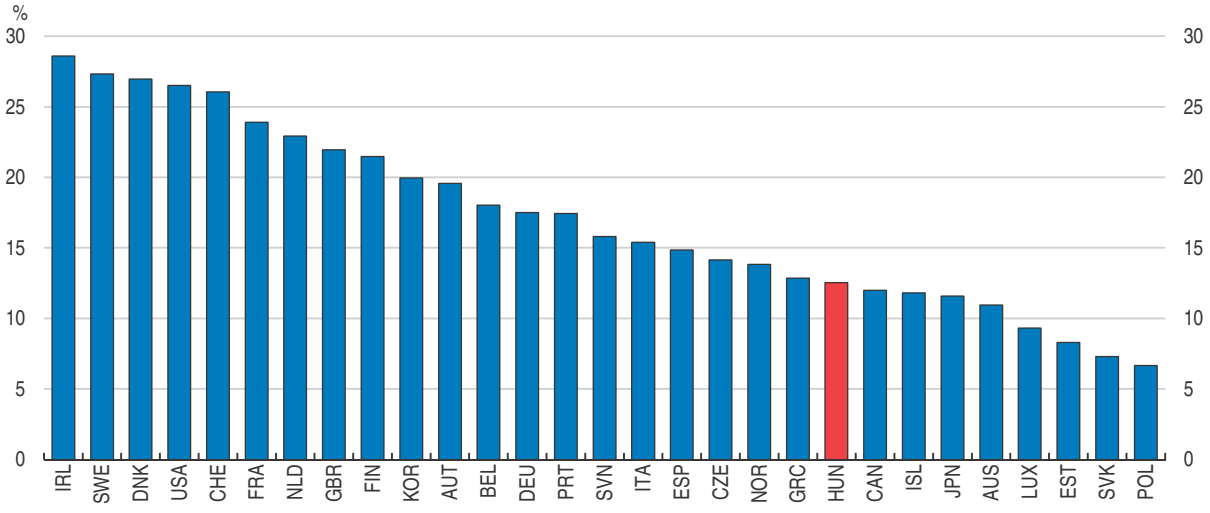
The low investment in intangibles also reflects a marked decrease in the service sector's investment intensity (Figure 1.12). As a result, the structural shift from manufacturing to services has slowed. The development of services, particularly in the areas of ICT and other business services, is important for providing the broad range of services, such as modern communications and product developments, which are necessary to move up the value added chain and to secure a deeper integration into the changing global production specialisation and supply chains. Better use of such services would help firms to capture more value in the global value chains (OECD, 2013b).

Figure 1.11. **Intangibles account for a low share of investment**

As a percentage of nominal non-residential investment, latest available data



Source: OECD (2015), *OECD Economic Outlook: Statistics and Projections Database*; national statistical offices; and OECD calculations.

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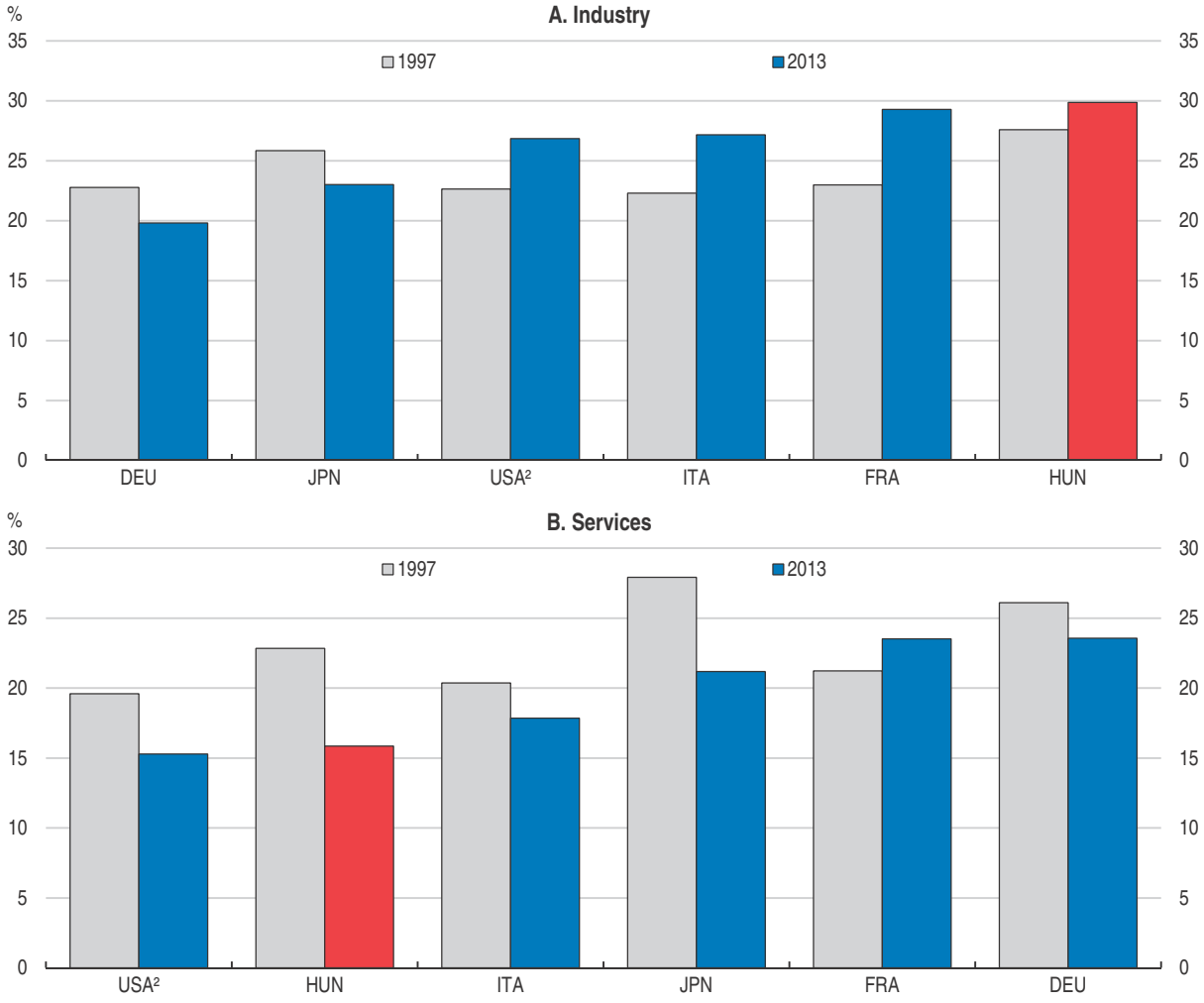
On the policy side, many of the factors that gave an edge to Hungary have ceased to confer a comparative advantage. For example, the tax regime had one of the lowest corporate income tax rates in the region, but other countries have adopted similar corporate tax regimes. Also, the low wage costs have not attracted FDI into traditional labour intensive sectors, such as clothing and footwear, and are not preventing outsourcing of production to lower wage cost countries (Hunya and Sass, 2014; Eurostat, 2015). Shortages of skilled workers are also emerging (DUIHK, 2015). This is exacerbated by an education sector that has only reacted slowly to new labour and market demands, despite a concerted efforts in a few cases to address acute labour market shortages (such as of truck drivers) (Chapter 2), and increasing emigration of younger skilled workers (Bodnár and Szabó, 2014) (Figure 1.13). Inward FDI has been simulated by trade facilitation as the backbone of the extensive transport infrastructure has been upgraded and extended through the use of EU structural funds, but secondary and tertiary transport networks remain often of a relatively poor quality (WBG, 2014; HCSO, 2013).

The disappearance of traditional comparative advantages in attracting FDI means that Hungary must compete for FDI by establishing a broad-based pro-competitive regulatory framework that are characterised by regulatory predictability, stability and simplification. This would attract investment into other sectors of the economy, reducing exposes to firm, sector, and country specific risk. In addition, such a framework would create more competitive firms, facilitating domestic firms' integration into the global value chains, particularly as sub-contractors to foreign owned exporters (Gyukics et al., 2011). The challenge of creating such a framework is substantial as the Global Competitiveness Report ranks Hungary 128th among 140 countries as regards the perceived burden of government regulation and 120th in terms of taxation's effect on investment incentives (WEF, 2015).

Figure 1.12. **Changing sectoral composition has affected aggregate investment intensity**

Investment intensity[1] – industry and services



1. Investment intensity is measured as the ratio of nominal investment to nominal gross value added.
2. Data for the United States based on the private sector only.

Source: Bureau of Economic Analysis; European Commission; Cabinet Office of Japan; and OECD calculations.

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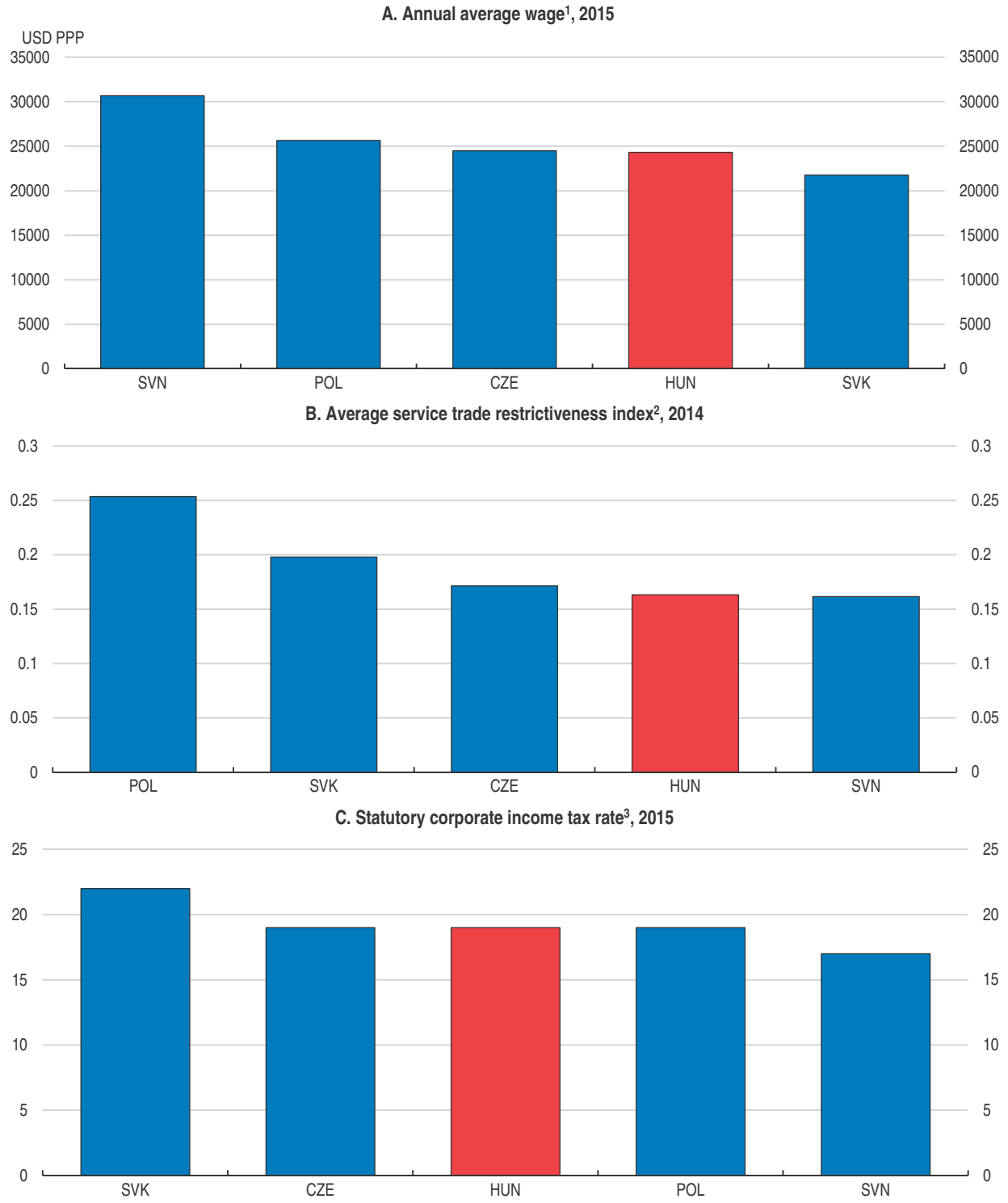
A stronger and more predictable regulatory environment would bolster business investment

At the overall level, OECD's product market regulation indicator shows that businesses are faced with an administrative burden that is similar to the average in European countries (Figure 1.14). This reflects partly very low regulation in some areas, such as barriers to trade and investment. On the other hand, there are relatively high barriers in professional services and for entrepreneurship (notably in terms of administrative burdens and protection of incumbents) (Koske et al., 2014). Moreover, regulation has often changed and at times there has been a lack of coordination across policies, creating regulatory uncertainty and high compliance costs that weigh on investment. Since the publication of the OECD indicator, barriers have increased with more state control (particularly in the banking and energy sectors) and more retail sector regulation. In many ways, this regulatory configuration has relatively little effect on the larger foreign-owned companies

Figure 1.13. **Factors attracting FDI have become similar across the region**



1. Total gross earnings before taxes for single person at 100% of average earnings without child.
2. The indices take the value from 0 to 1, where 0 is completely open and 1 is completely closed. The value is an unweighted average of 18 different service sectors.
3. Combination of central and sub-central government taxes.

Source: OECD (2016), *OECD Tax Statistics Database*; OECD (2015), *Services Trade Restrictiveness Index Database*.

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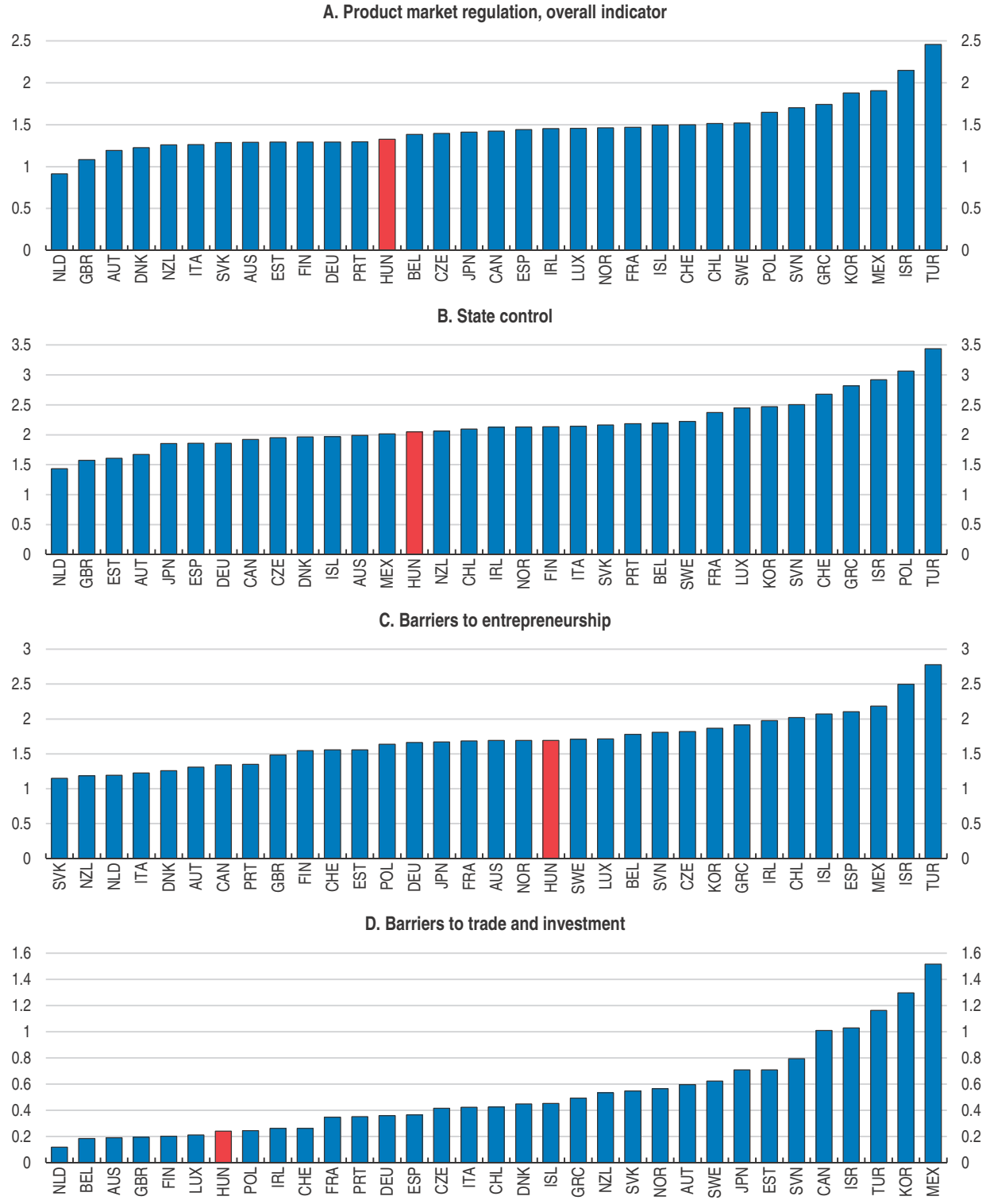
Figure 1.14. **Regulation is high in some areas**

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



Source: OECD (2014), *OECD Product Market Regulation Statistics Database*.

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operating in Hungary and who can concentrate on addressing the uncertainties of producing for international markets. On the other hand, the configuration may help to explain the low investment activity of Hungarian firms.

Regulatory barriers are high in some areas

Barriers to entrepreneurship remain high (Figure 1.14). The number of procedures to start a new business is comparable with neighbouring countries, but still higher than in other OECD countries. However, compliance time to deal with the procedures is much longer (OECD, 2015c). OECD calculations show that if Hungary aligns its regulatory regime to that of the top five OECD performers (including reversing recent increases in regulation) annual GDP growth would be boosted by a third of a percentage point.

The government wants to simplify administrative burdens on start-ups in the service sector and align them with EU standards. This includes implementing a more flexible and transparent system for licensing in the construction sector and a new electronic licensing system for firms. In addition, the government is simplifying requirements for professional services in sectors, such as tourism and catering, industry and commerce to create a more open labour market (Ministry for National Economy, 2015). On the other hand, the time and cost required to fulfil tax obligations remains more burdensome than in most neighbouring and OECD countries (OECD, 2014a).

The World Bank's Doing Business indicator, which focus on *de jure* aspect of regulation, points to other weaknesses in regulations. Hungary's overall ranking is 42 out of 189 countries (World Bank, 2016). For example, required time to complete many procedures is often relatively long, including 6 months to get construction permits and more than 8 month for getting electricity, on completing solvency procedures and tax formalities (OECD, 2015c). Additional concerns are relatively high cost of standard procedures, particularly for being connected to electricity and registering property, and poor protection of minority investors.

The government has instigated a programme of administrative simplifications that have reduced by a quarter the administrative burden of procedures and average processing time, according to the government's own estimates. The estimates are partial as attempts to develop a comprehensive Standard Cost Model Plus methodology has been abandoned because of resource constraints. The reduction in administrative burdens and processing time have been achieved despite the programme having relatively poor links to performance targets and outcomes, and largely disconnected from the budget process (OECD, 2014a and 2014b). Starting in early 2016, the government is also implementing a second phase of the Cutting Red Tape Programme to reduce the burdens of administrative procedures and tariffs for public services. At the same time, media reports that the government has also increased regulation in a number of areas, such as nationalising waste collection, introducing maximum prices for chimney sweepers, restricting the bidding process for farm land as well as in the areas discussed below (Budapest Beacon, 2014; Budapest Sentinel, 2015).

Public institutions and the system of checks and balances need to be strengthened

As reported in the previous Survey, the quality and effectiveness of legal and political institutions, including the maintenance of appropriate checks and balances, are perceived to be weak, which have adverse effects on investor sentiments, particularly as this may enhance uncertainties with regards to regulation and policies (OECD, 2014a). Trust and

transparency in policy making and the efficiency of the legal framework in enabling firms to challenge government regulation are considered problematic. For example, the general regulation in media and energy issued by the independent sector regulators can only be challenged in the Constitutional Court, which may be too high a barrier.

In addition, regulatory decisions are immediately enforced regardless of appeals to courts. For example, in the recent monopolisation of tobacco retail sales, legal amendments were introduced after the closing date for applications for retail licenses and the distribution concession was rewarded without an open tender process. A further complication is the 2015 amendment of the Freedom of Information Act, which abolished the government obligation to share all data used in the decision making process and imposed the cost of answering a public query on the originator of the query. Stronger checks and balances are important to strengthen the quality of legal and political decisions as well as the appointment of non-political experts to boards of independent agencies.

Also, as raised in the previous Survey, the tax system carries a high administrative burden and is often subject to changes (OECD, 2014a; OECD, 2015). Particularly, tax-paying SMEs are faced with high compliance cost and the administrative costs of tax collection are high by international comparison, reflecting a high number of different taxes combined with complex and frequently changing tax laws. As a simplification measure, two optional tax types for SMEs were introduced in 2013. In addition, a number of special sector taxes were introduced during the crisis in finance (where the banking levy is being reduced), media, energy, telecommunication, and retail sectors (OECD, 2014a).

The introduction of the sector taxes compounded regulatory unpredictability and uncertainty, which in itself is reducing investment incentives. Moreover, the design of the taxes discourage new investment as they are not taxing income, but rather turnover or the size of infrastructure, creating disincentives to expand through investment. Moreover, in some cases the rates of the sector taxes are higher for enterprises with large tax bases, which is making for an unlevelled playing field and thus further reduce investment incentives. Fostering incentives for higher investment requires simpler taxes with less costly compliance. Moreover, the distortive sector taxes should preferably be phased out. Alternatively, a less distortive tax base should be applied and applicable rates identical across market participants to prevent distortion of incentives for inward FDI and expansion decisions.

Among the instruments the government is using to improve regulatory quality are public hearings and regulatory impact assessments (RIA). RIAs are mandatory and an elaborated system, involving law-makers and ministerial experts with a public hearing process, is in place to secure a well-functioning *ex ante* assessment and supported by the Prime Minister's Office, while the Ministry of Public Administration and Justice's RIA Unit is responsible for coordination. Obviously designing and implementing a well-function RIA system is an ongoing process, where better targeting of the depth and coverage of RIAs could help improve the quality of regulation and contribute to addressing regulatory inflation (OECD, 2014b). The government is undertaking an evaluation of the current system to investigate a number of issues. The Prime Minister's Office has requested that ministries improve the communication of their processes. For example, the government's annual RIA report is not published.

Transparency could be improved by publishing the annual RIA report that is presented to the government, which together with more standardised and simpler guidelines, could

enhance the general knowledge of RIA, inside and outside of government. Such a framework could also facilitate a process that presents alternative regulatory solutions to minimise the negative impact of legislation. A continuous improvement of the RIA process could be secured by establishing a RIA commission, which should be responsible for evaluation and improvement proposals and receive all significant policy initiatives, including those originating in parliament. In addition, a framework for measuring and evaluating performance of policy initiatives and reform implementation, including the development of a Standard Cost Model Plus methodology, should be established as recommended in OECD's Public Governance Review of Hungary (OECD, 2014b). Regulatory quality and stability could be further enhanced by introducing mandatory consultations of new legislations with experts and stakeholders, as recommended in the previous Survey.

The competition framework has unusual features

The competition framework is modelled on European standards, as described in the previous *Survey*, and includes the competition authority's obligation to comment on draft bills or regulations, leading to some 70-100 requests for comments annually. However, the general exemption of consultation obligation for parliament-initiated (as opposed to government-initiated) bills means that it is the decision of parliamentarians to whether to submit proposals for commenting. As the government is also reluctant to submit all drafts to the authority, there is an uneven approach in terms of which laws and regulations are reviewed. This has induced the authority to comment (and publish the comments) on its own initiative about 5-10 times annually (OECD, 2014a). The regulatory framework could be strengthened if the competition authority systematically comments on the competition effects of all (relevant) proposals. Such a pro-competition regulatory stance would bolster investor confidence, boosting incentives for inward FDI incentives and domestic business investments.

An unusual feature of the competition framework is the 2015 general exemption for restrictive practices in the agriculture sector. The origin of the exemption was a Ministry of Rural Development sponsored agreement that larger retailers would pay a minimum price for watermelons (Szilágyi, 2012). Subsequently, a Competition Authority' cartel investigation was terminated because of the introduction of the exemption (GVH, 2013a). After an infringement procedure by the European Commission, the competition act was further amended to clarify that the exemption is only applicable if EU law does not prevail, implying cases that affect trade between EU countries cannot be exempted (European Commission, 2014a). Also, it was clarified that all agreements concerning agricultural products are excluded, if the competition restricting agreements secure economically justified and legitimate income and do not foreclose new entry. The competition authority has to seek a (binding) opinion from the minister for rural development about whether conditions for the exemption are met. As a consequence, the practical effect of the exemption is reduced, but could still be applied to local domestic markets with potentially distorting effects on investment incentives. The increase in regulatory uncertainty for the sector and in retailing should be removed by abolishing the general exemption for agriculture.

Another unusual feature is the 2013 introduction of merger exemptions that allow the government to exempt transactions from merger regulation, if they serve a public interest – particularly in terms of preserving jobs and supply security (OECD, 2014a). As a result, these transactions are not subject to the competition authority's merger review or impact

analysis. A further complication is that the exemptions are issued through decrees and thus cannot be challenged in court and be submitted to a legal review.

Merger exemptions on public interest ground are common in the OECD, but only after full merger reviews by competition authorities and based on clear and explicit public interest grounds. Such exemptions tend to be relatively rare. For example, Germany has exempted less than 10 mergers over the past 30 years. In contrast, Hungary had put at least 14 exemptions in place by mid-2015, including for sectors such as telecom, energy, and banking. Most of these mergers are relatively small and would probably have been cleared by the competition authority if subjected to a merger review. However, even if merger exemptions were made more transparent, they still create a regulatory arbitrariness that weighs on investment incentives. Looking ahead, Hungary should follow European standards of subjecting all mergers to full merger reviews, but where the government subsequently can allow the merger on clear, limited and explicit public interest grounds.

Better public procurement can enhance the efficient use of EU structural funds

Efficient public procurement is key to boosting public investments, including the efficient use of EU structural funds. These funds are larger than elsewhere, amounting to a quarter of 2013 GDP in the previous EU budget period, of which the largest amounts were allocated to infrastructural developments and regional and environmental-energy areas. In the next budget period, the EU funds will be reduced by 12% and have a higher priority on economic development, subject to the EU condition that the majority of funds are used in under-developed parts of the country (Government of Hungary, 2012).

Public investment has been a facilitator for business investment. For example, the economic effect of EU funds is substantial as each unit of EU funds is estimated to have a multiplier of 3.5 times additional investments. Moreover, each HUF 1 billion invested is raising employment by 60 people (MFB, 2015). The size of the multiplier effect is limited by the fact that the EU funds were allocated to improving the primary road network and the underdeveloped eastern part of Hungary rather than in the high growth areas in the middle and western parts of Hungary, where inward FDI and exporters are concentrated to have access to as wide range of goods and services as possible to support them in their export activities (Békés and Harasztosi, 2013). The clustering enables firms to exploit technological and informational spill-overs, particularly beneficial when multinational firms provide technology and management expertise (Békés et al., 2009). Thus, maximise the effects on business investment, Hungarian financed public infrastructure investments should focus on bolstering agglomeration effects. This should include upgrading secondary and tertiary road networks as well as other measures to promote communication.

The efficiency of public procurement has been hampered by a number of irregularities. For example, one of the largest construction companies (Közgép) has been prohibited from tender participation for three years because of submitting irregular data, reducing the number of potential bidders for large infrastructure projects. Other cases are being investigated by The European Commission's Anti-Fraud Investigation Office (OLAF). Indeed, a study prepared for the European Commission estimates that there is a probability of corruption in between 26% and 31% in public procurement involving EU structural funds (PwC, 2013). Overly prescriptive selection criteria prescribed by the contracting authorities have at times limited the number of potential bidders, such as the requirement that road constructors needed asphalt-mixing bases within 50 km of construction sites – a case that led the European Commission to withhold funds for road construction. Subsequently,

stricter rules for selection criteria have been introduced. In addition, not all public procurement is subject to open tendering process, such as in the case of the direct award of a nuclear power construction and refurbishing contract and when MVM NET – a state owned operator – awarded a contract for 4G mobile network equipment without public tender (*Budapest Business Journal*, 2015a).

The public procurement system has been revised to lower administrative burdens and bolster transparency, including the introduction of a state public procurement portal with compulsory free electronic publication of procurement documents. In 2012, a two-year anti-corruption programme was adopted, comprising a range of integrity-related measures for the public administration (including the establishment of an integrity management framework, training and courses in ethics) and the establishment off an online whistle-blower system (European Commission, 2014b). This was followed up with the 2015 adoption of the National Anti-Corruption Programme that focuses on curbing corruption across the economy, i.e. extending anti-corruption efforts to the business sector and state-owned enterprises, *inter alia* (Government of Hungary, 2015c).

Other countries in the region and Spain have established anti-corruption agencies and promoted e-procurement to further the efficient spending of EU funds and reduce associated administrative costs (EU Commission, 2014). The anti-corruption programme should be supplemented with the establishment of a dedicated anti-corruption agency. Moreover, in the public procurement system the e-procurements could be made more effective by addressing the problems of incomplete data of mixed quality in the absence of a standardised and open format in the public procurement database.

The government has increased its stake in energy markets

Energy retailing has become a government-owned monopoly as the state-owned the Hungarian Development Bank (MFB) and electricity company (MVM) have been buying private electricity and gas retailers, including subsidiaries of the German E.ON and RWE, the French GDF and EDF – the RWE and EDF transactions still have to be completed (GVH, 2013b).* The wholesale markets remain competitive, although the mergers have left the government-owned incumbent with a two-third market share in wholesaling. The increase in market power reduces incentives for investing in the energy sector. In addition, the non-competitive energy prices reduce investment incentives in downstream sectors as their competitiveness is weakened.

The decision of the foreign companies to leave the retail markets can be linked the erosion of their profits (and increased regulatory uncertainty) by government mandated cuts in retail energy prices by about a quarter in 2013-14 and higher taxation of the energy sector through the utility tax and the increase in the corporate tax rate for energy service providers from 8% to 31% as compared with standard corporate rates of 19% for taxable income above HUF 500 million. An additional issue is that the mandated price cuts were for households, which are cross-subsidised by relatively high prices for industrial users (Figure 1.15) (OECD, 2014a). The low energy prices for households boost their real incomes. However, the cost to the state-owned retailers may amount up to ½% of GDP. With the

* Common problems for corporate governance of SOEs are that individual line ministries are responsible for SOEs within their domain, hampering the implementation of a common set of principle and rules, and that board members often have cross board membership of other SOEs.

prospect of higher energy prices, this cost is likely to increase over time. The associated increase in contingent liabilities is eroding public finances. Moreover, relatively high energy prices for industrial users reduce investment incentives in down-stream sectors.

Energy price regulation is based on universal service obligations with the Hungarian Energy and Public Utility Regulatory Authority making recommendations to the Minister of the National Development which sets the prices (Government of Hungary, 2015b; Hungarian Energy and Public Utility Regulatory Authority, 2014). The universal service obligation covers all households (and some small enterprises). This is a very wide definition of universal service obligation, implying poor targeting of the measure. A better targeted measure would be to more narrowly define and cost the public service obligation. In addition, this approach is compatible with market-based energy pricing as recommended in the last Survey, if the provider of the universal service obligation is compensated for the associated costs.

Market-based energy pricing should be pursued by giving the responsibility for setting regulated prices to the sector regulator, using clear competition friendly pricing principles (OECD, 2014a). An additional measure to promote market based energy prices is to continue to deepen the regional energy market integration, which bolsters wholesale markets and supply security.

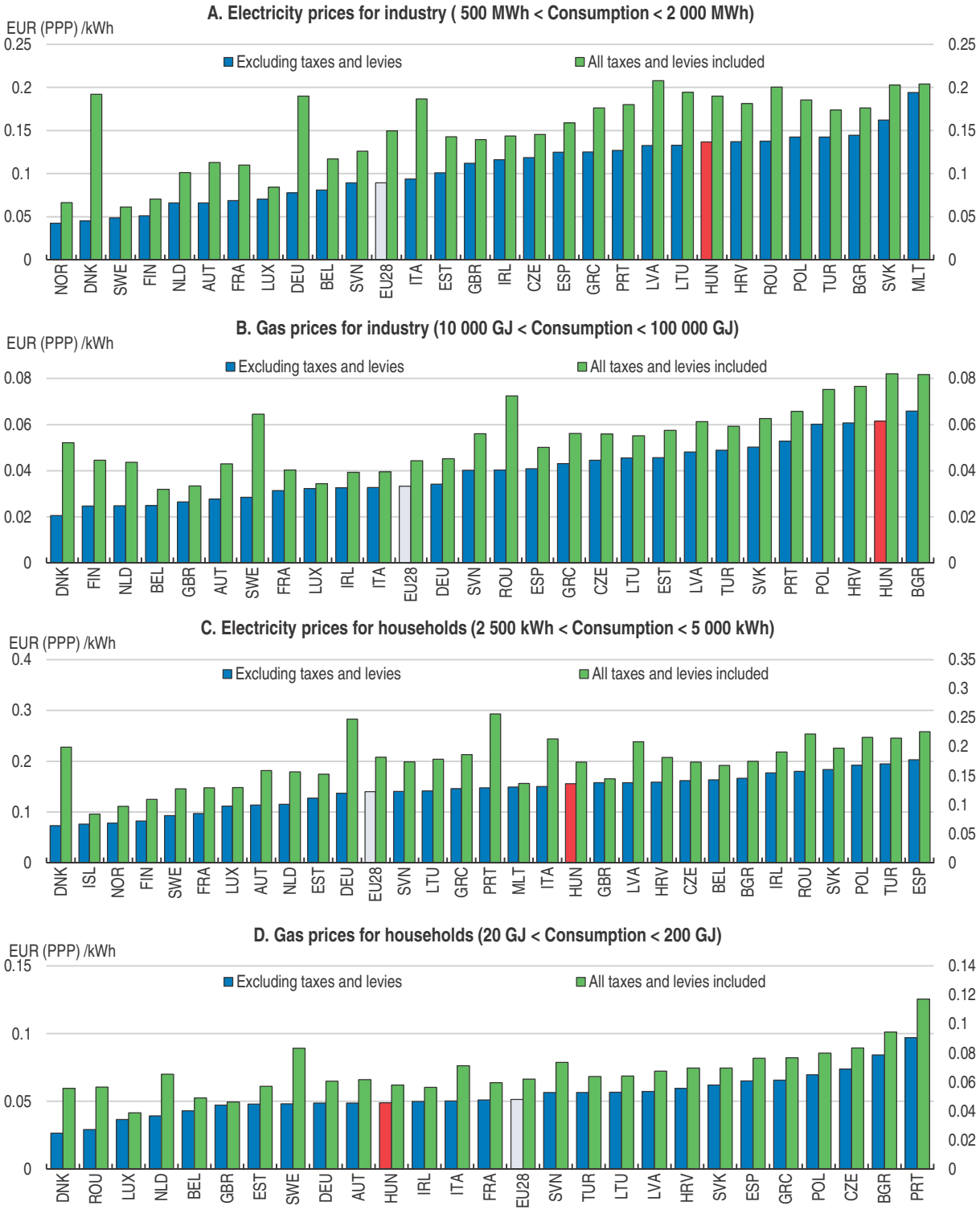
Regulation has increased in the retail sector

The performance of the retail sector in terms of productivity and profitability was inferior to most of the EU, pointing to the scope for restructuring as well as further investment in ICT and management technology to boost the sector's performance (OECD, 2014a). In 2013, retail sector regulation was about average in the OECD (Figure 1.16). However, a concern is barriers to new entry, including a high level of licenses and permissions are required to commence commercial activity (Koske et al., 2014). In this respect, the 2015 increase in the threshold for government permission for new commercial buildings from 300 m^2 to 400 m^2 has only a marginal effect on larger and more efficient operations. Outlets can ask for derogation, which have usually been granted in the non-food sector. Media reports that for food outlets, derogation has seldom been granted to foreign-owned outlets, but relatively frequently to larger Hungarian-owned chains (such as CBA, Coop, and Real) and less frequently to smaller independent shops (tldr.444, 2015). The low threshold risks slowing ICT investments, as the scope for exploiting economies of scale and scope is being restricted.

In 2015, the responsible authority for granting such permissions was moved from a ministerial committee to a local government official (the head of Hajdú-Bihar Country Government Office) who issues decisions based on the advice of a board (with ministerial appointees), taking into account a broad range of environmental and other considerations (LawNow, 2015; Government of Hungary, 2014). Delegating such a responsibility to a local government official is very unusual in the OECD. Moreover, the official has – as did the previous committee – wide room for discretion due to the lack of clear guidelines for environmental and urban planning criteria (OECD, 2014a). Securing a more transparent procedure would remove investment uncertainty, helping to bolster the retail sector's performance. Transparency could be improved by clarifying the rules for derogations, increase the ceiling and secure clear guidelines and move the permission granting powers to local municipalities.

Figure 1.15. **Energy prices are high for industry and low for domestic consumers**

Prices including/excluding taxes and levies, 2015 S1

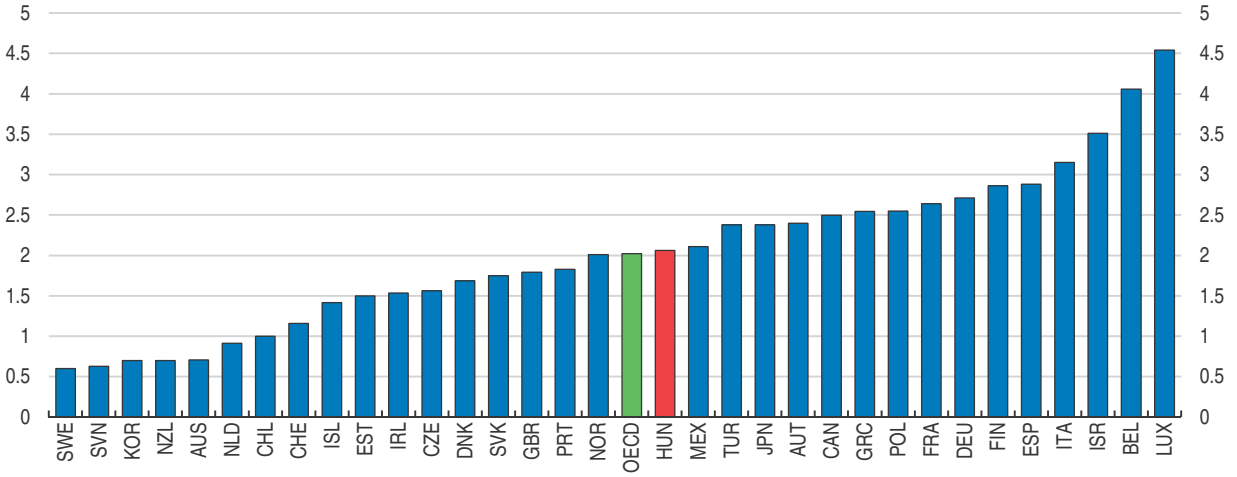


Source: Eurostat (2016), *Energy Price Statistics*.

StatLink http://dx.doi.org/10.1787/888933349704

Figure 1.16. **Regulation burden in retail trade is above the OECD average**

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



Source: OECD (2014), *OECD Product Market Regulation Statistics Database*.

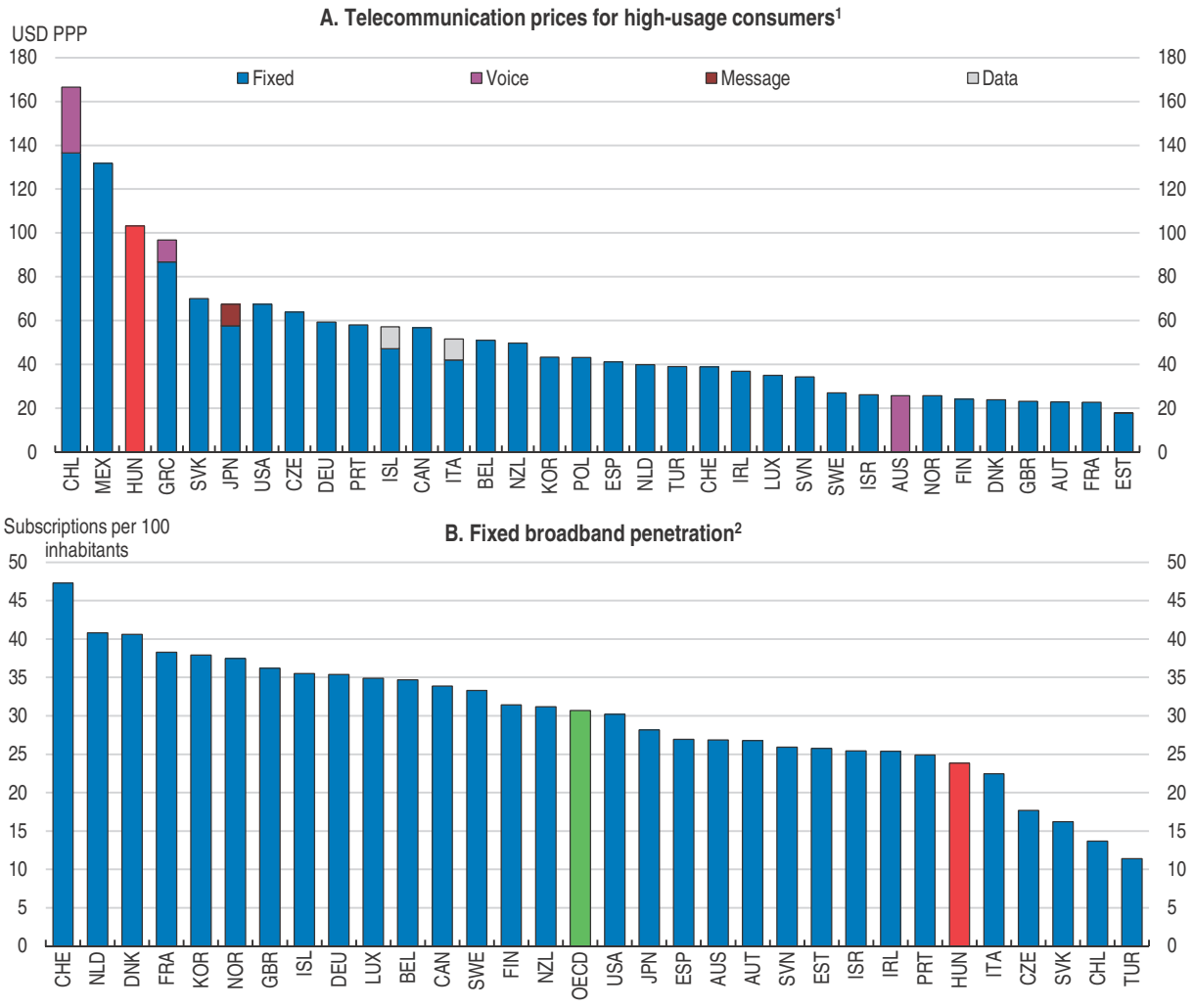
StatLink http://dx.doi.org/10.1787/888933349718

Incentives for building larger and more efficient outlets were further reduced by the 2015 restrictions on Sunday shop opening hours. For public policy reasons, outlets larger than 200 m^2 were not allowed to be open on Sundays (or at night). Smaller outlets could stay open if the owner (or a family member) was present or if the outlets were declared to be traditional outdoor markets (particularly in tourist areas) or attached to petrol stations. The Sunday opening hour restrictions were repealed in spring 2016. Retail efficiency is also hampered by a sector tax (a food chain supervisory fee) on retailing turnover, which previously had rates that increase with turnover. The turnover-based tax rates reduce profitability and productivity by limiting investment incentives for expansion and new entry. Draft legislation is under preparation to set a minimum staff requirement for stores over 400 m^2, selling daily food and consumer goods, stipulating a minimum of one staff member for every 70 m^2. Such overly prescriptive regulation may boost employment in the short term, but associated reduction in productivity decreases investment incentives. The government should ensure a level playing field in the sector to secure productivity enhancing investments and boost welfare of shoppers, by abolishing the sector tax. Revenue shortfalls could be secured through the broader and less distortionary VAT system.

Relatively high telecommunication prices are hampering downstream investments

A competitive telecommunication market is a key growth driver to enhance the use and diffusion of information technology that impacts on manufacturing as well as service sectors as varied as banking, retail, transportation, education, publishing, media and health (OECD, 2015d). This means that higher investment in telecommunication will boost investment in downstream sectors, boosting the economy's potential for innovation and deeper integration in the global value chain, particularly when supported by a well-educated work force that can easily use and adapt to new information technologies as discussed in Chapter 2. However, Hungary has internationally low public telecommunication investment per capita (OECD, 2015d).

Figure 1.17. **Telecommunication prices are high and infrastructure is lacking behind**



1. 900 calls + 2 Gb mobile basket, August 2014, VAT included.
2. For Japan, data are OECD estimates. June 2014 data.

Source: OECD (2015), *OECD Digital Economy Outlook 2015*, Tables 2.92 and 2.26.

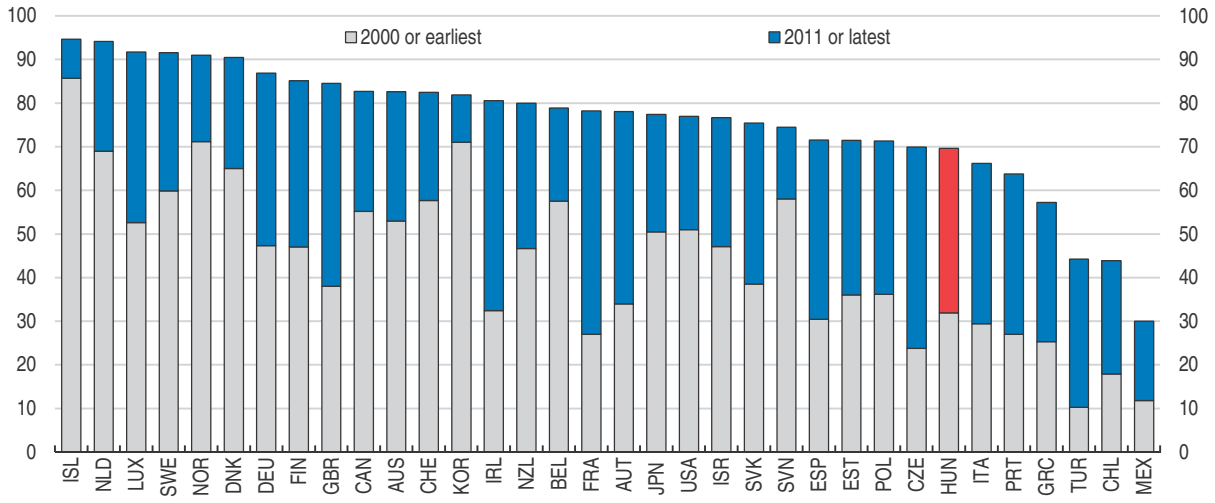
StatLink http://dx.doi.org/10.1787/888933349722

Telecommunication services for high usage are among the most expensive in the OECD and broad band penetration is only a quarter of the population (Figure 1.17; OECD, 2014c). Moreover, compared with a competitive telecommunication market like the French, the price of a standard high usage mobile package with unlimited voice and messages and a high limit on data is about 2½ times higher. Another sign of limited competition is that the three mobile network operators tend to have same prices for same packages with little efforts to compete by designing competitive packages for specific groups of users. In addition, there is only a couple of Mobile Virtual Network Operators (MVNO – resellers of bulk purchases from the network operators) whereas most European countries have double digit numbers of MVNOs.

The high cost of telecommunication services is a factor behind the fact that relative few households have access to a computer at home (Figure 1.18; OECD, 2015e). Another sign of slow adaptation of modern communication technology is that online banking is less

Figure 1.18. **Relatively few households have access to a computer at home**

Percentage of households with access to a computer at home[1]



1. Includes PC, portable, and handheld.

Source: OECD (2015), *Adults, Computers and Problem Solving 2015*, Table B1.1.

StatLink http://dx.doi.org/10.1787/888933349739

developed than in nearly any other OECD country, and a similar picture emerges for the share of enterprises (with more than 10 employees) using e-invoices. The regulatory framework is in line with EU recommendations. Nonetheless, an important factor behind the low usage of internet is that local loop unbundling is not effective; meaning that competition in this area is only introduced through tenders for fibre network construction. The government's effort to have country-wide broadband coverage by 2018 through the Digital Hungary Programme to stimulate broadband penetration would be enhanced by securing local loop unbundling.

Research shows that the current market structure is not supporting telecommunication investment, helping to explain a relatively slow roll-out of modern mobile networks with the faster 4G LTE network covering is 73% of the country – below the EU average (European Commission, 2015 – digital agenda; WIK-Consult, 2015). In addition, investment incentives are also reduced by the sector specific taxes on usage and networks as they dampen the demand for higher connection speed, higher mobile penetration and higher data usage (WIK-Consult, 2015). In 2015, utility investment incentives were stimulated by exempting new investments from the public utility tax for 5 years – a measure that also applies to broadband investments.

OECD research shows that increasing the number of network operators raises the likelihood of more competitive and innovative services, as competitors invest in attracting customers (OECD, 2014c). In the mobile segment, two new entrants are establishing networks. MVM NET – a state owned company – is launching a 4G network to serve government telecommunication needs (Budapest Business Journal, 2015b). The other entrant is Digi.Mobil, owned by the fourth largest Rumanian mobile network operator, which is expected to deploy its 4G LTE network on the 1 800 MHz frequency band during 2016. In contrast, the three incumbents (owned by Deutsche Telecom, Telenor, and Vodafone) have superior access to spectrum (800, 1 800, 2 600 MHz) and a head start in deploying 4G infrastructure. Thus, the new entrant will have smaller network capacity and

weaker financial backing, suggesting relatively limited effect on competitive pressures in the mobile segment (BMIResearch, 2014).

To further new entry the government should reward another spectrum with full bandwidth to a new entrant – a measure that has been successful in enhancing competition in countries like Denmark, France, and Slovenia. In addition, mobile virtual network operators (MVNO – resellers of bulk wholesale purchases of network capacity) should be secured non-discriminatory access to networks. This can be achieved through regulation, as done in France, or through the competition law's provisions against abuse of dominant position, as in Denmark. Moreover, broad-band penetration can be stimulated by securing local loop unbundling. Investment incentives could be further enhanced by stimulating the demand side through a taxation system that does not tax usage.

Further investment in renewable energy is needed to achieve policy objectives

The share of renewable energy sources has increased to 9½% of total energy consumption in 2014 and is planned to reach nearly 15% by 2020, requiring substantial investment in this area. The main instruments in place are investment financing, feed-in tariffs (with time-varying rates that are highest at peak demand), and biofuel obligations (IEA, 2011) as well as investment support; credit support and guarantees. A main emphasis is on developing biomass and district heating (Hungary National Renewable Energy Action Plan 2010-20). The feed-in tariff system was modified in 2008 in favour of smaller plants. The parameters of the electricity grid, including limited capacity to accept wind power (and other weather dependent technologies), may have contributed to the instalment of smaller and less efficient wind mills, albeit there are clear economies of scale in such systems (Table 1.2).

Table 1.2. **Feed-in-tariffs for renewable energy in 2016 (HUF/kWh)**

		Peak	Off-peak	Night time
Plants approved before Jan. 2008 (except hydro power plant ≤ 5 MW)	Solar and wind power plants	34.34	34.34	34.34
	Hydro, biomass, and geothermal	38.36	34.34	14.02
Plants approved after Jan 2008	Solar power plants less than 20 MW	31.77	31.77	31.77
	Other renewable power plants less than 20 MW (except solar)	35.50	31.77	12.96
	Power plants between 20-50 MW (except wind after Nov. 2008)	28.39	25.42	10.36
	Wind power plants between 20-50 MW built after Nov. 2008	35.50	31.77	12.96
Renewable energy power plants more than 50 MW and hydro power plants more than 5 MW		22.07	14.13	14.13
Waste power plants, independent of capacity		33.29	22.94	11.97

Source: Hungarian Energy and Public Utility Regulatory Authority, *www.mekh.hu/kotelezo-atveteli-rendszer-villamos-energia*.

Hungarian feed-in tariffs are relatively low compared with other European countries (Table 1.3). On the other hand, abatement costs are higher than in most other countries as carbon intensity of existing generation capacity is relatively low, reflecting a high share of nuclear power. Investments in renewable energy can be further stimulated by increasing feed-in tariffs. Moreover, the focus on a single technology and the lack of emphasis on scale imply cost inefficient policies to reach the renewable energy target. Lower costs could be achieved by implementing a feed-in tariff system that is un-biased with respect to technology (i.e. which has the same abatement cost across technologies) and scale. Moreover, having feed-in-tariffs that vary between peak, off-peaks and night time is unusual

and a feature that reduces the profitability of investments in renewable energy. Thus, the time-varying aspect of the feed-in tariffs should be removed. Another approach could be to use competitive auctions for renewable energy projects to allow competitive forces to determine the level of support needed – an approach that has been increasingly popular in recent years and used in Brazil and South Africa, among others (OECD, 2015f; IEA, 2016).

Table 1.3. **Feed-in-tariffs for tariffs in Europe**

F.I.T. = Feed-in-tariff, in EUR per MWh
A.A.C. = Associated abatement costs, in EUR per tonne of CO_2

	gCO_2 per kWh	Wind		Solar PV		Biomass		Waste		Small-scale hydro	
		F.I.T.	A.A.C	F.I.T.	A.A.C	F.I.T.	A.A.C	F.I.T.	A.A.C	F.I.T.	A.A.C
AUT	165	95	473	237	1 178	127	633	50	249	0	..
CZE	529	93	175	264	500	147	277	0	..	124	235
DNK	249	63	254	81	324	20	81	100	402	13	54
EST	711	73	103	73	103	73	103	73	103	73	103
FIN	203	105	517	0	..	33	161	0	..	4	21
FRA	74	82	1 110	307	4 154	145	1 958	48	643	58	785
DEU	449	83	184	249	555	95	212	0	..	81	179
GRC	715	88	123	550	769	175	245	150	210	88	123
HUN	**310**	**83**	**269**	**107**	**345**	**83**	**269**	**76**	**246**	**81**	**263**
IRL	428	68	158	0	..	118	274	N/A	..	84	196
ITA	374	0	..	350	936	0	..	0	..	0	..
LUX	309	83	268	395	1 280	135	437	120	389	95	308
NLD	367	134	364	120	327	132	360	148	402	89	241
POL	656	111	169	111	169	111	169	111	169	111	169
PRT	299	78	261	401	1 340	112	376	112	376	79	265
SVK	217	81	373	385	1 775	129	595	126	581	85	394
SVN	338	95	282	347	1 024	196	579	134	396	94	277
ESP	296	78	262	209	706	159	537	115	388	78	263
GBR	439	236	537	298	679	0	..	135	307	147	336

Note: 2011 data except for Austria (2012).
Source: Author's calculations based on OECD (2013), *Renewable Energy Policy Dataset*, version March 2013; and IEA (2016), "Emissions per kWh of Electricity and Heat Output", *IEA CO_2 Emissions from Fuel Combustion Statistics Database*.

Another instrument to stimulate private investment in low-carbon and climate-resilient infrastructure is a public-owned green investment bank. Such banks have been established in Australia, Japan, Malaysia, United Arab Emirates, Switzerland, the United Kingdom and in several states of the United States. The banks have a variety of strategic mandates, but share the common goal of mobilising private investment in environmentally friendly infrastructure by using public capital and risk mitigating and transaction enabling interventions, such as loan guarantees, loan loss reserve funds, subordination, warehousing and securitisation. The banks often seek to prove the profitability of investments to overcome a lack of familiarity or distorted perceptions among regarding commercial viability. Some banks aim for project replicability and standardisation to facilitate scaling-up of investments and attract additional financing (OECD, 2016).

Main recommendations for stimulating business investment incentives

Facilitate access to credit for investment purposes

Key recommendations

- Develop a strategy for the asset management company to step-up offloading of non-performing assets.

Other recommendations

- Promote a regional stock exchange by developing common rules and standards for accounting, corporate credit, insolvency and other capital market regulation could foster capital markets in the region, possibly clearing the way for a larger regional stock exchange.
- Adjust existing regulation or adopt separate regulation to facilitate the introduction and adoption of new financial technologies.

Secure a stable and predictable regulatory framework

Key recommendations

- Improve transparency, stability and formulation of regulatory policies. Continue efforts to cut red tape and make better use of regulatory impact assessments.
- The competition authority should comment systematically on law proposals. Systematically review mergers that might reduce competition. Only allow competition limiting mergers on clear public interest cases.

Other recommendations

- Establish a regulatory impact assessment (RIA) commission and develop a common framework for measuring and evaluating policy and regulatory measures. Apply RIA to all significant policy initiatives, and introduce mandatory public consultations.
- Remove sector exemptions to apply the modern competition policy framework as widely as possible.
- Strengthen public procurement through a more effective e-procurement system by ensuring high-quality and complete data in a standardised and open format in the public procurement database. Establish a dedicated anti-corruption agency. Complement EU's structural funds by focusing Hungarian financed public infrastructure investments on bolstering agglomeration effect.

Promote more competitive network sectors

Key recommendations

- Secure non-discriminatory third party access in all network sectors to bolster entry incentives.

Other recommendations

- Introduce market-based energy pricing to attract new investment, by giving the responsibility for setting regulated prices to the sector regulator, using clear competition friendly pricing principles. Open market segments to competition by more narrowly defining public service obligations. The provider of the public service obligation should be compensated for the associated costs.
- Facilitate new entry in the retail sector by moving permission for opening new outlets to municipalities and clarify the rules for derogations, increase the ceiling for outlets and secure clear guidelines.

Main recommendations for stimulating business investment incentives *(cont.)*

- Stimulate investment in telecommunication by rewarding a spectrum with full band width to a new entrant, facilitating entry of MVNOs by securing their non-discriminatory access to networks, and secure local loop unbundling.

Stimulate investment in renewable energy

- Increase feed-in tariffs and make them un-biased with respect to technology and scale and remove differences between peak and off-peak rates.

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Chapter 2

Enhancing skills to boost growth

Skill requirements in the labour market have significantly changed over the past two decades. The restructuring of the economy is making the labour market increasingly knowledge-based. The education system has reacted to this structural change, but as the pace has been relatively slow, many graduates remain without adequate skills and insufficiently prepared to apply knowledge in unfamiliar settings. Moreover, strong selectivity early in the education system reinforces student's socio-economic background, leading to an excess of low skilled workers with poor labour market prospects. This contributes to persistently low employment rates and low productivity gains, slowing down the income convergence process. The education system needs to improve learning outcomes by better aligning student qualifications with labour market needs. Improving overall educational outcomes would also make the education system more equitable and inclusive. Bolstering the supply of skills requires lifelong learning and improving the access to labour market to those who have left the education system without proper skills. In return, this will also increase "on-the-job" training, which is a key driver of acquiring competences after graduation. In addition, mobilising untapped skill resources, particular educated younger women, would raise employment, which is needed to confront the labour market problem arising from population ageing.

Economic restructuring has changed the labour market's skill requirements

The structure of the economy has undergone marked changes over the past two decades. The service sector has expanded, particularly in business and retail services (Figure 2.1, Panel A). In addition, new jobs have appeared in information technologies and telecommunication services. At the same time, manufacturing has become more tightly integrated into global value chains and more concentrated in sectors with a higher technology content, moving away from heavy industries to electrical and transport equipment industries (Figure 2.1, Panel B). Over the same period, employment in agriculture, mining, textiles has plummeted.

The restructuring led to important changes in terms of occupational structure and skill requirements. The overall skill content has increased, with a growing share of workers with tertiary and college education (Figure 2.1, Panel C). Over the past two decades, growth in professional and technical occupations has increased more than employment in other occupational categories. In addition, ICT related occupations have spread throughout the economy. In contrast, job opportunities for unskilled workers have significantly declined and the share of craft physical workers has decreased. This trend is in line with the experience in other European countries, where the blue collar occupations saw the most pronounced declines and the demand for craft skills and repetitive physical tasks declined significantly (Handel, 2012). At the beginning of the transition period the share of low skilled job was two to three times higher than in western economies (Kollő, 2006). The restructuring has led to a large excess of low-skilled supply and the relative wages of workers with higher education have dramatically improved, leading to wide wage gap between low and high skilled workers (Figure 2.1, Panel D).

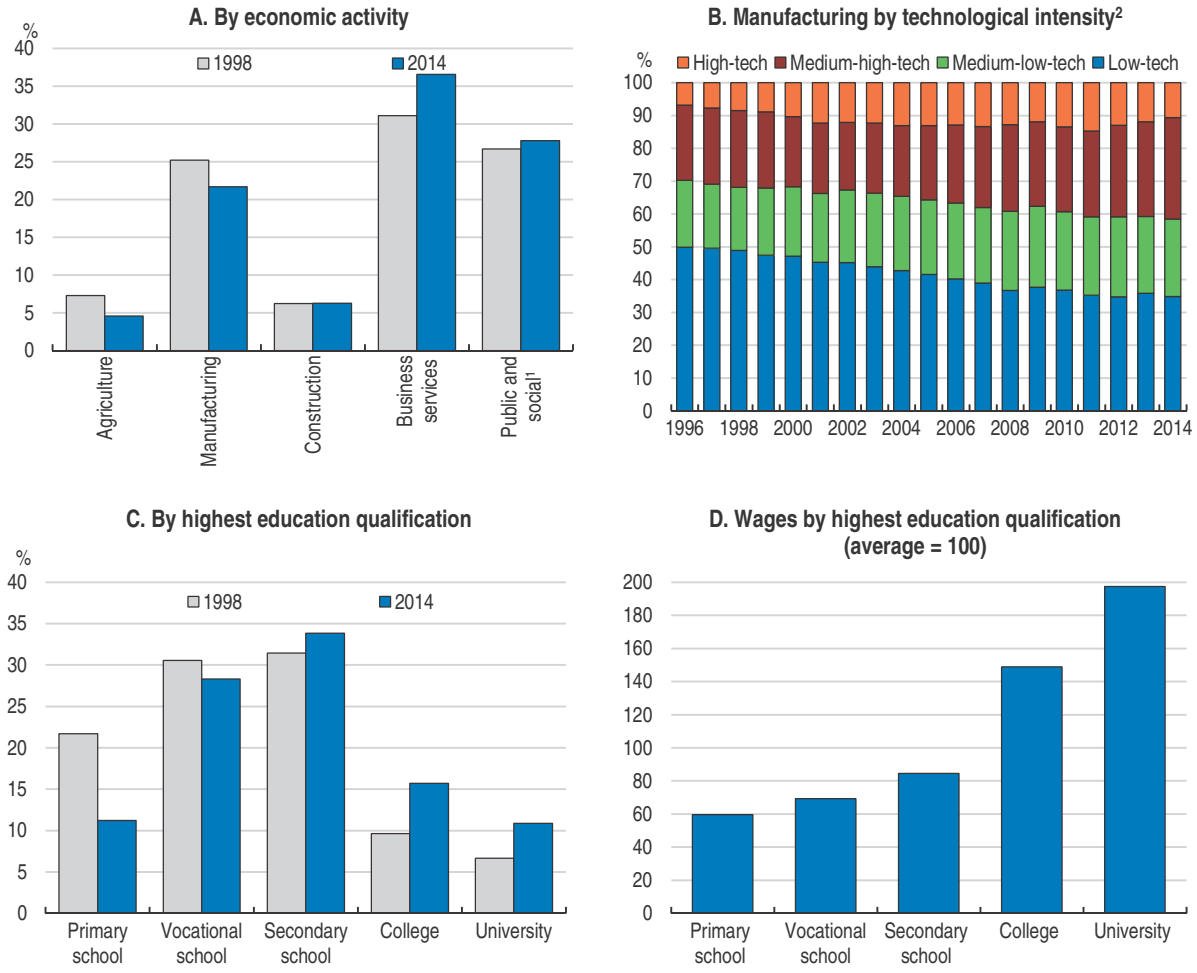
The education system's reaction to structural changes has not been sufficient…

The population's educational attainment has increased considerably over the past couple of decades. Enrolment rates in secondary education have increased from 64% in 1995 to 92% in 2013. As a result, the proportion of the population with at least upper secondary education is 60%, well above the OECD average of 44%. However, the improvement in education attainment is relatively recent and many older workers have a low education attainment. This highlights the importance of an efficient system of life-long learning to develop skills for this part of the population.

Enrolment in tertiary education has nearly quadrupled since 1991, boosting enrolment rates among the youth aged 20-29 to 26%. However, higher enrolment has not resulted in higher graduation rates, which at 23% is much lower than the OECD average. As a result, the stock of graduates remains relatively low, allowing them to command one of the highest wage premiums in the OECD. In addition, the unemployment rate for graduates is 3.7%, half of the national average (Figure 2.2).

Overall participation in education reflects higher demand for skills, but it seems the content of education and fields of studies have adjusted much more slowly. Indeed,

Figure 2.1. **Structural change in employment**



1. Public administration and defence; compulsory social security; education; human health and social work activities; other service activities.
2. Manufacturing technology intensity is an aggregation of manufacturing industries according to technological intensity (R&D expenditure/value added) and it is based on the Statistical classification NACE at 2-digit level according to Eurostat High-tech classification of manufacturing industries.

Source: Eurostat, *Employment-LFS Series Database*; Hungarian Central Statistical Office, *Labour Market Statistics*.

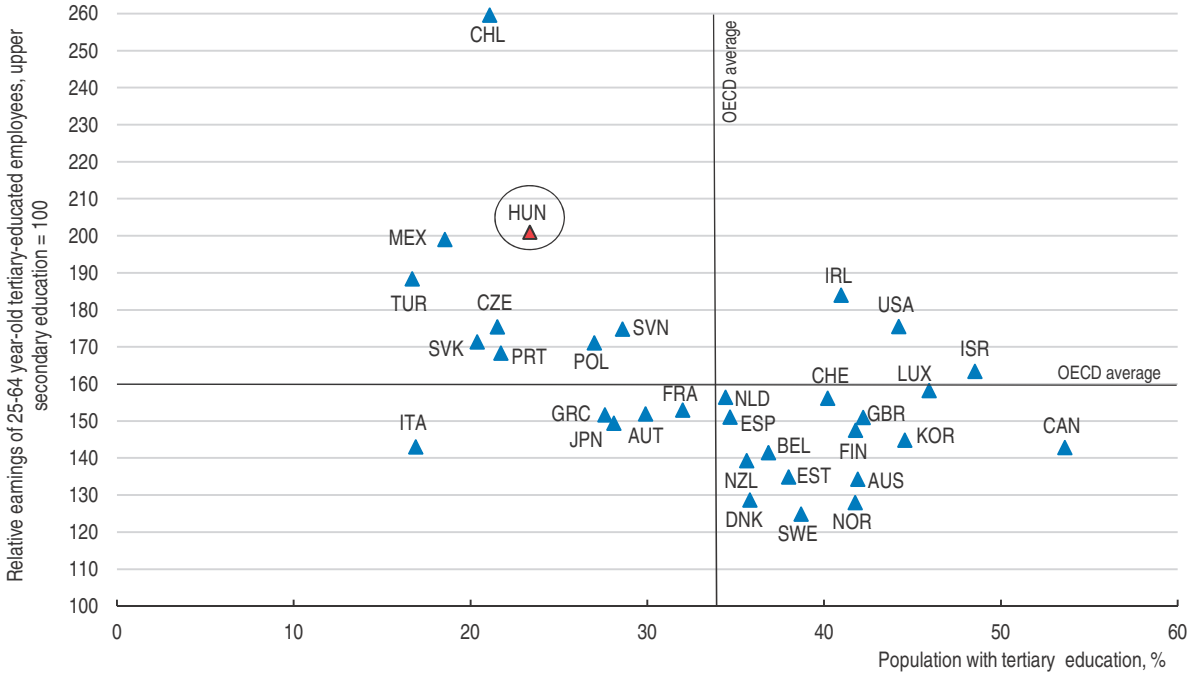
StatLink http://dx.doi.org/10.1787/888933349740

graduation rates have increased in fields where employment rates are relatively low (Figure 2.3, Panel A). This translated into growing mismatches with a high share of the workforce occupying a position not directly related to their field of study (Figure 2.3, Panel B). A better match between people's skills and occupations, implying a better use of talent could boost labour productivity by as much as 10% (McGowan et al., 2015).

Another sign of insufficient skills creation is that companies are increasingly experiencing shortages of skilled labour and to a higher degree than in other Central and Eastern European countries (Figure 2.4, Panel A). The main reasons are lack of job applicants with relevant technical competences. The labour shortages are more pronounced in manufacturing, affecting over half of all companies and particularly among large export companies (Figure 2.4, Panel B). Overcoming skills shortages could enable firms to meet growing demand and boosting income creation.

Figure 2.2. **The room for further expansion in tertiary education remains high**

Relative earnings of tertiary-educated workers and their share in the population, 2013 or latest available data



Note: Tertiary education includes short cycle tertiary, bachelor's, master's, doctoral or equivalent degrees. Data on educational attainment refers to year 2014 or latest available year.

Source: OECD (2015), *Education at a Glance 2015*, Tables A1.3a and A6.1a.

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... while structural problems on the labour market remain unsolved

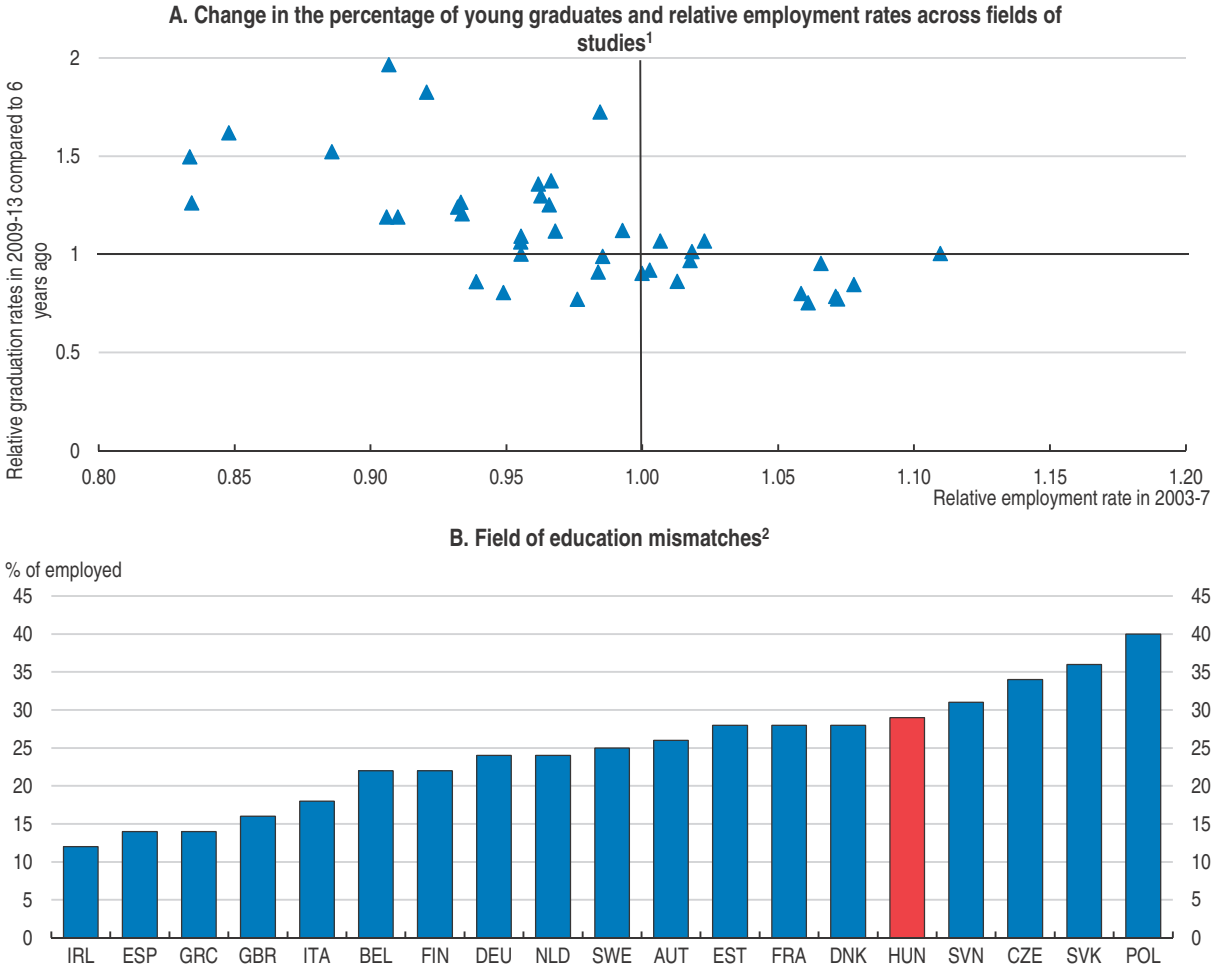
The changes in education outcomes have not bolstered the internationally low employment rates. Despite high enrolment in secondary education, the employment rate for youth age 20-24 remains below the OECD average. This suggests that the changes in the education system have not sufficiently matched the skills of younger generation exiting the education system with labour market needs. Thus, little progress has been made in solving persistent structural problems with low employment rates.

Long-term unemployment remains high, with 50% of the unemployed out of the labour market for more than a year, and this mostly affects workers with poor and obsolete skills. The difference in labour market outcomes between low-skilled and high-skilled workers is one of the largest in the OECD (OECD, 2014a). For example, average job searching time of low-skilled unemployed is 15 weeks longer than the average search time, contributing to high long-term unemployment. Moreover, long-term unemployment has an important regional dimension, where regions with high unemployment are also those with higher share of long-term unemployed.

Future changes in labour demand are likely to increase the need for skilled labour

Looking ahead, the labour market is likely to demand workers with high skill levels. Income convergence in itself implies higher wages and a move up the value added chain, requiring a more skilled labour force. In addition, further integration into global value chains is likely to bolster demand for skills. Furthermore, the changing economic structure, with a

Figure 2.3. **Education has not been responsive to labour market signals**



1. The average growth in the percentage of graduates from each field is calculated over employed youth (aged 15-29) considering graduates from specific fields (excluding youth who graduated from "General Programmes") over the period of 2003-9, 2004-10, 2005-11, 2006-12 and 2007-13. The relative employment rate, considering the entire population, is calculated as the ratio of the employment rate for graduates from each field (irrespective of whether they work in the field or not) and the employment rate of the entire population. Relative employment rates above 1 mean that the employment rate among graduates from that field is higher than the national average; values below 1 mean that the employment rate of graduates from that field is lower than the national average.
2. Field of education mismatches take place when the level of education matches job requirements but the type of education (e.g. field of study) is inappropriate for the current job. 2009 data.

Source: OECD calculations based on the *European Labour Force Statistics 2003-2013*; Randstat (2012), "Into the Gap: Exploring Skills and Mismatches", *SEO Report*, No. 2011-56, SEO Economic Research.

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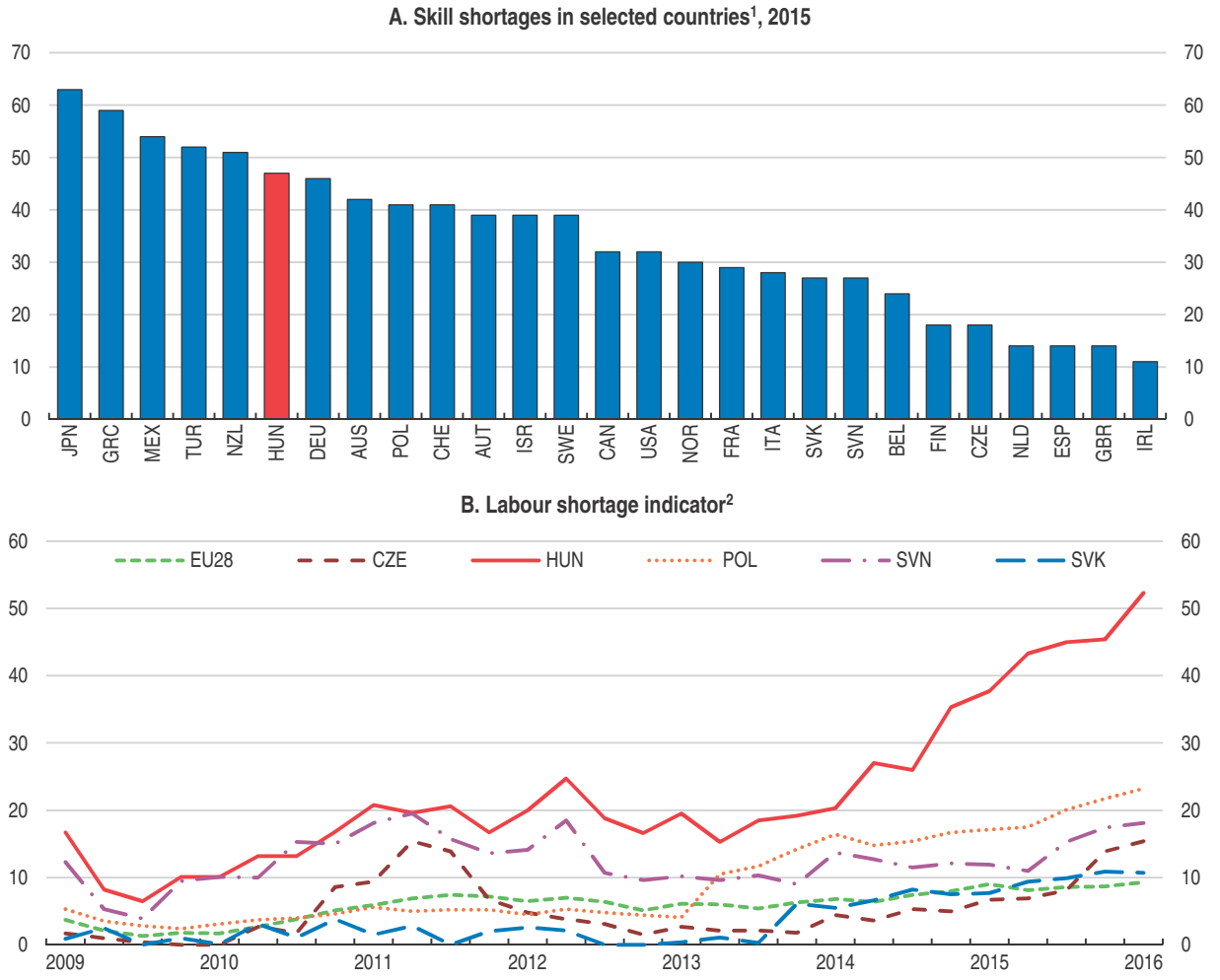
higher reliance on the service sector, is likely to create new job opportunities for well-educated professionals with qualifications in science, engineering and health (EC, 2015a).

The ongoing ageing process means that the labour force is expected to shrink. Thus, the income convergence process will become ever more dependent on securing successful educational outcomes for shrinking youth cohorts. In addition, the older and growing part of the workforce will have occupation specific experience. This raises the risk of rapid technological change, which will lead to fast depreciation of skills, raising demands on life-long learning and out-of-job training to maintain human capital (Braconier, Nicoletti and Westmore, 2014).

Figure 2.4. **Labour shortages are becoming more pronounced**



1. As a percentage of all firms with 10 or more employees. Firms are classified as facing a skill shortage if their manager reports having difficulties filling jobs.
2. Percentage of manufacturing firms pointing to labour shortage as a factor limiting production.

Source: *Manpower Talent Shortage Survey* (2015); Eurostat, *Industry Database*.

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Mobilising underused skills

Underutilised labour sources and the effects of population ageing can be countered by upgrading skills and boosting employment rates of under-represented groups in the labour market. Increasing employment rates will amplify the chances of "on-the-job learning", which is one of the main drivers for acquiring skills after graduation. The low employment rate is mainly attributed to a few partly overlapping groups: i) women in child bearing age; ii) low skilled persons; and iii) older workers. Bolstering participation of these groups on the labour market combined with measures to attract and retain skilled migrants can help secure a more skilled labour supply.

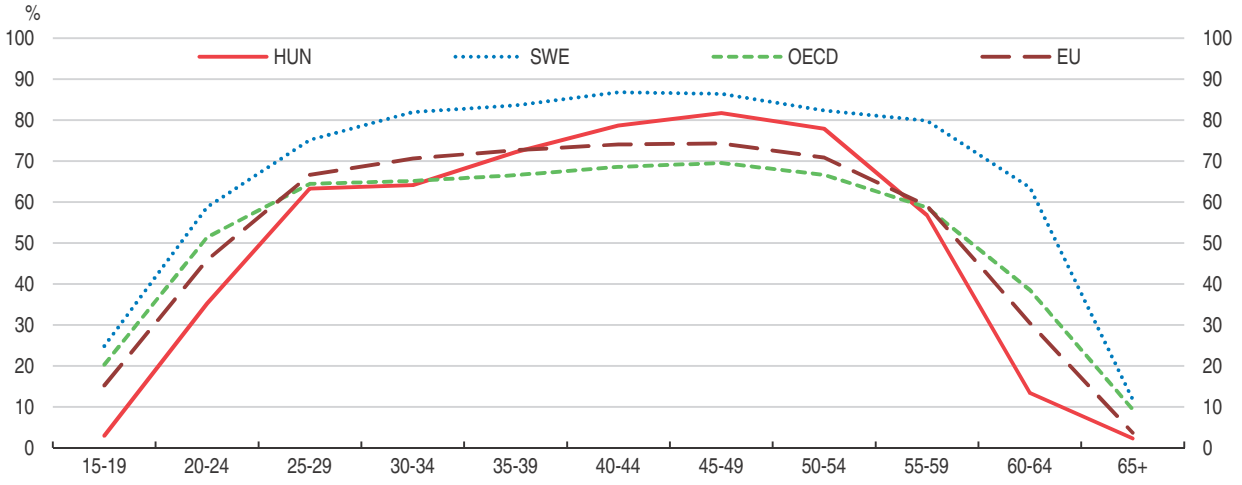
Increasing the supply of skills by enhancing women's labour market participation

Women's skills are underused in Hungary. The employment rate of females remains relatively low in certain age groups despite increased job opportunities in service sectors

(Figure 2.5). This is worrying given that females account for nearly two-thirds of new tertiary graduates. Low female participation and employment is particularly pronounced at both ends of the age spectrum. The employment rate of older females has increased in reaction to the tightening of conditions of old-age pension and disability retirement (Kátay and Nobilis, 2009). On the other hand, participation of younger women remains low, reflecting higher educational enrolment and labour market withdrawal related to parental responsibilities.

Figure 2.5. **Female employment rates are low at both ends of the age distribution**

Female employment/population ratio by age group, 2014



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

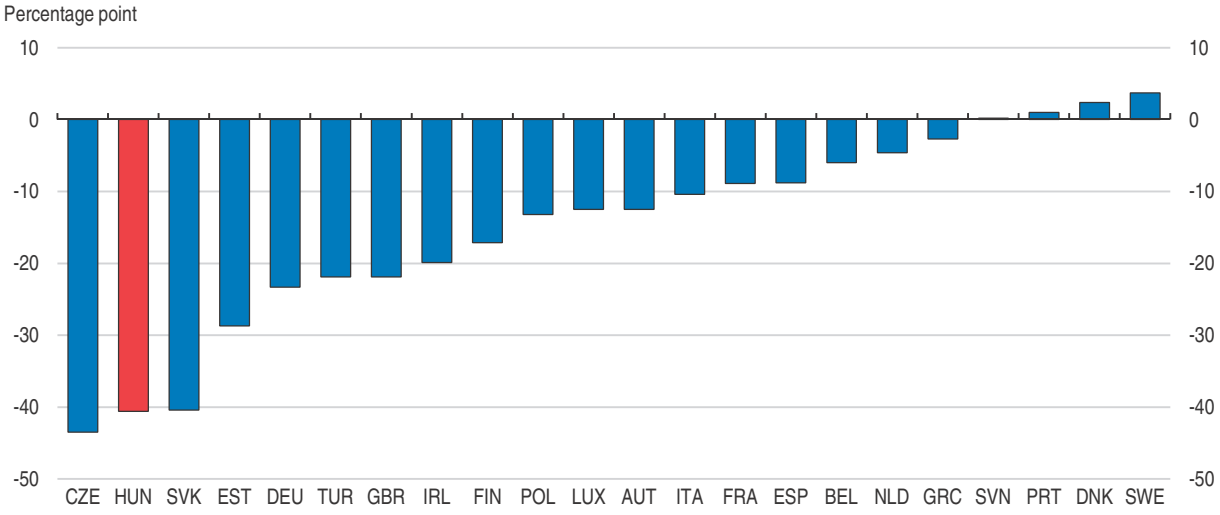
StatLink http://dx.doi.org/10.1787/888933349778

Although the employment of mothers with children increased in recent years, the impact of motherhood in reducing female labour market participation remains among the highest in the OECD (Figure 2.6). This reflects that mothers with small children are faced with high work disincentives, such as a lack of childcare supply. Thus, young women are often faced with a choice between employment and parenthood, reducing female labour participation and also contributing to one of the lowest fertility rates (1.41 children per woman) among OECD countries. Moreover, when workers stay out of the labour market for extended periods of time, their human capital will deteriorate, this may contribute to the fact that tertiary educated women in Hungary earn only two-thirds that of their male counterparts.

Mothers with young children typically take long periods of parental leave. This pattern is similar across countries in the region, reflecting a tradition for comprehensive and long maternity leave policies and guaranteed jobs upon return. Attitudes are slowly changing, but still more than 80% of survey respondents believe that pre-school children under age three suffer if their mothers work (Buber-Ennser, Panova, 2014). However, these attitudes also reflect a lack of family-friendly work opportunities and serious shortages of childcare services (Blasko, 2011). Hungary has one of the longest parental leaves in the OECD, which is almost exclusively taken by the mothers (OECD, 2012a; Figure 2.7). Longer parental leave is supported by generous family policies. The mother is entitled to 24 weeks maternity leave and receives maternal benefits in the amount of 70% of her previous salary. Thereafter a parent is allowed to take up to three years of parental leave and receive parental benefits up to 70% of twice the minimum wage until the child becomes two years

Figure 2.6. **Mothers tend to withdraw from the labour market**

Difference between employment rates of women 20-49 with children up to 6 years old, and without children, 2012

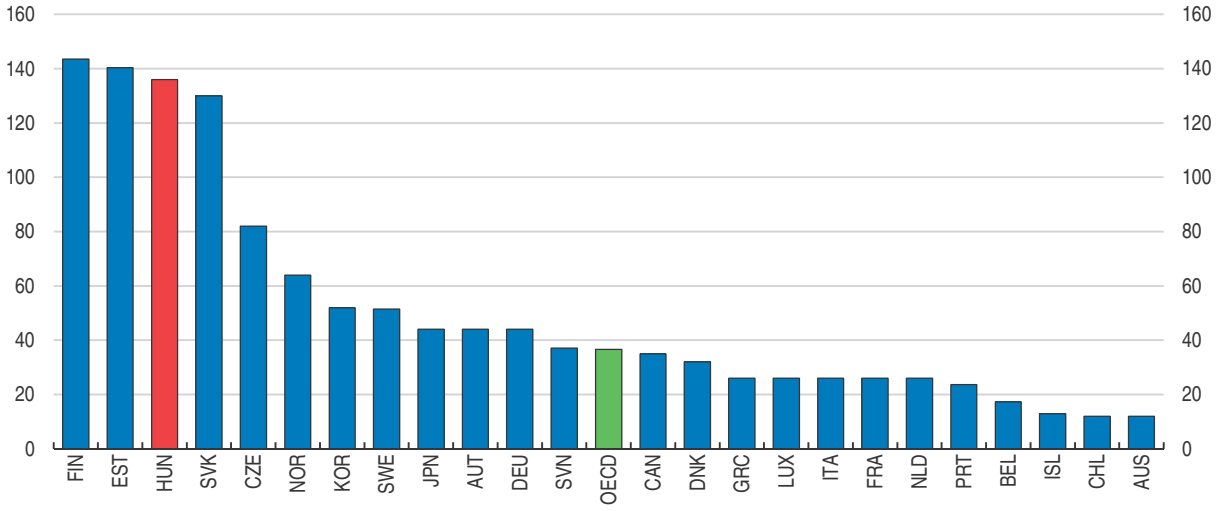


Note: Negative values indicate that employment rates of those with children up to 6 year olds are lower than those without children.
Source: Eurostat.

StatLink http://dx.doi.org/10.1787/888933349784

Figure 2.7. **Parental leave in Hungary is long**

Weeks of paid parental and home care leave, 2014



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

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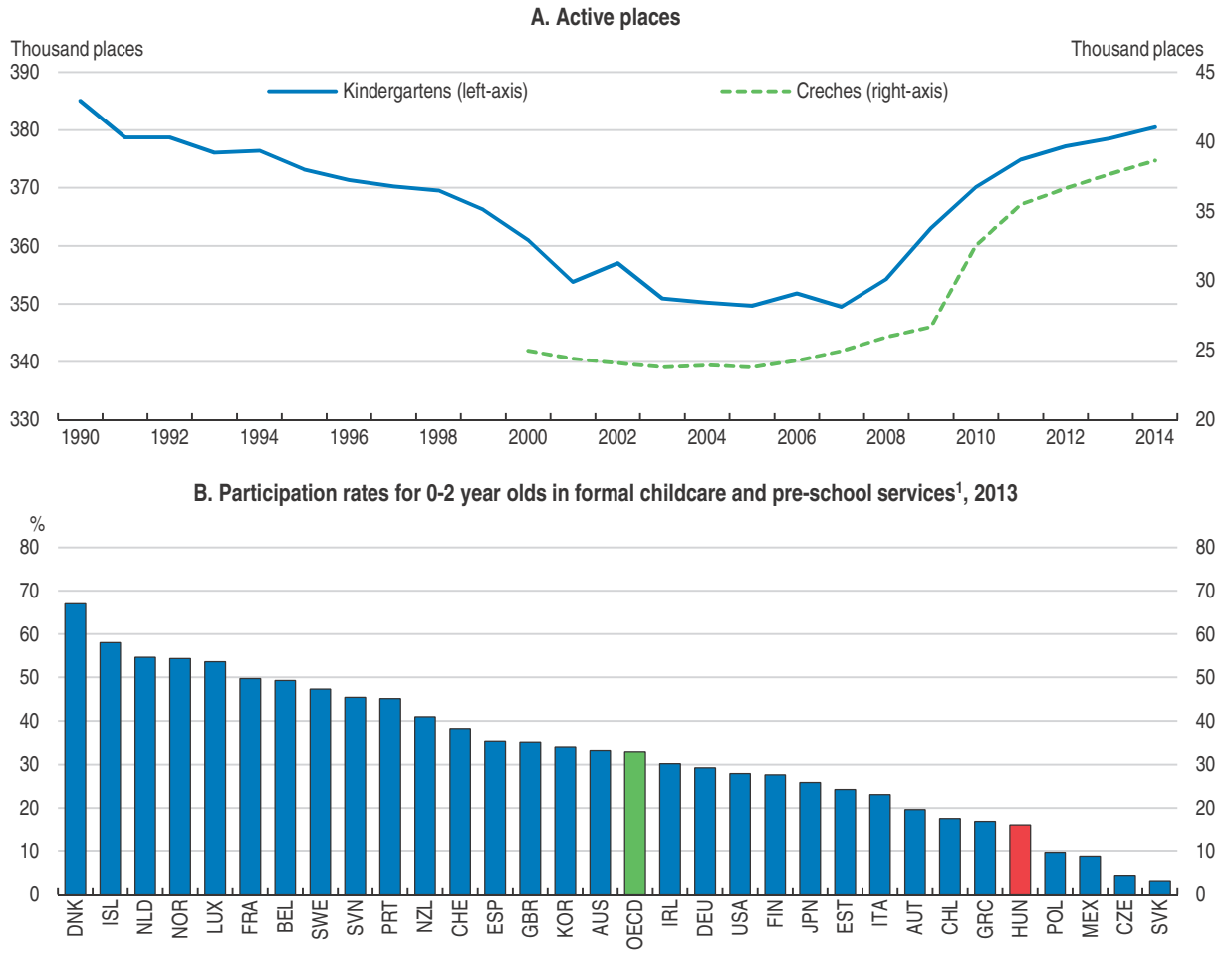
old. Between the second and third year of the child the parental benefit equals the sum of the minimum elderly pension.

Child care facilities remain scarce. This can be explained by the closing of state owned company run child-care facilities in early 1990s, which halved the number of available places. Despite significant improvements in the past years these places have not been adequately replaced. The number of child care facilities (crèches) has started to increase in recent years, as a part of the government's strategy to increase parents' labour participation. However, still only 16% of small children attend nurseries (Figure 2.8). The

Figure 2.8. **Enrolment in formal childcare remains low**



1. Data reflect children in day-care centres and pre-school (both public and private) and those who are cared for by liscensed childminders. It excludes informal services provided by relatives, friends or neighbours regardless of whether or not the service is paid for.

Source: Hungarian Central Statistical Office; OECD (2015), *Family Database*.

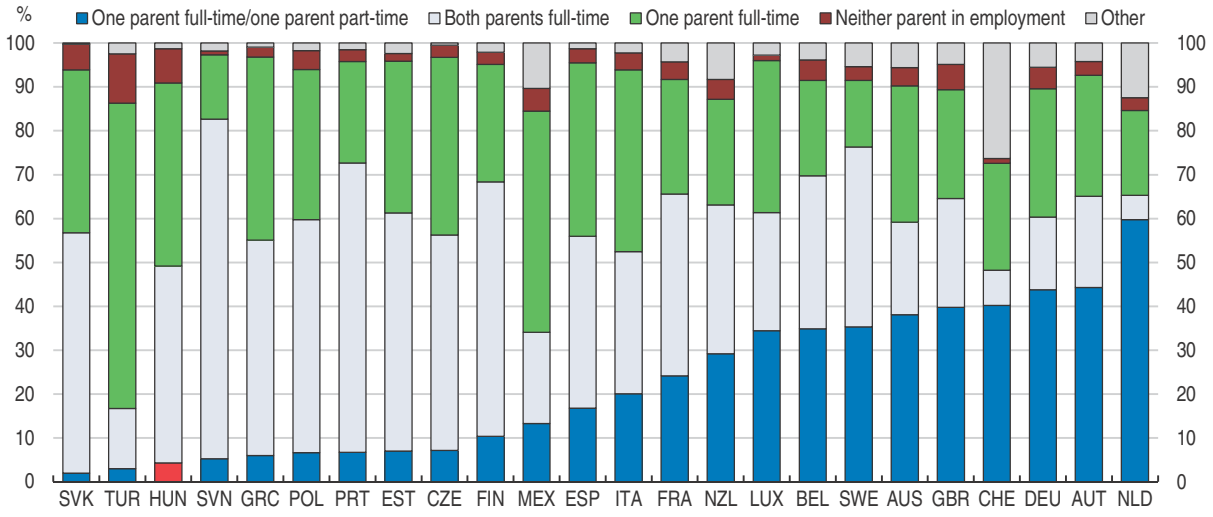
StatLink http://dx.doi.org/10.1787/888933349800

intake in Kindergartens (children above 3 years) is much higher, with 10 times more places available, although in this respect major cities are experiencing capacity constraints. When securing a place, parents are faced with the additional hurdle of opening hours, which are not aligned with working hours (Herrmann et al., 2014). To further expand child care supply, part of the parental leave benefits can be mandated towards support of childcare facilities through a voucher linked to the purchase of childcare services; this could stimulate private sector provision of childcare (OECD, 2007).

Part-time work and flexible working arrangements could facilitate combining work and family responsibilities, but are rarely used as the female part-time ratio is just 6%, low by international standards (Figure 2.9). To promote flexible employment, resources from European funds have been redirected to support flexible employment and the demand for part-time workers is further supported by reduction in social security contributions (Box 2.1). This has been combined with the introduction of family-friendly practices and adequate training for human resources professionals and managers. Further steps are

Figure 2.9. **The part-time family model is rarely used in Hungary**

Employment patterns among couple families with children aged 0-14, 2011[1]



1. 2010 data for Mexico, Sweden and Switzerland.

Source: OECD (2014), *OECD Family Database*.

StatLink http://dx.doi.org/10.1787/888933349815

necessary to promote the use of part-time employment. The government can increase women's part-time work in the public sector providing an example for the private sector and thus improving female labour market participation. At the same time, the choice between full-time and part-time work should be neutral to ensure that women have easy access back to full time jobs.

The government has recognised the problem and has taken several steps to improve female access to the labour market, including permitting the parents to work without losing the entitlement to the parental allowance and child-care allowance. The government also provides tax credits for employers hiring parents with young children (Box 2.1). Moreover, the government introduced measures that oblige employers to allow returning mothers to work part-time until their children reach the age of three. This measure, however, should be monitored carefully as evidence from Spain showed that similar policies of protection of mothers against layoffs decreased hiring of women in child bearing age (Rodríguez-Planas and Fernández Kranz, 2013).

So far, these measures have not overcome prevailing negative attitudes towards working mothers. To do so, a gradual reduction of the parental leave period and increasing the role of fathers could further increase mother's participation in the labour market and promote a more gender balance sharing of paid and unpaid work. Reductions in parental leave could be done by shortening child-related leave entitlements, but paying them at a higher rate. In Germany, the flat-rate childcare payment for 22 months was reformed into an earnings-related income-support payment over 12 months. This could be combined with an increase in paternity leave by transforming part of the family entitlements available to both partners into individual non-transferable rights for the specific use of fathers. A reform such as this in Iceland increased the proportion of parental leave days taken by fathers from 3% to around 35% (OECD, 2011a). In addition, empirical research

Box 2.1. **The Job Protection Act to promote employment growth**

The government introduced the Job Protection Act in 2013 to promote employment in private sector and ease administrative burdens of employers.

An important part of the measures are aimed at strengthening labour demand for workers with weak links to the labour market such as people under the age of 25 or over 55, long-term job-seekers, workers in unskilled jobs, agricultural employees and mothers with small children returning to work. A reduction in social security contributions and vocational training subsidies are offered to employers, who are hiring hard-to-employ workers. To create and preserve existing jobs, these tax allowances can be taken in the case of both newly employed and current workers.

The Job Protection Act significantly reduced social security contributions. With a gross wage of up to HUF 100 000, the overall 28.5% of social security contributions payable by the employer is lowered to 14%, when companies employ people under the age of 25, over 55 or workers in unskilled jobs. Furthermore, in the first two years of employment, enterprises are totally exempt from social security contributions in the case of career starters (under 25, with at least 180 days of work experience), long-term job seekers (registered as unemployed for over 6 months) and mothers with small children (after having received child care fees or after/during their eligibility for child care allowance or child raising support). Also, in the third year of employing long-term job seekers or mothers, the employer social security contributions are lowered to 14%.

Table 2.1. **Payable public charges of employers offered by the Job Protection Act**

Beneficiary groups		Payable public charges of employers up to HUF 100 000 (%)		
		Social security contribution	Vocational training contribution	Total
Original rate (without ceiling)		27.0	1.5	28.5
Under the age of 25		12.5	1.5	14.0
Over the age of 55		12.5	1.5	14.0
People in unskilled jobs		12.5	1.5	14.0
Agricultural employees		12.5	1.5	14.0
Career starters (with max. 180 days of work experience)	first 2 years	0.0	0.0	0.0
	3rd year	12.5	1.5	14.0
Long-term job-seekers	first 2 years	0.0	0.0	0.0
	3rd year	12.5	1.5	14.0
Mothers with small children (1 or 2 children)	first 2 years	0.0	0.0	0.0
	3rd year	12.5	1.5	14.0
Mothers with small children (3 or more children)	first 3 years	0	0	0
	4 and 5 years	12.5	1.5	14.0

Source: National Employment Service of Hungary.

suggests that increasing the role of father in child care is associated with rising fertility rates and has the potential to be beneficial for the child development later in life (Feyer et al., 2008; Cools et al., 2015).

Upgrading skills of elderly in order to increase their labour market participation

Population ageing has brought the share of 55-64 year olds in the population to 21%, which is one of the highest among OECD countries. Since the crisis, this age cohort's employment rate has shot up as the government tightened conditions for

receiving old-age and disability pensions, and increased labour demand incentives with new tax measures devoted to this age group (Box 2.1). Nonetheless, the employment rate of those above 55 is still only 40% – the third lowest in the OECD. Despite, the participation of future older workers is expected to increase in line with rising educational attainment, and thus skill-enhancing measures are needed to increase employability of recent older workers.

Moreover, the demand for different skills is subject to constant change. This means that older workers are particularly exposed to a depreciation of their qualifications in the absence of continuous investment in education and training. In this context, training can preserve their skills and increase their employability. However, the participation of older workers in lifelong learning is low compared to other countries. Training provided by companies is one of the lowest amongst EU countries and incentives have decreased further as the possibility of deducting the training costs from social contributions was eliminated in 2012 (Eurofound 2015). A low incidence of lifelong learning could contribute to relatively low employment rate of older workers (OECD, 2012a). Therefore it is important to promote policies encouraging upgrading of skills, particularly targeted at older workers, and also encourage informal learning within the firm.

Firms may find it less profitable to train older workers as they are approaching retirement, therefore public support should be tilted towards individual take-up incentives. For example, the current vocational training contribution (1.5% of wages) could be used to create individual learning accounts. Experiences in other OECD countries, such as Canada, Netherlands, and Spain, indicate that individual learning accounts can be effective in facilitating lifelong learning. The advantage of such accounts is that they provide individuals with a training subsidy that give them more responsibility and control, allowing for a better match between the individual needs and appropriate training. An alternative or complementary approach could be offering training vouchers targeted at older workers. In Austria, adult courses are subsidised by vouchers whose amount varies according to the characteristics of adults (OECD, 2005a).

Programmes designed combining short classroom sessions with a firm-based approach, could be effective for older workers. Foundation of general skills becoming relatively less important as people grows older. After a certain age, the benefit that a person can reap from specific job-related training is higher than the return on investments in more general skills, whose pay-back period can be relatively long as compared with the remaining working life of that person.

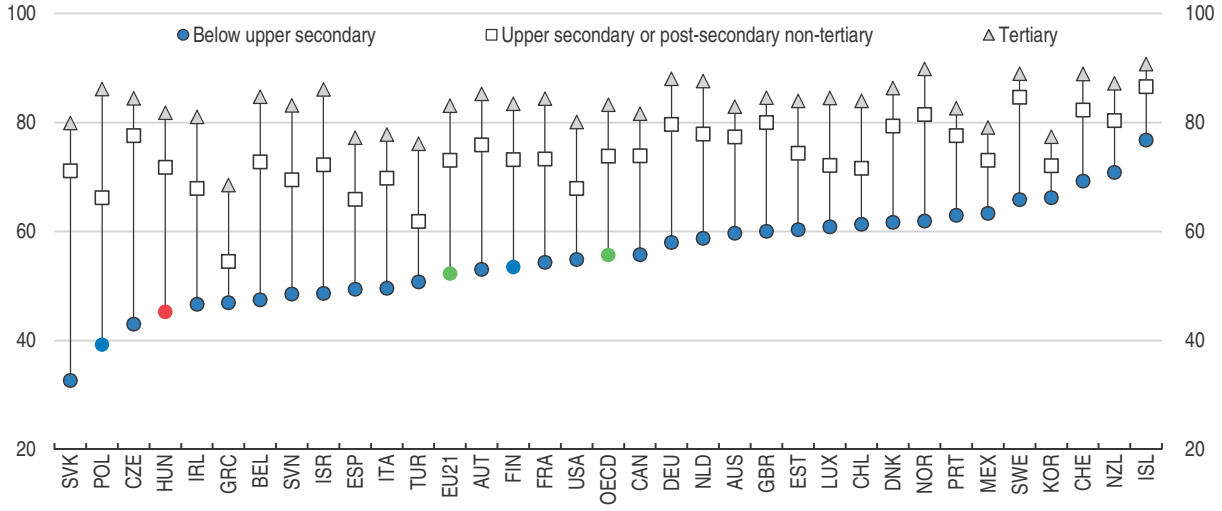
In order to avoid skills depreciation policies to promote older worker participation should be strengthen. The government has already reduced the social security contribution for older workers paid by employers, which could improve their employability (see Box 2.1). Reducing the implicit tax on work at older ages would increase employment and promote training participation (Bassanini, 2005). In addition, empirical research shows wage subsidy programme targeted at long-term unemployed aged over 50: is effective in reemploying older workers. (Cseres-Gergely et al., 2015). Wage subsidy programmes should be scaled-up and can be supplemented with job search assistance and job search monitoring measures.

Improving labour market prospects for low skilled

The difference in employment rates between low-skilled and high-skilled workers is one of the largest in the OECD (Figure 2.10). Moreover, the long-term unemployed are characterised by inadequate and obsolete skills. This suggests that more is needed to assist low skilled adults that have left the education system without adequate skills.

Figure 2.10. **The less educated have lower chances of finding a job**

Employed persons as percentage of population, age 25-64, 2014



Source: OECD (2015), *Education at a Glance 2015*, Table A5.3a.

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The government's main measure to alleviate the insufficient skill problem is high spending on active labour market policies (ALMP), mostly though the public works scheme. However, these programmes have little emphasis on skill enhancing measures. Spending on active labour market policies has more than doubled over the past 10 years to 0.8% of GDP in 2013 driven by a strong expansion in public works schemes, particularly since 2009, which now accounts for 0.5% of GDP. In contrast, spending on training measures is lower than a decade ago. Besides these programmes, the government has recently introduced several active labour market policy measures to improve employability of certain group of job seekers (Box 2.2).

The public works scheme holds the promise of making growth more inclusive by providing low paid jobs to the unemployed. The programmes typically offer jobs in the public sector and intend to help the unemployed maintain basic general labour market skills, such as working discipline and time management. Currently, 5% of overall employment is sourced in this type of jobs in the public sector, which are mostly provided in the poorer regions that have a higher share of long-term unemployed (Figure 2.11). Wages paid through the scheme amount to three quarters of the minimum wage and is paid by municipalities or state companies and subsequently reimbursed by the central government. A problem is that there is little supervision of how these funds are used. Thus, local municipalities have a strong interest in organising public works and expanding the available budget (Scharle, 2015). Other reason behind increasing participation in the public works scheme is relatively short duration of unemployment benefits, which has been reduced from nine months to

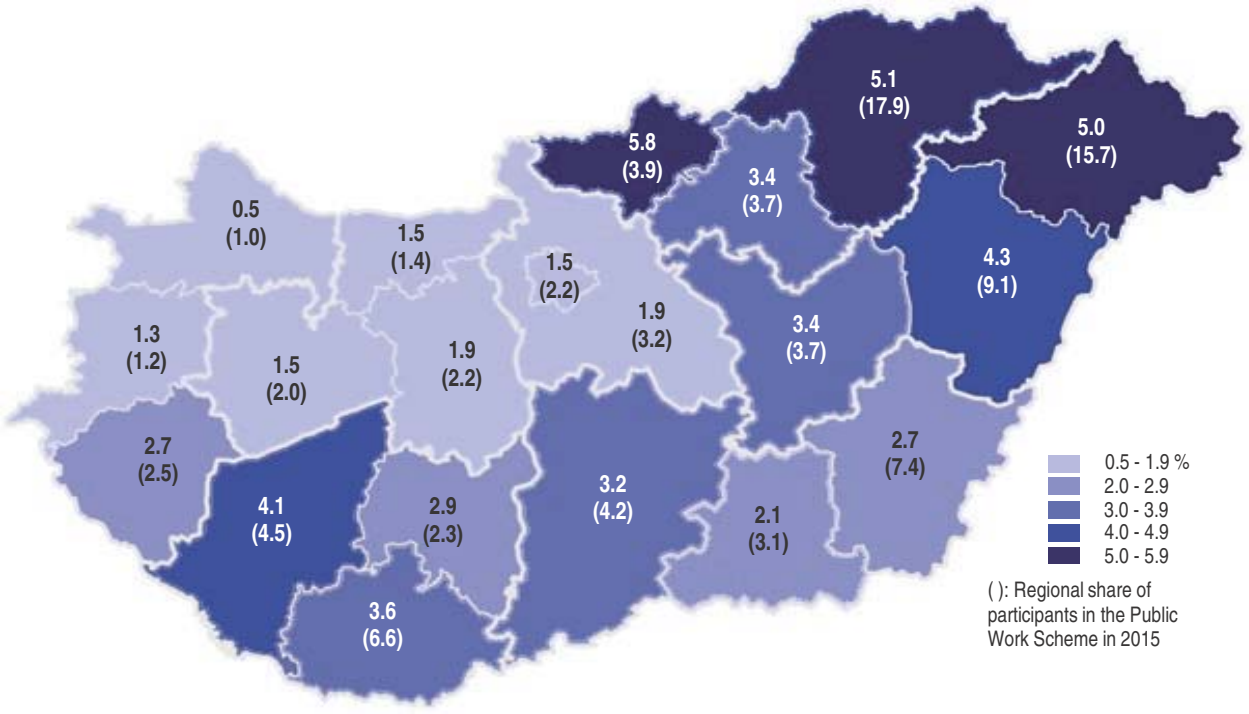
Box 2.2. **New active labour market policy measures**

The government has introduced several active labour market policy measures to improve employability of certain groups of jobseekers.

1. The "Path-to-work" is a large-scale active labour market programme which aims to improve the employability of jobseekers by personalised and tailor-made individual programmes including labour market services, subsidies and training. Priority target groups of the programme includes low skilled, older people (50+), career starters between 25-30, parents returning to the labour market after parental leave and those exiting from the public work scheme.
2. The Youth Guarantee system aims to ensure that young people (16-24) not in employment or education/ training (NEET) are provided with a support to improve their chances on the primary labour market. The programme offers entrepreneurship support, apprenticeship, traineeship, further education within 4 months after being registered in the Public Employment Service.
3. The start-up incentive programme aims to support young people to set up their businesses through provision of entrepreneurial training, mentoring and development of business plans. Young people who complete their training and have their business plan accepted can apply for a maximum EUR 10 000 grant to cover their initial costs.
4. An apprenticeship programme fosters the employment of young qualified career starters by fully or partially subsidising their wages and social contributions for nine months.

Figure 2.11. **Public work scheme jobs are predominantly in regions with high long-term unemployment**

Rate of registered jobseekers over 180 days in working-age population, 2014



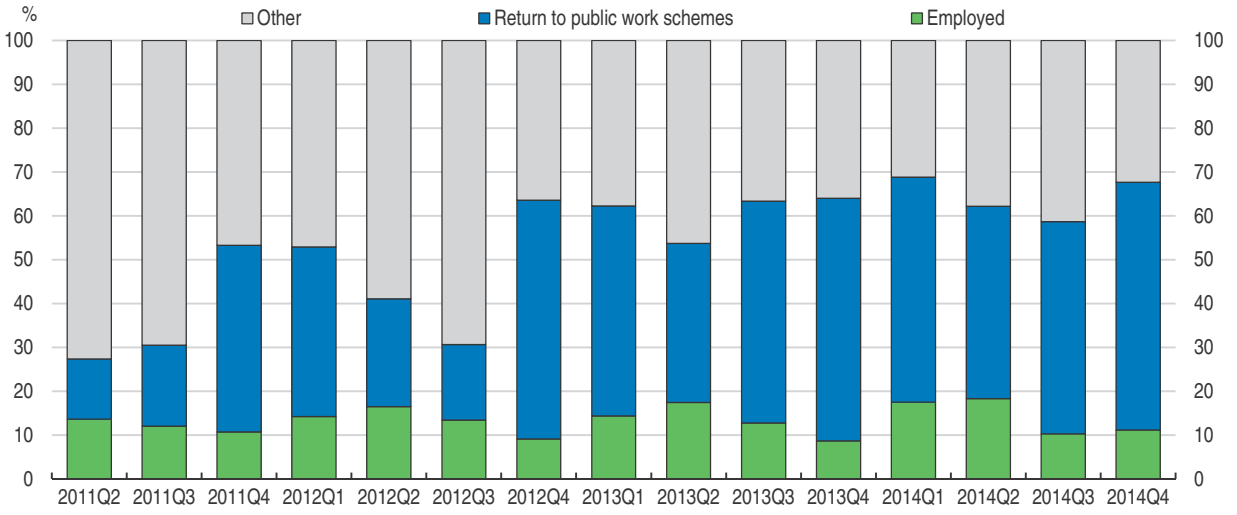
Source: Hungarian Central Statistical Office.

three months in 2012. The public works scheme provides temporary relief to the unemployed. This helps to reduce social tensions and contribute to local community development.

Only a small share of participants find a job in the private sector and most who exit out of the scheme tend to return to the programme after 6 months of spell of unemployment (Figure 2.12). Repeated participation has particularly detrimental effects on skills and re-employment prospects (EC, 2015c). This confirms experiences in other countries that skills gained in public works scheme jobs are usually not relevant for private sector jobs. Participation can even lower the probability of finding employment after the programmes have ended, reflecting lock-in effects that prevents enrolees from job search or training activities (Card et al., 2015; Duel et al., 2010). This is a particular risk in Hungary, where high regional differences and low mobility can create a lock-in effect of public work participants in less economically developed regions. The programmes are likely to limit labour market adjustment and exacerbate already high regional differences (OECD, 2014a). In order to improve the access to the primary labour market, the government has introduced several measures including cash "bonus" for former public work participants who find a job in the private sector and wage subsidies for employers who hire former public workers.

Figure 2.12. **Labour market status 6 months after participating in public work schemes**

Quarterly average



Source: Fazekas, Varga, Bakó and Molnár (2015), *The Hungarian Labour Market 2015*.

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Training measures can significantly improve skills of participant's and employability (Card et al., 2015). The positive effects of training are especially pronounced for young participants, for which training measures are more effective than any other ALMP programmes (EC, 2015c). However, the overall share of participants in training in Hungary is less than 10% of all ALMP participants. Training programmes are facilitated by two institutions – public employment services (PES) that provides training for the unemployed through mostly private providers and by the public *Turr Istvan Institute* that provides training for public work participants. The latter focuses on training to improve agricultural, basic and professional skills.

One way forward is the greater use of profiling to determine which unemployed should enter the public works scheme or which training should be applied according to the needs of the unemployed. Public works programmes should not be offered to early school leavers and young unemployed as these groups essentially need to acquire skills that would be transferable to private sector jobs. The share of participants with higher-secondary and tertiary education and of youth aged below 25 continues to be high, around 20% and 16%. The public works scheme should be used only for the long-term unemployed with low skills. For other groups, training and job search programmes are likely to be more effective. The Government has launched a new profiling system in 2016, including services based on the risk categories of jobseekers. In order to effectively implement these measures, the profiling system needs to be complemented by comprehensive evaluation of particular measures in order to effectively match unemployed to specific programmes. If such measures were successful, the public works schemes could be scaled back as over time fewer people would need this sort of support.

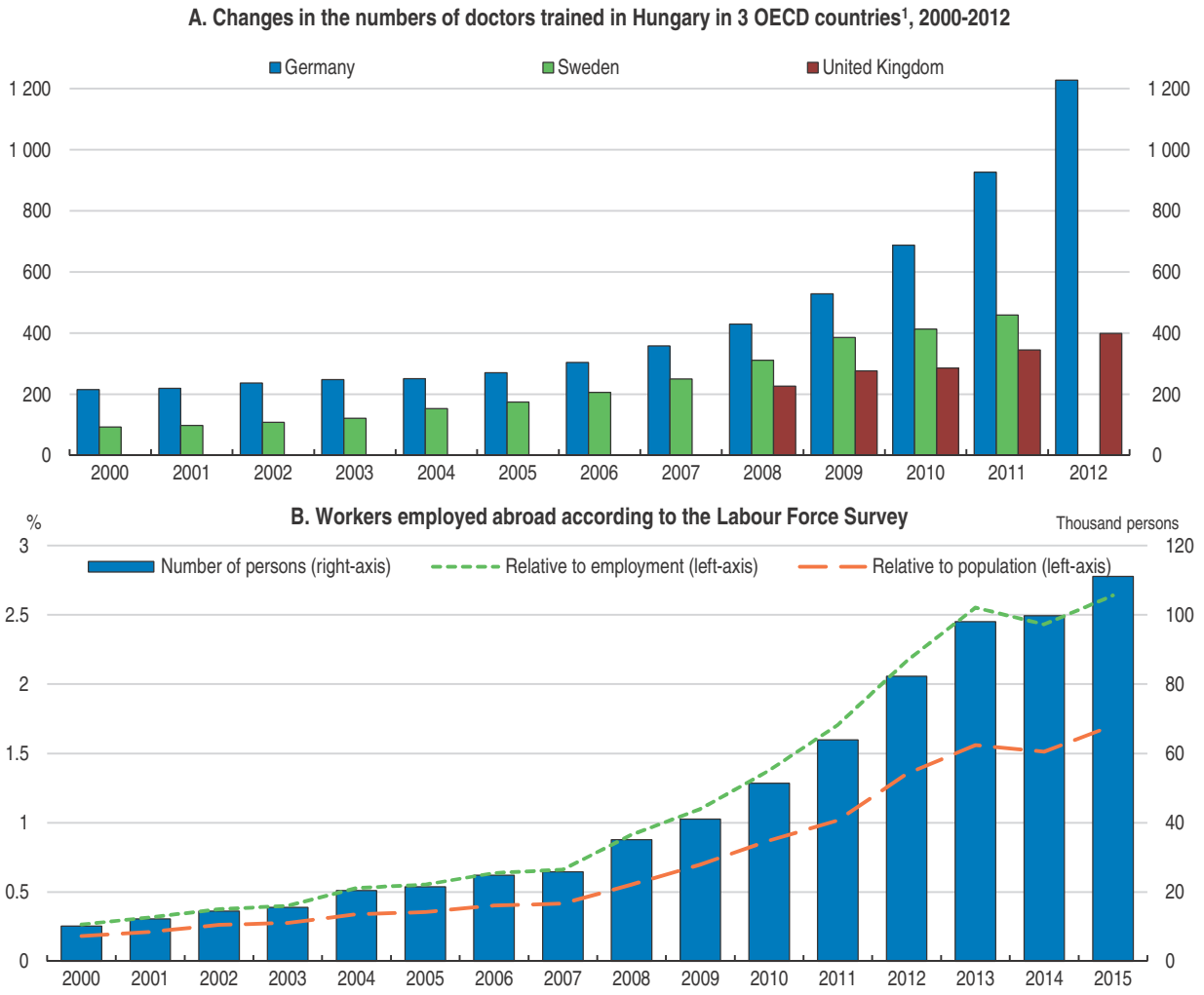
In addition, a follow-up programme should be put in place for participants in the public works scheme. Making the existing individual action plan mandatory and offering complex programmes based on mix of training, counselling and mentoring programmes should be an important element of an upskilling strategy for the unemployed. It is important that all clients reaching 12 months of unemployment are re-profiled and should be assigned to a personal counsellor (EC, 2015c). The existing individual action plan is voluntary and limited to staff in the public employment service, leaving little room for individualised assistance. Following the recommendation from the *2014 Economic Survey of Hungary*, the capacity of the public employment service should be scaled up in terms of staffing and efficiency.

Securing skilled labour supply in the future

Supply of skilled labour is further decreasing through emigration. Since 2008, emigration has increased significantly from low levels, notably to Germany, Austria and the United Kingdom (Figure 2.13, Panel B). Emigration is dominated by young and skilled workers (Bodnar and Szabo, 2014): surveys suggest that almost half of the Hungarians under the age of 25 are willing to emigrate. These developments have contributed to labour shortages, most pronounced in the health care sector. For example, since 2012 the number of experienced Hungarian doctors working in Germany has increased by more than 30% (Figure 2.13, Panel A). Experienced and qualified doctors aged 30-39 are the most likely to leave (Girasek et al., 2013). The high number of official doctor qualification certificates issued to doctors wanting to work abroad also indicates skill erosion in the health sector. The dominant push factors in emigration are relatively low salaries, poor working conditions and limited research opportunities.

Attracting emigrants to return to Hungary can boost the supply of skilled labour as evidence suggests that return migrants bring back skills and knowledge, spurring innovation and growth (OECD, 2008). However, according to surveys only 10% of recent emigrants intend to return in the near future (SEEMIG, 2014). The government is addressing this issue through the recently launched "Come Home, Youth!" programme with a budget of HUF 100 million, mainly targeting skilled youth. The programme covers part of the resettlement costs and provides additional monthly wage subsidy (EUR 320) for the year following the repatriation. As the programme has attracted only few return emigrants so far, other steps are necessary to attract high skilled workers to return from other countries.

Figure 2.13. **Emigration is low, but has been increasing significantly over recent years**



1. Data for Germany refer to the number of doctors of Hungarian nationality. Data for Sweden are only available up to 2011 and data for the United Kingdom are only available for 2008-12.

Source: OECD (2015), *International Migration Outlook 2015*, Figure 30; Magyar Nemzeti Bank (2014), *Growth Report November 2014*, Figure 2.32; Hungarian Central Statistical Office (2016), *Labour Force Survey*.

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As a member of the European Economic Area (EEA), the scope for attracting skilled immigrants is restricted to facilitate access for workers outside the EEA. These workers need to obtain a working permit that can be granted only if the employer can prove that no Hungarian job seeker is suitable for that job (OECD, 2014a). Many OECD countries are using a more supply driven system, whereby potential migrants are chosen according to awarded points, which reflect qualifications, skills, language proficiency and experience allowing selected immigrants to enter the country without a job offer to search for employment. However, impact of this measure can be limited in Hungary, where language is so important for labour market success. The existing EU Blue Card system, which grants special residency rights and work permits to highly-skilled migrants outside of Europe, led to only four permits issued in the last years. Hungary could grant special tax treatment for highly-skilled immigrants. Several countries offer tax concessions to specific groups of highly skilled workers: in Belgium, the state grants a 75% exemption from wage withholding taxation to temporary and permanent foreign workers,

while Italy offers a 90% of exemption from personal income tax earned for three years. In Hungary, a possible approach could be to focus on reducing social security contributions, which is one of the highest in the OECD countries.

One group of readily available high-skilled immigrants is international students. They are particularly attractive as they have studied in Hungary and are thus familiar with the language, institutions, and culture. The government is trying to boost the relatively low number of foreign students with a scholarship programme through a series of bilateral agreements, mainly from outside Europe. This should be supplemented with measures to retain foreign graduates. Many countries allow university students to look for job after completion of their studies. For example, Sweden allows students to work during their studies. Hungary has no special provisions for staying on, and graduates must use the existing labour migration channels if they are to find qualifying employment (OECD, 2014b). Therefore, it is important to ease conditions for international graduates' work permits by allowing them to look for a job after graduation. In addition, a post-study work experience visa should afford a transition pathway from temporary to permanent residence.

Securing future skills formation that meet labour market needs

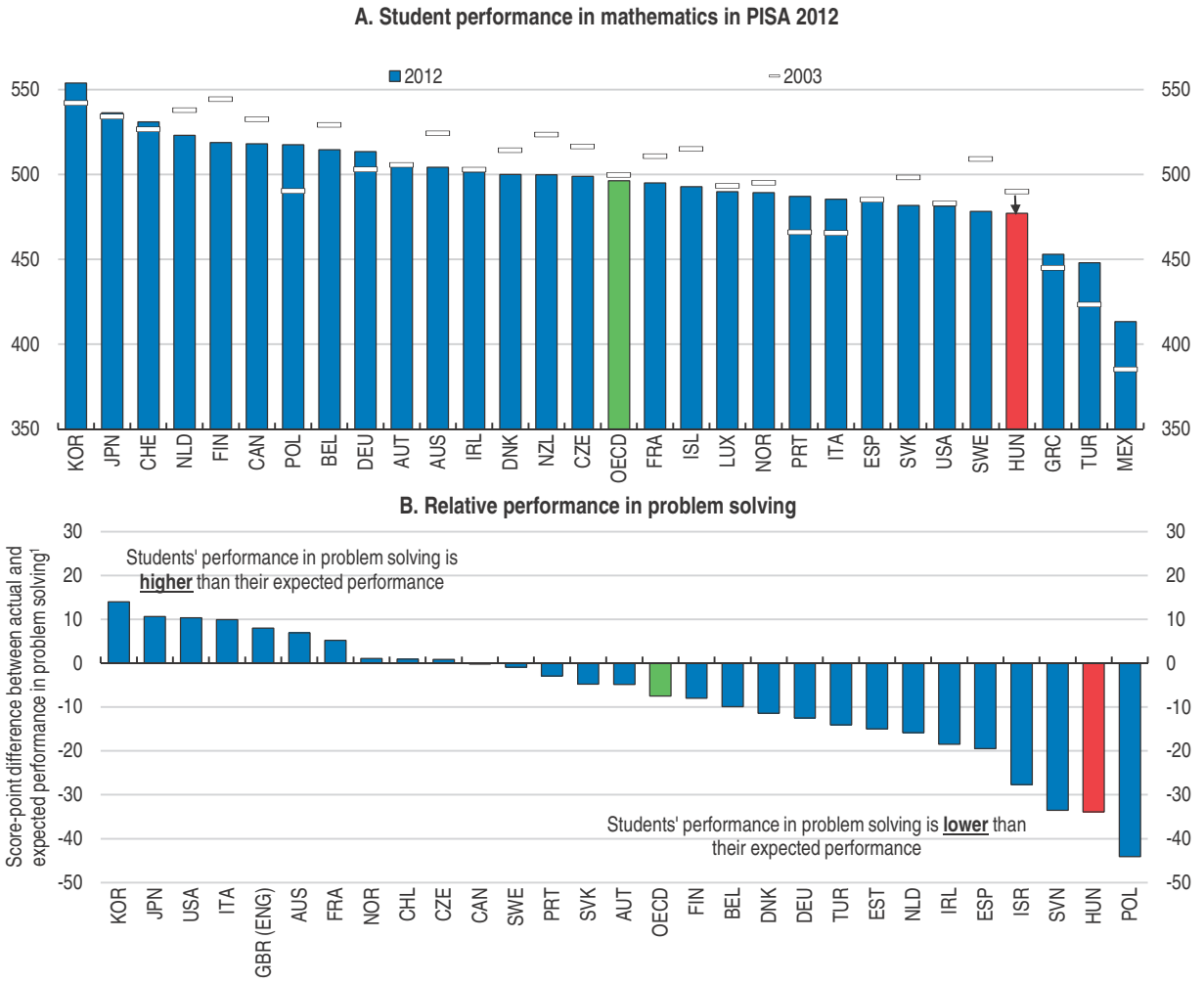
The education system is essential in developing relevant skills. A constantly changing economic environment poses challenges in this respect, as it requires more endogenous adjustment to better align student learning outcomes with changes in labour market demand. However, low youth employment rates suggest that little progress has been achieved. Furthermore, citizen satisfaction with the education system is lower than in neighbouring countries and below the OECD average (OECD, 2015b). In addition, public spending on education has been decreasing, leading to internationally low spending per student, particularly for primary and secondary students.

Learning outcomes for 15 year-old students are worse compared to the OECD average in all assessed subjects and in mathematics and science have been deteriorating over time (OECD, 2015b; Figure 2.14, Panel A). Also, students are not sufficiently prepared to perform tasks required in today's labour market such as solving non-routine problems in unfamiliar situations. Indeed, PISA tests show that problem solving skills are amongst the weakest in the OECD. Particularly, students perform significantly worse in problem solving than students in other countries with similar performance in core subjects, reflecting that prevailing Hungarian teaching practises remaining content-centred with little space for knowledge application (Figure 2.14, Panel B). Such differences are likely to reflect that teaching content gives little space for knowledge application. In contrast, today's changes in economy and in technology require the ability to adapt to new circumstances and learning in unfamiliar contexts. Surveys of adults' skills show that those who reach the highest level of proficiency in problem solving are also those who have access to jobs in the occupations with the strongest employment creation (OECD, 2014c). As a result, 15 year-olds who lack advanced problem solving skills are faced with higher labour market risks and potential economic disadvantage as adults.

Enhancing the quality of learning and strengthening skills valued in the labour market

The introduction of new, modern teaching methods and a new curriculum require highly qualified and motivated teachers (OECD, 2005b; Chetty et al., 2011). However, the conditions for teachers remain unattractive with some of the lowest salaries in the OECD, equivalent to half of average tertiary graduate earnings (Figure 2.15). Moreover, low wages are encouraging the best teachers to find employment elsewhere. Indeed, former teachers

Figure 2.14. **Student performance in PISA 2012 has deteriorated**



1. Each student's expected performance is estimated, using a regression model, as the predicted performance in problem solving given his or her score in mathematics, reading and science.

Source: OECD (2014), *PISA 2012 Database*, Tables I.2.3b and V.2.6.

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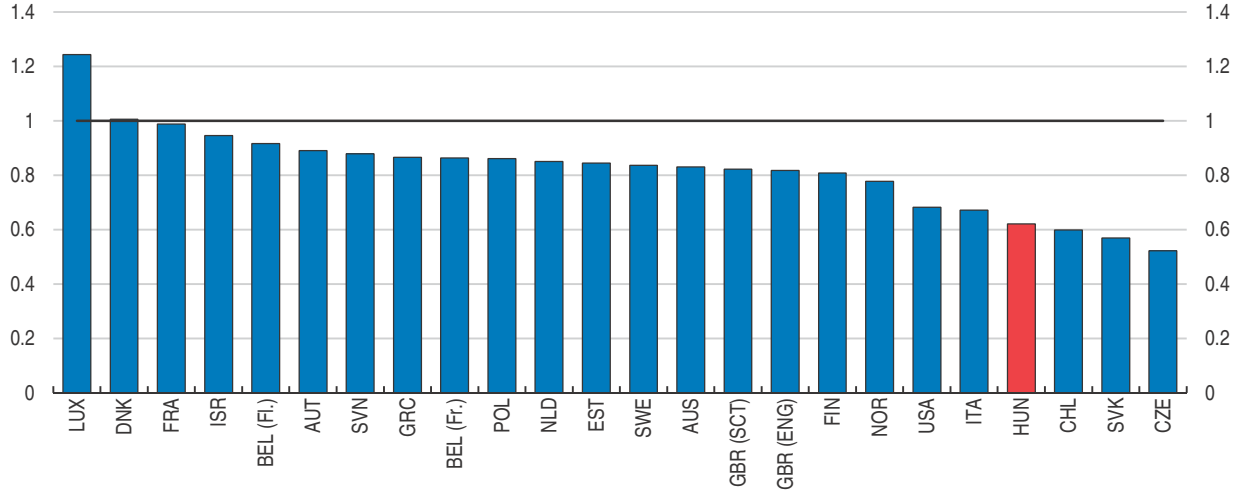
who are now employed in other areas of the economy have higher average earnings than those of current teachers (Varga, 2014). In addition, many teachers take on second jobs to supplement their earnings (EC, 2013), which together with relatively high administrative burdens can negatively affect preparation and the quality of their teaching.

The government introduced a new career model and promotion system for teachers to improve conditions and to ensure better quality of teaching. This is a step in the right direction as it is boosting teachers' wages. However, for some teachers, this increase is effectively cancelled out by their restructured workload and the removal of salary supplements (EC, 2014). The last significant wage increase in 2002 helped retain many young teachers in education, but the effect disappeared as the relative earning of young teachers began to deteriorate again thereafter (Varga, 2014). Therefore, the implementation of a new career model path should ensure effective wage increases, especially for the new teachers to make the profession more attractive. In addition, in countries where teachers have relatively low pay, an element of performance-based pay can improve student

Figure 2.15. **Teachers are amongst the lowest paid in the OECD**

Ratio of salary using annual average salaries (including bonuses and allowances) of teachers in public institutions relative to the wages of workers aged 25-64 with similar educational attainment, 2013



Source: OECD (2015), *Education at a Glance 2015*, Table D3.2a.

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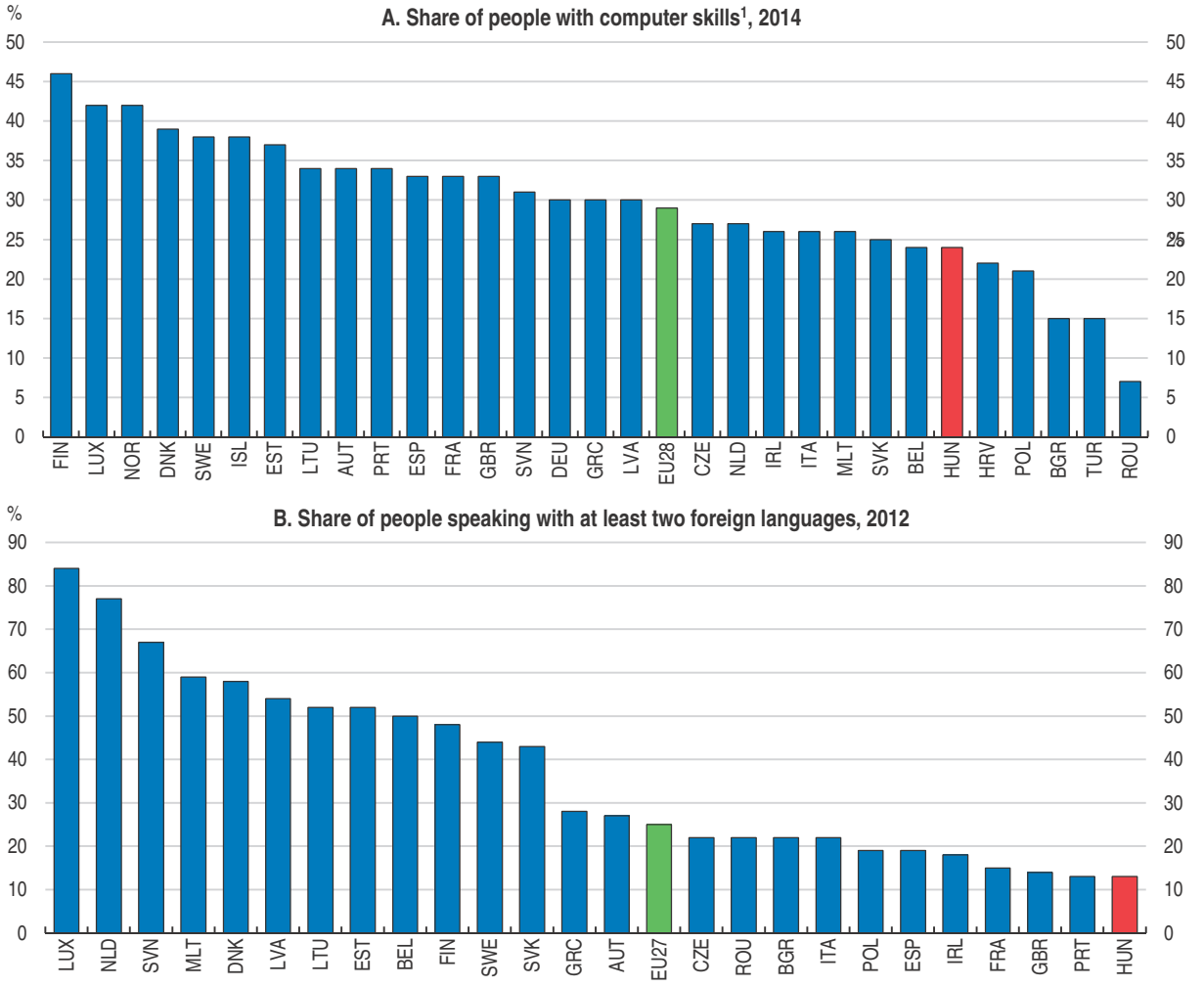
performance (OECD, 2012b). Recent reforms in Hungary have centralised responsibilities for schools teachers' salaries and career system. In this context, the authorities should restore should ensure that organisational and some pedagogical autonomy remains with schools, including the management of human resources (OECD, 2014a).

Another problem is the administrative burden, which almost 30% of Hungarian teachers find excessive (much higher than the EU average) and identify as the biggest hindrance for the teaching profession (EC, 2013). Freeing up teacher resources by reducing administrative burdens would give teachers more time to teach and to prepare and enable principals to engage more in pedagogical leadership. Measures to identify and decrease unnecessary administrative burden of teachers need to be implemented. An example to follow could be the online workload challenge introduced in the UK, which aims to identify unproductive and unnecessary workload through responses from teachers (UK, 2015).

The curriculum also needs to be updated to better reflect changing demands in the labour market. For example, the demand for more generic ICT skills are increasing across all professions, raising the need for additional ICT qualifications. Hungarian employers identified computer skills as one of the most important elements when recruiting graduates (Eurobarometer, 2010) and computer skills remain relatively weak (Figure 2.16, Panel A). Therefore, basic ICT skills should be adequately taught and strengthened in primary and secondary school. The use of ICT in classes in Hungary is among the lowest in the EU countries, reflecting a lack of appropriate qualifications, motivation and teacher support (Public education strategy, 2014). ICT training should take up a more horizontal form of knowledge application across all subjects in the curriculum to correspond with ICT usage in the economy.

Other important skill requirements in an increasingly internationalised economy are language capabilities, which employers place particular emphasis upon (Eurobarometer, 2010). However, in Hungary only 6% of students in primary education learn more than one foreign language, the lowest level in the EU, and the number of foreign languages learnt in

Figure 2.16. **Computer skills and language proficiency are weak**



1. Share of individuals aged 16 to 74 reporting to have carried out five or six specific tasks related to computer use.

Source: Eurostat (2015), *Individuals' Level of Computer Skills*; European Commission (2012), *Special Eurobarometer 386: Europeans and their Languages.*

StatLink http://dx.doi.org/10.1787/888933349868

secondary school is below the EU average (EC, 2015d) leading to weak foreign language ability among population (Figure 2.16, Panel B). The number of foreign language lessons should increase and external assessment of student's language proficiency should be used to identify bottlenecks in the learning process.

Selectivity in education is hampering the basis for skills formation

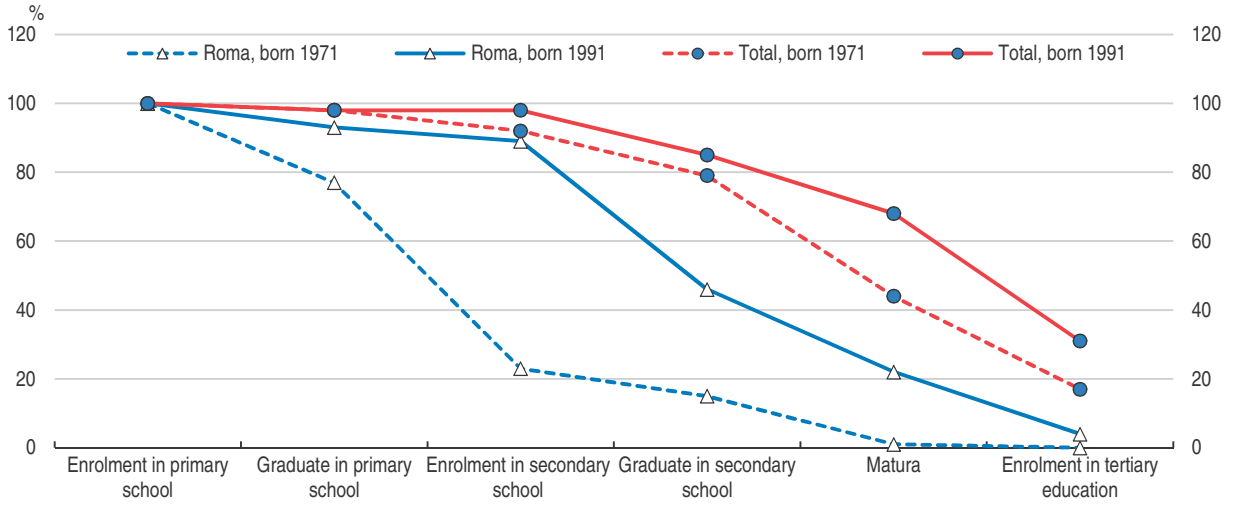
Early tracking and streaming in the education system creates strong socio-economic dependencies, hampering the skills formation of disadvantaged groups, and complicating their integration into the labour market (Box 2.3). Enrolment in lower tracks of secondary school has a detrimental effect on skills (Herman, 2013). Analyses of the PISA results show that the education performance gaps with regard to the socioeconomic background of students is larger in Hungary than the OECD average and the variation across schools is higher than within the individual schools (OECD, 2013a). The implication that the education system tries to meet the needs of each student by creating different education tracks rather than providing general comprehensive education to reduce effects stemming from different socio-economic backgrounds.

Box 2.3. **Early tracking in the education system**

Education is compulsory until the age of 16 and characterised by early tracking. The first tracking can take place at age 10 or 12, where students can be admitted into a longer general education path – 8 or 6 year gymnasium (the share of students in 5-8 grades gymnasium was 6.6% in 2014/15). The next tracking stage occurs at age 14, when students can choose between three secondary institutions: gymnasium – a four year general secondary school; four year vocational secondary school, which provides a mix of general content with vocational education; and three year basic vocational school. The two four year programmes end with a school leaving exam – matura – that provides direct access to tertiary education. The three year vocational schools prepare students for the labour market, although the graduates can take an additional two years of schooling to get the matura exam. Selection into these tracks is based on school grades and entrance examination. The students are roughly equally distributed across the secondary institutions.

PISA test results point to a large variation between schools and certain population groups, such as the large Roma minority (7.5% of the population), tend to be left behind. Four out of five adult Roma have only primary education, reflecting low preschool enrolment, which harms their school readiness and thus their chances to achieve better education and obtaining necessary skills needed for labour market entry later in life (WB, 2016). Early tracking only exacerbates the initial differences. The relative educational attainments of Roma have improved over the last decade; nonetheless the drop-out rate remains above 50% (Figure 2.17).

Figure 2.17. **School enrolment and graduation rates of minority groups remain poor in Hungary**



Source: EC/World Bank/UNDP *Survey 2011*.

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If the education system could reduce initial differences stemming from different socio-economic backgrounds, average skills acquisition would increase. This would reduce the incidence of long-term unemployment and non-active in the working age population. The government is trying to limit the influence of socio-economic backgrounds by making early childhood education compulsory from age three, reflecting international research

that indicates that children who attend pre-primary education have better school outcomes (OECD, 2013b). Further steps are necessary to mitigate the initial inequalities. The system of early tracking in education should be either abolished or more flexibly allow movement across tracks. In addition, extending the period of compulsory grammar school by one more year should be considered. In countries where students attend comprehensive school until a late age, inequalities of student outcomes are lessened, and overall performance is improved (Herman et al., 2011).

A new set of teaching tools focusing on disadvantaged students should be implemented in the educational system. Additional compensation and training of teachers needs to be provided in the areas and regions with a prevailing share of disadvantaged students. The government has already put in place special allowance to teachers who work in towns and villages classified as beneficiary municipalities regarding their depriving socio-economic and infrastructural situation and regions with high unemployment. Early detection mechanisms, such as periodic individualised assessments of students by several groups of teachers, allow educators to identify struggling students and offer them the necessary support early on, before falling behind the pace of their peers. A new set of inclusive teaching methods to equip teachers with a new curricula and training to support skills development in classes of diverse social background should be implemented. The impact assessment of one of the pilot programmes used between 2003 and 2006 found that the performance of pupils taught according to this inclusive methodology improved student outcomes already in the short run compared to outcomes of students in non-participating schools (BI, 2010).

Vocational training provides narrow labour market skills

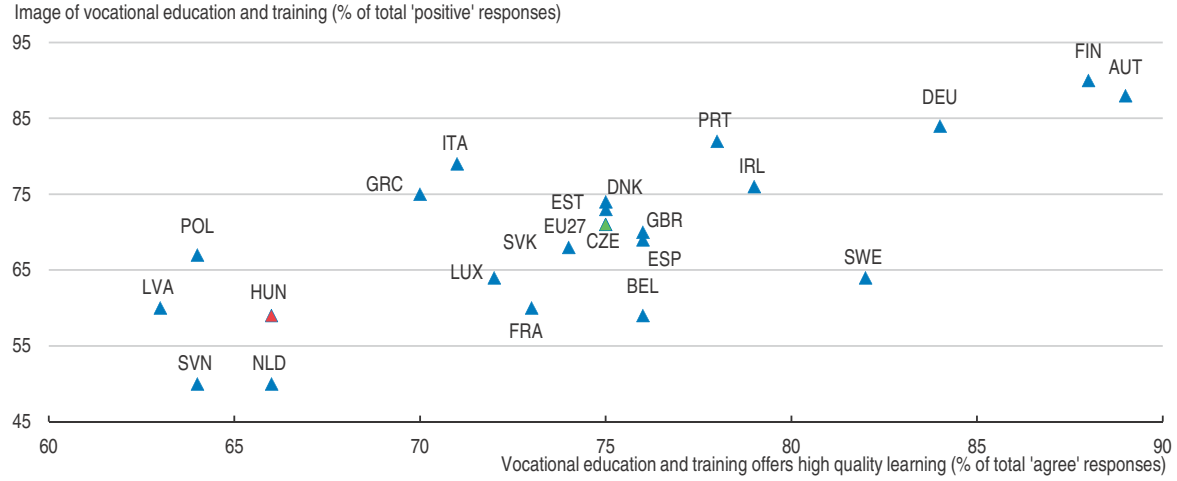
Vocational education and training (VET) is provided through vocational training schools and vocational secondary schools. Vocational training schools provide limited general education content and focus on providing practical workplace training. In contrast, vocational secondary school combine general and vocational education and students may seek entry directly into tertiary education.

Vocational training is supposed to prepare students for direct access to the labour market, but its quality has deteriorated. Over the years, vocational training has become the most likely education path for children with uneducated and poor parents (Keller and Mártonfi, 2009). This strong socio-economic selection bias is strengthening the perception of poor quality in vocational training. Indeed, a relatively high share of survey respondents considered vocational training to provide poor quality education (Figure 2.18). This impression is confirmed by empirical studies showing that students with comparable results in primary school tend to advance at a slower pace in mathematics and reading in vocational training programmes than in general secondary schools (Hajdu et al., 2015). Moreover, the difference in solving complex problems between students in vocational training programmes and their peers in general secondary schools is one of the largest in the OECD. In addition, the drop-out rate of 30% in vocational school is much higher than in other schools (Martonfi, 2014).

As a result, labour market outcomes of vocational training graduates are characterised by high unemployment rates, greater difficulties in finding a first job, and wages that are 25% lower than other secondary school graduates (Figure 2.19; Hajdu et al., 2015). Moreover, graduates work relatively often in occupations that are different from their field of study. An additional concern is that wage dispersion tends to increase over time, suggesting that VET graduates are less likely to adapt to changes in a labour market.

Figure 2.18. **Vocational schools are perceived to be of low quality**

Perceived vocational education and training image and quality



Source: European Commission (2011), "Attitudes Towards Vocational Education and Training", *Special Eurobarometer 369 Report*, September.

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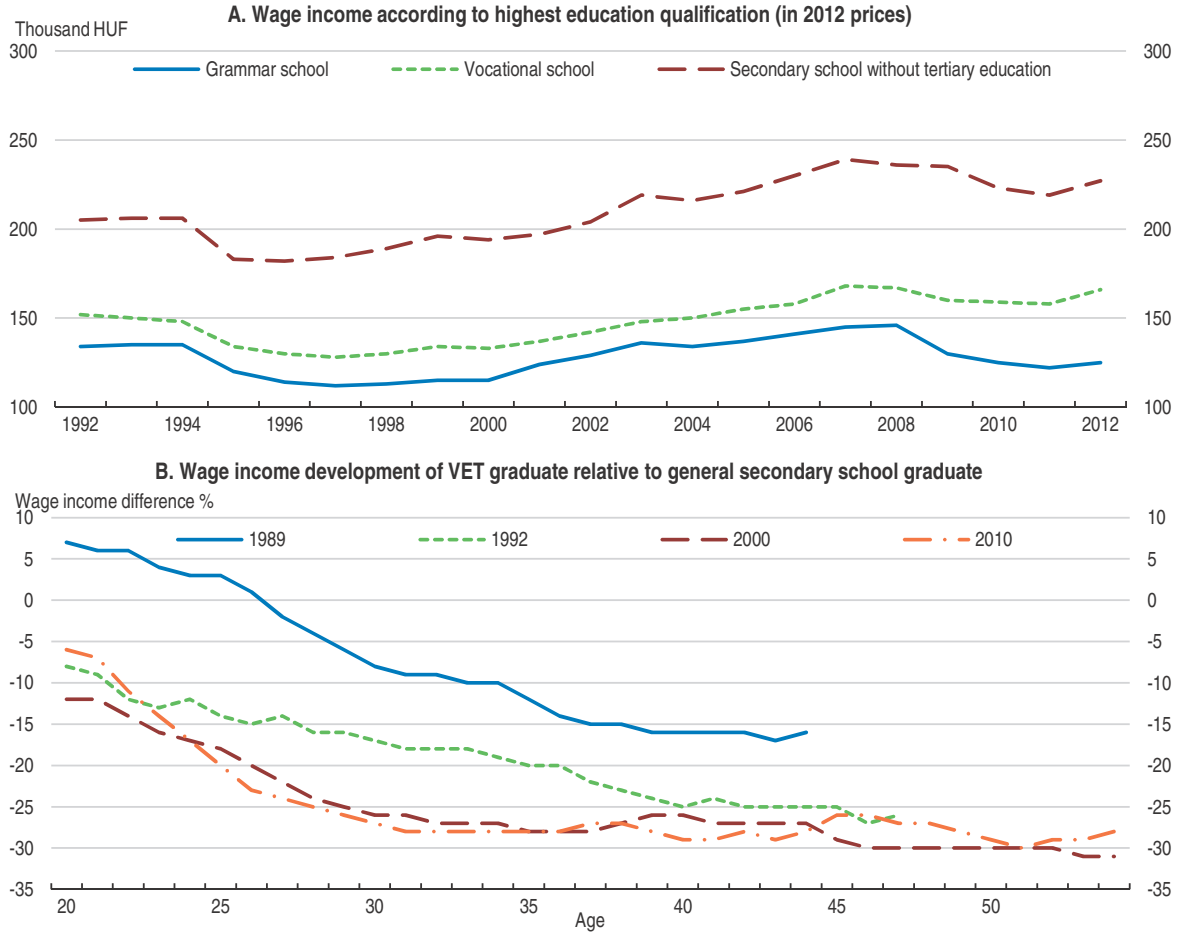
Figure 2.19. **Labour market outcomes of vocational school graduates are unsatisfactory**



Source: Hajdu et al. (2015), NMH Bértarifa-felvételei: *http://adatbank.krtk.mta.hu*; Kezdi, G. (2014), "Zsákutca a magyar szakmunkásképzés", *De Facto*.

Weak emphasis on general skills in vocational training can weaken employability prospects of the graduates in the long term. The current number of lessons for general skills acquisition is already much lower than in the dual learning system of vocational training in Germany (Hajdu et al., 2015). Although, language lessons have added to the vocational training curricula, teaching general skills has shortened with the 2013 reform. Class time dedicated to mathematics was cut by half and ICT subjects have been eliminated (Martonfi, 2014). The rapid changes in technology and the structures of the economy suggest that the labour market would favour those with more general skills and those more likely to adapt. Empirical research shows that beside work place experience, better language skills and a capacity for acquiring new knowledge are essential for successful labour market integration (MKIK, 2014). Vocational programmes need to give sufficient weight to general academic, numeracy and literacy skills to reflect the labour market developments (OECD, 2010). Students should be systematically assessed at the point of entry to vocational programmes to ensure a basic minimum of skills and identify those in need of targeted support.

The government is reforming VET training (Box 2.4) by introducing the possibility to extend the studies by two years. The effectiveness of this measure might be undermined by the prevalent high dropout rates and the fact that VET students are already lagging behind in general academic, numeracy and literally skills. Without increasing the basic skills content of the current 3-year curriculum, students may have difficulties to acquire the level of key competences necessary for mastering subjects usually required for the upper secondary school-leaving exam (EC, 2015d). Therefore, merging vocational training schools with vocational secondary schools with more general content could emphasise the value of general skills and improve the reputation of vocational training, helping to close the gap in labour market outcomes between vocational training schools and vocational secondary schools.

Box 2.4. **Changes in the secondary education system**

The new changes in vocational education aim to attract more students to vocational education. These measures should take effects between 2015 and 2016:

- The name of secondary vocational schools will be modified to “vocational grammar school” in order to attract more students to VET. In order to take a secondary school leaving certificate and a vocational qualification at the same time, the share of vocational training is planned to be higher.
- The path from vocational training to secondary school leaving certificate will be eased. After getting the vocational qualification at the end of the third year, vocational training graduates, unless they request to terminate their legal status as students, automatically continue their studies for two more years to obtain the secondary school leaving certification.

The government is implementing reforms to increase the emphasis on workplace training. More than half of students from vocational institutions are participating in workplace training, the third highest rate in the EU (EC, 2015). The government wants to increase this to 70% by 2018 through additional financial incentives for companies. The problem, however, is that high participation in workplace training is not improving the

labour market outcomes for VET graduates. Empirical research shows that apprenticeship students have better chances of finding a job, but there is no wage difference between apprentice and non-apprentice graduates, suggesting that no specific skills have been acquired during apprenticeship (Horn, 2013). The government should carefully monitor and assess the results of the recent reforms.

The benefits of workplace learning can be ensured by tighten up the required quality standards. Quality standards can be enforced through inspections and effective assessment of the skills acquired through training. In Germany and Denmark there is strong quality control and firms need to meet quality standards to be licensed to take on apprentices while the quality of training is monitored throughout the apprenticeship (OECD, 2010). Implementing similar practices in Hungary should help to avoid the allocation of students to unskilled tasks and to prevent training being narrowly focused on firm-specific skills. Contractual arrangements should define obligations of trainee and employer in order to achieve learning objectives, which should be developed with the involvement of employers and schools.

Tertiary education must be more responsive to the labour market needs

Tertiary graduates enjoy favourable labour market prospects in terms of wages and employment. However, in terms of skills two major problems remain unresolved: i) the supply of tertiary graduates in economy is still persistently low, and ii) the quality of the tertiary education outcomes in terms of labour market prospects is uneven.

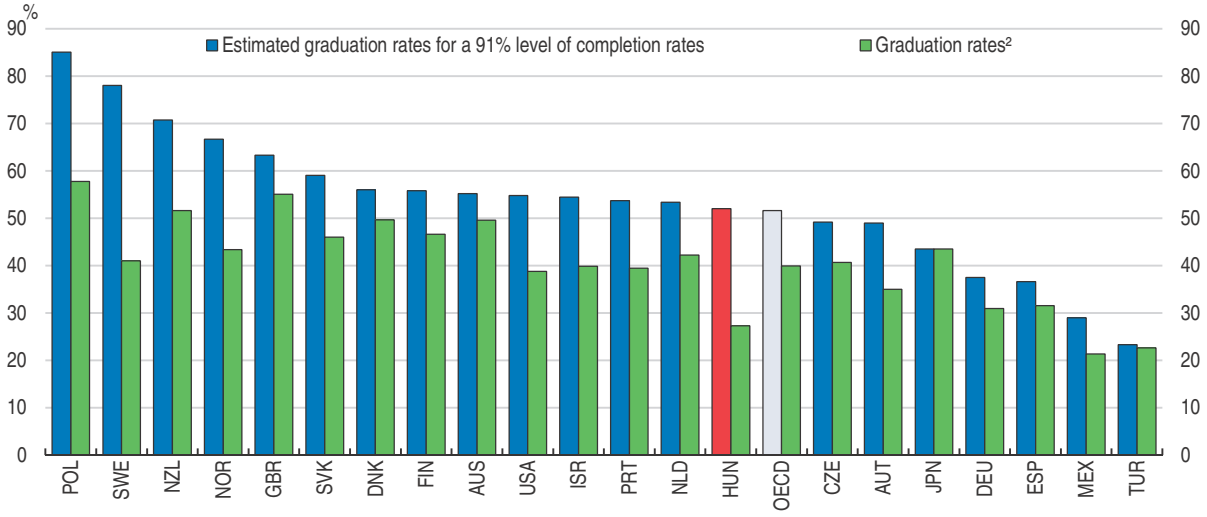
The supply of tertiary graduates is severely impaired by low completion rates and long completion times (Tremblay et al., 2012). Less than half of all students are able to finish studies within the required time (OECD, 2013b). OECD estimates suggest that graduation rates can increase up to the OECD average by improving completion rates to the level of the best performing countries (Figure 2.20). Non completion and late completion of degrees are attributed to various factors such as insufficient academic preparation prior to enrolment, and slow study progression. This is much more pronounced in ICT education, where only just 31% finished their studies within the required time. A high proportion of students in Hungary drop out either by not being able to undertake payment of tuition fee or opt out at reclassification from state-financed to fee-paying places due to weak academic achievement.

In general, there is a strong demand for tertiary graduates. However, there is great variance among labour market outcomes of different tertiary graduates. For example, graduates with degrees in informatics and engineering earn more than twice as much as graduates in social science or agriculture (Figure 2.21). Moreover, one in four graduates in tertiary education works in a job that does not require a tertiary degree (Nyusti and Veroszta, 2013). Over-qualifications are strongest in the fields of social science, agriculture and humanities. Graduates who have identified themselves as overqualified have on average 20% lower wages than the better matched graduates (Varga, 2013). These over-qualifications entail a potential waste and misallocation of scarce public funds spent on tertiary education.

One way forward to reduce dropout rates and increase participation in the tertiary education is to expand means-tested support for disadvantaged students. Recently, around 30% of students pay tuition fees, while the rest are admitted in state-financed places. These state funded places are set according to the score-limits mainly based on high school results and Matura exams, which make the admission system regressive. Coming from a stronger secondary school will increase students' chances, while those coming from less educated families and weak schools are unlikely to get admissions to prestigious universities and are

Figure 2.20. **Graduation rates can be significantly increased through raising completion rates**

Estimated graduation gains from raising completion rates to best international level[1]

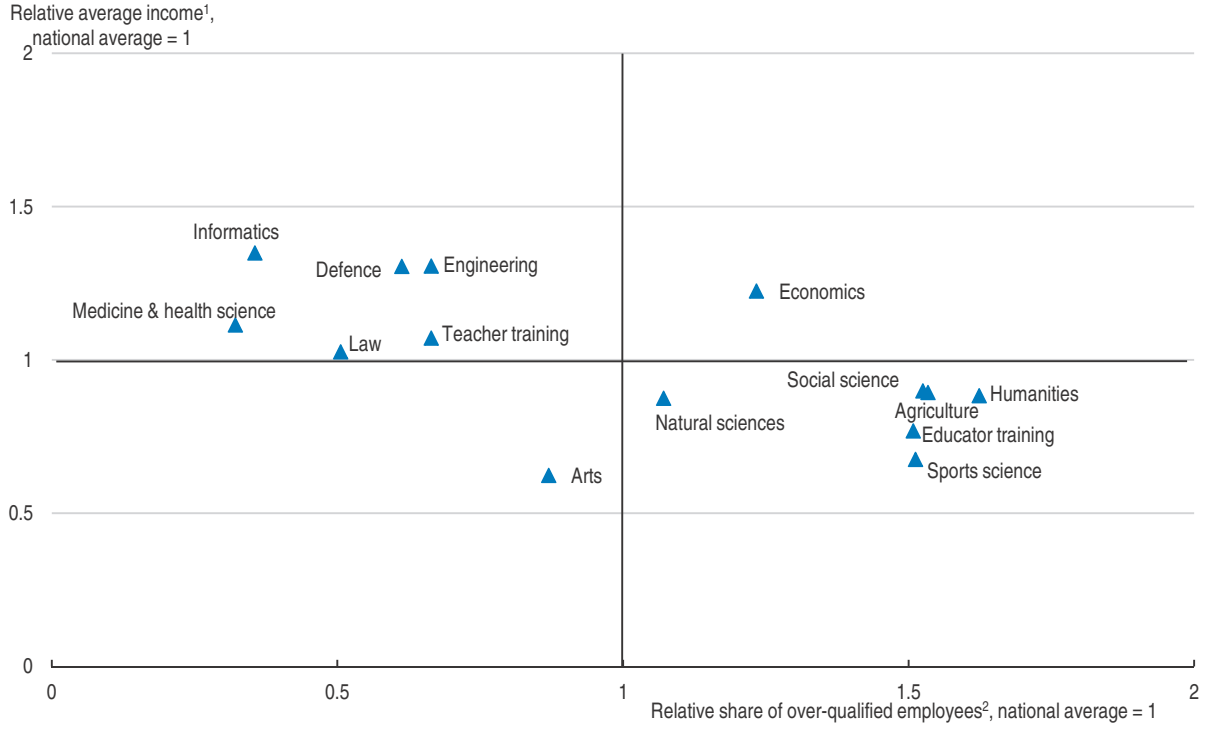


1. Estimations based on a 91% level (Japan) of completion rates at tertiary-type A level of education, considering that the level of entry rates remain constant. Latest available data are for year 2011.
2. Tertiary-type A programmes (first-time graduates) graduation rates, which represent the estimated percentage of an age cohort that is expected to graduate over their lifetime.

Source: OECD calculations based on OECD (2013), *Education at a Glance 2013*, Tables A3.1a and A4.1.

StatLink http://dx.doi.org/10.1787/888933349891

Figure 2.21. **Difference in income and labour market outcomes by field of education**



1. Recent graduates' average gross total income per month.
2. Share of employees working in jobs that do not require higher education qualifications.

Source: Education Public Services Non-profit LLC. (2014), *Hungarian Graduate Career Tracking 2013*, Figures 61 and 66.

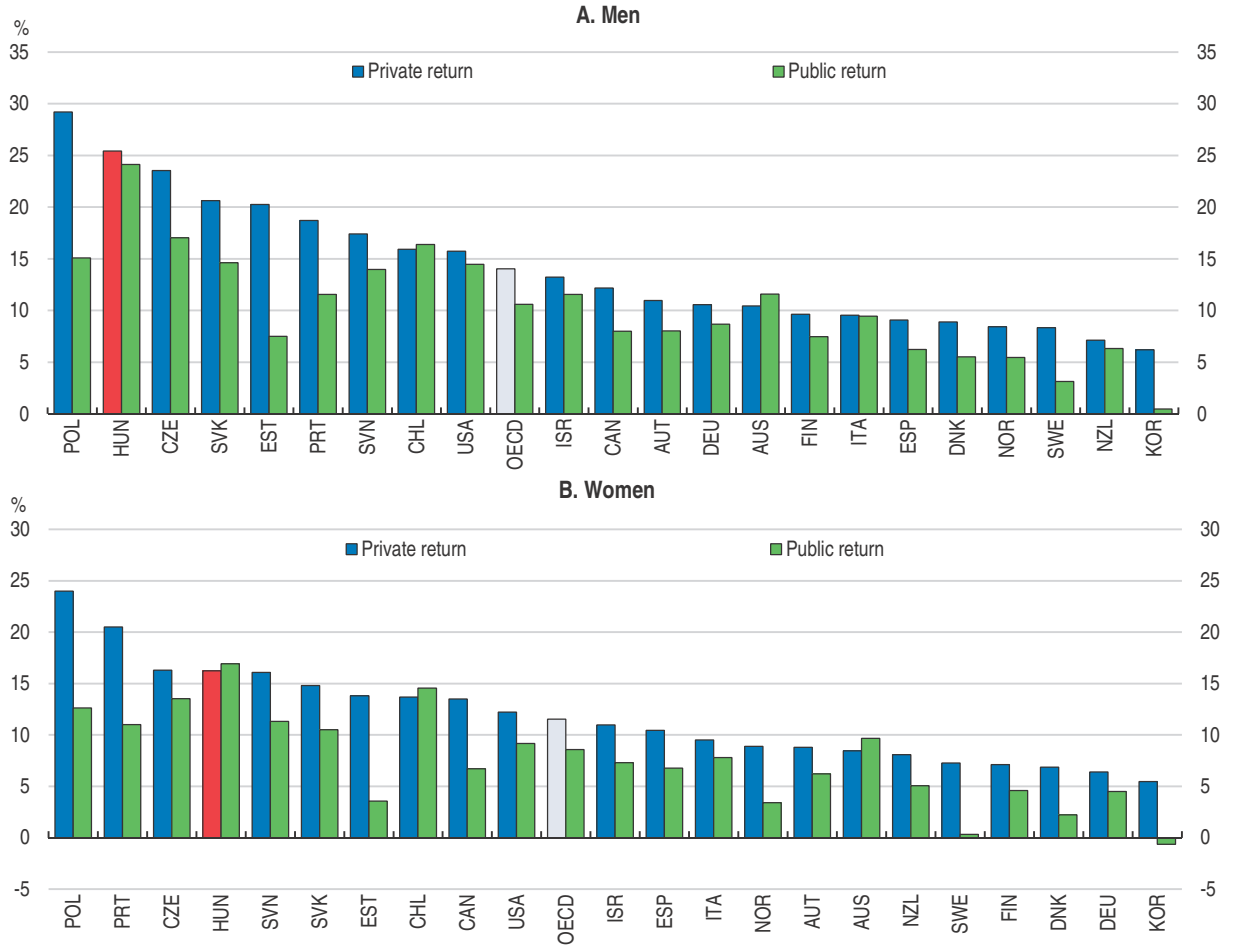
StatLink http://dx.doi.org/10.1787/888933349905

likely to pay tuition fees. Therefore, means tested state grants should be expanded and provided to those students coming from disadvantaged and poorer families. OECD research suggests that student financial support systems that provide both loans with income-contingent repayments and means-tested grants promote access and equity of higher education and lead to better outcomes for weak students (OECD, 2012c). For example, Australia and New Zealand have used this approach to mitigate the impact of high tuition fees and to encourage disadvantaged students to enter higher education (OECD, 2012).

In addition, there is a room to increase the funding to tertiary education by supporting programmes with better labour market outcomes. Public returns from tertiary education in Hungary are amongst the highest levels in the OECD countries (Figure 2.22), providing incentives to investment in tertiary education. Increased funding mechanisms could, for example, provide differentiated rewards to specific courses that provide skills closely linked to labour market needs, such as certain subjects within the STEM disciplines. This would make the system more responsive to the changing needs in the labour market.

Figure 2.22. **Private returns on tertiary education are high in Hungary**

Internal rate of return of a person attaining tertiary education[1]



1. As compared with a person attaining upper secondary or post-secondary non-tertiary education, in equivalent USD converted using PPPs for GDP. The internal rate of return indicates at what real interest rate the investment breaks even. 2011 data.

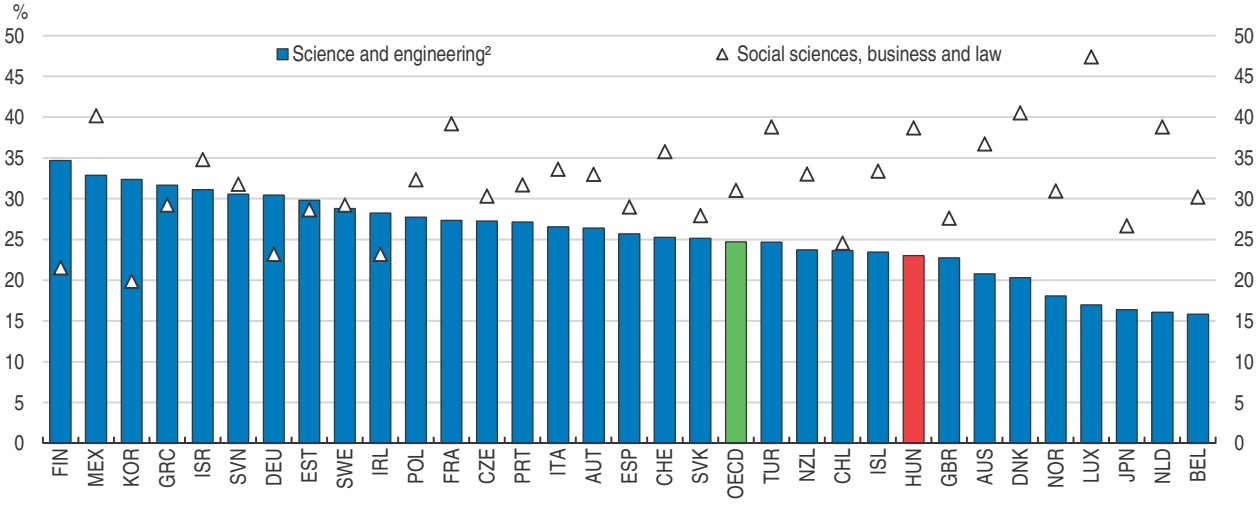
Source: OECD (2015), *Education at a Glance 2015*, Tables A7.3a, A7.3b, A7.4a and A7.4b.

StatLink http://dx.doi.org/10.1787/888933349912

Responsiveness to labour market needs should be further encouraged through career counselling. Relatively few students pursue tertiary programmes in science and engineering fields compared to the rest of the OECD (Figure 2.23), despite better labour market prospects. The government has already increased engineering quotas for state-financed places in order to increase the enrolment rates in engineering fields. However, this has little effect thus far on improving the participation in these fields; rather the raised quotas led to smaller admission score-limits in some engineering programmes, meaning that some weak students have been admitted (Birró, 2012). More effort needs to be dedicated to providing individuals with information on market returns of various career paths. Since 2013 – based on legal authorisation – an integration of administrative datasets at the individual level was introduced and led to the improvement of career tracking. This is a welcome step, but should be strengthened by improving guidance and counselling at the secondary school level. This can help students choose a course with better labour market outcomes.

Figure 2.23. **Students are not entering fields where labour market demand is high**

New entrants to tertiary education by field of education[1]



1. Latest available data are for year 2012.
2. ISCED field of education 4 and 5.

Source: OECD (2014), *Education at a Glance 2014*, Table C3.3a.

StatLink http://dx.doi.org/10.1787/888933349922

Main recommendations to enhance skills

Key recommendations

- Expand early childhood care. Reduce the effective length of parental leave and provide incentives for paternity leave.

Upgrading skills of older workers

Key recommendation

- Creating a tool set, including individual learning accounts, to promote lifelong learning.

Other recommendations

- Scale up the wage subsidy programme targeted at older unemployed workers and supplement it with job search assistance and job search monitoring measures.

Reforming active labour market policies in order to improve skills of the unemployed

Key recommendation

- In public work schemes, increase the focus on training and identify programmes that get workers into the primary labour market.

Other recommendations

- Tighten the conditions for public work schemes by efficient implementation of a profiling system, which redirects the unemployed to specific programmes according to their needs.
- Improve the evaluation of the efficiency of existing training programmes to better match different categories of participants to specific training programmes. Make individual action plans for unemployed mandatory and offer programmes with a mix of training, counselling and mentoring measures.

Improve educational outcomes to meet labour market needs

Key recommendation

- Assess recent reforms and continue integrating the vocational training programmes into secondary vocational schools.
- Increase funding and expand means-tested support for disadvantaged students.
- Provide incentives to tertiary institutions to better respond to labour market needs.

Other recommendations

- Develop quality assurance for apprenticeship places and ensures sufficient time for instruction relative to the productivity work.
- Continue to strengthen career counselling in order to improve responsiveness of tertiary education to labour market needs.
- Improve teacher's working conditions by further increasing their wages and reducing unnecessary administrative burdens.
- Make ICT training take up a more horizontal form of a knowledge application in all subjects through the curriculum.
- Postpone tracking and extend the period of compulsory grammar school to enhance general skills.

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