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# **Estonia**

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**OVERVIEW**

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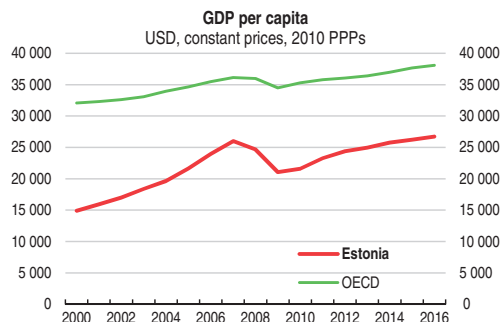
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## Executive summary

- *Making growth stronger and more inclusive*
- *Deepening integration in global trade*
- *Unleashing productive investment*

## Making growth stronger and more inclusive

### Income convergence has slowed down



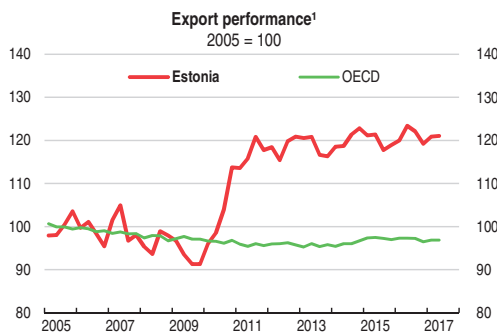
Source: OECD National Accounts Database.

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The Estonian economy displays numerous strengths, including an excellent business environment, high educational attainment, high labour market participation, an innovative ICT sector and solid public finances. Economic growth has disappointed in recent years but is now gaining momentum. Around a quarter of the population is still at risk of poverty. Fiscal room is available for measures to increase the long-term growth potential and to make growth more inclusive. Strengthening social protection and life-long education is a priority, as it will help the most vulnerable adapt to the rapid changes induced by globalisation and technological progress.

## Deepening integration in global trade

### Export performance has been resilient



1. Export performance is measured as actual growth in exports relative to the growth of the country's export market.

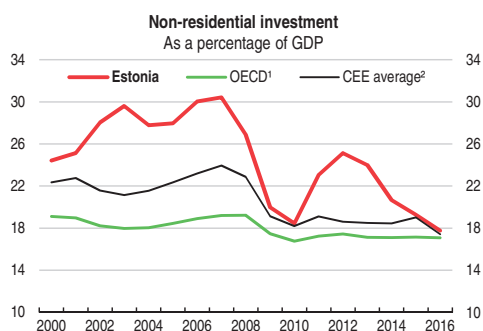
Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).

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Estonia is well integrated into global trade, and export performance has been resilient. Low and medium value added products still account for a large share of total exports. To increase export potential and value-added drawn from trade, innovative capacity and transfer of knowledge from highly productive firms to the rest of the economy need to improve. Efforts should concentrate on strengthening adult education, immigration of talents, and co-operation between businesses and researchers.

## Unleashing productive investment

### Investment has weakened



1. Simple average of OECD available countries.

2. Simple average of Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia.

Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).

StatLink <http://dx.doi.org/10.1787/888933582246>

Investment has weakened, particularly in projects required to increase business productivity. Skill shortages prevent business expansion in some sectors and investment in knowledge-based capital. Weak credit recovery from insolvent firms can limit funding of small innovative firms. The quality of infrastructure has improved, but bottlenecks in logistics remain. Green investment is needed to reduce pollution emitted by the oil shale industry and to achieve energy efficiency gains.

MAIN FINDINGS	KEY RECOMMENDATIONS
<b>Fostering inclusive and greener growth</b>	
The fiscal space to support growth-enhancing policies is large: the fiscal rule targets a balanced structural budget, even though gross public debt, at 13% of GDP, is the lowest in the OECD and is projected to decline in the medium term.	Increase spending on measures that boost growth potential and welfare. Consider allowing a small deficit in the government budget rule in the longer term.
Social programmes do not provide adequate protection and assistance to the jobless.	Increase subsistence benefits.
The coverage of unemployment benefit schemes is low, making the unemployed less reachable for the public employment services.	Relax eligibility conditions for unemployment benefits, not least to improve participation in active labour market measures.
Labour market participation of mothers is low and the gender pay gap the second highest in the OECD. To tackle these issues, the provision of childcare is being expanded considerably, but the long parental leave remains an important obstacle to gender equality.	Extend the share of parental leave reserved for fathers.
Many workers, especially the low-skilled, are exposed to physical health risks.	Increase sanctions for breaches of health and safety regulations. Require that employers purchase occupational accident and disease insurance.
Financial incentives to prevent or reduce environmental damage are too low.	Set tax rates on oil shale, vehicle and energy use at a level that better reflects the environmental damage they generate.
<b>Deepening integration in global trade</b>	
The business environment is good, but room for simplifying trade administrative procedures exists.	Complete a one-stop shop for administrative formalities. Improve access to information on trade regulation (e.g. agreements with third countries and appeal procedures).
Innovative capacity of Estonian firms is limited, and collaboration between academia and businesses is too low.	Give more weight to co-operation with the private sector when allocating funds to public R&D institutions.
Migration can open up new trade links and ease the adoption of foreign technologies. Policies to attract skilled migrants have had limited success.	Relax annual quotas, and simplify conditions for work permits of skilled workers.
There is no institution in charge of a regular assessment of productivity challenges and of monitoring policies in the field of competitiveness. The European Council advised to set up a national productivity board.	Establish an independent body to advise on policies to raise productivity.
<b>Unleashing productive investment</b>	
Insolvency procedures are long and costly. Possibilities of early intervention are limited.	Allow creditors to initiate restructuring. Introduce early warning mechanisms, such as one-line insolvency tests. Develop options for out-of-court settlements.
Businesses have difficulty finding suitable skilled labour, and a large share of the population does not have a professional qualification. Participation in lifelong learning is relatively high but its effectiveness questioned.	Strengthen the monitoring of training courses, by using <i>ex post</i> evaluation of training including labour market outcomes of participants. Extend the accreditation system to all publicly funded learning programmes to signal and improve their quality.
Competition in the banking sector seems low, and few financing alternatives exist.	Create a centralised credit bureau that will collect both positive and negative information on creditors.
Varying approaches to <i>ex ante</i> project evaluation pose the challenge of identifying the most productive infrastructure investments.	Carry out <i>ex ante</i> cost-benefit analyses for all large-scale infrastructure projects based on a uniform methodology.



## Assessment and recommendations

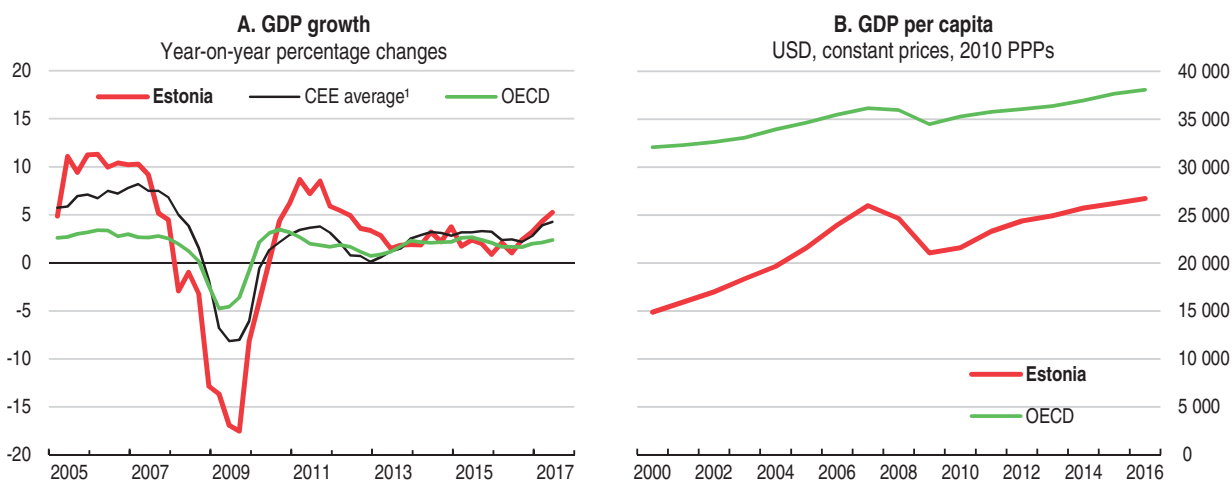
- *Growth is projected to gather pace*
- *Fiscal and social policies could better sustain inclusive growth*
- *Unleashing productive investment and export performance*
- *Transitioning to a greener economy*

## Introduction

Estonia has major structural strengths, including a well-educated and flexible labour force, a business-friendly environment, a robust financial sector, and a strong and credible fiscal policy. It stands out in terms of its educational outcomes and the ease of doing business. Its transition to digitalisation in the public sector is more advanced than in most OECD countries. Major macroeconomic imbalances which had accumulated before the crisis (a large current account deficit and excessive indebtedness) have been addressed, and macro-prudential tools are in place to mitigate the risk of repeated boom-bust cycles. Significant measures have also been taken to improve labour market performance, including tax reforms and additional spending on active labour market policies.

After two years of relatively weak activity, GDP growth has gained momentum and is expected to exceed 4% in 2017 (Figure 1, Panel A). Progress in raising incomes towards those in more prosperous OECD economies is likely to resume, after having slowed almost to a halt (Figure 1, Panel B). Nevertheless, policy action is needed to support growth engines and economic resilience – critical to the convergence process. Productivity growth has been significantly lower than in pre-crisis years, and younger firms have not posted better performance in post-crisis years, suggesting reduced economic dynamism (IMF, 2017). The country faces a more severe decline in its working-age population than in most other European countries, and skill shortages have emerged in some sectors (e.g. information and communication technology and health care). Also, as a small open economy, Estonia is vulnerable to external shocks and is highly volatile as illustrated by GDP developments over the past few decades (Figure 1, Panel A).

Figure 1. **Income convergence has slowed down**



1. Simple average of Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

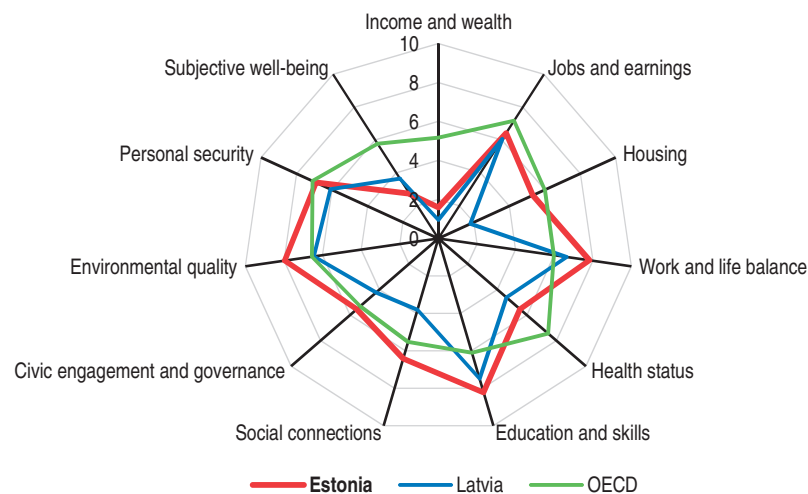
Source: OECD National Accounts Database.

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On many dimensions of well-being, Estonia scores as high as or higher than the typical OECD country, an impressive record for a country with a relatively low level of income (Figure 2). Nevertheless, subjective well-being in Estonia is below OECD standards, which seems to be mainly related to low income and wealth, and to poor health outcomes. Political willingness to address weaknesses is strong, and recent policy measures have already met with some success.

Figure 2. **Well-being can be improved**



Note: Each index dimension is measured by one to four indicators from the OECD Better Life Index (BLI) set. Normalised indicators are averaged with equal weights. Indicators are normalised to range between 10 (best) and 0 according to the following formula:  $(\text{indicator value} - \text{minimum value}) / (\text{maximum value} - \text{minimum value}) \times 10$ . The OECD aggregate is weighted by population.

Source: OECD Better Life Initiative 2016.

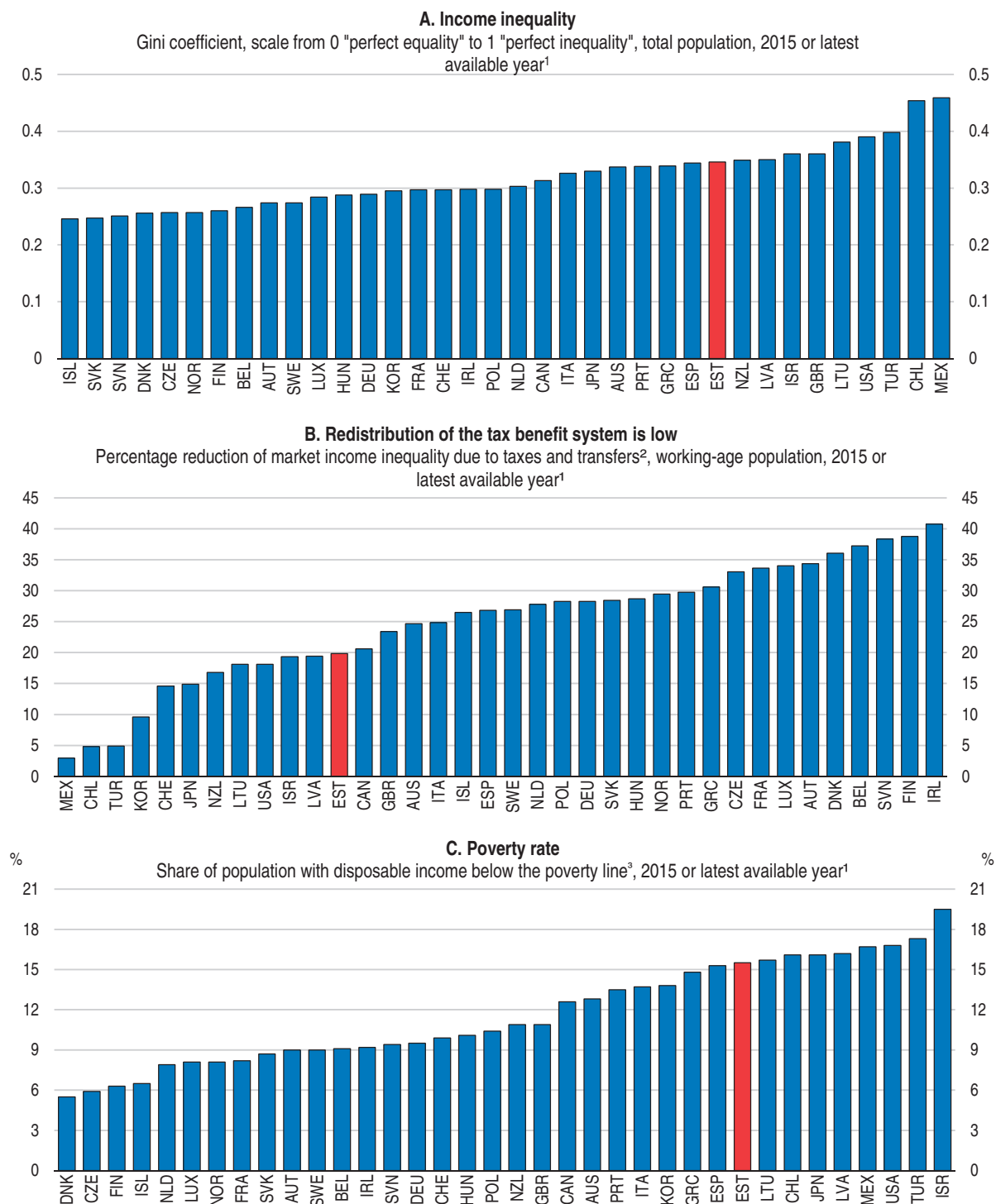
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However, poverty and income inequality are among the highest in the OECD (Figure 3, Panels A and C). Over recent years, incomes of the poor have risen, due in part to successive rises in the minimum wage (from EUR 278 in 2011 to EUR 470 in 2017) and from a re-evaluation of subsistence benefits in 2016 (from EUR 90 to EUR 130). Thus, absolute poverty – i.e. the share of those who live with less than around EUR 200 per month – declined to below 4% in 2015.

High income inequality stems from both inequality in market income and very low redistributive effects of the tax and benefit system (Figure 3, Panel B). It leaves a considerable proportion of the population at risk of poverty, with risks significantly higher for the unemployed, disabled and low-educated as in most OECD countries. While a large share of social spending goes to families, poverty rates remain relatively high for lone parents and families with three and more children. The old-aged are also more at risk of poverty, not least due to the relatively low level of pensions. On-going reform of the tax and benefit system aims at reducing inequality (see details below). The reform of the personal income tax planned for 2018 should bring more progressivity to the tax system.

Against this background, the main messages of the Survey are:

- Estonia has made great strides in increasing incomes and well-being, largely through sound macroeconomic policies and open, outward looking engagement with the world economy.


Figure 3. **Estonia lags behind in terms of income inequality and poverty**

1. Gini coefficient of disposable income, latest available data refer to 2015 for Chile, Finland, Israel, Korea, Mexico, the Netherlands, the United Kingdom, and the United States; to 2012 for Japan; and to 2014 for all other countries.

2. Redistribution is defined as the difference between market income and disposable income inequality (inequality measured using the Gini coefficient), expressed as a percentage of market income inequality. Market incomes are net of taxes in Hungary, Mexico and Turkey.

3. The poverty threshold is 50% of median disposable income.

Source: OECD Income Distribution Database (IDD).

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- Sustained economic and social progress hinges in part on policies to reduce inequality and poverty. An adequate social safety net, conducive to upskilling, should be implemented to ensure that all benefit from opportunities created by high trade intensity, while being protected against extreme external shocks.
- Raising investment, including in intangible capital, further integrating into global trade and easing labour-market bottlenecks would lay the foundations for continued and sustained increases in living standards.

## Growth is projected to gather pace

Economic growth has disappointed over the past two years, with GDP growth slowing from close to 3% in 2014 to around 2% in 2015 and 2016 (Table 1). This deceleration was driven by weak foreign demand and successive falls in capital spending (Figure 4, Panel D). As a result, GDP returned to its pre-crisis level only in 2016 (Figure 4, Panel A).

Table 1. **Macroeconomic indicators and projections**

Annual percentage change, volume (2010 prices)

	2013 Current prices (billion EUR)	2014	2015	2016	Projections	
					2017	2018
<b>Gross domestic product (GDP)</b>	<b>18.9</b>	<b>2.8</b>	<b>1.8</b>	<b>2.2</b>	<b>4.2</b>	<b>3.2</b>
Private consumption	9.7	3.5	4.6	4.2	2.2	3.7
Government consumption	3.6	2.5	3.3	2.0	1.3	1.2
Gross fixed capital formation	5.2	-8.0	-3.1	-0.9	18.0	4.1
Final domestic demand	18.5	0.2	2.4	2.5	5.8	3.3
Stockbuilding <sup>1</sup>	-0.1	3.6	-1.3	0.7	-2.2	-0.3
Total domestic demand	18.4	3.9	1.1	3.4	3.7	2.9
Exports of goods and services	16.0	2.5	-0.6	4.1	3.5	3.4
Imports of goods and services	15.4	3.5	-1.8	5.2	4.5	3.8
Net exports <sup>1</sup>	0.5	-0.8	0.9	-0.7	-0.7	-0.2
<b>Other indicators (growth rates, unless specified)</b>						
Potential GDP	..	2.2	2.2	2.3	2.6	2.9
Output gap <sup>2</sup>	..	-0.4	-0.9	-0.9	0.6	0.9
Employment	..	0.6	2.6	0.7	0.9	0.2
Unemployment rate	..	7.4	6.2	6.8	6.9	7.8
GDP deflator	..	1.6	1.2	1.5	3.6	3.1
Harmonised consumer price index	..	0.5	0.1	0.8	3.3	2.8
Harmonised core consumer price index	..	1.3	1.2	1.2	2.2	2.8
Current account balance <sup>3</sup>	..	0.9	2.2	2.0	2.3	1.8
General government financial balance <sup>3</sup>	..	0.7	0.1	0.3	-0.4	-0.7
Underlying government financial balance <sup>2</sup>	..	1.2	1.0	1.0	-0.3	-1.0
Underlying government primary financial balance <sup>2</sup>	..	1.1	0.9	0.9	-0.3	-1.0
General government gross debt <sup>3</sup>	..	14.1	12.9	13.0	13.0	13.5
General government gross debt (Maastricht) <sup>3</sup>	..	10.7	10.0	9.4	9.4	9.9

1. Contribution to changes in real GDP.

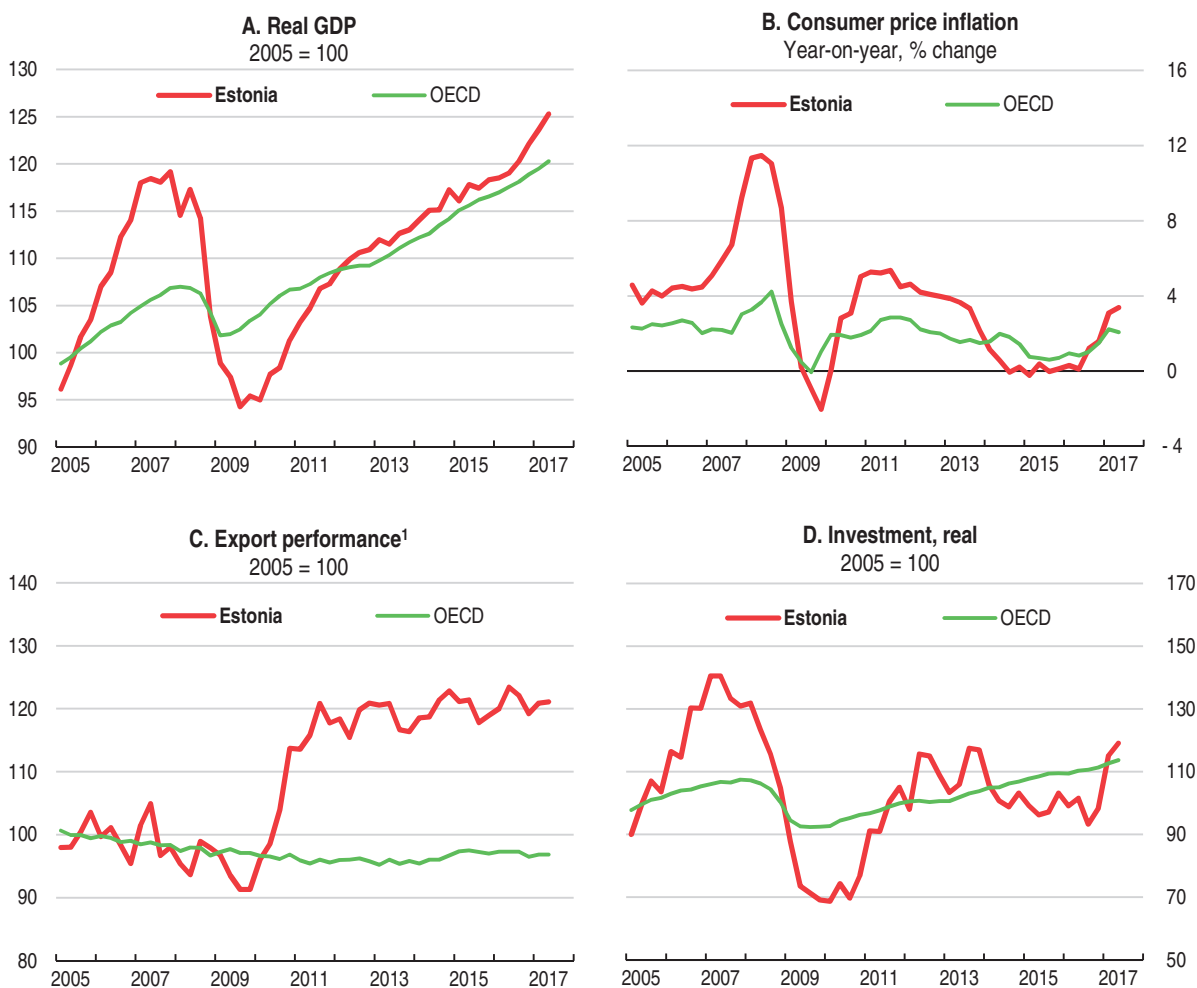
2. As a percentage of potential GDP.

3. As a percentage of GDP.

Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).


Estonia's export market performance has been resilient (see Figure 4, Panel C). It exports approximately 80% of GDP, and around half of domestic employment is sustained by foreign demand. The main exported goods are machinery, electronic equipment, oil shale products, wood products, miscellaneous industrial goods and foodstuffs. Services account for around

Figure 4. Economic indicators



1. Export performance is measured as actual growth in exports relative to the growth of the country's export market.

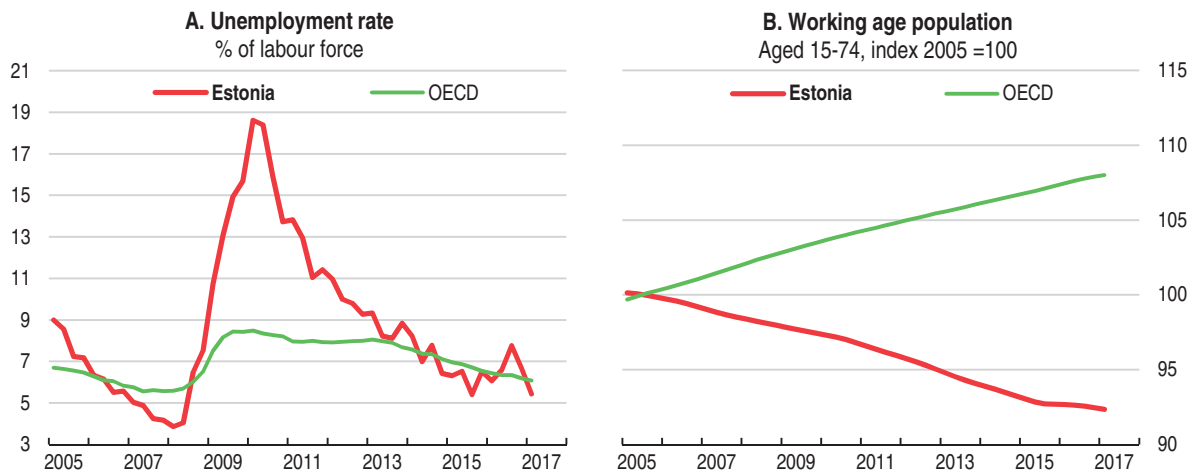
Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).

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40% of gross exports and 60% in value added terms, with maritime transport and tourism being the largest items. The main exporting destinations are Sweden and Finland, with the EU being the destination for 70% of exports. Export diversification has mitigated the impact of weak economic developments in Estonia's main trading partners, notably Finland and Russia. Nevertheless, some sectors, including food processing and tourism, have been hit by Russia's economic downturn and its ban on imports of EU food products. The profitability of the domestic oil shale industry, which accounts for around 1% of GDP, has also been affected by the decline in oil prices over recent years.

Private consumption has been the main growth engine over the past two years, supported by strong labour market performance, record low inflation and interest rates (see Figure 4, Panel B). Unemployment has declined by around 10 percentage points since 2010 (Figure 5). Since mid-2015, this trend has come to a halt partly due to the reform of the disability benefit pension scheme (the Work Ability reform), which now conditions the receipt of benefits to job-search activity. Recipients of the disability pension with work capacity have to register as unemployed and thereby have access to a range of activation and

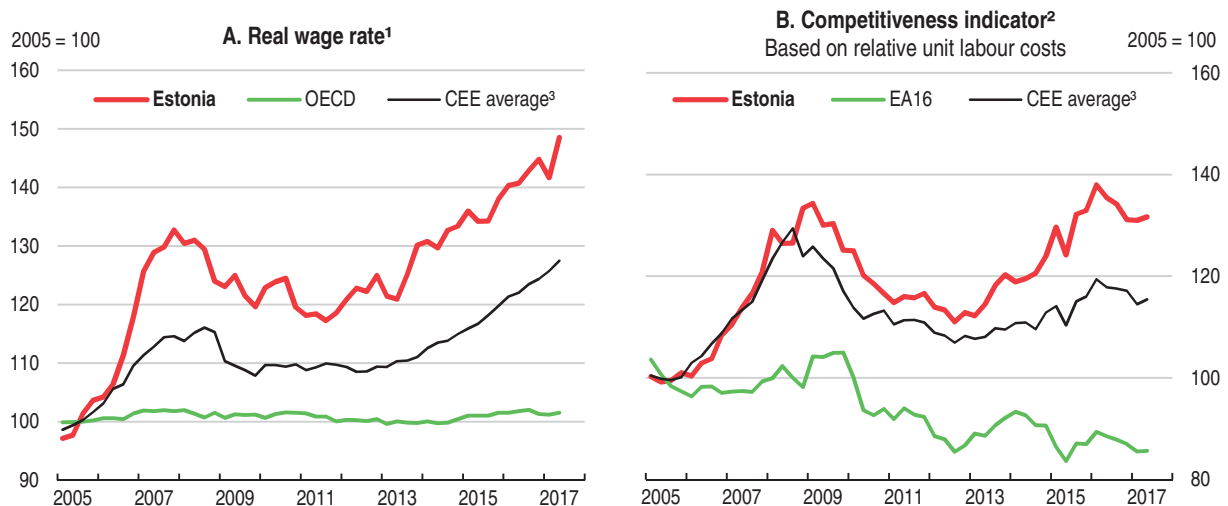
Figure 5. Labour market conditions have tightened



rehabilitation measures aiming at improving their employability. Because some of them did not find a job, the unemployment rate has increased. Nevertheless, participation and employment rates stand above OECD average, and labour shortages have emerged in some sectors (e.g. ICT, and health care).

Wages have increased fast (Figure 6, Panel A). While strong wage growth is to be expected in a catch-up economy, it seems out of line with its peers and disconnected from flattening productivity growth (IMF, 2017 and Figure 6). Public-sector wage increases and rises in the minimum wage have played a significant part (IMF, 2017). Also, emigration of skilled labour puts upwards pressure on wages, though Estonia has been less affected by brain drain than its Baltic peers, and the net emigration trend has reversed in recent years (IMF, 2016). The rise in

Figure 6. Unit labour costs have increased fast

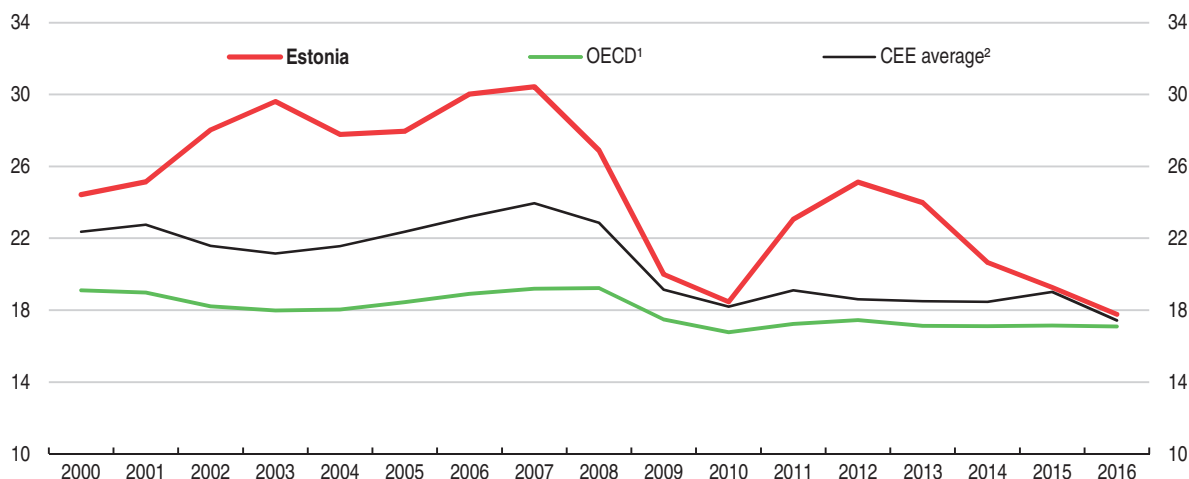


relative unit labour costs by over 30% since 2005 – the largest among CEE countries (Figure 6, Panel B) – has been compensated by a compression of firms' margins and gains in non-price competitiveness (Eesti Pank, 2017a). Maintaining price competitiveness could prove challenging going forward, as the decline in the working-age population and emerging shortages of skilled workers will keep wage pressures high (see Figure 5).

Since the crisis, Estonia has experienced one of the most pronounced declines in the ratio of non-residential investment to GDP (Figure 7), despite the favourable business environment and advantageous financial conditions. Poor investment performance is likely to reflect the weak outlook in main trading partners, a normalisation after the boom years, and lower EU funds disbursements at the beginning of the new programming period. It also stems from domestic factors, including the declining profitability of firms and recruitment difficulties (Figure 8). By contrast, robust growth in household disposable income has supported residential investment: prices in Tallinn now exceed pre-crisis levels but are in line with income developments (Figure 9).

Figure 7. **Investment has lost ground**


Non-residential investment in % of GDP



1. Simple average of OECD available countries.

2. Simple average of Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).

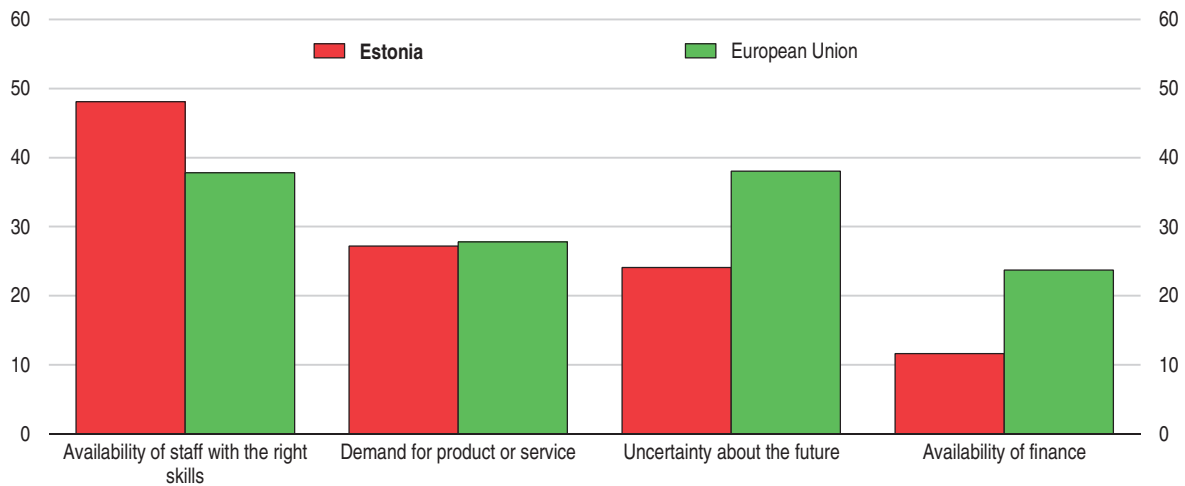
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At 2% of GDP, the current account remained in surplus in 2016 mainly due to large net exports of services. On the financing side, FDI inflows have declined significantly since the crisis, falling from 10% of GDP in 2007 to 0.6% in 2015 and reaching 3.8% in 2016. This mainly reflects capital flows towards foreign parent companies in the banking sector, but also modest investment in the manufacturing sector (European Commission, 2017). While it has improved since the financial crisis, the negative net international investment position remains large. The inward FDI stock reached 83% of GDP in 2016, the highest level among peer economies.

Macroeconomic policy is becoming more supportive. Fiscal policy was broadly neutral over 2015-16, but is expected to loosen significantly from 2017 (see Table 1). Financing conditions are also favourable for stronger growth, supported by the very accommodative stance of euro-area monetary policy. Meanwhile, lending conditions have loosened, borrowing costs remain at historically low levels, and access to external funds is deemed

Figure 8. **Skill shortages are a major obstacle to investment**

% of all firms citing a major obstacle,<sup>1</sup> 2015



1. Firm responses to the question: “Thinking about your investment activities in your country, to what extent is each of the following an obstacle? Is a major obstacle, a minor obstacle or not an obstacle at all?”

Source: European Investment Bank – EIBIS, EIB Investment Survey


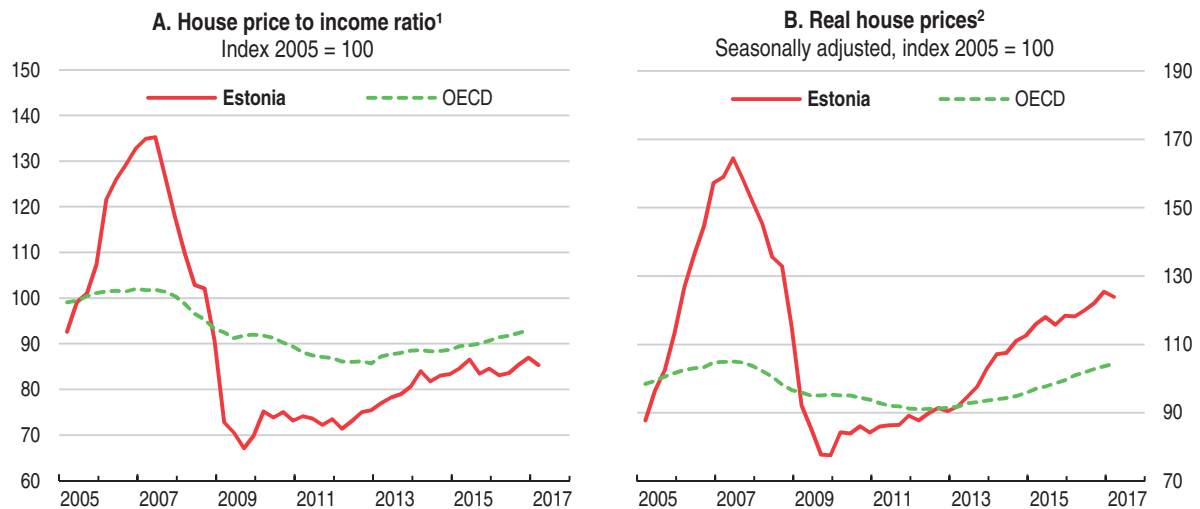

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Figure 9. **House prices are recovering**

1. The nominal house price is divided by the nominal disposable income per head.

2. Nominal house prices deflated using the private consumption deflator from the national accounts.

Source: OECD Analytical House Price Database.

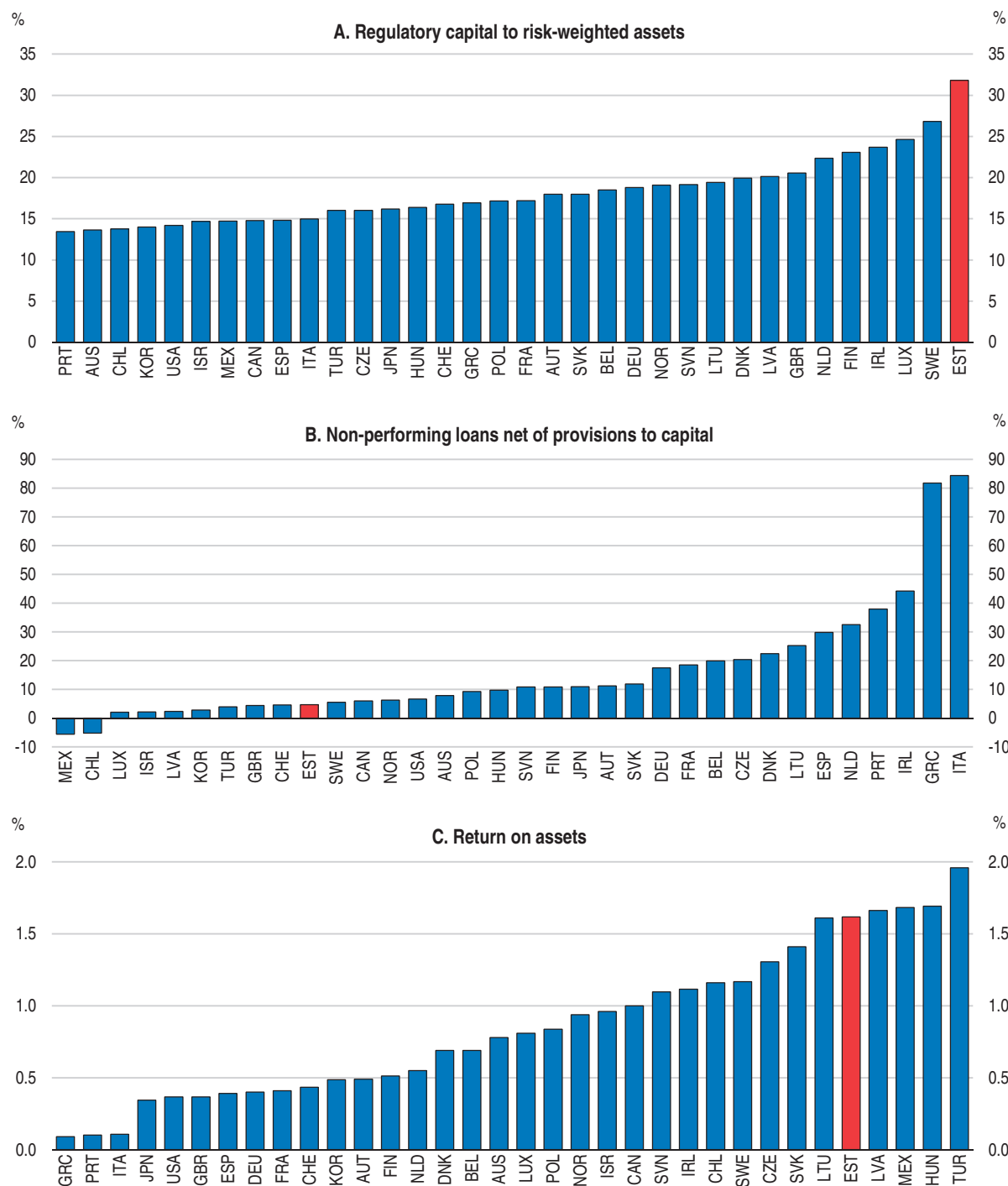
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better than in the average EU country (Eesti Pank, 2016, 2017b). The Estonian banking sector seems well capitalised and profitable (IMF, 2017; Figure 10, Panels A and C). Non-performing loans are low (Figure 10, Panel B), but the loan-to-deposit ratio, at 108%, is relatively high.


Sustained by a more supportive macro-policy stance and recovering foreign demand, GDP growth is projected to gain strong momentum and exceed 4% in 2017 (see Table 1). The recovery will also be supported by public investment, in part because disbursement of EU structural funds will pick up. Export growth is set to recover in line with improvements in major export markets, despite continued rises in real wages and unit labour costs. Corporate

Figure 10. **The financial sector is well capitalised and profitable**

Q4 2016 or latest quarter of data available



Source: IMF Financial Soundness Indicators database.

StatLink  <http://dx.doi.org/10.1787/888933581125>

investment will recover supported by foreign demand. The labour force will expand somewhat as a result of the progressive implementation of the disability benefit reform and increases in pension age. Because the employability of some disability benefit recipients is

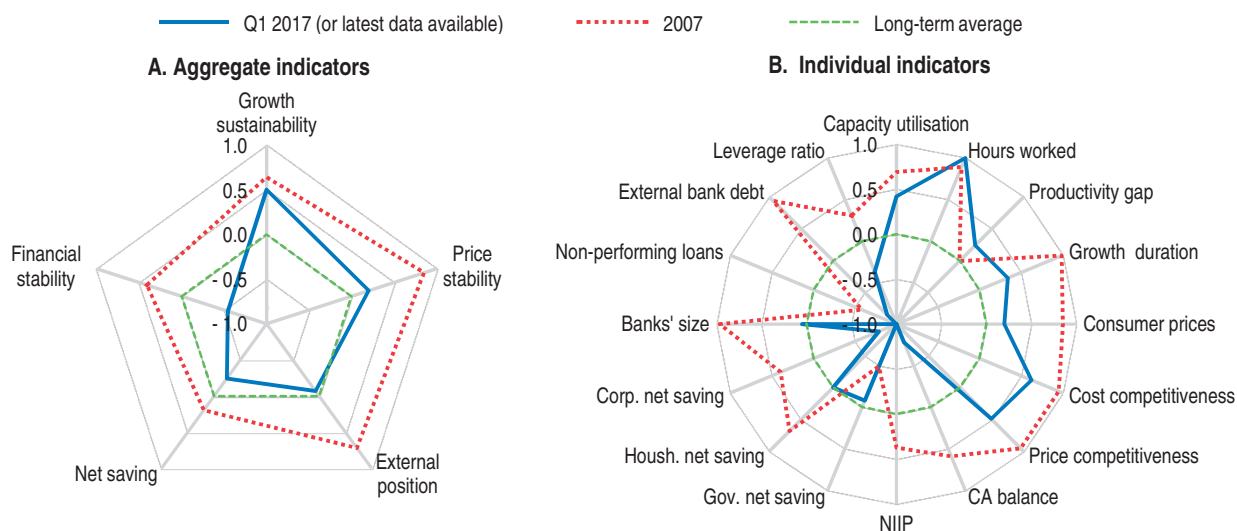


low, expected increases in labour market participation will be accompanied by an increase in the unemployment rate over the projection period. Household spending will decelerate as inflation resumes. Consumer prices will increase by more than 3% in 2017 due to rising commodities, oil and energy prices, and large rises in excise duties on alcohol, tobacco and fuels (with an estimated impact of 0.9 and 1 percentage point on inflation in 2017 and 2018, respectively). Nevertheless, private consumption will remain strong, supported by rising wages and planned cuts in the personal income tax.

Estonia's growth prospects are very sensitive to developments in its main trading partners and in the euro area, implying both downside and upside risks. Brexit may have only a small direct impact on the Estonian economy as trade links with the United Kingdom are limited, but may affect it *via* its effects on trade in the Baltic Sea region. Domestic negative risks include deeper divergence between wages and productivity growth. Conversely, a higher level of return migration or better-than-expected integration of disabled and older workers in the labour market would relax labour supply constraints and wage pressures. Risks to the projection also include extreme shocks, which might have large economic repercussions if they materialise (Table 2). Macro-financial vulnerabilities have receded since 2007, but one of the tail risks includes capital outflows from Nordic parent banks (Figure 11 and Table 2).

Figure 11. **Macroeconomic vulnerabilities have diminished since 2007**

Deviations of indicators from their real time long-term averages (0), with the highest deviations representing the greatest potential vulnerability (+1), and the lowest deviations representing the smallest potential vulnerability (-1)<sup>1</sup>



1. 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 (consumer prices), and it is calculated by the following formula: absolute value of (core inflation minus inflation target) + (headline inflation minus core inflation). External position includes: the average of unit labour cost based real effective exchange rate (REER), and consumer price based REER (cost competitiveness), relative prices of exported goods and services (price competitiveness), current account (CA) balance as a percentage of GDP and net international investment position (NIIP) as a percentage of GDP. Net saving includes: government, household and corporate net saving, all expressed as a percentage of GDP. Financial stability includes: banks' size as a percentage of GDP, the share of non-performing loans in total loans, external bank debt as percentage of total banks' liabilities, and capital and reserves as a proportion of total liabilities (leverage ratio).

Source: OECD calculations based on OECD (2017), *OECD Economic Outlook: Statistics and Projections* (database), June; OECD (2017), *Main Economic Indicators* (database), June; Statistics Estonia, June; IMF, *Financial Soundness Indicators* database and Thomson Reuters Datastream.


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

Vulnerability	Possible outcome
Increase in geopolitical tensions	This could trigger an international financial crisis with difficult-to-project consequences for confidence and activity in Estonia.
Banking crisis	Sudden withdrawal of capital by Nordic parent banks could lead to a sharp credit squeeze.

## Fiscal and social policies could better sustain inclusive growth

### Using fiscal space for a more inclusive growth

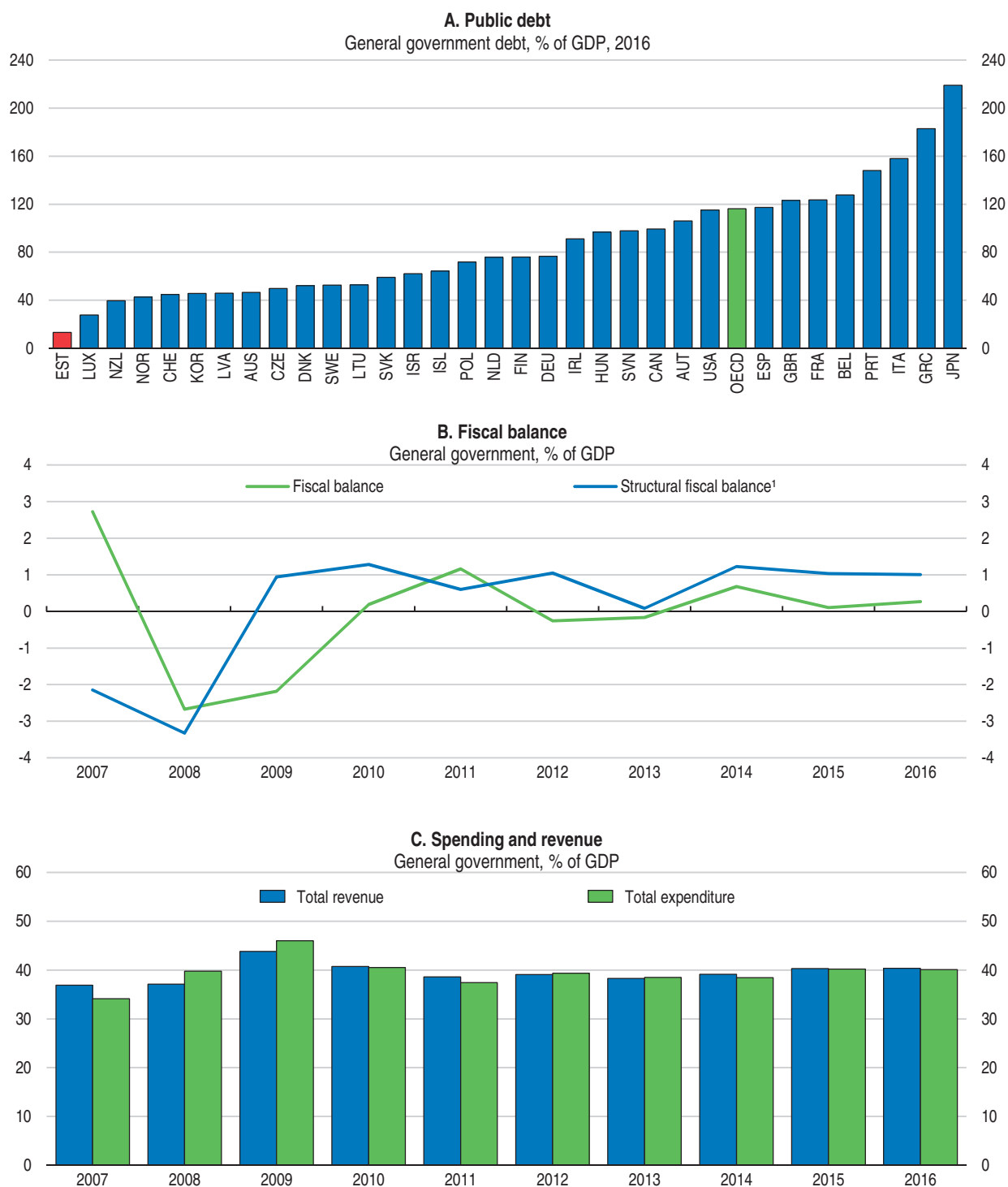
Fiscal policy has been tight over past years, despite economic slack. Estonia has the lowest gross public debt relative to GDP in the OECD (around 13%), a rough budget balance since 2010, and an estimated structural budget surplus since 2009 (Figure 12). The government plans a structural deficit of 0.5% in 2018, 2019 and 0.3% of GDP in 2020. The budgetary plans include broad changes in the tax system and increased spending on infrastructure, health care, education and family benefits (Box 1). The Fiscal Council and the Central Bank have raised concerns about a possible deviation of the deficit from current plans and questioned the expected increase in tax revenues.

Given the current favourable borrowing conditions and the need for growth-enhancing policies, the planned easing of fiscal policy over 2017-20 is appropriate. Fiscal room should be used to increase long-term growth potential, notably for measures that increase labour supply and productivity growth. As detailed below, more needs to be done to support innovative activities in domestic firms, improving access to lifelong education, and fostering labour market participation of mothers, while reducing labour taxation. In addition, public spending should be used to reinforce social protection, which does not adequately protect the most vulnerable against poverty, notably by activating all individuals with some work capacity.

Such fiscal initiatives should rely on *ex ante* evaluation (OECD, 2016a). Cost and benefit analyses have not been systematically carried out for the infrastructure projects planned for 2018-20, and, given the already considerable levels of investment in road and rail transport, it is unlikely that such additional projects will have high positive economic returns. Furthermore, they will inevitably induce extra maintenance costs in the longer run. *Ex ante* evaluation should ideally be carried out by an independent advisory body tasked with reviewing long-term economic challenges and identifying priorities and synergies, as is done in a number of OECD countries including the Netherlands and Australia.


A well-designed institution can improve the quality of the decision process and contribute to evidence-based policymaking (Banks, 2015). There is no unique institution in charge of undertaking or commissioning the necessary research and analysis to identify the most promising growth-enhancing policies for Estonia. The authorities are considering different options to comply with the recent recommendation of the EU Council to establish productivity boards. While the national context is central in determining the optimal design, mandate, mission and governance of pro-productivity institutions, a recent OECD analysis shows that such institutions should be given sufficient resources, skills, transparency and procedural accountability to fulfil their tasks. It should consider both supply-side and demand-side policies (including those proposed by the government) and have policy evaluation functions (Renda and Dougherty, 2017).

Figure 12. Fiscal policy has been prudent



1. Per cent of potential GDP. The structural balance is adjusted for the cycle and for one-offs. For more details, see Sources and Methods of the OECD Economic Outlook ([www.oecd.org/eco/sources-and-methods.htm](http://www.oecd.org/eco/sources-and-methods.htm)).

Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).

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### Box 1. Draft budget plans

The new coalition government appointed in November 2016 puts emphasis on reducing inequality and fighting the population decline. Budget plans for 2018-20 consist of additional spending in education, health, social welfare and public investment that will be partly financed by raising taxes (Table 3). The authorities expect the structural deficit to reach 0.5% of GDP in 2018 and progressively return to balance by 2021. Such projections are questioned by the Fiscal Council, in particular the level of tax revenues, as changes in the tax system are likely to take time to materialise and their impact is uncertain.

#### Spending

A sizeable investment plan of 1.3% of GDP has been announced and includes large-scale projects in transport infrastructure, development of the broadband distribution network, and investments in a conference centre in Tallinn, defence and public residential housing. A relatively large share of funds will be allocated to the road and railway networks (36% of the total amount).

Around 35% of additional spending will be allocated to the education system. Teacher's salaries are set to increase to 120% of the national median wage, and wages in kindergarten will be aligned to the minimum level in schools. These measures are welcome, as teacher wages were particularly low by international standards. They should improve the attractiveness of the teaching profession among young graduates.

#### Revenues

Changes in the taxation system are expected to increase revenues from corporate income tax and indirect taxation, while reducing labour taxes.

- The income tax allowance will be increased from EUR 170 to 500 per month in 2018 and decreased gradually with the income level for those earning more than EUR 1 200.
- Increases in excise duty rates on alcohol and gas will strengthen incentives to reduce alcohol consumption and achieve energy savings.
- The tax rate on distributed dividends will be cut from the current 20% to 14% for mature companies (companies that pay dividends for three consecutive years). While this is expected to increase revenue in the short term by encouraging the companies to distribute profits, it will decrease it in the longer term.

Table 3. Budgetary and fiscal reforms planned for 2018-20

% of GDP	2018	2019	2020
<b>Increase in spending</b>	<b>1.5</b>	<b>1.6</b>	<b>1.4</b>
Education	0.3	0.5	0.5
Public investment	0.5	0.5	0.3
<b>Increase in revenues</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>
Personal income tax reform	-0.6	-0.5	-0.5
Corporate income tax reform	0.6	0.4	0.2
Excise duty and VAT measures	0.5	0.1	0.2
<b>Total impact on public deficit</b>	<b>-0.5</b>	<b>-0.5</b>	<b>-0.3</b>

Source: Ministry of Finance.

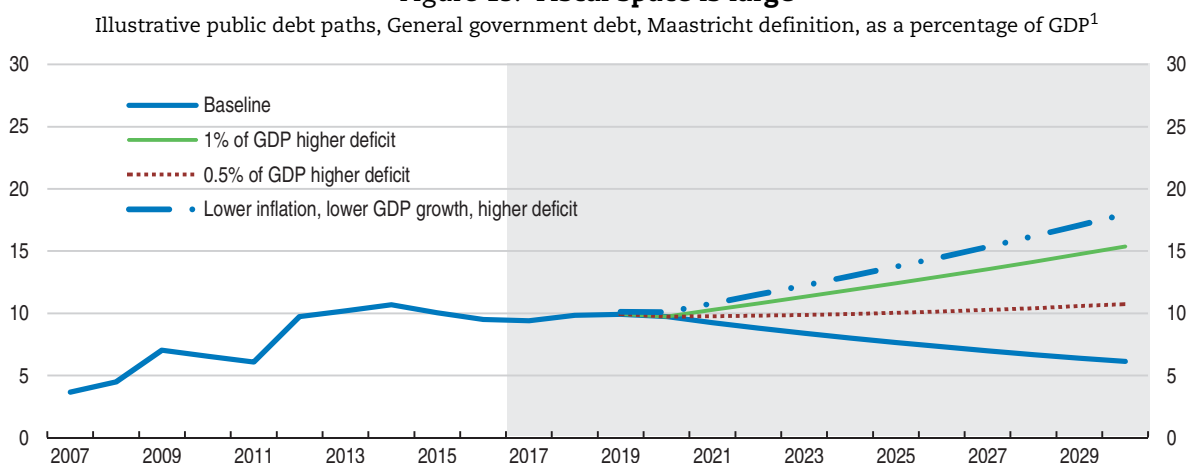
### Improving the fiscal framework

Because of its vulnerability to external shocks, it is prudent that a small open economy like Estonia keeps a relatively low level of debt and room for manoeuvre for countercyclical

fiscal policy. The current fiscal rule imposes a balanced budget in structural terms, but past surpluses can be used to allow a deficit of not more than 0.5% of GDP. Indeed, these will be used in 2018-20.


Beyond 2020, financing growth-enhancing measures could require revising the fiscal rule. Maintaining a small structural deficit for an extended period would not undermine the long-term sustainability of public finances. For instance, a persistent deficit of 0.5% of GDP would result in debt reaching less than 11% of GDP in 2030 (Figure 13). In the same vein, increasing the deficit by 1% of GDP would still maintain a prudent debt level, even if coupled with 1 percentage point lower inflation and GDP growth (Figure 13).

Figure 13. **Fiscal space is large**



1. The baseline consists of projections for the Economic Outlook No. 101 until 2018. Thereafter, assumptions are: real GDP growth progressively closing the output gap and from 2020 growing by 2.5% in line with OECD estimates for long-term potential growth; a budget balanced in structural terms from 2021 as set out in the national reform programme; inflation declining progressively to 2% by 2030 and an average effective interest rate converging to 3% by 2030. The “0.5% of GDP higher deficit” scenario assumes a structural deficit maintained at 0.5% of GDP from 2021. The “1% of GDP higher deficit” scenario assumes a structural deficit increasing to 1% of GDP from 2021. The “lower inflation, lower GDP growth and higher deficit” scenario assumes lower inflation and real GDP growth by 1 percentage point per year, both from 2019 with structural deficit increased by 1% of GDP from 2021.

Source: OECD Economic Outlook 101 Database; calculations based on OECD (2017), OECD Economic Outlook: Statistics and Projections (database), June.

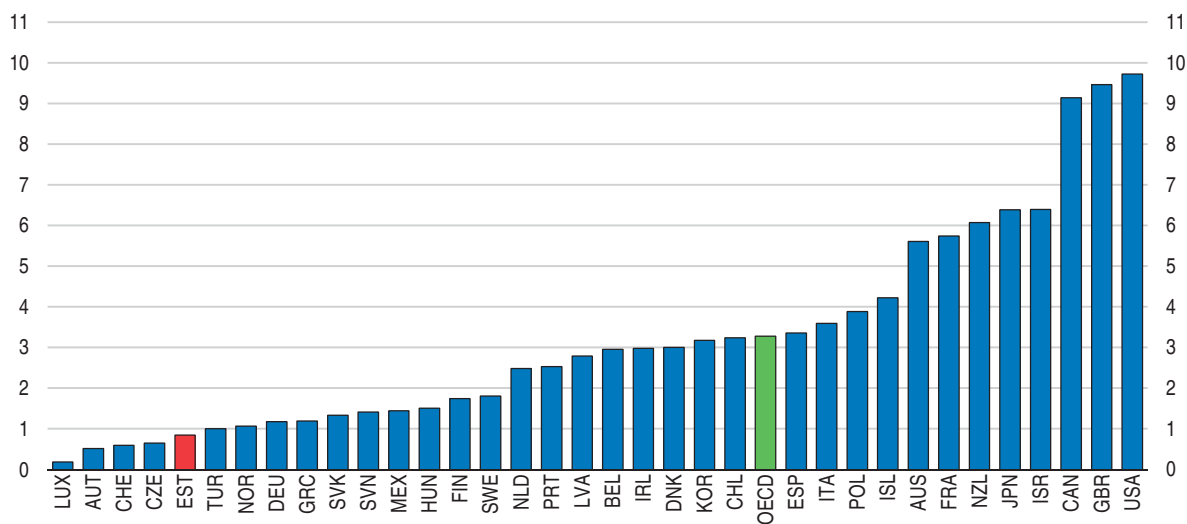
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According to long-term projections, and despite a rapid decline in its working-age population, Estonia does not face particular ageing-related spending pressures (European Commission, 2016b). However, this is mainly because replacement rates in the public pension system are projected to decline and remain among the lowest in the EU (25% by 2060). Poverty risks for pensioners with a short contribution history, notably to the second pillar, and/or with low remuneration are already relatively high by international standards. To address this issue, a reform of the public pension system that increases redistribution among pensioners and raises the pensions of low income earners is being prepared. Measures to reduce fees and improve competition in the second pension pillar have also been taken. These measures are welcome, but their effects will materialise only in the long run. Fiscal space could be used to speed up the increase in pension levels at the lower end of the income distribution.


The tax mix could be made more favourable to long-term growth prospects. Taxes on immovable property – estimated to be the least distortionary of taxes (Johansson et al., 2008) – are particularly low by international standards (Figure 14). Extending the tax base to

Figure 14. **Taxes on immovable property are among the lowest in the OECD**

Recurrent taxes on immovable property as a per cent of total taxation, 2015 or latest available year



Source: OECD Revenue Statistics Database.

StatLink  <http://dx.doi.org/10.1787/888933581201>

residential property and using market values for the tax base would raise revenue from this source significantly. Environmental taxes already account for a relatively large share of tax revenues, but increases in energy, pollution and transport tax rates would better price these activities' negative impacts on the environment. As stressed in previous *Economic Surveys*, energy tax rates should be increased and exemptions and reduced rates should be eliminated (OECD, 2015 and Table 4).

Table 4. **Past recommendations for improving fiscal policy**

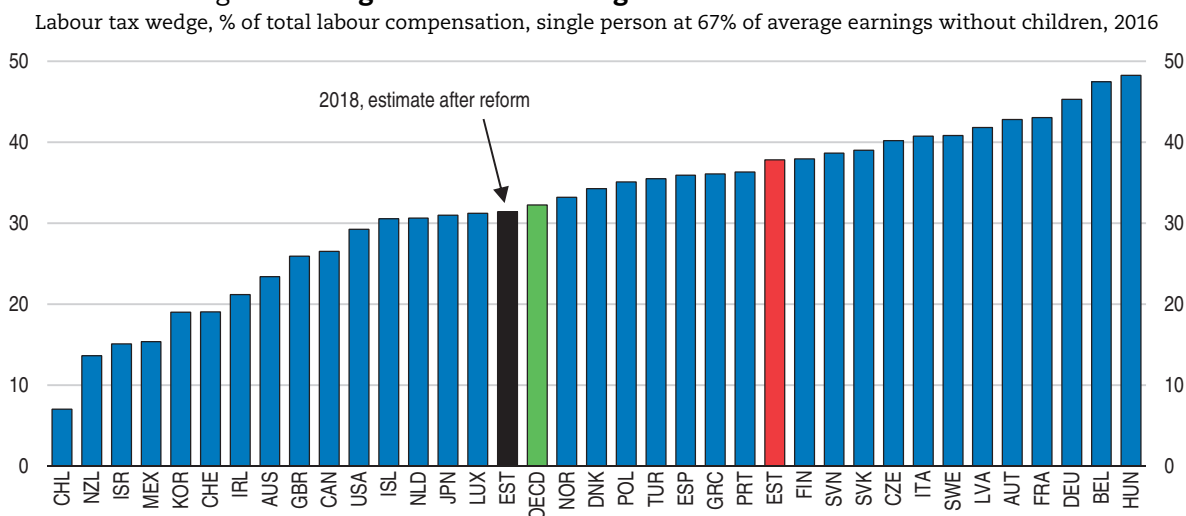
Main recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Create budgetary room to raise spending on active labour market policies, infrastructure and education, as well as to lower labour taxes. Improve spending efficiency and prioritisation and phase out tax exemptions, notably the deductibility of mortgage interest payments. In the longer term consider allowing a small deficit in the government budget rule.	The fiscal rule was changed in 2017. Past surpluses can be used to allow a deficit of up to 0.5% of GDP. The government plans to use this option in 2018-20. Labour taxes were cut. Spending on active labour market policy is set to more than double between 2015 and 2017. The tax deductibility of mortgage interest payments has been reduced.
Further reduce the taxation of labour earnings, in particular of low earnings.	The government lowered the income tax rate from 21% to 20% in 2015 and plans to increase the monthly income tax-free allowance from EUR 170 to EUR 500 in 2018. The unemployment insurance contribution rate was cut from 3.2% to 2.4% in 2015.
Raise more revenues from the taxation of real estate by removing exemptions and by evaluating property according to market values.	No action taken.
Phase out exemptions and preferential rates and further strengthen VAT administration. Apply the standard rate to all goods and services.	The Tax and Customs board has started registering all transactions exceeding EUR 1 000 and crosschecks the transfers in the IT system.

### **Strengthening public support to reduce poverty**

The government plans important redistributive measures. Reform of the personal income tax, to take effect as of 2018, is expected to improve its progressivity and reduce poverty by 0.7 percentage point. The income tax allowance will be raised and decrease gradually with the income level, thereby increasing the disposable income of 80% of households and reducing some disincentives to work generated by threshold effects in the previous system. After the planned reform, the tax wedge will fall below the OECD average

(Figure 15). However, as the lowest income earners (up to EUR 170 per month) do not pay income tax now, this measure will not help them. Moreover, the reform will replace a better targeted means-tested tax credit introduced in 2016, which was conditioned to work intensity, and is likely to increase marginal tax rates for medium wage earners.

Figure 15. **High taxes on low wage earners are set to decrease**



Note: The black bar shows the impact on the tax wedge of the reform of the personal income tax planned for 2018.

Source: OECD Tax Statistics and OECD Secretariat calculations.

StatLink <http://dx.doi.org/10.1787/888933581220>

The benefit for large families (which have the highest poverty risk) is set to increase to EUR 300 per month, at a cost of 0.1% of GDP. This measure would be more cost-effective if targeted on the poorest. The Work Ability reform to increase the participation of people with reduced work capacity in the job market can in principle also contribute to fighting poverty. However, its impact might be limited in the medium run, because employers' willingness to hire persons with disabilities appears to be low (National Audit Office, 2017). Active labour market policies have been stepped up to improve the employability of jobseekers and increase incentives for hiring disabled people, but their success will rely on the provision of adequate financial and human resources, which is not currently guaranteed in all municipalities (National Audit Office, 2017). Finally, if approved by parliament, proposed changes to the public pension system could also mitigate inequality among pensioners and reduce old-age poverty, but would require several years to take effect.

There is room to make social support more effective at reducing poverty. Despite the high level of relative poverty, the level of spending allocated to protection of the most vulnerable is low: around 31% of total public spending in 2014 went on social spending, some 9 percentage points less than the EU average. A relative large share of spending is directed to family benefits, while expenditure on social exclusion lags behind (Table 5). At the same time, the impact of transfers and taxes on inequality is among the lowest in the OECD (see Figure 3, Panel B). The social safety net does not provide adequate support to those who most need it. Despite a significant increase in 2016, the level of social assistance has not stepped up to a level that would minimise the risk of poverty. The subsistence benefit stood at around 20% of the median equivalised income in 2016.

The targeting of social programmes is poor, with means-tested measures accounting for a low share in total social spending. In addition, estimates of take-up rates for social



**Table 5. Breakdown of social spending**  
% of total social protection spending, 2015

	Sickness and disability	Old age	Survivors	Family and children	Unemployment	Housing	Social exclusion	Other
Estonia	16.4	54.5	0.5	17.9	8.3	0.2	1.0	1.2
CEE <sup>1</sup>	18.4	55.9	6.0	9.3	3.1	0.8	3.7	2.7
Nordics <sup>2</sup>	18.4	46.3	1.5	14.6	9.4	2.1	6.0	1.6
OECD <sup>3</sup>	15.8	51.3	6.3	11.2	7.4	2.3	3.9	1.9

1. Unweighted average of Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

2. Unweighted average of Denmark, Finland, Sweden.

3. Unweighted average of available OECD countries.

Source: OECD National Accounts Database.

assistance benefits are relatively low (Vörk et al., 2016). All this calls for streamlining the existing benefit schemes and ensuring that transfers go to those most in need. This should be done by increasing the rate of subsistence benefits further. Because increasing benefit generosity might lower job take-up rates for low-wage earners, reforms should aim at maintaining strong work incentives and maximising the prospects of re-integrating beneficiaries into employment. To do so, social benefits should be withdrawn only gradually when the recipient takes up a job, or in-work benefits should be introduced, as is the case in a number of OECD countries.

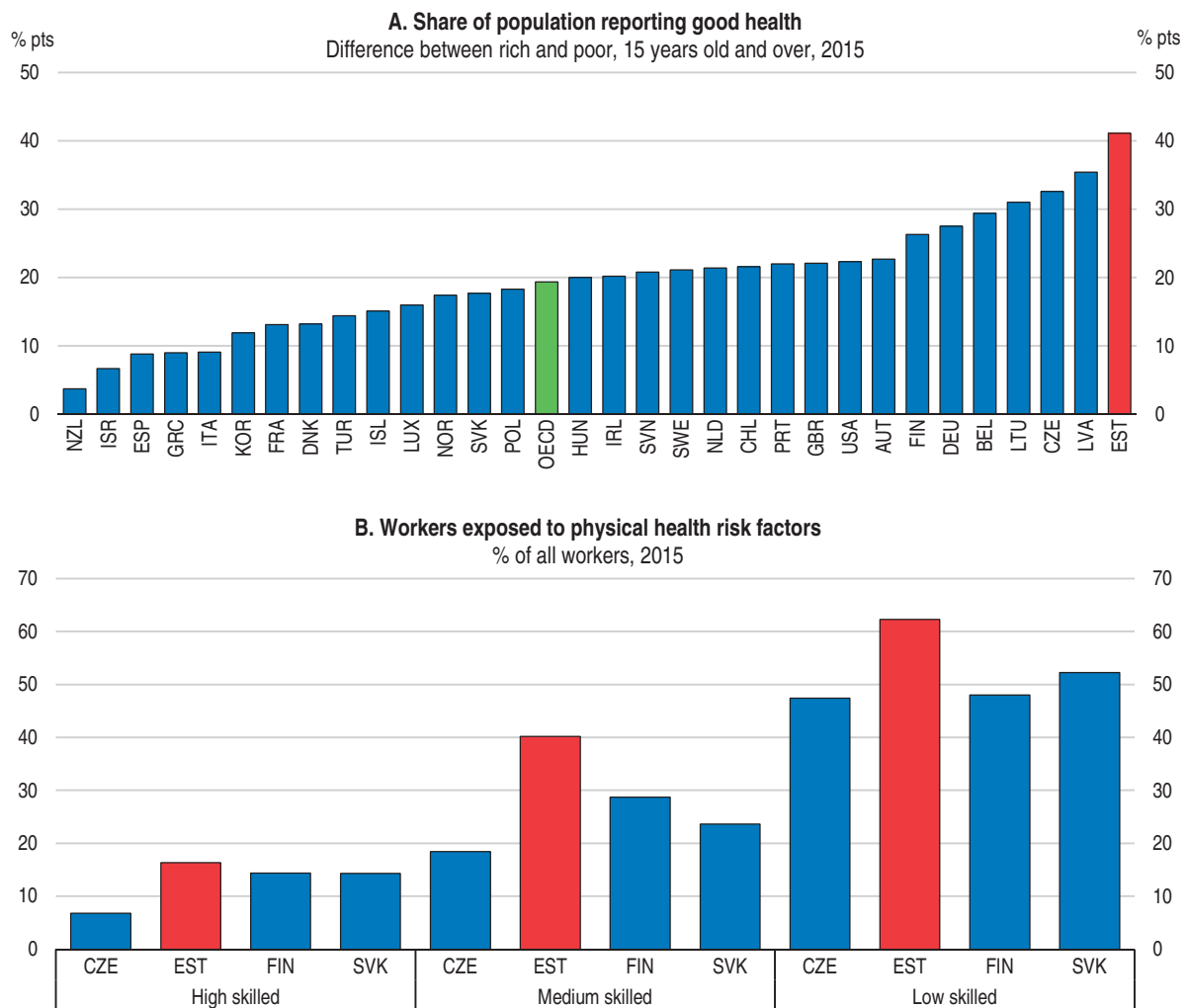
To ensure that all benefit from opportunities created by globalisation and Estonia's high trade intensity, those who can work need to have the right skills and incentives to get good jobs. International experience suggests that the best way to support jobseekers is through a combination of temporary income support, job search support and measures to improve their employability (OECD, 2016d). While all unemployed have access to the public employment service and activation programmes, in practice only a few participate. Participation in and spending on active labour market policies is modest. The coverage of the unemployment benefit system is low, with only half of the registered unemployed receiving benefits. Improving the coverage can make the unemployed more readily reachable for upskilling programmes available via the Unemployment Insurance Fund.

### **Improving health coverage**


Low health status is one of the weaknesses identified by the OECD Better Life Index (see Figure 2). Significant discrepancies in life expectancy by education level and socio-economic background suggest a high level of inequality in access to health care, although they also reflect a number of other factors (Figure 16). Regional disparities persist in exposure to environmental health risks: residents of Ida-Viru County register worse health indicators than residents of other regions (OECD, 2017a). About 6% of the population was not covered by the Estonian Health Insurance Fund in 2016. Some health services are provided in municipalities to uninsured people, and the coverage of health insurance, which now includes dental care, has recently been extended.

Out-of-pocket payments are 19% of total health care spending, above the EU average of 14%, which poses a barrier for those with low incomes. The promotion of generics and more generous reimbursement have stabilised out-of-pocket payments for pharmaceuticals. Further effort to reduce out-of-pocket payments for low-income households could be made, as recommended in the 2012 *Economic Survey*, by increasing and means testing the cap on out-of-pocket payments on prescribed pharmaceuticals (Table 6).



Figure 16. **Health outcomes vary strongly with socio-economic background**

Source: OECD Social and Welfare Statistics Database; OECD Job quality indicators Database.

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Prevention plans for risk factors (alcohol consumption, smoking, obesity) are being implemented, but spending in this area remains well below the OECD average and should be increased (De Maeseneer, 2016). Indeed, a relatively high proportion of the population smokes regularly, and alcohol consumption is among the highest in the OECD. As in other OECD countries, obesity rates have increased fast. Introducing taxes to limit health-damaging behaviour, as envisaged by the government with a tax on sugar-sweetened beverages, should be considered as it can improve health outcomes (Sassi et al., 2013). In addition, more needs to be done to reduce the number of occupational accidents, which increased by 68% between 2009 and 2016. A considerably higher proportion of Estonian workers, especially among the low skilled, are exposed to physical health risks than in, for instance, the Czech Republic, Slovakia or Finland (see Figure 16).

According to the Labour Inspectorate, there lack incentives for employers to meet the requirements for work environments and to improve their quality (National Audit Office, 2017). Well-developed occupational health and safety regulations have contributed to a decline in work accidents in most OECD countries (OECD, 2010a). In Estonia, enforcement of

health and security regulation should be strengthened, for instance by increasing the level of fines imposed for breaches of the regulations from current low levels (OECD, 2010b). An occupational accident and disease insurance system that would strengthen the liability of employers and thereby incentives for investment in health and work safety has been on the policy agenda of many past governments. It should be introduced and include experience rating of firms (i.e. basing insurance cost on amount and/or number of claims made in previous years) that, be it part of public or private scheme, has brought positive results for instance in the Netherlands, Finland and Belgium (OECD, 2010b; European Agency for Safety and Health at Work, 2017).

Table 6. **Past recommendations for reducing poverty**

Main recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Increase spending on active labour market policy, and better target spending, while ensuring stronger co-operation among local governments, education institutions and the Unemployment Insurance Fund.	Spending on active labour market policy is set to more than double between 2015 and 2017 due to the implementation of the Work Ability reform and the introduction of preventive measures for workers at risk of unemployment.
Refocus the social protection system on activation and return to work, underpinned by stronger inter-agency co-operation. All working-age people with some capacity to work should become clients of unemployment insurance fund offices and be encouraged to participate in job search and activation.	A reform of disability benefits, the Work Ability reform, is being implemented, strengthening the assessment of capacity to work and tying the receipt of benefits to the obligation to participate in activation programmes.
Target benefits to provide sufficient help for those in greatest need.	No action taken.
Strengthen health spending efficiency, promote healthy lifestyles and improve access for disadvantaged groups.	EHealth services (e-consultations and e-referrals, and a central e-registration system) are being developed. The building of primary healthcare centres with teams of specialists in 2016 has started to reduce pressure on hospitals. Dental care are partly reimbursed since July 2017.

### **Making education more inclusive**

Estonia outperformed the rest of Europe in the OECD's latest PISA survey. In 2015, Estonia achieved high levels of both performance and equity in education. Coverage of pre-primary education and tertiary education attainment are high. At the secondary level, performance of students in reading, mathematics and science is among the best, and students' socio-economic background has a smaller impact on performance than in other OECD countries. But there is still some room to make the education system more inclusive. A recent OECD review identifies policy priorities to improve equity in the Estonian school system, including targeting extra resources on students with special education needs and Russian-speaking students, notably by addressing shortages of Estonian language teachers in Russian schools (Santiago et al., 2016). These resources could be drawn from a further consolidation of the school network.

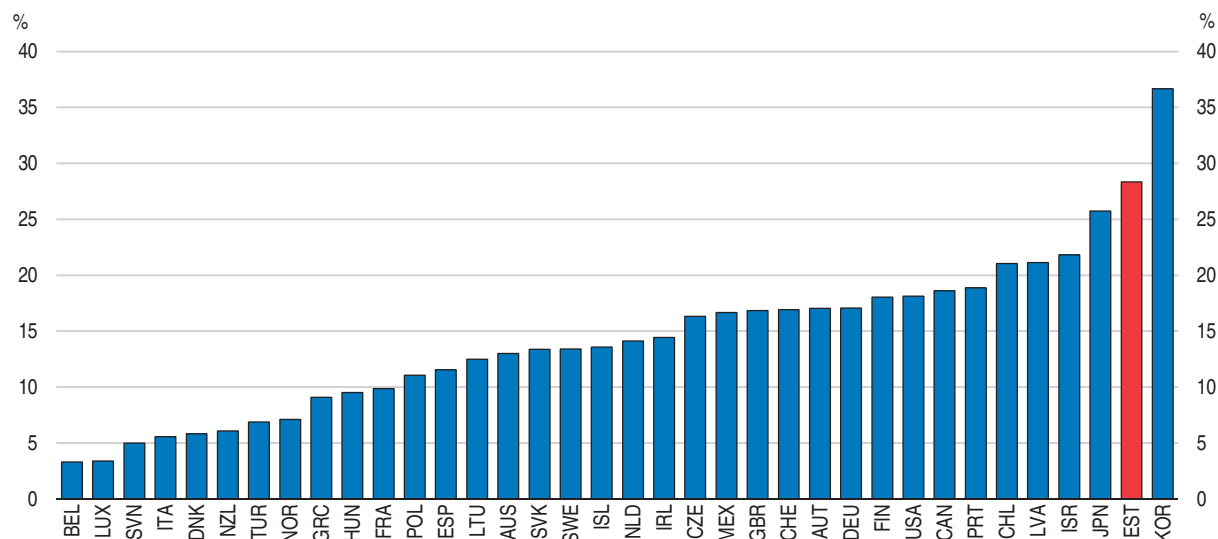
Integration of the Russian-speaking minority in the labour market remains a challenge, in particular in eastern regions of the country where redundancies in the chemical and oil shale industries further deepened the unemployment gap in 2016. The unemployment rate of the Russian-speaking minority (around 25% of total population), was 3 percentage points higher than that of other Estonians. While this is partly linked to regional economic disparities, a whole-of-government approach is needed to tackle the multidimensional obstacles encountered by this minority, including limited Estonian language skills, choices regarding education, and weaker social contacts and networks. Particular attention should be paid to Estonian and English proficiency, which are found to improve labour market outcomes but are poor among Russian speakers (Ministry of Education and Research, 2015).

The Strategy of Integration and Social Cohesion in Estonia 2020 includes a number of measures and measurable targets, but little progress has been achieved since 2011 (Ministry of Education and Research, 2016).

### Addressing gender gaps

Estonian women have high employment rates and outperform men in the education system. However, Estonia has both the second highest gender pay gap in the OECD (Figure 17) and relatively low employment among mothers with children under 3 (24% in 2014). The gender employment gap for parents is large, while it is close to zero for childless women and men (OECD, 2017b). In addition, management and supervisory positions are overwhelmingly held by men. Differences in education and occupations explain only a minor part of the pay gap (Anspal, 2015). Meanwhile, gender stereotypes are prevalent (Figure 18).


Figure 17. **The gender pay gap is high**  
Full-time employees, 2015 or latest year available<sup>1</sup>



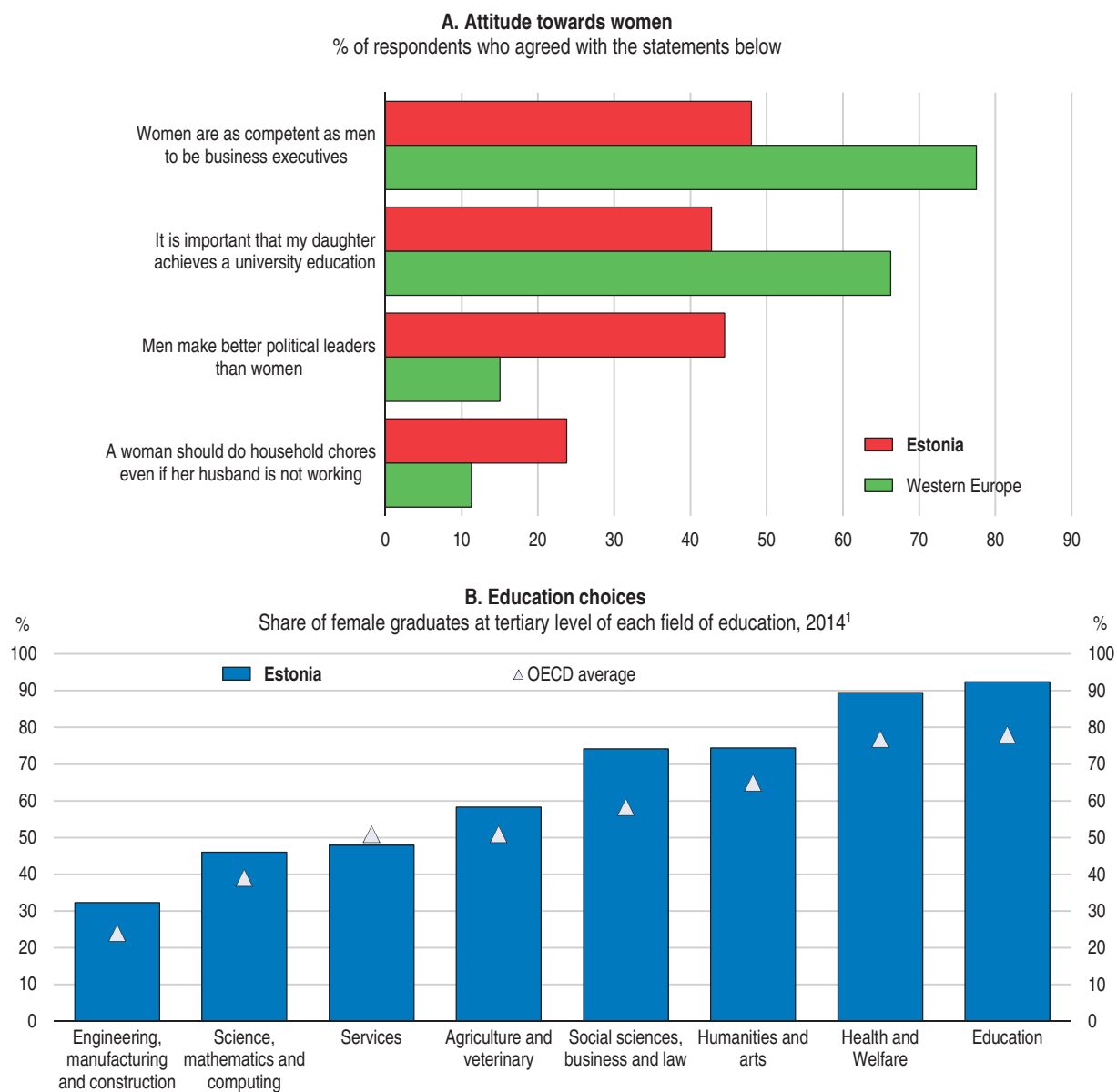
Note: The gender wage gap is defined as the difference between male and female median wages divided by the male median wage.

1. Data refer to 2016 for Czech Republic, Korea, United Kingdom and United States, 2014 for Belgium, Estonia, France, Germany, Greece, Iceland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Poland, Portugal, Slovenia, Spain, Switzerland and Turkey, 2013 for Sweden, 2011 for Israel

Source: OECD Employment Database.


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The Welfare Development Plan for 2016-2023 sets targets to counter gender inequality, and policy measures including allowing the Labour Inspectorate to monitor the equality of pay and carry out audits on firms suspected of gender discrimination are under discussion. Measures for pay transparency, which require companies to carry out analyses of gender wage gaps and share them with employees, government auditors or the public, could be implemented as is done in several OECD countries (including Sweden, Germany, Lithuania and Austria). In Iceland, one of the OECD's top performers in terms of gender equality, companies with 25 or more employees are required to disclose the gender composition of both general and management staff and to develop a certification scheme for gender pay equality, to ensure that all jobs of equal value are paid the same. Other strategies include the introduction of pay-gap calculators, publicly available online, to help employees to estimate what salary they should receive for a given job, sector and locality, as is done in the Czech Republic.

Figure 18. **Gender stereotypes are pronounced**

1. Level of education: total tertiary education (ISCED 2011 levels 5 to 8). 2013 for OECD average.

Source: EBRD (2016), *Life in Transition: A decade of measuring transition*; OECD Education Statistics.

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The parental leave system is also being revised. Estonia has the longest parental leave in the OECD (146 weeks vs. 37.5 weeks on average), but father-specific leave is very short (2 weeks). Long leaves can have a detrimental impact on careers, as skills can deteriorate and the costs to firms of vacancies can induce discrimination against women of childbearing age (Rossin-Slater, 2017; Thévenon and Solaz, 2013). Increasing the length of father-specific leave, as planned by the authorities, is not the most cost-effective way to achieve a better gender balance in childcare responsibilities. Introducing a “daddy quota” as in Sweden or France (whereby the length of the parental leave is reduced if the father does not take his leave) without increasing the total length of the parental leave would accelerate the return of mothers to the labour market at a lower cost.

The capacity of childcare services for children below 2 years old is being increased, as recommended in past Surveys (OECD, 2015 and OECD, 2012). Participation of children aged 0-2 in pre-school education has increased significantly from 20% to 34% in 2016. With funding from the European Regional Fund around 2 300 childcare places will be created in larger cities and suburbs as well as in municipalities where needs are unmet (European Commission, 2017). Local governments will also be given more flexibility in organising the provision of high-quality early childhood education and care possibilities based on the needs of families.

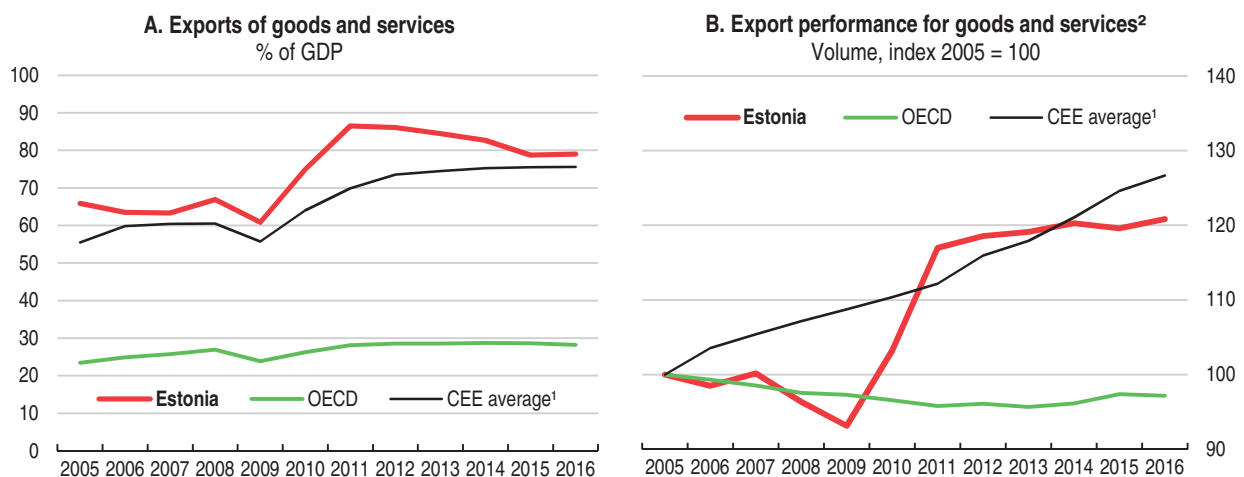
## Unleashing productive investment and export performance

### Deepening participation in global trade

Trade and foreign direct investment can channel knowledge and innovation into the economy and thereby increase productivity. The economic performance of Estonian exporting firms is higher than their non-exporting counterparts, suggesting that deepening integration in global trade would contribute to reducing the currently high productivity gap with the OECD's best performing countries. Higher productivity in exporting firms is due to both self-selection (i.e. more productive firms are the ones that tend to become exporters) and to productivity increases after the firms enter export markets (Wagner, 2012; Masso and Vahter, 2015; Benkovskis et al., 2017).

Estonia is already well integrated in global trade, and exports have been resilient (Figure 19, Panel A). On average around 12% of firms export, while in OECD countries less than 10% of firms are directly engaged in international trade (OECD, 2016b). Around a half of private-sector employment is sustained by foreign demand, twice as much as the OECD average. Nevertheless, low and medium value added goods and services dominate, and aggregate value added per worker remains modest, even if comparable to that of its peers (Figure 20). Gains in export market shares have been less than in its EU catch-up peers, to whom Estonian businesses may lose out, particularly in terms of price competitiveness (Figure 19, Panel B).

Figure 19. **Export orientation and gains in export market shares are comparable to peers**



1. Simple average of Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

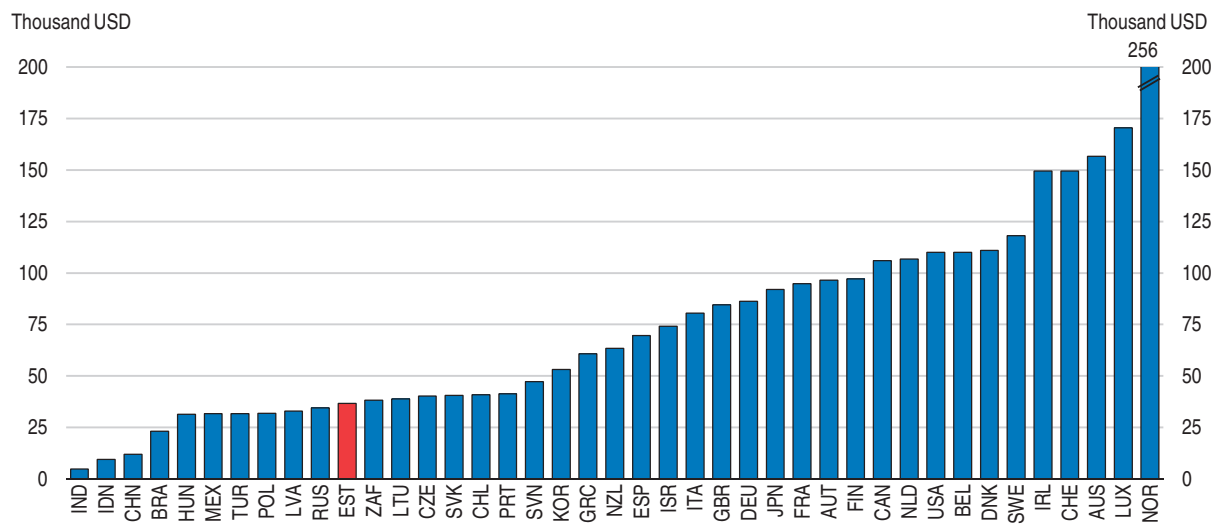
2. Export performance is measured as actual growth in exports relative to the growth of the country's export market.

Source: OECD Economic Outlook 101 Database (updated with information available on 1 September 2017).

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Figure 20. **Value added per worker embodied in foreign demand is low**

Value added embodied in foreign final demand per worker



Note: Value added embodied in foreign final demand per worker is computed by dividing the domestic value added captured from foreign final demand by the number of employees sustained by foreign final demand. Figure refers to 2011 data.

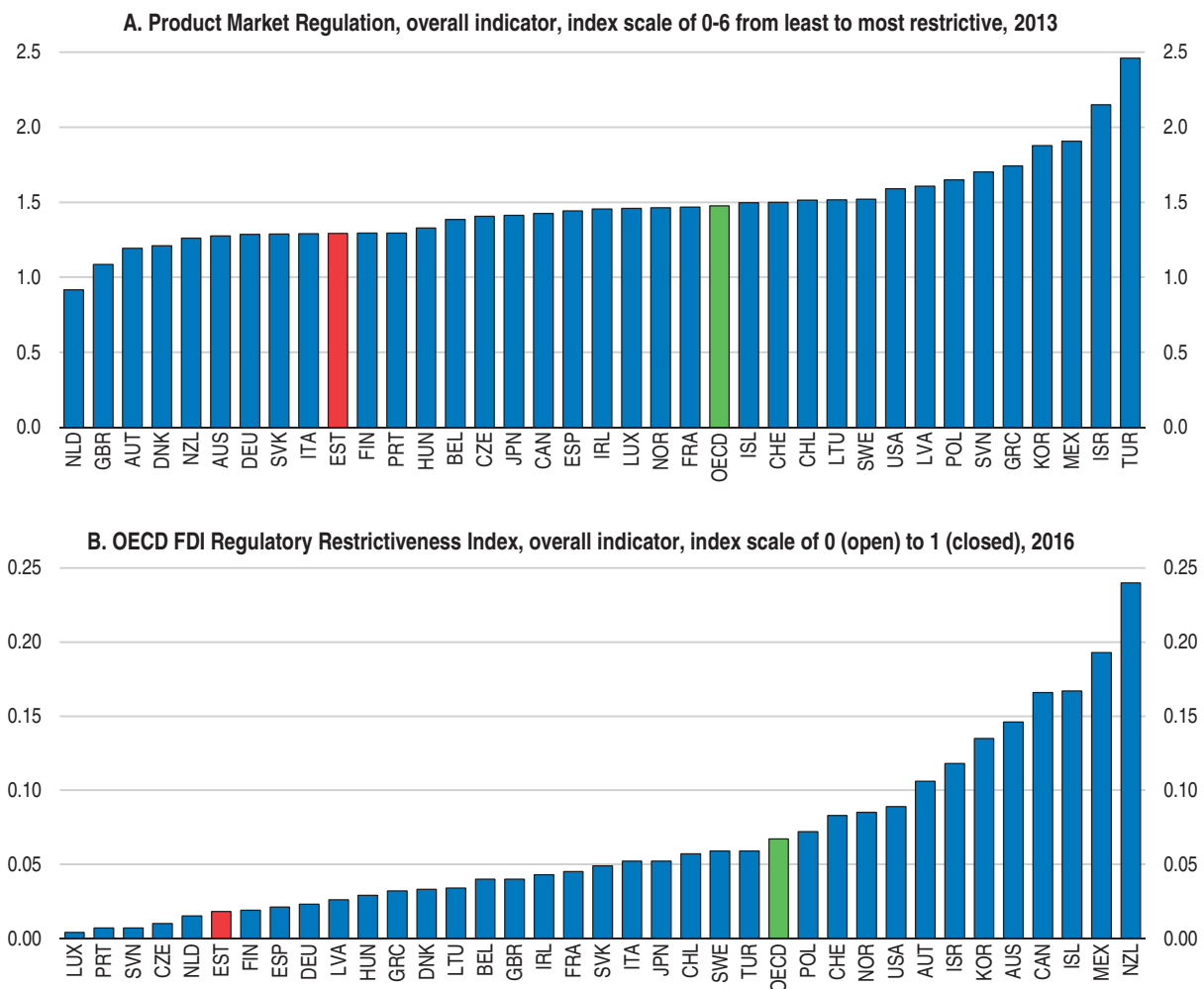
Source: OECD/WTO (2016), Statistics on Trade in Value Added (database) and OECD (2016), "Trade in Employment: Core Indicators" in OECD Structural Analysis (STAN) Databases.

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### **Reducing regulatory barriers to investment and trade**

Low corporate taxes combined with business and competition-friendly regulation compensate for Estonia's small size, which might otherwise be a barrier for investment and productivity. The PMR and FDI Regulatory Restrictiveness Index indicators, which respectively measure the restrictiveness of product market regulation and the statutory restrictions on foreign direct investment, are well below the OECD average (Figure 21). Political willingness to continuously improve business conditions is strong, and several initiatives target reducing red tape: a 'zero bureaucracy' programme, the introduction of a business account for micro-entrepreneurs and an e-residency programme. Measures aiming at restricting tax-free transfers of profits distributed abroad in the form of long-term loans are welcome. The planned reduction of the taxation of distributed dividends for mature companies (from 20% to 14% for companies that pay dividends for three consecutive years) is unlikely to have any positive impact on investment by domestic firms, because reinvested profits are not taxed. Furthermore, it will add complexity to the tax system and penalise young firms.

Business conditions could be improved further through easing remaining unnecessary entry barriers in services (such as exclusive rights for engineers, architects, accountants and lawyers, as recommended in the 2015 *Economic Survey*) and revising environmental regulation to reduce the administrative burden on small firms (OECD, 2017a). Alignment with best international practice for trade facilitation would reduce the administrative and information costs of trade. These include completing the one-stop shop for formalities (i.e. the Single Window) and improving co-operation between agencies involved in trade activities (e.g. customs, border control). Increasing regulatory certainty by making more use of advance rulings (i.e. binding statements by the administration on regulatory rules applied to specific goods) and making information about agreements with third countries, appeal procedures, and penalty provisions more accessible would also help.

Figure 21. **The business environment is favourable**

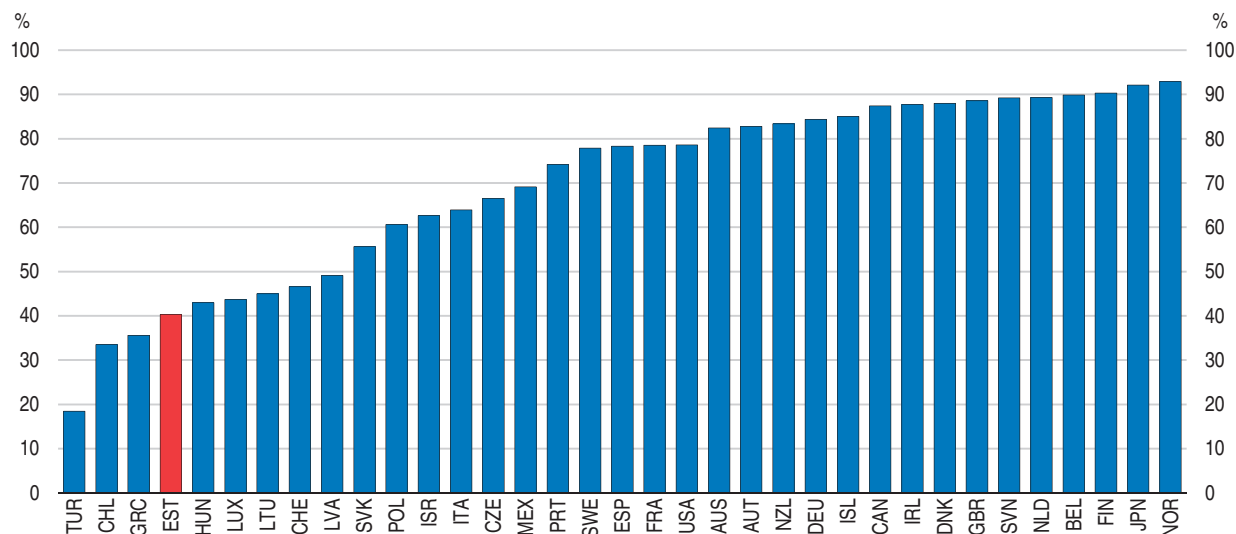
Source: OECD (2013), Product Market Regulation Database; OECD FDI Regulatory Restrictiveness Index Database.

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An efficient insolvency framework is key to supporting investment and avoiding capital becoming trapped in low-productivity firms. Bankruptcy laws that do not overly penalise business failure are likely to support capital spending in risky but innovative companies, though excessively low creditor protection could undermine credit supply. The high cost of closing a business in Estonia may reduce incentives to invest and raise the cost of credit. Bankruptcy procedures are long, and the recovery of creditor claims is low (Figure 22). A new OECD indicator on insolvency regimes shows that Estonia has ample room for improvement in terms of the framework and outcomes of corporate insolvency proceedings (Figure 23). The Ministry of Justice's current review of the legislative framework, whose outcomes should be available in autumn 2017, is thus very welcome.

Avenues to improve the insolvency regime include giving creditors the right to initiate restructuring (rather than liquidation alone) as it increases either recovery rates or the chances of the company's survival (Adalet McGowan and Andrews, 2016). Early-warning mechanisms, such as on-line self-assessments, and pre-insolvency regimes permitting swifter out-of-court settlement could also be introduced. Additionally, the length of the stay

Figure 22. **Credit recovery is low**  
Average recovery rate<sup>1</sup>



1. The recovery rate is calculated based on the time, cost and outcome of insolvency proceedings involving domestic legal entities and is recorded as cents on the dollar recovered by secured creditors. The calculation takes into account the outcome: whether the business emerges from the proceedings as a going concern or the assets are sold piecemeal. Then the costs of the proceedings are deducted. Finally, the value lost as a result of the time the money remains tied up in insolvency proceedings is taken into account. The recovery rate is the present value of the remaining proceeds, based on end-2015 lending rates.

Source: World Bank, Doing Business 2017.


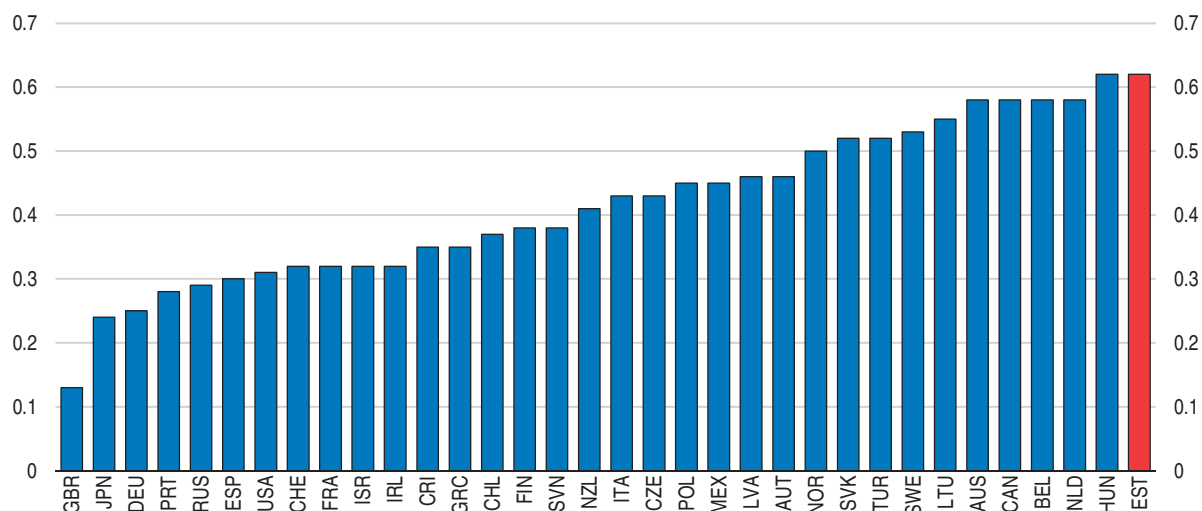
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Figure 23. **The insolvency regime is inefficient**  
OECD indicator of insolvency regimes,<sup>1</sup> 2016



1. A higher value corresponds to an insolvency regime that is most likely to delay the initiation of and increase the length of insolvency proceedings. Composite indicator based on 13 components: time to discharge; exemption of assets; early warning mechanisms; pre-insolvency regimes; special insolvency procedures for SMEs; creditor ability to initiate restructuring; availability and length of a stay on assets; possibility and priority of new financing; possibility to “cram-down” on dissenting creditors and dismissal of management during restructuring; degree of involvement of courts; distinction between honest and fraudulent entrepreneurs and the rights of employees. For more details, see Source

Source: Adalet McGowan, M., D. Andrews and V. Millot (2017), “Insolvency Regimes, Zombie Firms and Capital Reallocation”, OECD Economics Department Working Papers, No. 1399; and Adalet McGowan, M. and D. Andrews (2017), “The Design of Insolvency Regimes”, OECD Economics Department Working Papers, forthcoming.

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on assets (i.e. the period in insolvency during which creditors cannot continue debt collection, thereby allowing for restructuring of the business) tends to delay the resolution of financial distress and should be limited as in some other OECD countries, including Germany, Ireland and the United Kingdom. Finally, to encourage capital injections required to facilitate the reorganisation of firms, international best practice suggests that new financing should have priority over unsecured creditors (Adalet McGowan et al., 2017).

### **Addressing skill shortages**

Labour market tensions and recruitment difficulties can undermine capital spending and impact investment decisions, especially for international companies. With Estonia's populating ageing, its working-age population is declining. Moreover, labour shortages have already materialised, in particular in managerial, specialised education, legal professional, health care and ICT (Information and Communication Technology) (EU Skills Panorama, 2014). Businesses' difficulty to recruit an adequate skilled workforce is one of the main barriers for long-term investment (see Figure 8).

### **Make the labour market more inclusive and attractive**

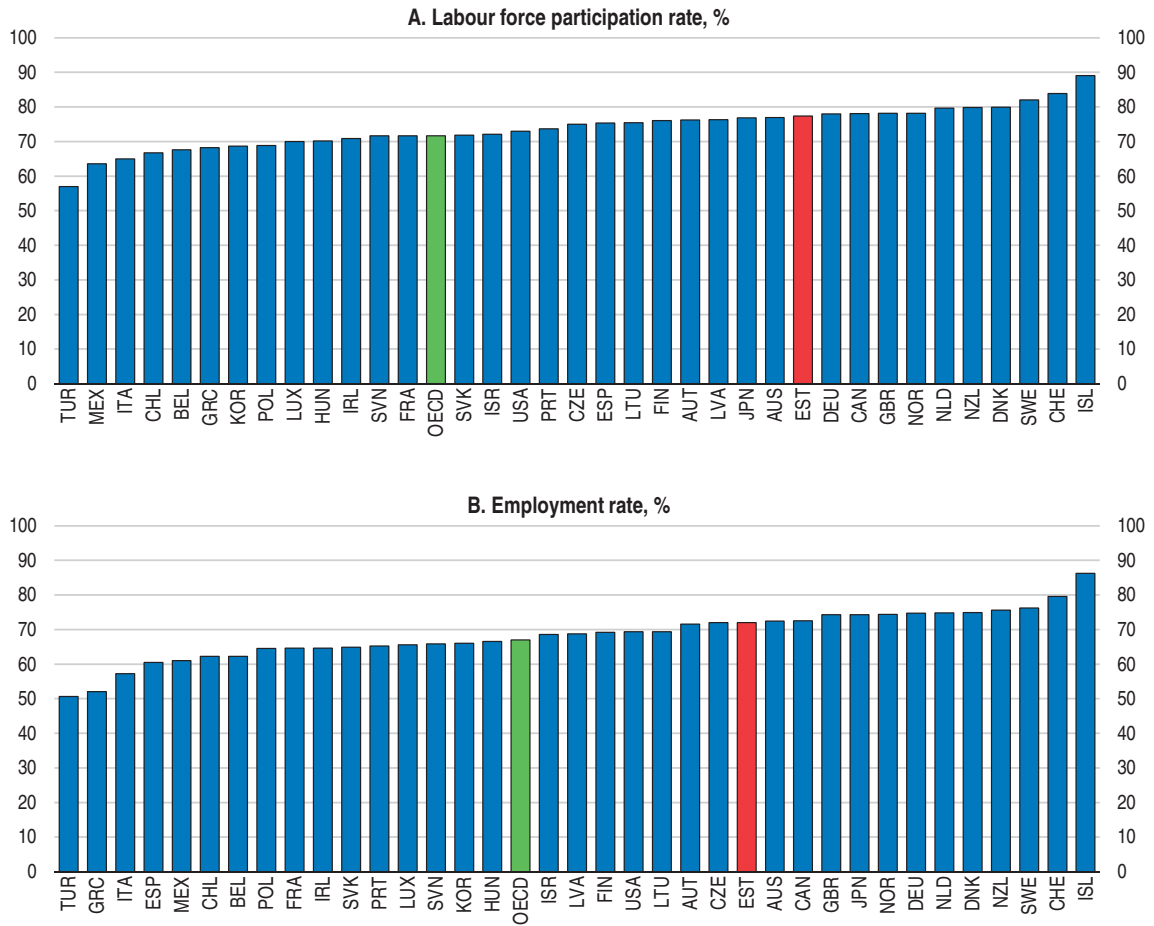
Estonia already has high participation and employment rates (Figure 24), but there are exploitable avenues to improve labour market performance, including reducing the gender participation gap. Combining reform of parental leave with better provision of childcare services would foster participation and upskilling of young mothers. Current efforts to rehabilitate individuals with partial ability to work and to reduce early retirement go in the right direction but are unlikely to have a major impact on employment or the integration of the disabled, given employer reluctance to offer jobs to those with reduced work capacity (National Audit Office, 2017).

Migration could also help to address skill shortages; it is also a means of knowledge transfer and of creating business links to foreign markets. Emigration has been significant in the past, but return migration rose in 2015/2016, reflecting at least in part deterioration of economic prospects in Finland and Russia and Estonia's strong labour market. Still, immigration from non-EU countries is low (Figure 25). Excluding returning Estonians, only 2 800 immigrants (0.23% of the population and half of total migratory flows) arrived annually during 2005-13. Under a third of these were labour migrants, and only a quarter of the adult immigrants had higher education (National Audit Office, 2015).

Estonia's selective immigration policy, oriented to attracting the high-skilled, has had only limited success so far. It is complex and failed to attract the skilled workers needed on the labour market (Praxis, 2014; National Audit Office, 2015). Conditions to obtain a work permit are strict and vary between permit types. An annual quota on migration of 0.1% of the resident population is in place and was reached in 2007 and 2016. Since 2016 the authorities have relaxed entry conditions for sectors affected by labour shortages, such as ICT. Also, the wage threshold for work permits has been reduced, which is welcome. The policy framework could be streamlined by consolidating the various immigration programmes and raising the quota. Making job search easier for international students, particularly non-EU ones, could capitalise on young foreigners already present in the country. They could be granted a longer period in which to find a job after completing their studies. Better labour market integration of family migrants could also reduce labour shortages and should be supported by reinforcing activation and training programmes for third-country nationals.

Figure 24. **Employment and participation rates are high**

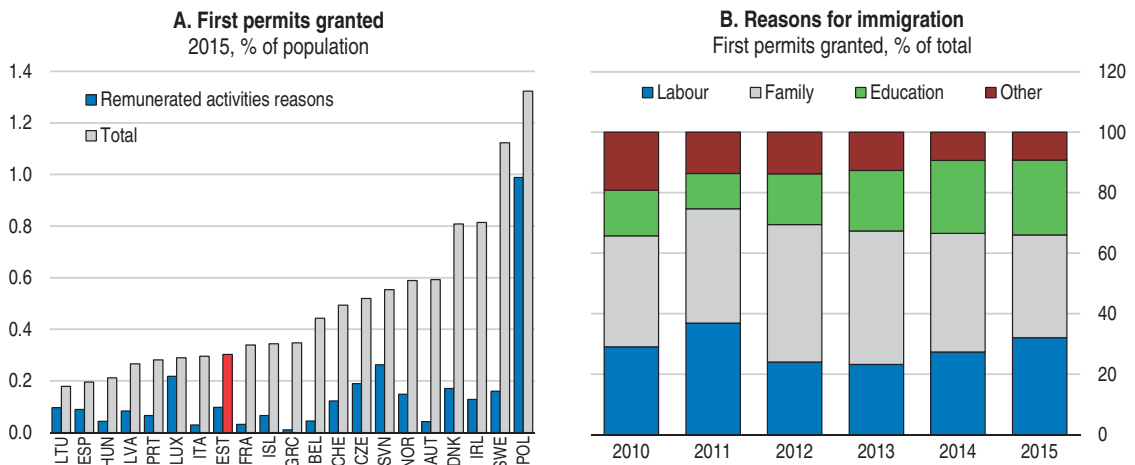
Percentage of population aged 15-64, 2016



Source: OECD Employment Outlook 2017.

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Figure 25. **Labour migration is modest**



Source: Eurostat, Demography and migration database.

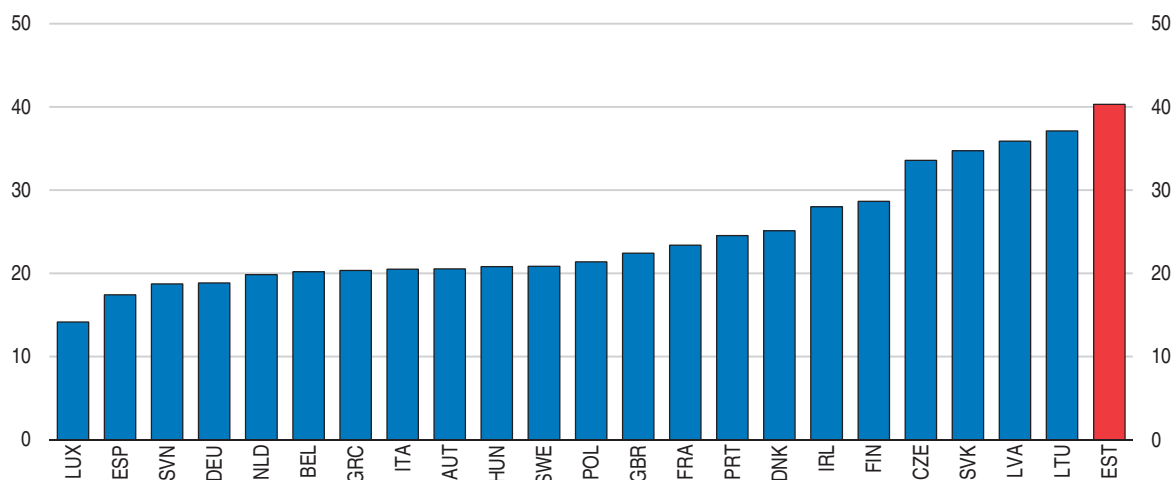
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## Skills


The rapid transformation of skills requirements has complicated the task of aligning educational content with labour market needs. An increasing share of jobs requires high education levels and competencies to adapt to a changing environment. New OECD estimates show that differences in countries' capacity to endow the population with the right mix of skills can lead to significant differences in exports. Estonians' high educational attainment and appropriate skill mix make them well equipped to benefit from increased trade and openness (OECD, 2017c). Tertiary educational attainment in Estonia is among the highest in the OECD, and adults rank highly in information-processing skills. Nevertheless, they lag behind in the capacity to solve problems in a technology-rich environment (Ministry of Education and Research, 2015). Around 30% of adults do not have a professional qualification. Moreover, in 2014, around 40% of employees reported insufficient skills for their job at the time of hiring, one of the highest shares in the European Union (Figure 26).

Figure 26. **A large share of Estonians feels under-skilled**

The share of employees reporting lower skill level than required for their jobs at the time of hiring, 2014



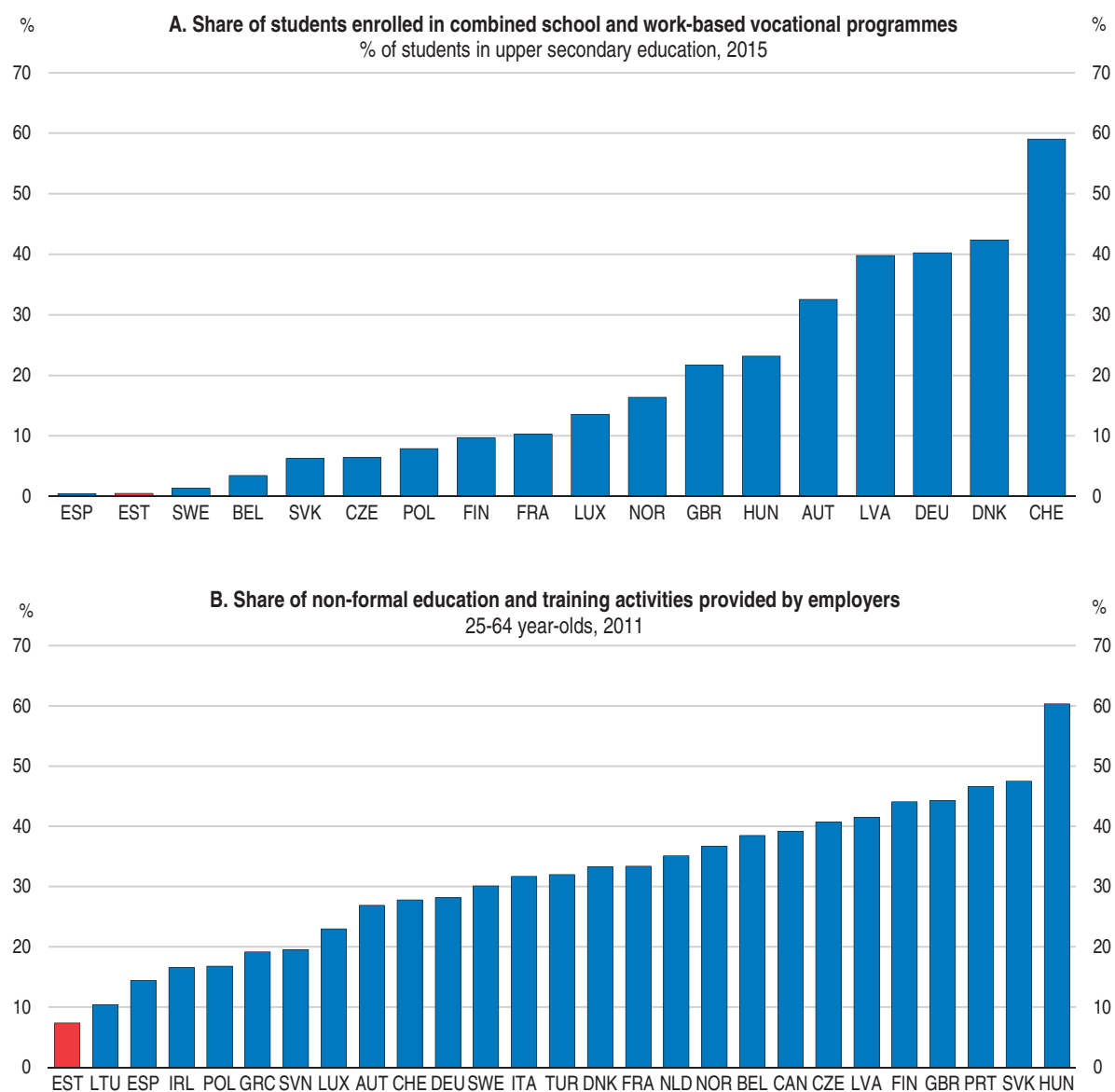
Source: CEDEFOP (2016), "Skills Panorama – The EU workforce: under-skilled at hiring", <http://skillspanorama.cedefop.europa.eu>.

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Providing information on labour market opportunities and better career guidance are central to helping students choose courses that will lead to good jobs. Such information and guidance can also be used to fight gender stereotypes as women tend to be under-represented in scientific areas, including computer science and engineering, where needs are large (see Figure 18, Panel B). Only 11% of Estonians have used career guidance, around half the EU average (European Union, 2014). The qualification and career counselling system has been strengthened in recent years, notably with the provision of guidance at the secondary school level, the publication of performance indicators and the establishment of guidance centres. The Unemployment Insurance Fund has also started to provide career advice to those in work, but the take-up has been relatively low. A skill forecasting system (OSKA) that analyses changes in skills requirements and labour market developments has been implemented, but it remains to be seen how it is used by educational institutions. While these are welcome steps, more needs to be done in basic education, where the quality of counselling services remains poor (Santiago et al., 2016).

On-the-job training and apprenticeships can provide valuable skills in line with labour market needs and thus improve matching quality on the labour market. Currently, students have too few opportunities to engage in apprenticeship, and businesses are little involved in the provision of adult education (Figure 27). A programme launched in 2015 aims to multiply the number of apprenticeship places by more than five by 2020 and cut the dropout rate to 25% (from 42% now). Finding companies offering training opportunities is the main obstacle to these objectives, as a large share of Estonian firms are small with limited resources. Developing a system in which several firms jointly offer apprenticeship training, as

Figure 27. **Businesses are little involved in the provision of vocational education and training**



Note: At the upper secondary level (ISCED 3) and the non-tertiary post-secondary level (ISCED 4), “vocational & prevocational programmes” are divided into “school-based programmes” and “combined school and work-based programmes” on the basis of the amount of training that is provided in school as opposed to training in the work place. Programmes are classified as combined school- and work-based if less than 75% of the curriculum is presented in the school environment..

Source: Eurostat, Education and training database; *Education at a Glance 2016: OECD Indicators*.

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recommended in the 2015 *Economic Survey* (OECD, 2015; Table 7), might mitigate this problem. To encourage business participation, Vocational Education Training (VET) institutions may allocate to companies up to 50% of the funds paid to the school for the study place. Consideration should also be given to reducing employers' social security contributions or to introducing a lower minimum wage for apprentices.

A rapidly changing environment and longer working lives make lifelong learning central to maintaining workers' competences and ensuring they can find and keep good jobs. The Lifelong Learning Strategy 2020 set ambitious targets for adult education, including a 20% participation rate by 2020 (vs. 16% in 2016) and a reduction in the share of adults without professional qualification to 25%. A vast range of training opportunities are provided, including continuous training and retraining measures to prevent unemployment, introduced in 2017. Measures have already started to bear fruit, with a significant increase in participation in lifelong learning in 2016 (Figure 28, Panel A). To ensure the quality of training courses and their effectiveness in upskilling participants, monitoring of lifelong learning programmes should be reinforced by using *ex post* evaluation, including of labour market outcomes of participants. Also, the accreditation system should be extended to all training suppliers subsidised by the public sector.

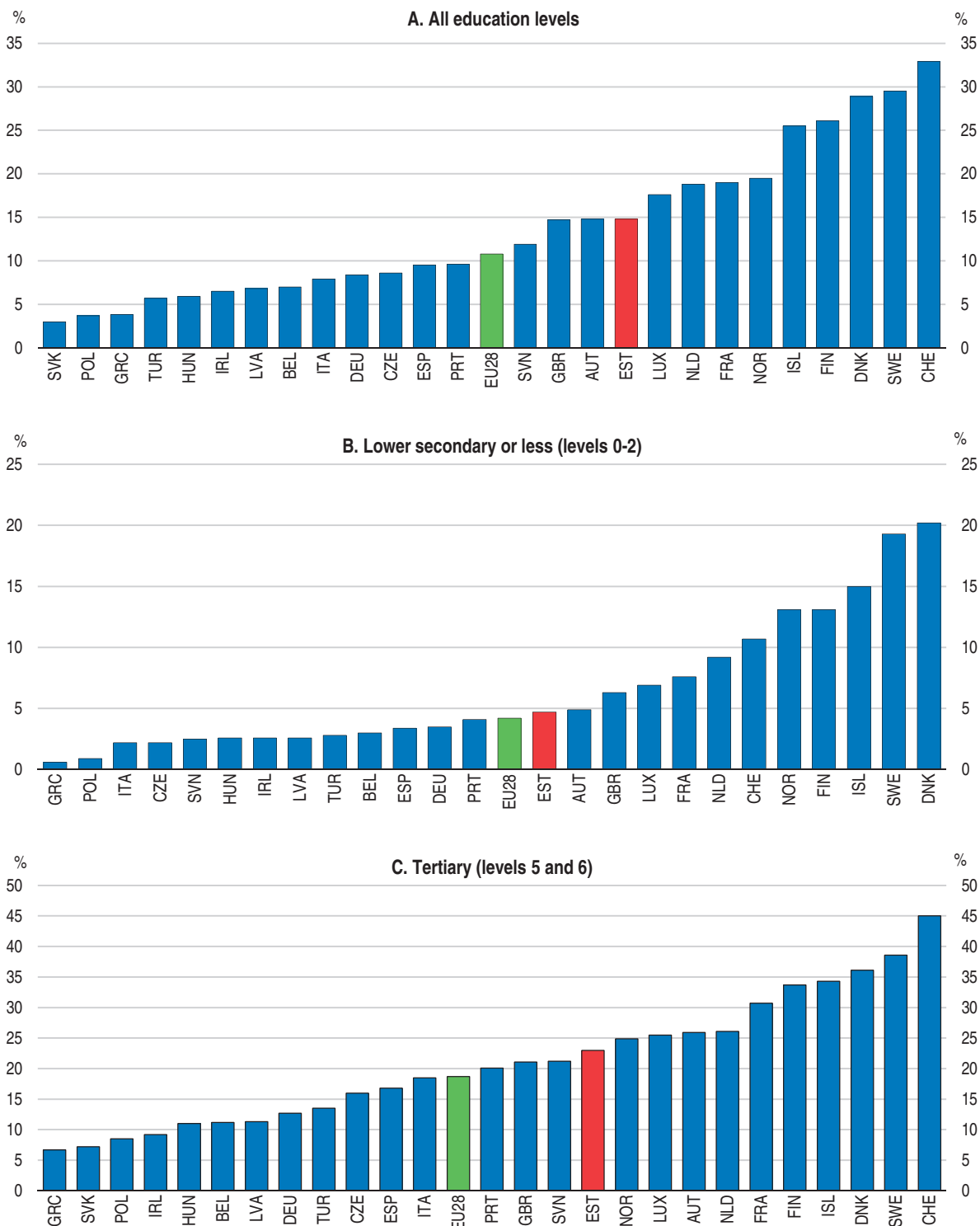
Training of low-skilled workers remains below average, and the take-up of measures targeted to this group is likely to be low (Figure 28, Panel B; Browne et al., 2017). To counter this, training vouchers should be provided to all low-educated workers; these could be directed towards training in core skills (ICT, language). In addition, programmes should be more targeted at small companies who are less likely to see the need for training of their workforce or to have a training plan (Kitching and Blackburn, 2002). An outreach mechanism targeting small-business managers should be developed to provide them with information and support in identifying appropriate training.

### **Expanding access to funding**

Access to funding has not been a major obstacle to investment in Estonia (see Figure 8). Nevertheless, economic literature shows that low competition in the financial system is likely to limit credit supply, in particular for young and/or small innovative firms. The Estonian banking sector is dominated by two systemically important, foreign-owned banks (Swedbank and SEB), and the relatively high mark-ups in the sector – measured by the difference between output prices and marginal costs, relative to prices – reflect weak competition (Cuestas et al., 2017). Market power magnifies credit constraints for SMEs (Carbo-Valverde et al., 2009; Love and Peria, 2012). In addition, foreign-owned banks and large banks with complex and hierarchical structures tend to engage less in relationship lending compared to domestic banks, thereby lending less to SMEs and start-ups (Stein, 2002; Havrylchuk, 2012; Havrylchuk et al., 2012).

Entry of new players into Estonia's financial system is difficult, given the absence of a proper credit information-sharing scheme. Negative information on borrowers (non-repayment and/or loan restructuring) is available from private credit bureaus, but the major banks do not share positive information (loan conditions and repayment), resulting in incomplete information for lenders. A well-designed credit information-sharing scheme should be established: one covering all borrowers (firms and individuals), collecting both positive and negative credit information. Such an institution would lower the cost of intermediation and improve access to credit by reducing adverse selection bias (Brown et al., 2009). Access to such data could also assist the Financial Supervision Authority in assessing the health of banks.

**Figure 28. Participation in lifelong learning is good but low educated lag behind**  
 Per cent of the population aged 25 to 64 participating in education and training (last 4 weeks), 2016



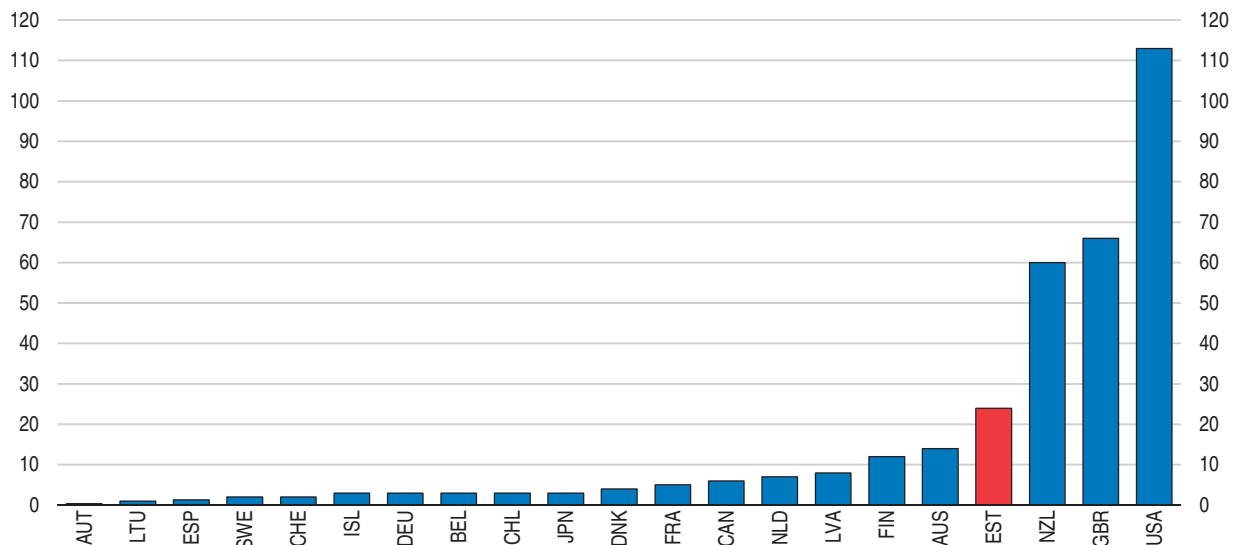
Source: Eurostat, Main indicators on lifelong learning database.

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As proposed in the 2015 *Economic Survey*, the financial industry could be diversified by granting banking licences to savings and loans associations (Table 7). Efforts to develop venture capital, including the creation of a fund of funds are welcome. Another avenue is to remove barriers to the development of alternative funding modes, such as peer-to-peer lending and equity-based crowdfunding (i.e. Fintech). Estonia is a host to some of the most innovative Fintech start-ups and a frontrunner in alternative finance, but the scale of finance channelled remains limited (Figure 29).


Figure 29. **Estonia is a frontrunner in alternative finance but amounts are low**

Volumes, in euros per capita, 2015



Note: Alternative finance includes peer-to-peer lending, equity crowdfunding, donation and reward crowdfunding, as well as balance sheet lending.

Source: Cambridge Centre for Alternative Finance.

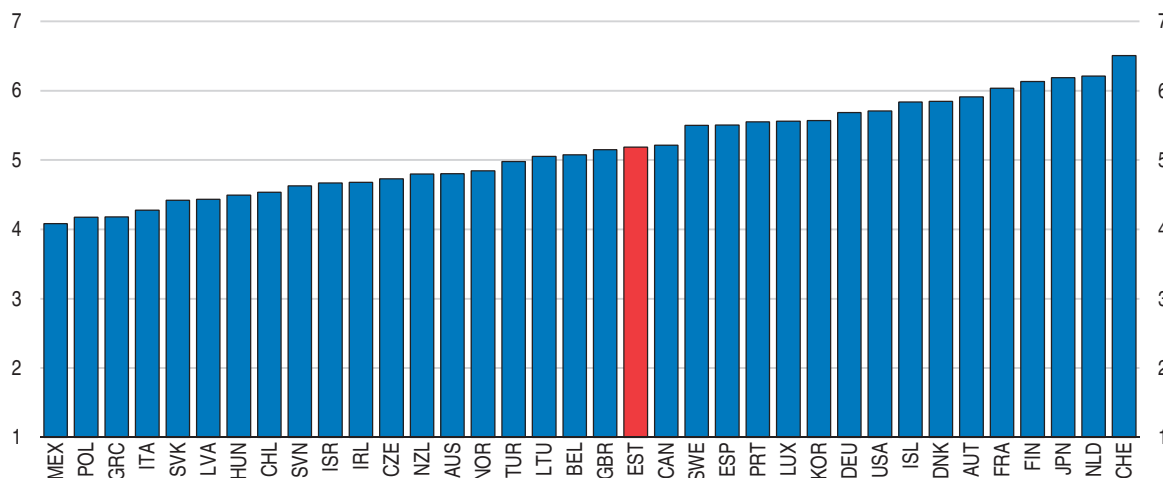
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Establishing conditions for the development of Fintech could increase credit supply for risky projects and offer new business opportunities to Estonian ICT companies. To do so, a level playing field should be established between traditional and alternative sources of credit in terms of access to information, regulation and taxation. Consumer protection of Fintech users is weak and should be reinforced to build confidence in these new funding alternatives. Licencing and transparency requirements for Fintech platforms should be introduced. The platforms should be required to have resolution plans in place to ensure that repayments continue to be collected in case of bankruptcy. Furthermore, the taxation of investment via Fintech platforms should be harmonised with the taxation of bond and equity securities by allowing investors to deduct their losses from their income tax base.

### **Building high-quality infrastructure**

High-quality infrastructure is a key factor underpinning the success of firms, in particular those operating in international markets. Infrastructure in Estonia has been upgraded significantly over recent years, benefiting from large amounts of public investment. The World Economic Forum Global Competitiveness Index shows that the quality of infrastructure is now perceived as higher than in other CEE countries (Figure 30).

**Figure 30. The quality of infrastructure is average**  
Quality of overall infrastructure score, from 1 (lowest score) to 7 (highest score), 2016-17



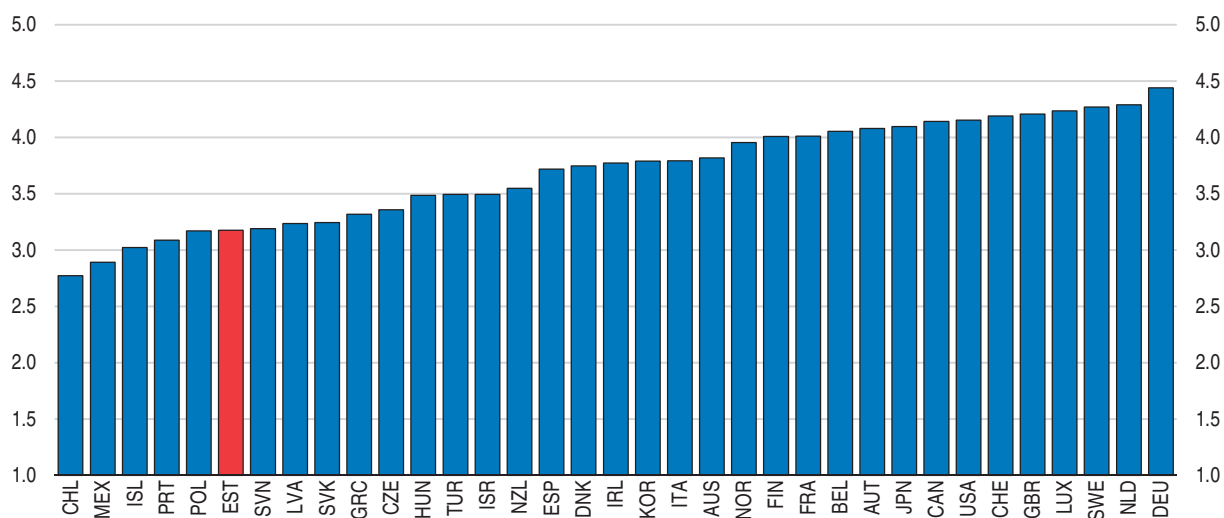
Note: The score is based on the assessment of business leaders operating in the country to the question: how do you assess the general state of infrastructure (e.g. transport, communications and energy) in your country? [1 = extremely underdeveloped – among the worst in the world; 7 = extensive and efficient – among the best in the world].

Source: World Economic Forum Global Competitiveness Index dataset.

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Some bottlenecks remain in logistics infrastructure, which partly reflects the lack of interoperability with European railways and of intermodal terminals for combined transport (Figure 31; Hilmola and Henttu, 2015). The construction of the Rail Baltica corridor to connect Estonia with the European Core Network by 2030 provides an opportunity to partly address this issue and enhance logistics competitiveness.

**Figure 31. The quality of logistics infrastructure is poor**  
Quality of logistics infrastructure score, from 1 (lowest score) to 5 (highest score), 2016-17



Source: World Bank, Logistics Performance Index database 2016 (LPI).

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Satisfaction with the quality of roads is well below the levels seen in Western European countries, and the Road Administration estimates that 30% of roads are in bad or very bad condition (EBRD, 2016). Estonia's achievements in improving its road safety record



have slowed in recent years. The lack of adequate maintenance activities partly explains these outcomes. The need for increased maintenance – predicted to grow by around 13% by 2020 – has to translate into adequate budgetary provisions to ensure high service standards.

Changing trade flows have resulted in overcapacity in the railway sector. Meanwhile, the ongoing networks expansion of recent years increases the pressure to maintain and upgrade infrastructure assets over their entire lifetime. To enhance Estonia's ability to maintain quality and safety standards and reduce the risk of underfunding over the next few years, it will be crucial to increase revenues drawn from user fees. Otherwise, additional budget funding will have to be allocated to management and maintenance.

The government announced a large investment plan for 2018-20 (a total of 1.3% of GDP, see Box 1). Returns on infrastructure investment are expected to be higher in catching-up countries like Estonia where the initial stock of capital is relatively low (Fournier, 2016). To ensure those returns materialise, the quality of project selection is of paramount importance, and a coherent framework to assess the value-for-money and socio-economic impacts of planned investment (on regional development, environment and safety) should be established.

In Estonia, different methodologies guide decision-making, and cost-benefit analyses (CBA) are not compulsory for all large-scale projects. All substantial infrastructure investment (such as the planned project to double road capacity between Tallinn and Tartu) should be subject to CBA using a uniform methodology, while the quality of CBA and the precision of forecasting – which has recently come into question (Praxis, 2017) – should be improved, preferably using a specialised body as argued above.

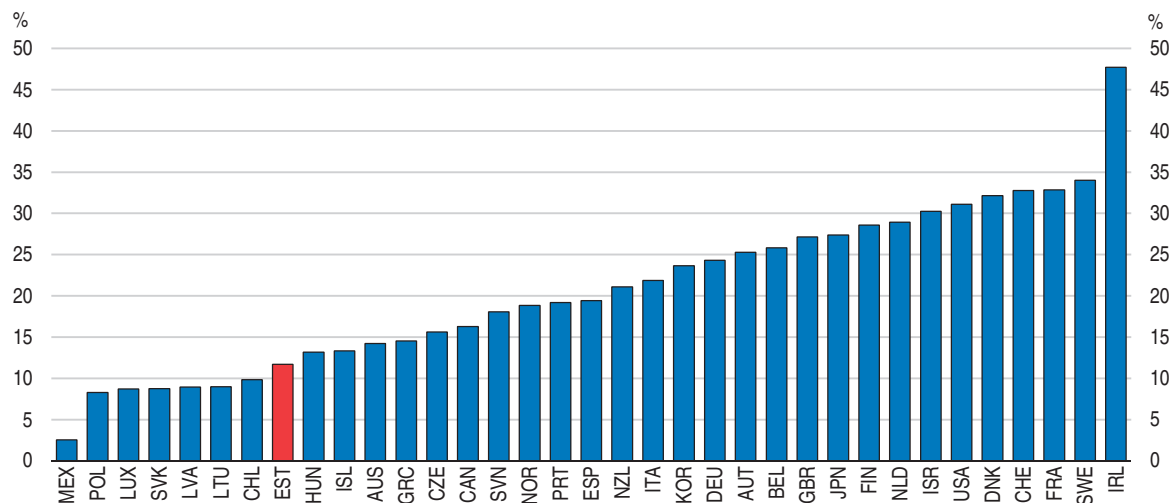
### ***Strengthening diffusion of knowledge and raising innovative capacities***

As in many other countries, a considerable productivity divide exists between Estonian export-oriented firms and those servicing the domestic economy (Masso and Vahter, 2015). Analysis of Estonian firm-level data shows that past productivity improvements can be attributed to a strong catch-up by firms with initially below-average performance, but there is still a long way to go (IMF, 2017). Estonian average productivity expressed as value added per hour worked is around 56% that of the euro-area countries and half the average of the upper half of OECD countries.

Estonia lags behind in terms of investment in knowledge-based capital, which partly explains why the share of innovative firms has been relatively low (Figures 32 and 33). Despite a fast uptake of digital technology by the public sector and high ranking in internet use, access to high speed internet and development of broad band networks is still below international standards, as is the use of ICT by Estonian firms (Figure 34). The main policy challenge is to ensure the transfer of knowledge and spill-over of high productivity from export-oriented firms to the rest of the economy, and to encourage the application of research and innovation in the business sector as a whole.

Estonia has some high-ranking academic research. In nine disciplines, such as molecular biology and genetics, plant and animal science, the University of Tartu belongs to the top 1% of the world's universities and research institutions by citations. However, in the business sector, innovation activity is limited to only a few enterprises (some of which are publicly owned), and, more importantly for knowledge diffusion, strong links with academia are rare. A number of tools have been put in place to bring about academic and business

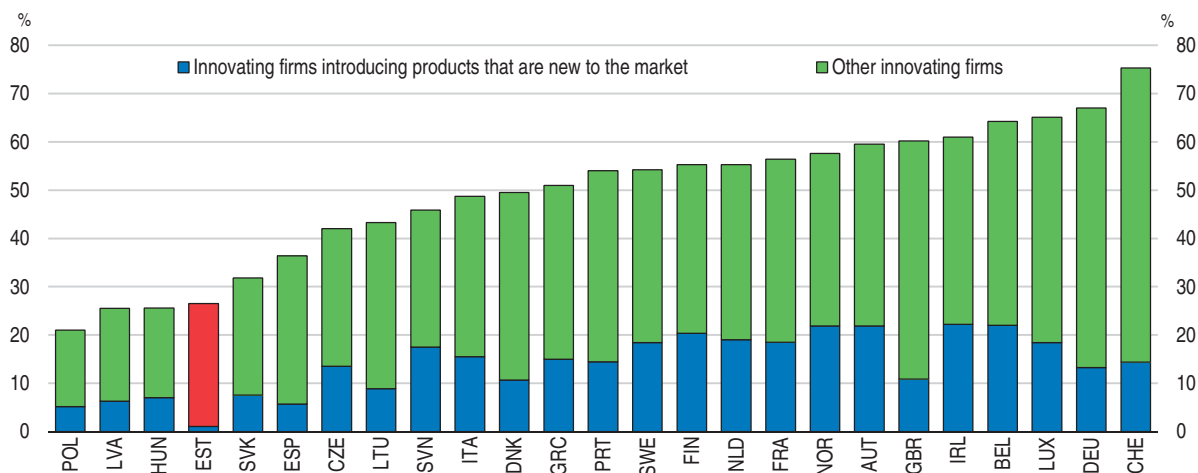
**Figure 32. Investment in intangible capital is well below OECD standards**  
Investment in intellectual property products as a percentage of nominal non-residential investment, 2015 or latest available year



Source: OECD National Accounts Database.

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**Figure 33. Innovation capacity is low**  
Share of innovating firms in all firms surveyed, 2012-14



Note: International comparability may be limited due to differences in innovation survey methodologies and country-specific response patterns.

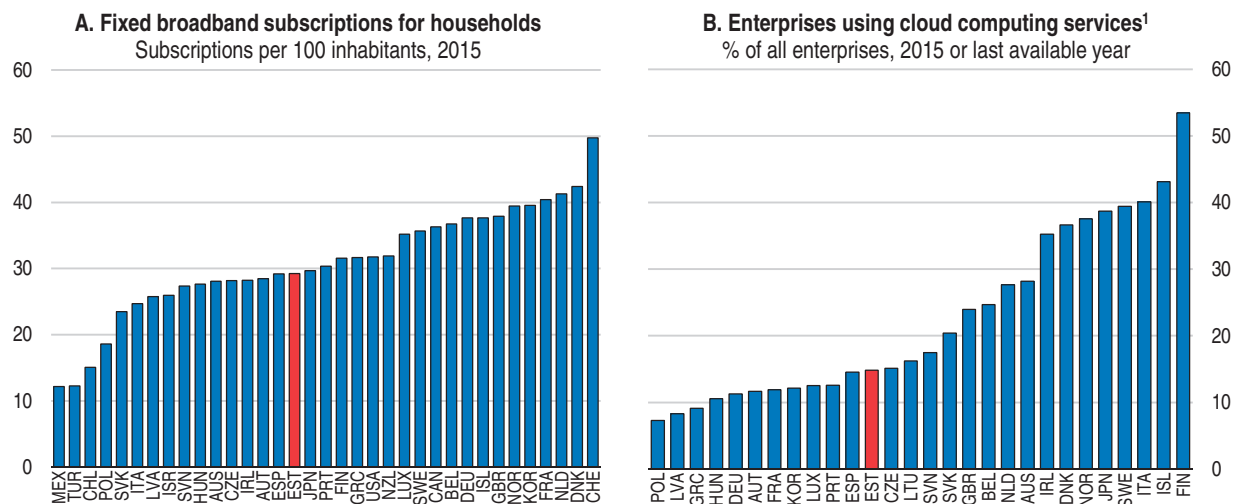
Source: Eurostat (2016), Community Innovation Survey (CIS) 2014.

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co-operation, including innovation vouchers (a scheme for applied research and product development between research institutions and businesses) and 12 publically subsidised clusters (i.e. concentrations of firms and higher education and research institutions) in 5 industries. The impact has been limited so far, probably because of excessive dispersion of resources.


The policy framework is driven by supply-side measures, with relatively little input from, or ownership by, the business community. Business representatives are not involved enough in the design of innovation policy, in particular at early stages. Regular feedback on

Figure 34. Fixed broadband penetration and ICT use could improve



1. Cloud computing refers to ICT services used over the Internet as a set of computing resources to access software, computing power, storage capacity and so on.

Source: OECD Broadband Database; OECD ICT Database.

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policy instruments is organized via committees in which businesses are represented, but remains weak. Scope for changes once measures are approved should be made more flexible. A new industrial policy green paper that focuses on digitalisation of traditional industries has been initiated by the business community. This is welcome and it will be important to maintain the link with the business community while designing concrete policy measures to implement it.

Innovation policy places a growing emphasis on demand-side policies in OECD countries (OECD, 2011). While international best practices have not yet been identified, measures such as the US or Australian small business innovation research programmes can serve as an inspiration, not least because of the relatively small size of Estonian companies. Well-designed public procurement can also serve as a tool: it has been a key determinant in the emergence of a number of high-technology sectors in the past (e.g. internet, GPS, etc.), and the Estonian public sector is digitally advanced in a number of areas. A programme to help the public administration design more innovation-friendly public procurement is in place, but its scope has remained limited so far. The measure is quite recent; it is thus too early to evaluate its reach.

Local stakeholders point to a gap between business and academic research areas: public R&D spending is concentrated on different areas to those of the major private-sector innovators (Karo et al., 2014). Public financing for R&D in electronics, forestry, food, mechatronics, automation and many other similar fields that would correspond to the leading export sectors has consistently lagged behind. The highest overlap between public and business R&D focus is currently in ICT-related domains (e.g. programming), stimulated by academic-business R&D co-operation but undermined by a lack of university graduates. Moreover, the existing evaluation system for academic staff is seen as too restrictive to allow for meaningful participation in the private sector. When allocating public funds to R&D institutions, giving more weight to co-operation with the private sector could help. It is welcome that the weight of business contracts in the funding formula for public research institutions will be increased as of September 2017.

Table 7. **Past recommendations for improving business conditions**

Main recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
To strengthen knowledge transfers to domestic firms, promote applied research, and improve collaboration with domestic and foreign institutions conducting applied research.	The government has established an ADAPTER platform for universities' joint business co-operation and doctoral studies in co-ordination with businesses. Development vouchers incentivising co-operation between research institutions and businesses have been introduced in 2015. The criteria for basic financing of Estonian research institutes were modified to stimulate business co-operation. A pilot programme for innovative public procurement is being implemented.
Implement plans to expand access to European transport networks and energy supply facilities. Improve inter-modal transport connections.	The third Estonian-Latvian power connection needed for the full integration in the Continental European Market and the Rail Baltica project have progressed.
Shorten corporate insolvency procedures and improve their efficiency, for example by increasing the use of experts.	No action taken.
To remove barriers to SME lending, consider making it easier for savings and loan associations to apply for a banking licence.	No action taken.
Introduce a tax-free lower minimum wage for apprenticeships, improve financial support for students in vocational education and strengthen collaboration of businesses and schools at the local level.	No action taken.
Increase the financial incentives of employers to invest in lifelong learning. Target public co-financing towards low educated and older workers, as well as towards employees in SMEs.	Since 2017, training opportunities are extended to employees at risk of displacement. The main target group are workers with no professional education or whose skills are outdated, whose knowledge of Estonian is poor and who are older than 50.

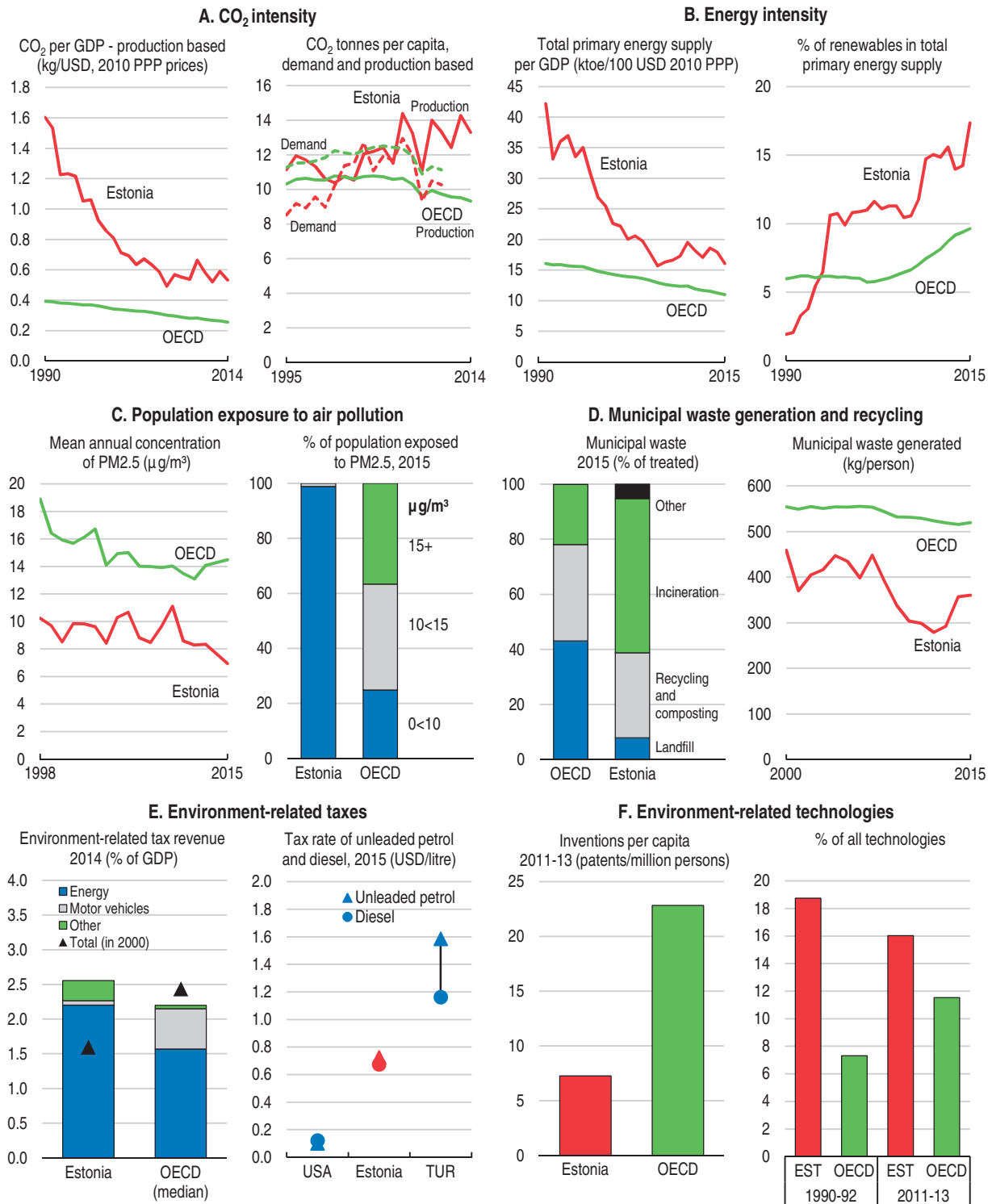
## Transitioning to a greener economy

OECD well-being indicators point to a relatively high quality of the environment (i.e. for air and water, see Figure 2). Nevertheless, Estonia is the most carbon-intensive economy and the third most energy-intensive in the OECD, with pockets of very high pollution (Figure 35). These environmental challenges are dominated by the consequences of exploitation of oil shale, whose combustion emits a lot of CO<sub>2</sub> as well as other pollutants. Some 75% of total primary energy supply in Estonia is produced from this source, mainly for electricity and shale oil. The process generates nearly 98% of total hazardous waste, of which Estonia has 35 times more per capita than the EU average. Worryingly, waste disposal creates air and water pollution, with measurable consequences for the health of the local population (OECD, 2017a).

Although large investments have been made to decrease direct emissions from oil shale-based energy production, the transition to a greener energy mix, planned in the National Development Plan of the Energy Sector until 2030, is at risk. Too few initiatives have been taken to reduce or price negative externalities generated by the oil shale industry and to support alternative energy sources over the past five years. Indeed, recent reform of the extraction tax to take account of the actual value of the resource extracted has even reduced the impact of taxation. The recently published *OECD Environmental Performance Review* contains a large number of important recommendations to accelerate the transition to a greener economy (OECD, 2017a). Because price incentives may not be sufficient in the case of oil shale, taxes should be supplemented with direct targets to substantially reduce air and water pollution. In addition, incentives for land restoration are weak, calling for stricter requirements on operating companies.

The transition to a greener economy is likely to have large socio-economic impacts. Oil shale mining is a key employer in the north-east of the country, where unemployment and poverty rates are well above the national average. It is also an important source of revenue for the government, both from taxation and from 100% public ownership of the dominant

Figure 35. Green growth indicators



Source: OECD (2017), Green Growth Indicators (database).

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energy company. A number of measures have already been introduced to anticipate structural changes in this industry, including study allowances and wage subsidies for redundant workers. Efforts to expand learning opportunities, including language training targeted on the Russian-speaking minority living in the region and to encourage labour mobility are very welcome. The social safety net should also be reinforced to ensure those who cannot find a job stay out of poverty.

Expanding the use of energy from renewable sources is part of Estonia's strategy for green energy supply. The share of renewables is close to the OECD average for total energy supply, primarily through the use of biomass for heating. A recent innovation has been the opening of a combined district heat and power station which uses domestic waste as a fuel, helping to keep the amount of waste sent to landfill very low (see Figure 35). By contrast, the use of renewable energy sources in the electricity sector is among the lowest in the OECD, as 80% of electricity is produced from oil shale. An auctioning system is being set up to kick-start investment in renewable energy sources. Developing electricity production from renewables, as planned in the National Development Plan of the Energy Sector until 2030, will also require adapting to intermittent energy supply and subsequent investment to ensure reliability of electricity provision at a reasonable cost.

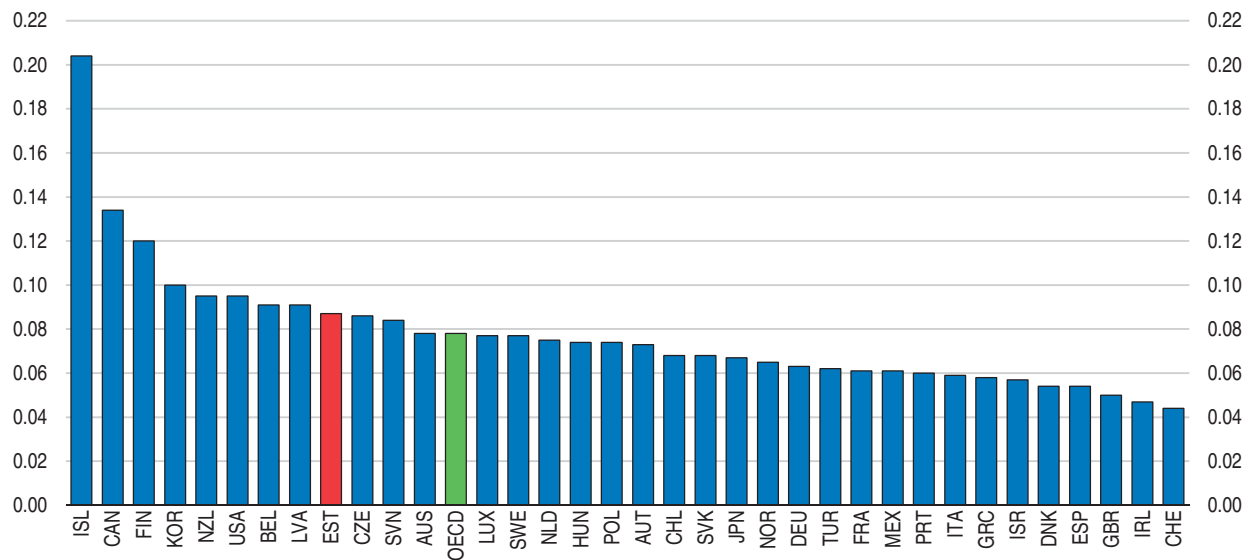
Estonia ranks ninth in the OECD in terms of domestic energy consumption per unit of GDP (Figure 36), partly due to relatively inefficient use of energy in some parts of the economy, such as in the housing sector and some district heating systems. As stressed in previous *Surveys*, ensuring that energy is used efficiently would have large positive economic and environmental impacts (OECD, 2015 and Table 8). Measures accelerating renovation of buildings and supporting resource-efficient investment in the corporate sector are welcome but would be more cost efficient if better targeted and if existing market instruments (such as Energy Performance Contracting) were used. Renovating and improving the efficiency of older parts of the district heating network is another priority; broadening the use of heat-use metering could also improve incentives for greater efficiency, given that unit heat costs in some systems are twice as high as in others.

Over the past decade, the strategy to reduce environmental externalities has included increasing use of environment-related taxation. Total revenue from environmental taxation was around 2.6% of GDP in 2014, somewhat above the median OECD country, but below its peak in 2009-10. Despite considerable increases in the tax rates on some pollutants since 2000, many taxes or charges remain below the environmental costs they generate, with a limited effect on pollution levels. For some water pollutants, however, there are strong marginal incentives: polluters pay a reduced rate if their discharges remain below permitted limits but may be liable to non-compliance fees of up to 100 times the basic rate if they exceed those limits.


Some rationalisation of these varying incentives, including by ensuring that where taxes are applied the related pollution is measured effectively, could help to improve cost-effectiveness and increase incentives to reduce pollution. To increase the efficacy of action on climate change, the effective cost of CO<sub>2</sub> emissions needs to be increased almost across the board as it is low in most sectors of the economy, including the oil shale industry (OECD, 2016c). Sectors where CO<sub>2</sub> emissions are not priced at all should also be included in carbon pricing. A methodology to assess the external costs of all main forms of pollution is being developed by the Ministry of Environment with the welcome intent to align environmental taxes to the damages they generate. Changes to the tax system should be made in 2019.

**Figure 36. Energy consumption is high by international standards**

Total final consumption per unit of GDP, 2014, toe per thousand 2010 USD PPP



Source: IEA World Energy Statistics and Balances.

StatLink  <http://dx.doi.org/10.1787/888933581391>

Road transport is the only sector facing any substantial tax on CO<sub>2</sub> emissions (an excise tax on energy use). Estonia had a generous electric car-purchase subsidy scheme (around EUR 15 000 per car) which ended in 2015, and the government has encouraged the development of a charging network for electric cars. This has not prevented transport emissions from growing. Estonia is unusual among OECD countries in that it has no specific tax on car purchases, while the tax system subsidises provision of company cars. A road-charging system for heavy duty vehicles will be introduced in 2018. Estonia could go further to address the environmental damage from road transport by introducing a road-pricing system for all motor vehicles, phasing out subsidies for company cars and introducing a vehicle tax reflecting the environmental characteristics of each vehicle (fuel efficiency, carbon emission, air pollution). The latter could bring around 0.1% of GDP additional tax revenues (Ministry of Finance estimates).

**Table 8. Past recommendations for reducing CO<sub>2</sub> emissions and energy consumption**

Main recommendations from previous Surveys	Action taken since the 2015 Survey
Gradually align and raise tax rates on energy sources according to their CO <sub>2</sub> emission content.	Fuel excise rates have been increased by at least 10% both in 2016 and 2017.
Strengthen incentives for operators of heating networks to improve efficiency. Strengthen incentives to invest in energy efficiency of buildings.	The government plans to expand public subsidy schemes, including for the renovation of district heating systems.
Consider introducing a tax on the use and the registration of motor vehicles differentiated by air pollution and energy consumption characteristics.	The government plans to introduce time-based road charges for heavy duty vehicles whose rate would depend on the sum of the maximum mass of the truck and the trailer, the number of axles, as well as the vehicle's emissions class.

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## ANNEX

# Progress in structural reform

*This Annex reviews actions taken on recommendations from previous Surveys that are not covered in tables within the main body of the Assessment and Recommendations. Recommendations that are new in this Survey are listed at the end of the relevant chapter.*

## Improving the fiscal framework

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Augment the work on estimates of the structural balance. Publish more detailed information about the business cycle and the underlying fiscal position, reflecting associated uncertainties.	No action taken.
Align the tax assessment of land value more closely with the market value by regularly updating assessments and enlarging the tax base to include buildings.	No action taken.
Consider phasing out the tax deductibility of mortgages in the medium term to avoid further amplifying the cycles in the housing markets. Consider phasing out the loan guarantee programme to reduce distortions in housing investment.	The cap on deductible interest paid on housing loan was cut to EUR 300.

## Strengthening social protection

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Family support should be more oriented towards better reconciling the obligations from parenthood and labour force participation, including through better provision of childcare services.	The revised Preschool Child Care Institutions Act introduces more flexibility for the provision of childcare services. Waiting lists for childcare services are being reduced, and new childcare places are being financed by EU funds.
Reform disability pensions as planned, in particular, increase access to activation measures and strengthen the assessment of the capacity to work.	A reform of disability benefits, the Work Ability reform, is being implemented, strengthening the assessment of the capacity to work and tying the receipt of benefits to the obligation to participate in activation programmes.
Introduce accident and occupation illness insurance with experience-rated employer contribution rates.	No action taken.

## Improving the pension system

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
In the compulsory private pension system, reduce costs borne by workers, in particular marketing expenses. In the public pension system, phase out special occupational and sectoral pension regimes.	Management fees have been reduced to 1.1% following the introduction of a new regressive scale in 2015. From 2017 the limit of the unit redemption fee was lowered to 0.1% (from 1%).
Index the legal retirement age to changes in life expectancy once the retirement age of 65 years is fully phased in 2027. Improve incentives for continued work in the old-age pension system.	A pension reform, still under discussion, will tie retirement age to changes in life expectancy starting from 2028.
Consider a fundamental reform of the compulsory private pension system, along the lines of the Swedish system, including the introduction of a low-cost fund to which new contributors are assigned by default.	No action taken.
Improve disclosure of information on costs of the private pension system to the public in a standardised manner.	No action taken.
Remove limits on switching between pension funds. Abolish redemption fees.	The cut in the ceiling for unit redemption fee is likely to stimulate competition between pension funds by eliminating most of the switching costs. Also, from 2017, capital requirements of pension fund management companies were reduced to ease entry of newcomers.
Improve representation of contributors' interests in pension fund governance.	No action taken.

## Improving labour market performance

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Increase the effectiveness of activation programmes by allowing public procurement to take greater account of the quality of training courses, encouraging greater involvement of employers and targeting hiring subsidies to firms committed to net hiring.	No action taken.
Delay the face-to-face part of the Individual Action Plan to after 3 months for most newly unemployed. Meanwhile devote more resources to at-risk groups from the first month.	Spending on labour market policy, including for risk groups, has increased substantially.
Abolish the lump-sum minimum social tax.	No action taken.
Lower barriers for the integration of Russian speakers in the labour market for example by providing more help to prepare to pass exams required for Estonian citizenship.	No action taken.
Require both parents to take up parental leave in order for parents to qualify for the full leave entitlement. Identify and address barriers to female entrepreneurship. Consider requiring firms to identify and address pay inequalities between men and women.	An on-going reform of the parental leave system will increase the father-specific leave by one month. The Welfare Development Plan for 2016-23 sets targets to counter gender inequality, and policy measures including allowing the labour inspectorate to monitor the equality of pay and carry out audits on firms suspected of gender discrimination are under discussion.

## Making the education and training system more efficient

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Increase the permeability between different educational levels.	The School Network Programme includes the creation of state upper secondary schools, separated from basic schools, to offer equal opportunity for students to prepare for higher education.
Develop quality assurance for apprenticeship places and ensure that the time for instruction is sufficient relative to productive work.	At the end of 2015 a new ESF programme was initiated to improve the quality of apprenticeship studies and work-based learning.
Make lifelong learning more attractive for adults by ensuring that training leads to the acquisition of qualification and by providing information about the return from different programmes.	The providers of continuing education and training have an obligation to provide updated information on their activities (e.g. curricula, learning conditions and training providers) and to publish performance indicators.
Provide independent and professional career guidance at the end of lower secondary education, including short internships towards the end of compulsory school.	Youth guidance centres (called Pathfinder centres) were set up in all counties in 2014. For adults, the Estonian Unemployment Insurance Fund has expanded its career counselling services to all people of working or retirement age since 2015.

## Making health care more efficient

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Ensure quality of care, and consider developing a wider system of quality indicators, also through international collaboration on establishing benchmarks and specialised care.	36 quality indicators set up in collaboration with medical specialities are in place to analyse the overall situation and to compare health care providers.
Increase the role and importance of primary care by boosting the responsibilities of family doctors.	A network of primary health care centres is being developed in all Estonian regions, financed by EU funds.

## Enhancing public sector efficiency

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Reform local governments either by merging or requiring greater co-operation, also over a broad territorial area. Consider imposing minimum population requirements.	The on-going reform of local government is reducing the number of municipalities.
Strengthen the revenue-raising possibilities of local municipalities by giving them more autonomy over setting the land tax.	No action taken.
Consider tightening the equalisation scheme, for example by looking at real and normative costs set uniformly by the central government. Consider reviewing the existing earmarking and block grants to avoid overlaps.	No action taken.

## Raising productivity

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Contain the threats to competition emanating from public monopolies and local authority sectors.	No action taken.
Consider introducing tax incentives for R&D.	No action taken.
Raise efforts to monitor the effectiveness and efficiency of infrastructure spending.	No action taken.
Review the need for a specialised bankruptcy court.	No action taken.
Give the existing court the power to require the creditor to pay for experts, particularly in more intricate corporate cases.	No action taken.
Develop a more detailed set of economic and financial principles for judges to take account of deciding whether a debt restructuring plan for individuals should be approved or not.	No action taken.
Continue efforts to identify and remove entry barriers in services that hold back competition and growth, including in professional and transport services. Consider relaxing restrictions on land purchases by non-EU citizens with a permanent residence permit. Promote the use of English in the administration.	No action taken.
Enhance effectiveness of evaluation of innovation policies by incorporating monitoring and evaluation already at the design stage. Test individual instruments through pilot projects.	Evaluations have been taken into account in the design of measures to support innovation, and regular monitoring of recent policy initiatives (clusters, innovative procurement) is in place.
Promote international and applied management skills and enhance the teaching of skills to run a business at school.	The Entrepreneurship Programme (2016-2018) aims at developing entrepreneurial skills in general, vocational and higher education.
Extend the impact assessment of regulations to systematically capture implications for trade and investment.	The creation of an institution in charge of a regular assessment of productivity challenges and of monitoring policies in the field of competitiveness is being discussed.

## Green growth

Recommendations from previous <i>Surveys</i>	Action taken since the 2015 <i>Survey</i>
Strengthen policies to reduce energy and resource intensiveness through appropriate pricing and setting better incentives for energy-saving programmes.	A new resource efficiency measure focusing primarily on manufacturing industry has been introduced.
Continue efforts to process oil shale into lighter oil products instead of using it for electricity generation. Internalise all social and environmental costs of oil shale.	The “General Principles of Climate Policy until 2050” approved by the Parliament on 5th April, 2017 set the long-term target to reduce the emission of greenhouse gas emissions by 80% in comparison with the emission levels of 1990 by 2050.
Consider engaging more in local policy trials and experiments to promote energy efficiency through behaviourally informed policies.	No action taken.