OECD Economic Surveys
ESTONIA

MAY 2024

OECD

LAUNCH VERSION

OECD Economic Surveys: Estonia 2024

Please cite this publication as:
OECD (2024), *OECD Economic Surveys: Estonia 2024*, OECD Publishing, Paris, https://doi.org/10.1787/33e6beee-en.

ISBN 978-92-64-92027-9 (print)
ISBN 978-92-64-67819-4 (PDF)
ISBN 978-92-64-48042-1 (HTML)
ISBN 978-92-64-58803-5 (epub)

OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: Estonia
ISSN 2221-2299 (print)
ISSN 2221-2302 (online)

Photo credits: Cover © Kapi Ng/Shutterstock.com.

Corrigenda to OECD publications may be found on line at: www.oecd.org/about/publishing/corrigenda.htm.

Foreword

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

The economic situation and policies of Estonia were reviewed by the Committee on 20 February 2024. The draft report was then revised in light of the discussions and given final approval as the agreed report of the whole Committee on 2 April 2024.

The Secretariat's draft report was prepared for the Committee by Zuzana SMIDOVA and Srdan TATOMIR, under the supervision of Sebastian BARNES.

Statistical research assistance was provided by Lutécia DANIEL and editorial support was provided by Jean-Rémi BERTRAND.

The previous Survey of Estonia was issued in June 2022.

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

Table of contents

FIGURES

TABLES

BOXES

Follow OECD Publications on:


https://twitter.com/OECD


https://www.facebook.com/theOECD


https://www.linkedin.com/company/organisation-eco-cooperation-development-organisation-cooperation-developpement-eco/


https://www.youtube.com/user/OECDiLibrary


https://www.oecd.org/newsletters/

This book has...

StatLinks
A service that delivers Excel® files from the printed page!

Look for the StatLink at the bottom of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser or click on the link from the digital version.

BASIC STATISTICS OF ESTONIA, 2023[1]

(Numbers in parentheses refer to the OECD average)[2]

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million, 2022)	1.3		Population density per km² (2022)	31.6	(39.0)
Under 15 (%, 2022)	16.4	(17.2)	Life expectancy at birth (years, 2021)	76.7	(78.7)
Over 65 (%, 2022)	20.6	(18.0)	Men (2021)	72.4	(75.9)
International migrant stock (% of population, 2019)	14.4	(13.2)	Women (2021)	81.3	(81.7)
Latest 5-year average growth (%)	0.5	(0.4)	Latest general election	March 2023	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%, 2022)		
In current prices (billion USD)	40.7		Agriculture, forestry and fishing	2.9	(2.8)
In current prices (billion EUR)	37.7		Industry including construction	27.3	(28.0)
Latest 5-year average real growth (%)	1.3	(1.6)	Services	69.8	(69.2)
Per capita (thousand USD PPP, 2022)	47.9	(60.2)			
GENERAL GOVERNMENT (Per cent of GDP)					
Expenditure (OECD: 2022)	43.5	(43.0)	Gross financial debt (OECD: 2022)	28.6	(113.3)
Revenue (OECD: 2022)	40.1	(39.7)	Net financial debt (OECD: 2022)	-2.4	(67.5)
EXTERNAL ACCOUNTS					
Exchange rate (EUR per USD)	0.92		Main exports (% of total merchandise exports, 2022)		
PPP exchange rate (USA = 1)	0.57		Machinery and transport equipment	25.8	
In per cent of GDP			Mineral fuels, lubricants and related materials	18.4	
Exports of goods and services	78.6	(31.2)	Manufactured goods	14.4	
Imports of goods and services	77.9	(31.4)	Main imports (% of total merchandise imports, 2022)		
Current account balance	-2.5	(-0.0)	Machinery and transport equipment	26.2	
Net international investment position	-22.1		Mineral fuels, lubricants and related materials	18.9	
			Manufactured goods	14.6	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	62.2	(58.0)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	6.4	(4.8)
Men	67.2	(65.6)	Youth (aged 15-24, %)	17.2	(10.6)
Women	57.9	(50.8)	Long-term unemployed (1 year and over, %, 2022)	1.2	(1.2)
Participation rate (aged 15 and over, %)	66.5	(60.9)	Tertiary educational attainment (aged 25-64, %, 2022)	42.1	(40.7)
Average hours worked per year (2022)	1,770	(1,752)	Gross domestic expenditure on R&D (% of GDP, 2021)	1.8	(3.0)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2022)	3.7	(3.8)	CO_2 emissions from fuel combustion per capita (tonnes, 2022)	6.6	(7.8)
Renewables (%, 2022)	26.4	(12.0)	Water abstractions per capita (1 000 m³, 2022)	0.9	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2020)	0.0	(56.5)	Municipal waste per capita (tonnes, 2022)	0.4	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2021, OECD: latest available)	0.321	(0.316)	Education outcomes (PISA 2022 score)		
Relative poverty rate (%, 2021, OECD: 2020)	16.5	(11.8)	Reading	511	(476)
Median disposable household income (thousand USD PPP, 2021, OECD: 2020)	26.1	(26.6)	Mathematics	510	(472)
Public and private spending (% of GDP)			Science	526	(485)
Health care (2022)	6.9	(9.2)	Share of women in parliament (%, 2022)	25.7	(32.5)
Pensions (2019)	6.7	(9.5)	Net official development assistance (% of GNI, 2017)	0.2	(0.4)
Education (% of GNI, 2021)	4.8[3]	(4.4)			

[1] The year is indicated in parenthesis if it deviates from the year in the main title of this table. Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries. [2] Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries. [3] This indicator includes education expenditure at primary, primary to post-secondary non-tertiary and tertiary levels.

Source: Calculations based on data extracted from databases of the following organisations: OECD, International Energy Agency, International Labour Organisation.

Executive Summary

The economy has been contracting since 2022 but should start to recover this year

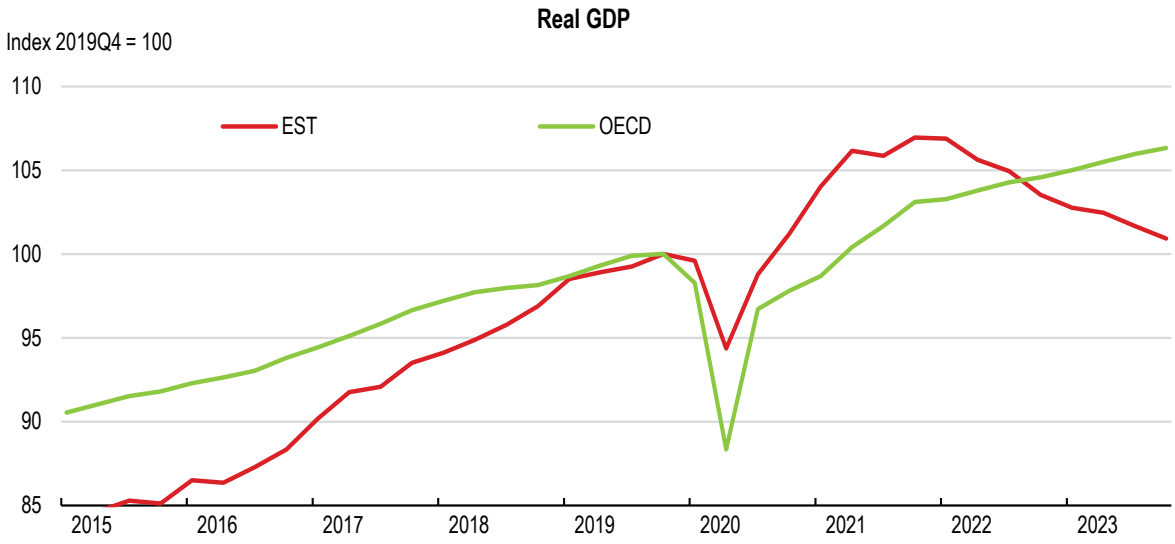
The Estonian economy has experienced a relatively severe downturn compared to other countries due to disruptions in trade, weaker export demand, high inflation and tight monetary conditions. With improvements in external demand, growth should start to recover this year.

Estonian living standards have doubled since 2000 and income convergence was steady prior to the pandemic, although per capita GDP and productivity remain below the OECD averages.

Following a strong recovery from the pandemic, the Estonian economy has contracted since the start of Russia's war of aggression against Ukraine in 2022 with GDP falling by 3.1% last year (Figure 1). Trade to the east was disrupted by the repercussions of the war, demand for Estonian exports in Nordic markets weakened, and household incomes were hit hard by the surge in inflation and a tightening of euro area monetary policy. Headline inflation has been falling rapidly in recent months, but core inflation has been more persistent. Exports have contracted, investment is below its pre-pandemic level and real consumption has been weak while households have drawn down pandemic savings and pension funds. A substantial negative output gap has opened up and the current account has swung into deficit. The labour market has held up well, but unemployment has started to rise. The financial system remains robust and non-performing loans are low, despite higher interest payments.

Growth will start to recover this year as prospects in Estonia's main trading partners improve (Table 1). Initially, the recovery will be modest as high interest rates continue to weigh on consumption. With weak growth, inflation should ease to 2.1% in 2025, although the increase in the VAT rate this year and in excise taxes have brought a temporary rise. Risks to the outlook are tilted to the downside. Weaker than anticipated developments in export markets, a stronger housing correction or worsening geopolitical developments could complicate the recovery.

Figure 1. The economy has experienced a relatively severe downturn



Source: OECD Economic Outlook Database.

StatLink https://stat.link/uv7l0h

Table 1. Macroeconomic projections

Annual average growth	2022	2023	2024	2025
Gross domestic product (GDP)	-0.5	-3.1	-0.4	2.6
Unemployment rate	5.6	6.4	7.0	6.8
HICP	19.4	9.1	3.9	2.1
Gen. gov. balance	-1	-3.4	-3.2	-3.7
Gen. gov. debt (Maastricht definition), % of GDP	18.5	19.6	23.2	27.3

Source: OECD Economic Outlook Database.

Fiscal policy needs to balance stabilisation of the economy with narrowing the deficit

There is a budget deficit, but government debt remains low as a share of GDP.

Fiscal policy has provided support during the pandemic and the global energy price surge. At 19.6% of GDP, the government debt to GDP ratio (Maastricht definition) is the lowest in the OECD and debt dynamics are favourable.

The authorities announced a consolidation strategy for 2024-27. Due to worse than expected economic outcomes, the automatic stabilisers should be allowed to work fully this year, while considerable EU funds available for investment and upskilling programmes should continue to be used. Future consolidation should strike a balance between rebuilding fiscal buffers and supporting economic activity.

Last year's budget deficit is estimated at 3.4% of GDP. Although a part of this reflects cyclical conditions, expenditures have increased in recent years due to higher spending on defence, healthcare and family benefits. Alongside the planned spending reviews, Estonia should review the tax system to explore avenues for increasing revenues in the medium term.

Given the low level of debt, the revised EU fiscal rules are likely to be less constraining on Estonia, which increases the onus on the domestic framework. The domestic budgetary rules have been strengthened, but the Fiscal Council has limited resources. The authorities should therefore strengthen the resources and analytical capacity of the Fiscal Council.

Given relatively high poverty, low-income households should be protected during the fiscal

adjustment. Estonia's overall tax burden is currently tilted towards labour and consumption.

Property taxation, considered economically efficient and the least damaging tax to long-run economic growth, remains very low. Long overdue revaluation of the land is being gradually phased in and will take place every four years. Municipalities should be given more autonomy to set the tax rates and, in the medium term, a recurrent tax on immovable property should be introduced.

The increase in long-term fiscal pressures due to ageing will be significant, although less than in many other countries. Other important spending needs include investment to accelerate the energy transition and to strengthen national security. To avoid additional fiscal pressures, the authorities need to develop a sustainable system to finance adequate retirements in the future and ensure adequate financing of better healthcare and long-term care.

Strengthening conditions for productivity growth

Convergence in living standards with more advanced countries had slowed before the pandemic. Reversing this trend requires strengthening productivity growth by boosting digitalisation, innovation, and skills across all firms.

Despite an innovative ICT sector and pioneering digitalisation in the public sector, traditional sectors of the economy lag in digital technologies. To improve innovation, Estonia should continue enhancing cooperation between the public and private sector given that R&D spending, at 1.8% of GDP in 2022, remains moderate.

Although Estonia has a well-educated population and a high employment rate, the labour market has been marked by a structural skills mismatch and labour shortages. Almost 40% of workers are over- or under-qualified and a lack of skilled staff has been a long-standing obstacle to investment. Management and organisational skills, key to the digital transition, appear to be a limiting factor and programmes for upskilling in managerial and digital skills should be broadened.

There is a narrowing but persistent gender pay gap. While women have high employment rates and parental leave can be taken by either parent, it is women who tend to take the leave and shoulder unpaid work in the household. Family policy spending is concentrated on cash benefits, while the offer of childcare services for children under 3 years old is limited. Childcare should be expanded and the 'father quota' in parental leave increased.

Estonia needs to strengthen understanding and management of the risks of corruption and money laundering in both the public and the private sectors.

Accelerating climate transition requires sustained policy action

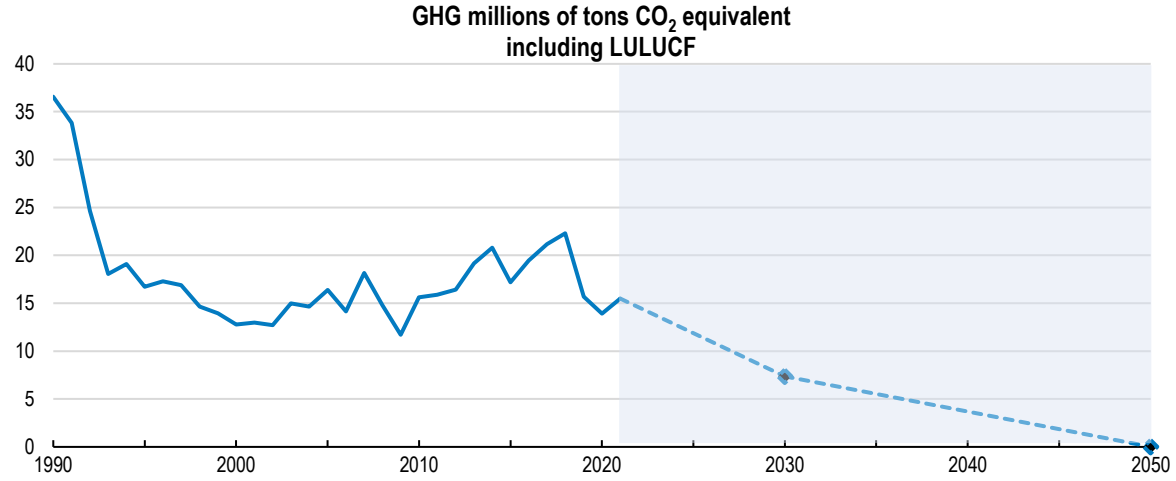
Due to continued reliance on domestic oil shale and increasing emissions in several sectors, the Estonian economy remains carbon intensive. To halve GHG emissions by 2030 compared to 2005, decarbonisation needs to accelerate.

The EU ETS prices a large share of emissions and is set to expand, but effective carbon prices remain below most OECD countries. The carbon content of fossil fuels is not consistently taxed. Excise duties on fossil fuels are increasing but, to drive faster decarbonisation, policies should be more ambitious.

Domestic oil shale, the most important source of energy, has contributed to energy security, but accounts for around a third of GHG emissions and should be phased out as planned. The expansion of wind and solar energy has progressed but needs to go further. To accommodate renewable energy and switch to European standards, the electricity grid needs an upgrade.

With increasing reliance on cars, transport emissions remain above their 2005 levels. The car fleet is large and polluting. The introduction of new motor vehicle taxation planned for 2025 is welcome. It could be accompanied by a scrappage scheme to support low-income drivers. With 40% of the population living in and around Tallinn, expansion and further decarbonisation of public transport is needed.

Figure 2. The reduction of GHG emissions needs to accelerate to achieve climate targets



Note: LULUCF stands for land use, land use change and forestry. The targets are Estonia's goals consistent with EU's Fit for 55 objectives.
Source: OECD Greenhouse Gas Emissions Database.

StatLink https://stat.link/i8ojw7

Health outcomes need to be improved

Health and life expectancy have improved significantly over the past two decades. However, years spent in good health are still among the lowest in the OECD. The health system is well designed but there are areas for improvement. Avoidable mortality is high as heart disease remains prevalent and cancer mortality rates elevated. Outcomes for older men and people on low incomes are particularly weak and there are significant regional disparities.

The financing of the health system is under pressure. Achieving further improvements in health outcomes against the background of an ageing population will likely require additional funding, while ensuring that spending remains efficient. Moreover, the authorities should consider sustainable funding models for long-term care, using a combination of public and private funding, while ensuring benefits are based on both income and needs.

Public health insurance covers the vast majority of the population, but there are gaps in coverage and high out-of-pocket expenses for medicines and dentistry. A universal system would close gaps in coverage at a relatively low cost. There is scope to reduce co-payments and better target support for low-income households for dental care and pharmaceuticals.

The health system provides good incentives for the use and allocation of resources. Nevertheless, there is room to improve treatment, increase the size of performance-linked payments, prioritise resources and exploit other efficiencies. Improving competition in the pharmaceutical market through easing restrictions on retail pharmacies and more use of joint medicine purchases by hospitals could lower medicine prices. Digitalisation is advanced but should be exploited further by making better use of existing information for monitoring and analytical purposes.

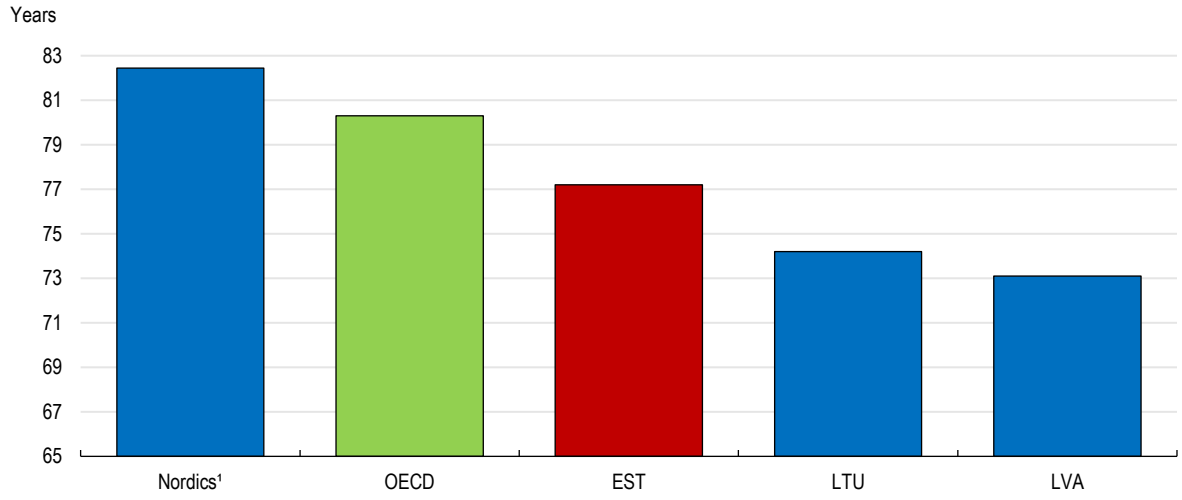
Persistent shortages of doctors and nurses complicate treatment and prevention and difficult working conditions contribute to staff shortages. Many doctors, notably in rural areas, are close to retirement. There is competition for medical staff from neighbouring countries, but few foreign medical staff work in Estonia. Wages of medical staff increased considerably in 2023. Measures to address shortages of doctors and nurses should ensure pay remains competitive, include more training, for instance by raising the number of places in nursing colleges and medical school, and improvements in working conditions.

To further improve health outcomes, broader cancer testing and improved awareness among the low income and less educated population is needed.

Given the prevalence of obesity and poor nutrition among some population groups, the proposed sugar tax should be implemented and taxes on unhealthy food introduced more generally.

Figure 3. Life expectancy lags behind OECD average

2021



1. Corresponds to the average of Denmark, Finland, Norway and Sweden.
Source: OECD.

StatLink https://stat.link/4ow8dc

MAIN FINDINGS	KEY RECOMMENDATIONS
Balancing macroeconomic stabilisation with a need to rebuild fiscal space	
The economy has experienced a relatively severe downturn. Fiscal consolidation is planned for 2024 and 2025.	In the short term, allow full operation of the automatic stabilisers. Ensure that future consolidation strikes a balance between rebuilding fiscal buffers and managing economic activity.
Spending on defence, social benefits and interest payments has increased, opening up a structural budget deficit.	Review the tax system to explore avenues for increasing revenues in the medium term, alongside the planned spending reviews.
Revenues from property taxation are low, as Estonia taxes only land, but valuations have been updated and will be phased in gradually. Municipalities are allowed to grant exemptions for primary residences.	Give municipalities more autonomy to set the land tax rates. In the medium term, introduce an annual tax on immovable property.
The government debt-to-GDP ratio remains low, but over the long-term ageing and other pressures need to be managed.	Develop a sustainable system to finance adequate retirements in the future.
Raising potential GDP by enhancing productivity growth	
R&D spending is moderate at 1.8 % of GDP. To strengthen public private cooperation, the authorities have established an applied centre to bring business and academia together.	Continue enhancing cooperation between the public and the private sector in terms of R&D.
Take up of digital technologies among traditional industries is low. Managerial quality is average and provision of digital training in business sector low.	Expand access to programmes for upskilling to improve digital and managerial skills.
The gender pay gap remains considerable. Spending on family policies is tilted to cash benefits, while there are gaps in childcare availability.	Extend the 'father quota' in parental leave and develop more childcare services.
Estonia faces risks of money laundering.	Strengthen understanding and management of the risks of corruption and money laundering in both the public and the private sectors.
Accelerating the green transition	
The EU ETS prices a large share of emissions and is set to expand, but effective carbon prices in other sectors are too low. The carbon content of fossil fuels is not consistently taxed.	Increase effective carbon prices by restoring taxes on fossil fuels to their pre-pandemic levels faster and by removing exemptions.
The electricity grid needs to be upgraded and expanded to connect and accommodate additional renewable wind and solar power.	Further increase investments to strengthen the electricity grid.
With much of the population living in the main urban areas, public transport can significantly reduce emissions. Most of the trains still run on diesel and only 10% of the rail network is electrified.	Increase the availability of public transport and accelerate decarbonisation of the rail and bus networks.
Towards better and more sustainable healthcare for all	
Revenues of the public health insurance fund are insufficient to maintain the current level of healthcare, meet rising costs due to ageing and improve health outcomes.	Raise revenues of the health insurance fund over time through higher contribution rates or general taxation while ensuring spending remains efficient.
Long-term care expenditure is low while demand for care is expected to increase.	Consider sustainable funding models for long-term care using a combination of public and private funding and ensure benefits are based on both income and needs.
Health insurance covers most but not all residents, leaving some exposed to healthcare risks.	Gradually extend health insurance coverage to all permanent residents.
Out-of-pocket spending remains high, causing financial difficulties for households, especially those on lower incomes.	Further reduce out-of-payment expenses in a targeted way for dental care and pharmaceuticals for low-income households and cap overall expenses.
Incentive payments make up a relatively small share of doctors' total incomes.	Increase the size of performance-linked payments.
There is a nationwide shortage of nurses and ageing of the workforce will lead to additional shortages in the future, including for doctors.	Raise the number of places in nursing colleges and at medical school.
Treatable mortality rates are high. Monitoring for risk factors and cancer screening participation is below OECD and EU averages.	Target cancer awareness programmes to less educated and low-income people. Broaden cancer testing to lung cancer.
More than half of all adults in Estonia were overweight, above the EU average. Among some population groups nutrition is poor.	Implement the proposed sugar tax and introduce taxes on unhealthy foods more generally.

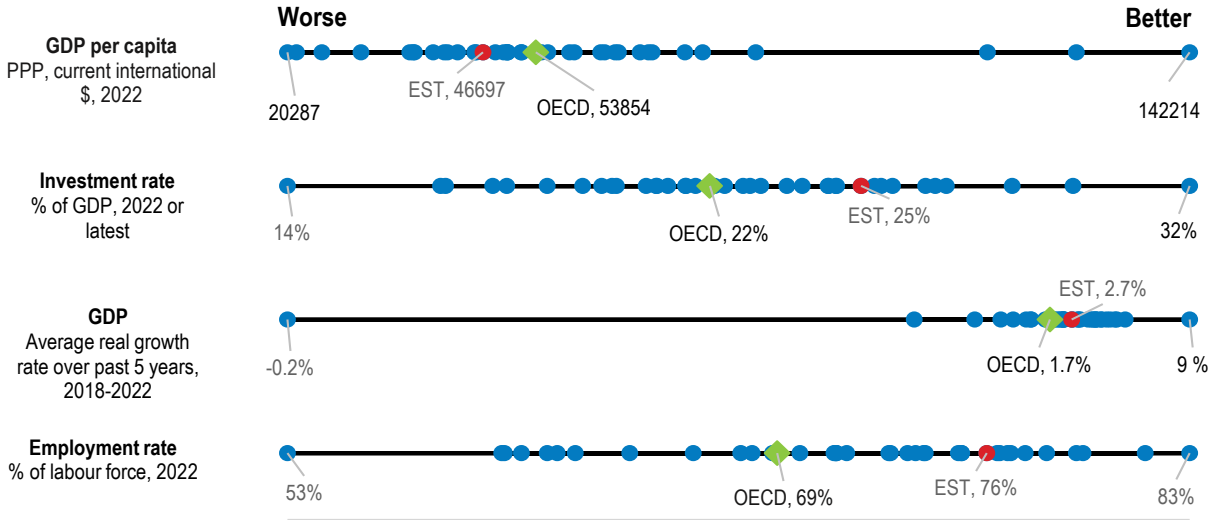
1. Returning to stronger, more inclusive and more sustainable growth

Estonian living standards have doubled since 2000 and income convergence was steady prior to the pandemic, although per capita GDP and productivity remain below the OECD average (Figure 1.1). Estonia enjoys solid institutions, a strong and credible fiscal policy, and a robust financial sector. The economy benefits from high educational outcomes, a flexible labour market and a business-friendly regulatory framework. It is a leader in e-government and has an innovative ICT sector. Nevertheless, relative poverty and regional disparities remain high, and a large gender pay gap persists.

GDP growth recovered strongly from the pandemic and surpassed pre-pandemic levels at the end of 2020, but the economy has experienced a relatively severe downturn as a result of substantial negative shocks: the surge in energy prices, disruptions in trade with Russia, tightening monetary conditions and a weakening in key Nordic export markets.

Estonia faces challenges to return to stronger, more inclusive and more sustainable growth. First, it needs to deliver an economic recovery and return to stronger growth and economic convergence, while ensuring more inclusive outcomes. Second, more progress needs to be made in advancing the climate transition as the economy remains one of the most carbon-intensive in Europe, relying heavily on domestic oil shale. Third, the ageing of the population will lead to a lower growth potential and fiscal pressures from providing adequate pensions and rising healthcare costs, as well as difficulties in replacing key healthcare workers as they retire.

Figure 1.1. Economic convergence has been strong



Source: OECD National Accounts and Economic Outlook Database.

StatLink https://stat.link/z3ilt6

A new coalition government came into office in April 2023, with many of the same partners as the out-going administration. The coalition agreement focuses on national security, the sustainability of the public finances, the green transition, reducing regional disparities and income inequalities, improving health outcomes and ensuring equity in education. The government has set out plans to increase defense spending, consolidate the public finances and is working on a wide-ranging climate law (Box 1.1).

Box 1.1. Key economic plans of the current government

The coalition agreement contains plans for several economic reforms:

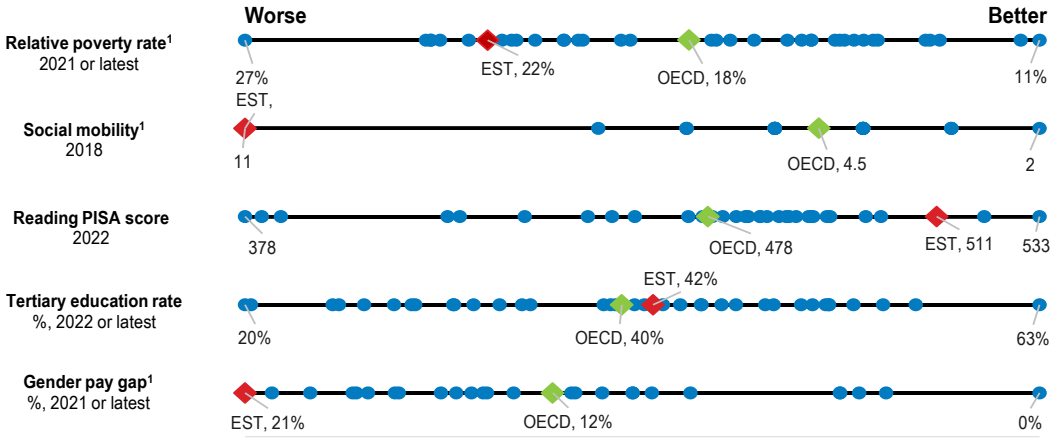
- Rebuilding fiscal buffers by decreasing general government deficit. To this end, both personal and corporate income rates, as well as VAT rate will be increased. At the same time, the basic tax allowance for personal income tax is being increased and the phase out of the allowance at average incomes is being ended.
- Reviewing expenditures and increasing budgetary transparency.
- Reforming education by raising the compulsory school age to 18 years, introducing a new funding model, and increasing student loans and the means-tested student allowance, while extending their repayment period.
- Undertaking a comprehensive review of family allowances, including the scope for more use of means-testing.
- Advancing a new legislative framework for achieving climate neutrality by 2050, the so-called Climate Law. Consolidation of several climate-related portfolios within a new Ministry of Climate and a creation of Climate Council, an expert body.
- Increasing teacher salaries to 120% of the average wage and the minimum wage to 50% of the average wage (42% of the average in 2024) in 2027.
- Further digitalising the public administration.
- Giving greater tax autonomy to municipalities.

Source: Estonian reform Party, Estonia 200 and Social Democrat Party coalition agreement for the years 2023-27.

Estonia needs to return to the path of steady convergence in productivity and living standards (Chapter 3). The shrinking of the working-age population will slow potential growth in the years ahead. Productivity growth had already decelerated before the pandemic and the labour market has been marked by a large skills mismatch. Adoption of digital technologies in traditional sectors of the economy lags behind, and managerial skills are average. R&D investments have been rising. Barriers to competition in professional services, such as notaries and lawyers, could be lowered. Substantial investments planned with EU structural funds can help to improve infrastructure and the productive capacity of the economy, as well as to develop attractiveness of rural areas.

More inclusive growth needs to be secured, alongside higher overall living standards. There are significant inequalities in terms of access to healthcare and pay at work (Figure 1.2). Moreover, socio-economic differences between metropolitan and rural areas are large. Poverty rates remain elevated compared to the European average and neighbouring Nordic countries, in particular among pensioners, the unemployed and people outside the labour force. The gender pay gap is one of the highest in the OECD. At the same time, the Estonian population has good education outcomes, and employment is high, which bodes well for addressing inequalities.

Figure 1.2. Growth can be more inclusive

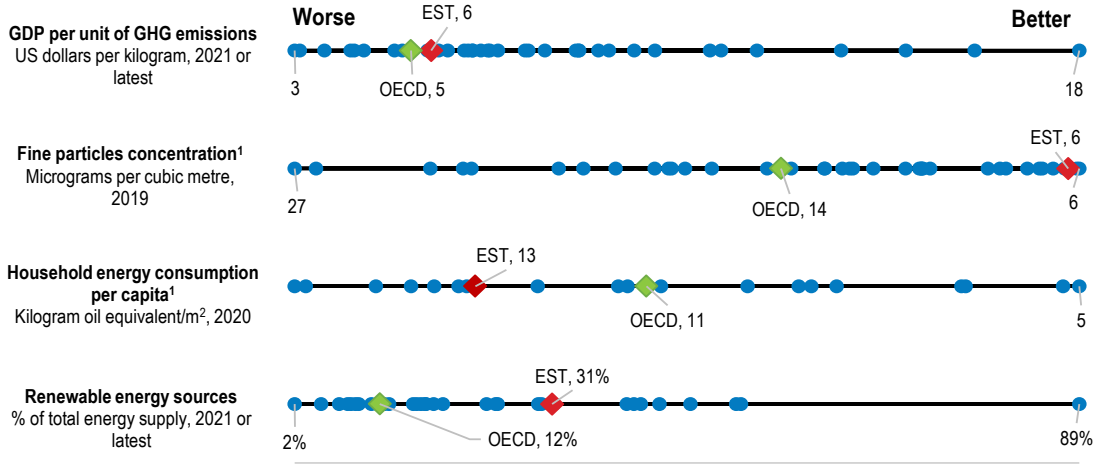


1. Indicator reversed so that the right side of the scale corresponds to a better outcome.
Source: EU SILC data and OECD Wellbeing indicators.

StatLink https://stat.link/kpfq5j

Despite progress in reducing greenhouse gas (GHG) emissions, the pace of decarbonisation needs to accelerate to meet national and international objectives (Chapter 4). Estonia remains a relatively carbon intensive economy due to continued reliance on domestic oil shale, despite renewables rising to around 30% of the energy mix (Figure 1.3). Emissions from forests and changing land use have increased recently and transport emissions have not fallen. The housing stock is old and energy intensive. Wind and solar energy have expanded, and administrative barriers have been removed to encourage further development. While the Estonian labour market is generally flexible, targeted support is currently focused only on Ida-Viru region, where the oil shale industry is concentrated.

Figure 1.3. The pace of emissions reductions should accelerate



1. Indicator reversed so that the right side of the scale corresponds to a better outcome.
Note: LULUCF stands for land use, land use change and forestry.
Source: OECD Greenhouse Gas Emissions database.

StatLink https://stat.link/nfwp59

Health outcomes are relatively weak, particularly for older men and those on lower incomes (Chapter 5). Life expectancy at birth rose by nearly eight years between 2000 and 2019, the largest increase in the OECD, to 77 years. Yet, it is still low by international standards and the number of years that people live in good health is among the lowest in the OECD. Heart disease is prevalent, while cancer mortality rates

are higher than in many other countries. The health system is well designed and provides good incentives for the use and allocation of resources. At 6.9% of GDP, health care spending remained below the OECD average of 9.3% GDP in 2022. Further financing pressures will come in the medium term, with the need to improve health outcomes and from population ageing, for instance in long-term care. Public insurance covers the vast majority of the population, but some people fall outside and out-of-pocket spending on medicines and dental care is high. Acute staff shortages among both doctors and nurses hold back treatment while access to healthcare varies considerably across regions.

An illustrative quantification of the impact of structural reforms recommended in this Survey on economic growth shows that by 2060, GDP per capita could be 5.8% higher than without reforms. Such reforms would entail increasing spending on active labour market policies by broadening their reach and lowering remaining barriers in services such as notaries, lawyers and pharmacies. There would be further gains in income levels from improving health outcomes of the population, freeing up those that provide informal care to work, improving the efficiency of R&D activities and bringing women more effectively into the labour market, but these reforms are not included in the estimates below as they are difficult to quantify in a consistent way.

Table 1.1. Illustrative quantification of the impact of structural reforms

	Impact on level of GDP per capita in 2060
Expansion of active labour market policies	2%
Lowering barriers in services	3.8%
Total impact of reforms	**5.8%**

Note: Based on estimates from Guillemette, Y. and J. Château (2023), "Long-Term Scenarios Update: Incorporating the Energy Transition."
Source: OECD.

Against this background, the four key messages from the Economic Survey are:

- Fiscal policy needs to carefully balance the need to rebuild fiscal buffers with ensuring macroeconomic stabilisation during the current downturn by allowing full operation of the automatic stabilisers in 2024. Long-term fiscal pressures will necessitate careful management of spending, additional sources of tax revenues and a sustainable strategy to fund adequate pensions.
- Steady productivity convergence will be key to raising living standards. While Estonia has many favourable policy settings and a dynamic ICT sector, performance in other sectors is less good. Efforts to boost skills and support innovation in firms, as well as to increase competition in professional services need to be strengthened. Improving childcare availability and tackling the gender gap would help to make the most of women's potential in the labour market.
- Further policy action is required to meet climate objectives, including upgrading the electricity grid, expanding public transport and carbon pricing. Targeted jobs support will need to be extended to other GHG-intensive sectors beyond the oil shale producing region.
- As the population ages and to further improve health outcomes, the funding of the public health insurance system should be put on a sustainable footing. The government should extend health insurance to all permanent residents and reduce out-of-pocket expenses for lower income households. Incentives should be adjusted to prioritise prevention and ensure adequate access to medical care across the country, while better working conditions and more training should help to ensure enough healthcare staff.

2. Macroeconomic developments and policy challenges

Zuzana Smidova

Economic growth recovered strongly from the pandemic, surpassing pre-pandemic levels at the end of 2020. Impacted by a surge in energy prices, disruptions in trade with Russia, tightening monetary conditions and a weakening in key Nordic markets, Estonia has experienced a relatively severe downturn and the near-term growth outlook is weak. Household incomes have been hit hard by high energy prices and, while the labour market has held up well, unemployment has started to rise. Inflation is easing, despite a VAT increase early this year. Fiscal policy supported the economy through the pandemic and the energy crisis but is becoming restrictive as the government aims to rebuild fiscal buffers. The financial sector is sound, although risks have increased. Despite low government debt as a share of GDP, there are fiscal pressures including from population ageing, health needs, higher defense spending and the climate transition.

Estonia's macroeconomic stability has long supported income convergence. Prudent monetary and fiscal policies have helped to ensure stability within the euro area and attracted considerable foreign direct investments, in sectors such as telecommunications and finance. While activity recovered strongly from the COVID-19 pandemic, the economy experienced the highest inflation rate of the euro area as energy prices rose sharply. The economy has gone through a relatively severe downturn due to the impact of high interest rates, substantial negative shocks from disruptions to trade with Russia and weaker demand for Estonian products from the Nordic countries. With inflation subsiding but an economic contraction underway, fiscal policy needs to carefully balance rebuilding of fiscal buffers with stabilisation of the economy and inclusiveness.

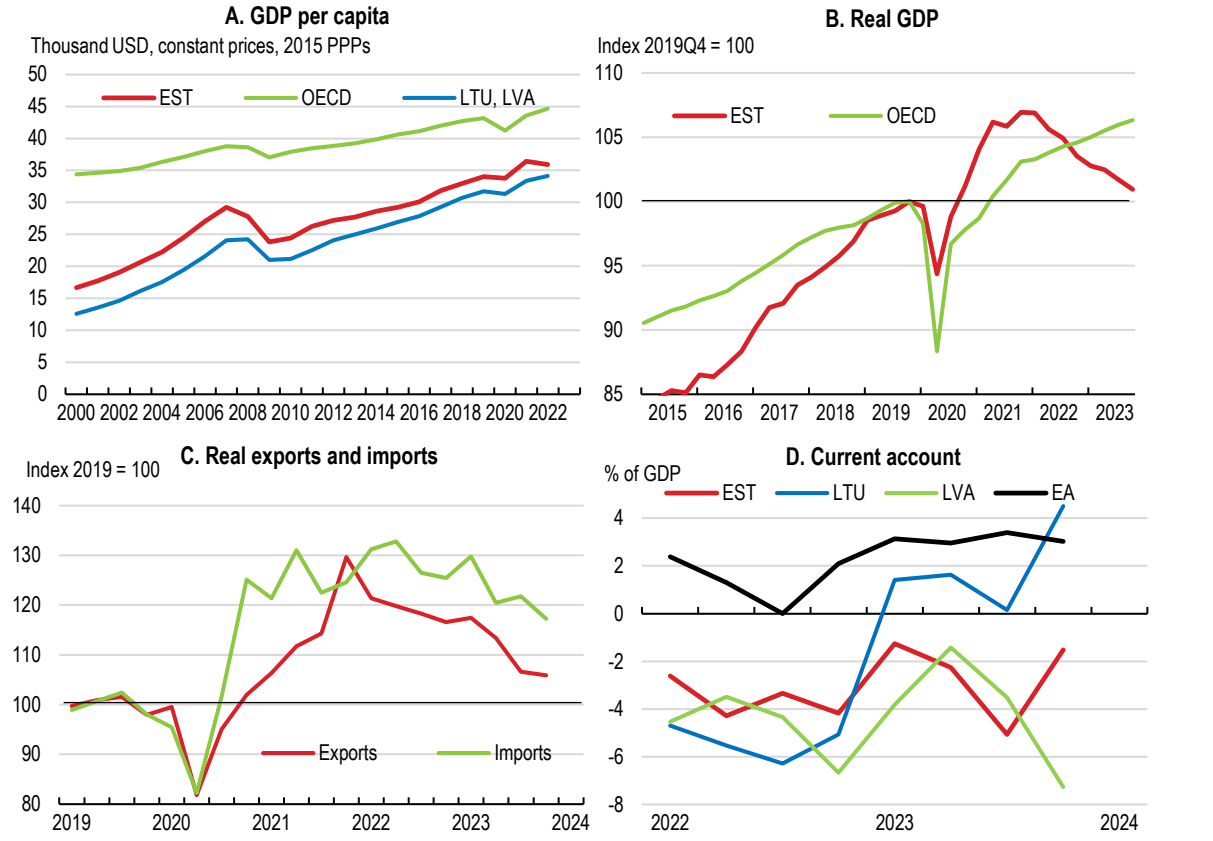
Inflation is subsiding, but the economy has contracted

The economy has contracted since the outbreak of war in Ukraine

With a sharp post-pandemic rebound, the Estonian economy surpassed its pre-pandemic output level at the end of 2020. Nevertheless, since the outbreak of war in Ukraine, it has been in a relatively severe downturn due to the impact of disruption of trade in the east, the surge in energy prices, the slowdown in Nordic export markets and the impact of tighter monetary policy (Figure 2.1). In the fourth quarter of last year output was 6% below its post-pandemic peak in the fourth quarter of 2021 and a sizeable negative output gap has opened up. Private consumption has been falling since the second quarter of 2022 in volume terms and is now 1 percent below its peak, even though it has been supported by a rundown of pandemic savings and private pension funds withdrawals. Increased uncertainty has been reflected in falling investment, although public investment has expanded and housing investment has held up. Business and consumer confidence remain subdued and other short-term indicators paint a mixed picture.

Although trade with Russia and Belarus represented only 10% of imports and 4% of exports in 2022, Russian imports were used in 40% of Estonian exports, notably in transport, wood, chemicals, manufacturing and fuel re-exports, leading to considerable disruptions in exporting industries since the start of the war (Eesti Pank, 2022a). Firm-level analysis of the initial impact of European sanctions on Russia showed a fall in the number of jobs, export volumes and an increase in prices among firms that imported from Russia, even before all embargo measures were fully phased in (Eesti Pank, 2022a). The slowdown in Nordic export markets for construction materials has added further strain as weakening of their housing markets spilled over to Estonian manufacturing exports, notably of construction services, wood and furniture. The current account balance has deteriorated sharply, from a pre-pandemic surplus of 2.3% of GDP in 2019 to a deficit of 3.6% in 2022 due to weaker exports and higher energy imports (Figure 2.1).

Figure 2.1. While the economy recovered from the pandemic, it has experienced a downturn



Source: OECD National accounts; OECD Analytical Database.

StatLink https://stat.link/edro2m

Headline inflation peaked at a high rate but is easing

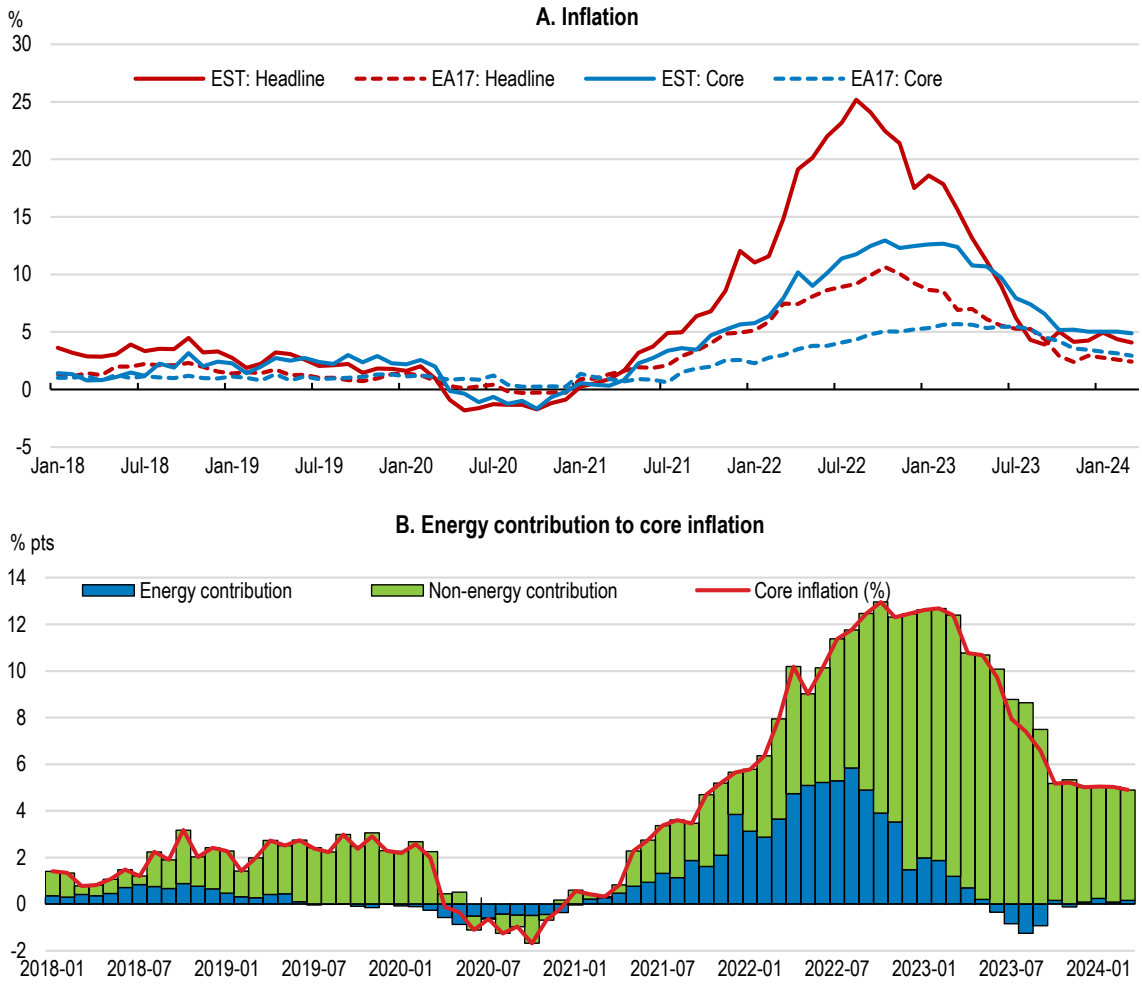
Following the surge in energy prices, headline inflation peaked at 25% in August 2022, the highest level in the euro area, but it has declined steadily to 4.1% in March this year. Inflation started to pick up in the pandemic recovery due to supply bottlenecks and strong demand as in many other OECD countries. Energy prices peaked at more than twice their pre-pandemic levels, while electricity prices remain more than three times higher. Energy and food have a larger share in the CPI basket than on average in the euro area (Eesti Pank, 2022). Estimates of the pass-through from global commodity prices and, in particular food, also show a more sizeable impact than in the euro area or Latvia and Lithuania (IMF, 2022).

Inflationary pressures have spilled over to the wider economy, although a significant part of the increase in core inflation appears to have originated in higher prices of energy and food. Core inflation peaked at 13% in October 2022 and fell to 4.9% in March this year. Input-output analysis suggest that a substantial share of the initial rise in core inflation can be explained by the higher cost of energy inputs feeding indirectly into the cost of other goods and services with food playing a similar role more recently (Figure 2.2). At the same time, price increases were higher than usual in other sectors. Higher inflation can partly be accounted for by higher unit profits, although much of this initially reflected higher profits in the energy sector (Eesti Pank, 2023a). A VAT rate increase of 2 percentage points at the beginning of 2024 has been passed to prices only partly so far, primarily affecting prices of food, alcohol and tobacco, with year-on-year inflation increasing in January compared to the previous month (Eesti Pank, 2024).

Labour costs have increased substantially and more rapidly than in past years, notably in the first half of 2023, on the back of increases in the minimum wage and public sector wages (teachers, healthcare, police

and the armed forces). In 2023, wages grew by around 11%, above the inflation rate of 9.1%, as they caught up with past inflation developments. The minimum wage, set by a collective agreement between the trade unions and employers, increased by 11% in 2023 and is set to rise by a further 13% this year. These increases could spill over into wider wage and price pressures. However, private sector wage growth appears more muted, especially in sectors such as manufacturing and construction directly exposed to the weak external environment (Eesti Pank, 2023d). The current weak state of the economy and low level of unionisation increase the likelihood that inflation will return to normal rates.

Figure 2.2. Both headline and core inflation reached very high rates but are declining



Source: OECD Consumer prices indices (CPIs) database.

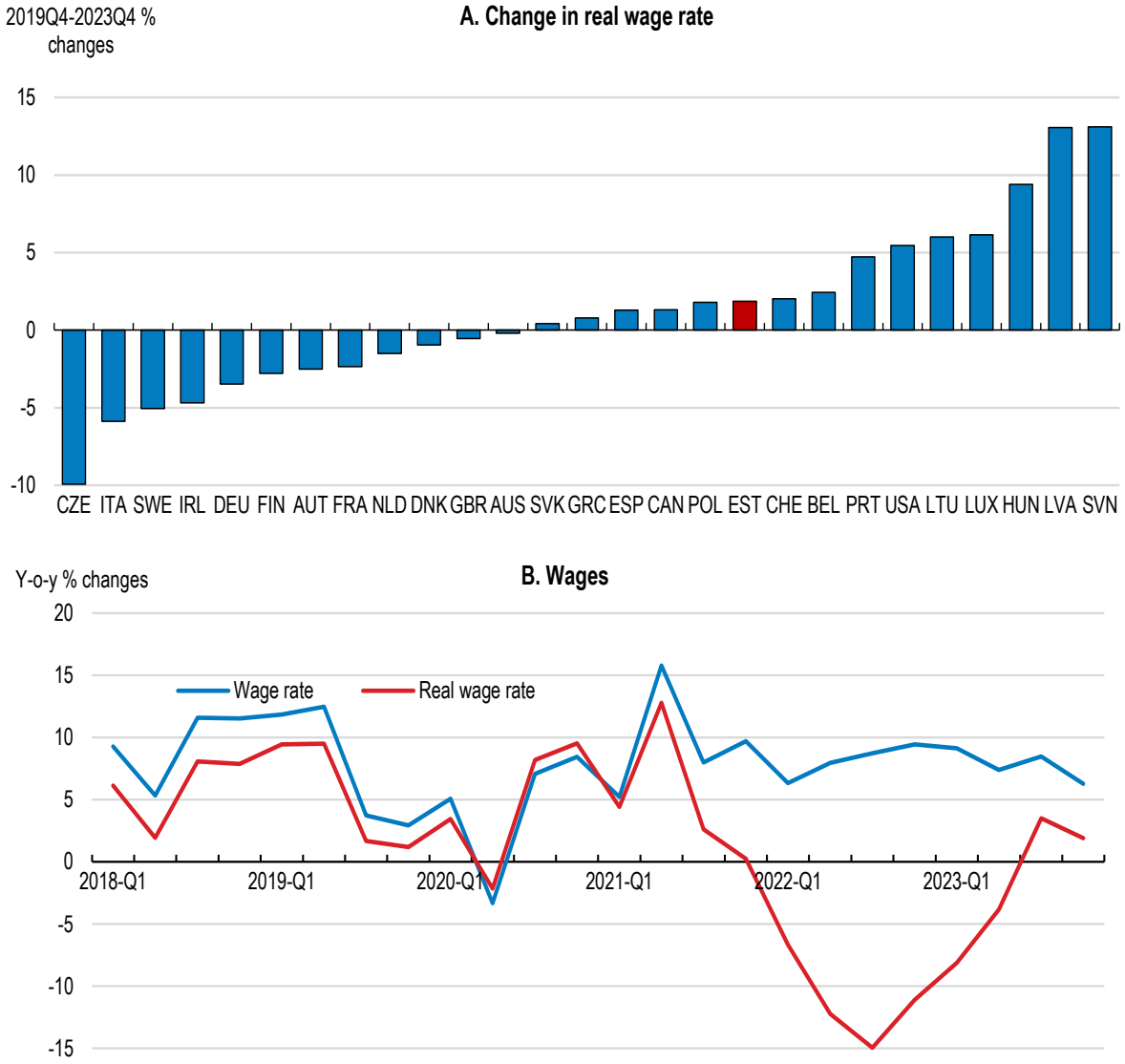
StatLink https://stat.link/u6leyz

Household incomes have been hit hard by high energy prices and households are dissaving

High inflation and modest wage increases have hit household consumption, although this has been partly cushioned by running down of savings. Real disposable incomes have fallen by more than in most OECD countries given the exceptionally high inflation. By 2023, real wages were more than 15% lower than in 2021 (Figure 2.3). The housing cycle has turned and mortgage-holders are facing much higher interest rates with relatively fast transmission of higher euro policy interest rates. Households have been able to cushion some of the inflation impact with savings accumulated during the pandemic. In addition, the second pension pillar became voluntary in 2021 and households are now able to withdraw savings before reaching

the retirement age. A third of participants withdrew a total of over EUR 2 bn by the end of 2023, around 5.3% of GDP. In the initial year, a fourth of those savings were used for consumption, another fourth remained as deposits and a tenth of the funds were used for debt repayments (ERR, 2023). Those exiting the pension pillar were households with no financial buffer, who tended to have large unsecured loans or faced credit constraints, and this creates risks for future retirement incomes. As a result of these developments, the household savings rate has turned sharply negative and household spending has increased 9 percent since the second quarter of 2022, adding to the inflationary pressures, although it has fallen by 3 percent in real terms by mid-2023.

Figure 2.3. Household income has dropped considerably as wages took a hit



Source: OECD Analytical Database.

StatLink https://stat.link/zms097

Box 2.1. Recent inequality and poverty developments

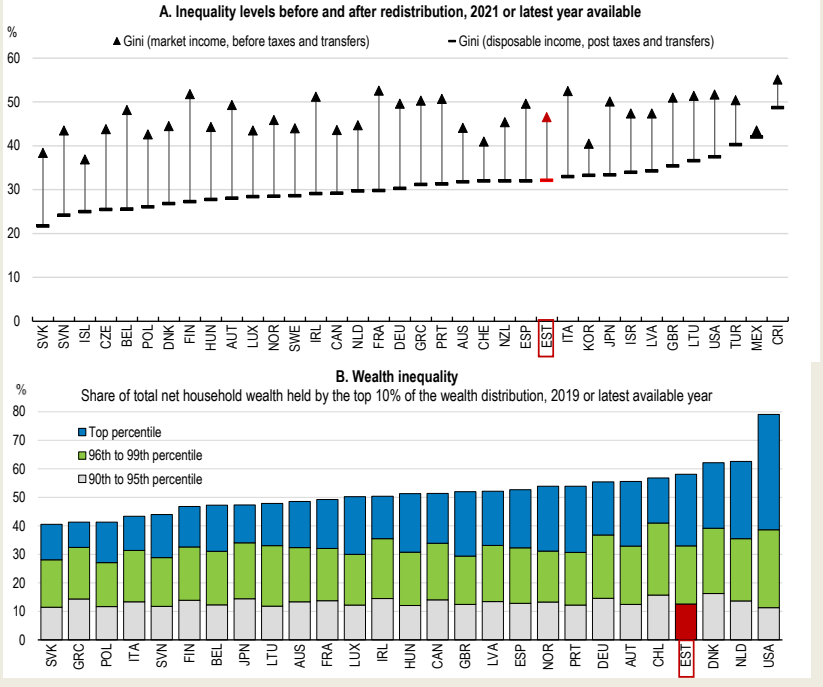
Income inequality, measured by Gini index, is comparable to the Baltic neighbours, but higher than among the Nordic countries or those of the Central European that are sometimes taken as peers (Figure 2.4). Relative poverty, measured by the share of population at risk of poverty or social exclusion, is above the EU average.

In 2022, 22.5% of population lived on less than 60% of the median household income (Statistics Estonia, 2023b). Old-age poverty is an issue, in particular for single pensioners. 28% of those over 65 years live below the poverty line, defined as half of the equivalised household income, and this share is almost 80% for single pensioner households. 14.6% of Estonians of working age lived below the poverty line of 50% of household income, with mean income 35% below half of the equivalised household income.

Income inequality has been on a declining trend since 2014, both due to declines in market inequality, as well as increased redistribution. Nevertheless, income growth of those at the bottom of the distribution has been lagging and the share of people at risk of poverty has increased during 2019-22, in particular for the elderly and inactive (Statistics Estonia, 2023b; IMF, 2022).

Wealth inequality increased between 2013 and 2021 and is more pronounced than income inequality with a Gini coefficient of net wealth at 0.71 (Merikull and Room, 2023). Estimates imputing the top wealth values, that are often underrepresented in wealth surveys, raise the Gini index to 0.75 (Brzezinski et al, 2019). In Estonia, the top 5% of wealthiest households held around 48% of net assets, compared to 38% for the OECD average, signalling high concentration of wealth.

Figure 2.4. While wealth inequality is high income inequality after redistribution is average



Note: Data were not available for Korea and a breakdown of wealth held by the top 10% was not available for New Zealand. The data on net private household wealth does not include occupational pensions, which are an important component of the wealth portfolio of households in some countries, for example in the Netherlands and Denmark.
Source: OECD Income distribution database; OECD Wealth Distribution Database.

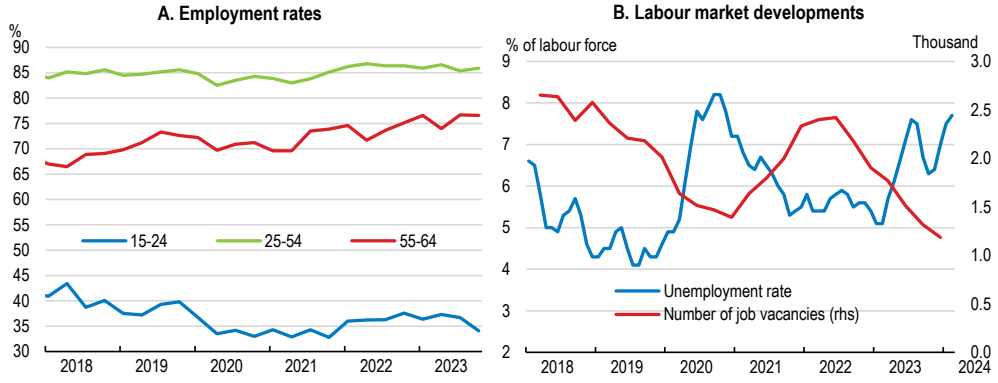
StatLink https://stat.link/zse0no

The labour market has remained strong

Despite the slowdown of economic activity, the labour market has remained strong. The employment rate surpassed the pre-pandemic level in 2022 and has reached 76.6%, substantially above the OECD average of 70%. Most of the recent employment growth has come from increasing part-time work, popular among the young, women and the older workers, as it became possible to combine work with receiving disability and parental benefits, and as the retirement age continues to increase (Eesti Pank, 2023b). Falling household incomes may have also contributed to increasing labour supply. However, employment rates among the young and men remain below 2019 levels. Having peaked at just under 7% in June 2020, the unemployment rate declined to 5-6% during the recovery. It started to rise again at the beginning of 2023, reaching 6% in December, although part of the increase can be accounted for by the inclusion of Ukrainian refugees in the labour force statistics. The job vacancy rate, high prior to the pandemic, subsequently recovered after the pandemic, but has also eased in recent months (Figure 2.5).

Estonia has experienced a large inflow of Ukrainian refugees. The number of Ukrainians living in the country increased more than three times since the outbreak of the war to around 48 000, accounting for 3.6% of the population. With 67% of refugees of working age, this has increased the workforce by 4% (Foresight Centre, 2023a). Half of the refugees of working age are employed, often in basic occupations and below their qualifications, pointing to a skills mismatch as a large majority of the refugees have middle or higher education (Statistics Estonia, 2023a). This situation is common across OECD countries (OECD, 2023f). Early labour market entry of refugees, especially in lower-skilled jobs, should be accompanied by training opportunities and continued counselling to facilitate the transition into sustainable employment commensurate with their education and skills (OECD, 2023c).

Figure 2.5. The labour market has held up fairly well so far



Source: OECD Short term labour market statistics; and Eurostat.

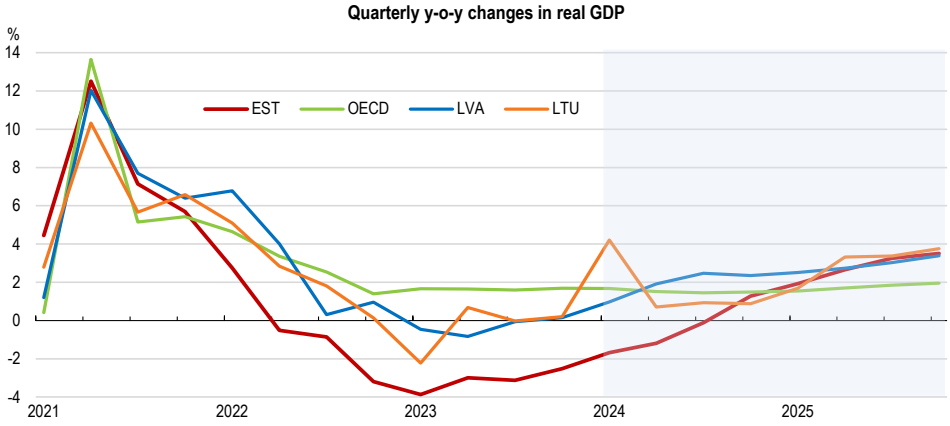
StatLink https://stat.link/7f61ms

A recovery is expected to begin this year

The economy is projected to contract by 0.4% this year, reflecting continued weak demand at the beginning of the year (OECD, 2024). Inflation will continue falling steadily to 3.9% this year as a policy-induced rise is expected due to VAT increase, estimated by authorities to contribute 1.5 percentage points in 2024 (Ministry of Finance, 2023). Next year inflation is projected to fall to 2.1%. Mortgage rates, closely linked to market rates, may be more stable going forward, although lower inflation will raise interest rates in real terms. The fiscal stance will turn contractionary as consolidation measures set take effect this year. In 2025, corporate and income tax rates are set to increase. Real GDP growth should strengthen in 2025 to 2.6% as the recovery progresses both domestically and abroad, and as Estonia draws on available EU

funds (Table 2.1). The unemployment rate is likely to continue increasing this year to 7% and fall to 6.8% the year after.

Figure 2.6. The economy should return to growth in the second half of the year



Note: Data from 3Q 2023 are based on current economic projections, except for Estonia.
Source: OECD Economic Outlook 115 database.

StatLink https://stat.link/1otukg

Table 2.1. A modest recovery ahead

	2020	2021	2022	2023	2024	2025
	Current prices EUR Billion	Percentage changes, volume (2015 prices)				
GDP at market prices	27.4	7.4	-0.5	-3.1	-0.4	2.6
Private consumption	13.6	9.3	2.2	-1.3	1.0	1.9
Government consumption	5.7	3.8	0.1	0.8	1.5	2.4
Gross fixed capital formation	7.9	11.3	-4.9	-3.7	3.7	3.0
Final domestic demand	27.3	9.9	-0.4	-1.3	2.1	2.3
Stockbuilding[1]	0.2	1.7	1.2	-1.5	-1.2	0.0
Total domestic demand	27.5	10.3	0.4	-2.8	0.8	2.4
Exports of goods and services	19.0	22.1	3.0	-6.9	-3.7	2.5
Imports of goods and services	19.1	23.5	3.3	-5.2	-3.5	2.2
Net exports [1]	-0.1	-1.0	-0.2	-1.4	-0.2	0.2
Memorandum items						
GDP deflator	_	5.7	16.2	8.1	3.5	2.6
Harmonised index of consumer prices	_	4.5	19.4	9.1	3.9	2.1
Harmonised index of core inflation[2]	_	2.8	10.3	8.7	4.3	2.1
Unemployment rate (% of labour force)	_	6.2	5.6	6.4	7.0	6.8
General government financial balance (% of GDP)	_	-2.5	-1.0	-3.4	-3.2	-3.7
General government debt, Maastricht definition[3](% of GDP)	_	17.8	18.5	19.6	23.2	27.3
Current account balance (% of GDP)	_	-3.1	-3.6	-2.5	-2.1	-2.4

Note: 1. Contributions to changes in real GDP, actual amount in the first column.
2. Harmonised index of consumer prices excluding food, energy, alcohol and tobacco.
3. The Maastricht definition of general government debt includes only loans, debt securities, and currency and deposits, with debt at face value rather than market value.
Source: OECD Economic Outlook 115 database.

Estonia has experienced a series of negative shocks, and risks to the outlook are tilted to the downside. A more protracted than anticipated slowdown in Nordic export and housing markets, an escalation of geopolitical tensions in the region or a large-scale cyberattack, given the prominence of digital activities in the Estonian economy, could impair recovery. One of the key questions is how quickly construction-related production will be able to find new markets, outside the Nordic region. A stronger domestic housing correction or an increase in household saving could complicate the outlook for domestic demand. On the other hand, a stronger than expected recovery in the regional economy or lower than anticipated interest rates could lead to stronger growth.

Table 2.2. Events that could entail major changes to the outlook

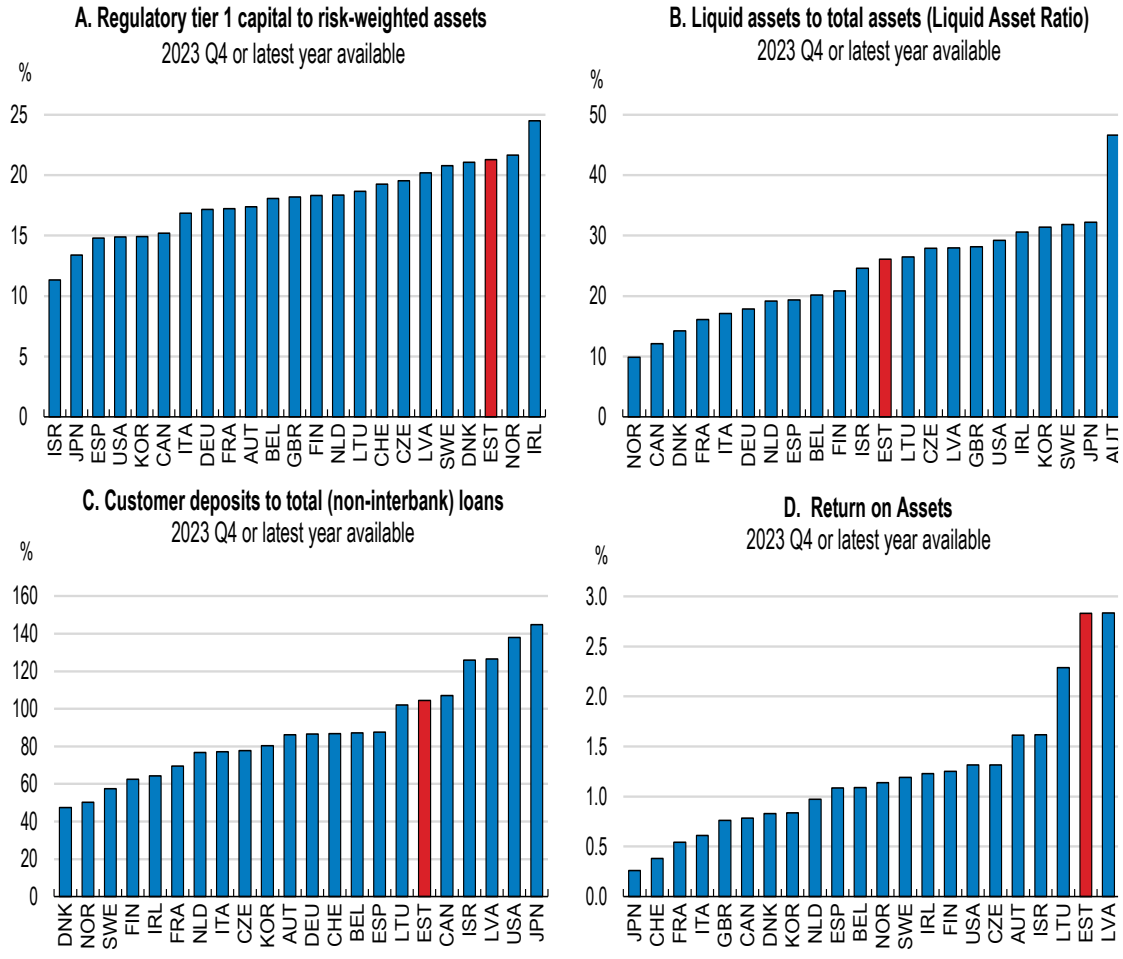
Shock	Likely impact	Policy response options
Protracted lower growth in the Nordics and the euro area due to higher energy prices and global trade tensions.	Lower export growth with knock-on effects on GDP growth, as the Nordics and the euro area remain the main destination of Estonian exports.	Strengthen the competitiveness of Estonian exports by fully implementing productivity-enhancing structural reforms and keeping real wage growth aligned with productivity growth.
Large scale cyber-attack or disruption of vital infrastructure.	Estonia has been target of cyber-attacks in the past, including a large-scale incident in 2022. The electricity grid remains connected to Belarus and Russian, and a gas pipe linking Estonia with Finland was damaged in September last year. These could impair functioning of the economy and create financial stress for firms.	Maintain pro-active cyber security policies. Ensure synchronisation with the Continental European electricity grid as planned for February 2025. Monitor vital infrastructure and use international cooperation to leverage surveillance and operational capacities.
Escalation of geopolitical tensions in the region.	Intensification and expansion of the Russia's war of aggression against Ukraine could lead to renewed refugee flows into Estonia.	Maintain a buffer for such costs and continue to implement integration policies.

The financial sector is sound, although risks have increased

Financial stability risks have increased, but the financial sector appears sound. The banking sector, with assets of around 134% GDP in 2022 and dominated by foreign-owned banks, is well capitalized with sound liquidity ratios and a low share of non-performing loans (Figure 2.7). Several macroprudential measures have been in place since 2015 (Table 2.3). Lending growth surpassed nominal growth of the economy during 2021-22, leading the authorities to increase the counter-cyclical capital buffer from 1% to 1.5% in December 2023 and resulting in tightening of credit standards (Eesti Pank, 2023b).

The sector remains highly concentrated, with the three largest banks holding 75% of all assets in 2022, although smaller banks have grown strongly over recent years (Eesti Pank, 2023b). A recent analysis by the central bank and Financial Supervision Authority suggests that, despite the high concentration of the banking market, access to loans has not been an issue in recent years (Eesti Pank and Finantsinspektsioon, 2024). Nevertheless, competition could be increased, for instance by lowering transaction costs of refinancing housing loans, improving access to standard conditions for housing loans or mandating alternative reference rates (Eesti Pank and Finantsinspektsioon, 2024).

Figure 2.7. The banking sector is well capitalised and profitable



Source: IMF Financial Soundness Indicators (FSI) database.

StatLink https://stat.link/3gtyj1

Credit risk has increased as interest rates have risen and growth has slowed but it appears manageable. The central bank's stress testing exercise is based on a 6-month Euribor rate of 5% (around 1 percentage point above the current rate) and unemployment rising to 13.6%. This would lead to the share of overdue loans increasing to 3.3% for consumer loans and to 0.8% for housing loans (Eesti Pank, 2023c). For context, during the housing market correction following the 2008 Global Financial Crisis, when house prices fell by over 40%, the share of non-performing housing loans reached 4.5% in 2010. At the same time, banks are exposed to risks in the commercial real estate. Corporate loans to real estate companies represent 37% and 18% of loans to the non-financial sector, while the activity in this sector has been muted over the past year (Eesti Pank, 2023c). Given that corporate taxation favors retention of profits, Estonian firms have considerable capital buffers.

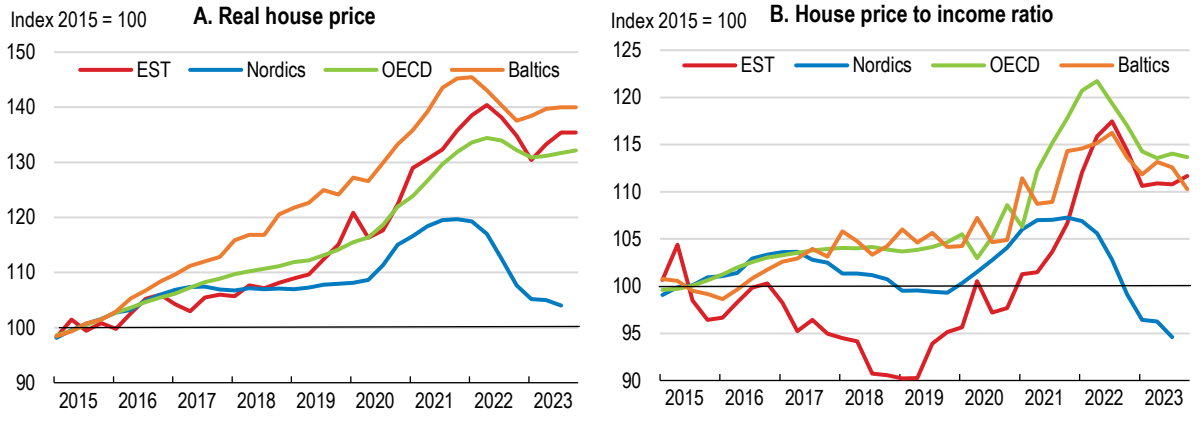
Table 2.3. Macro and micro-prudential measures currently in effect in Estonia

Measure		Details
Countercyclical capital buffer	1.5%	Effective as of December 2023
Buffer for other systematically important institutions	2%	Swedbank AS AS SEB Pank Luminor Bank AS AS LHV Pank
Risk weight floor for mortgage loans	15%	The floor set for the average risk weight of the mortgage loan portfolio of credit institutions that use the internal ratings-based approach. Effective as of 2019.
Housing loans requirements		Effective as of 2015. The limits may be breached by 15% of the volume of mortgages issued each quarter.
Loan-to-value limit (LVT)	85%	
Debt service-to-income limit (DSTI)	50%	The calculation of payments must use the interest rate set in the contract plus two percentage points or 6%, whichever is higher.
Maximum maturity	30 years	

Source: Eesti Pank (2023b).

Nominal average house prices have been relatively flat for almost a year, following a surge after the pandemic. In real terms and relative to incomes, the housing market is undergoing a mild correction and the authorities estimate that house prices are overvalued by 5% (Eesti Pank, 2023c) (Figure 2.8). House prices have failed to match inflation for most of the past year. As interest rates rose and the economy slowed, both the number and value of transactions fell in 2023 (Global Property Guide, 2023). Nevertheless, housing investment has been relatively resilient, continuing to grow in year-on-year terms for much of 2022 and 2023. The mortgage stock remains relatively low at 37% of GDP compared to 52% at the peak in 2008. Home ownership is high, with 76% of households living in owner-occupied housing and the rental market is small. The house price-to-income ratio stands close to the OECD average: to buy a 100m^2 dwelling, a household requires 10 years of disposable income. Difference between house prices in the metropolitan region, where around 40% of population lives, and that in far-off rural areas reached 50% in the first half of 2021, is one of the largest in Europe, restricting the potential for labour mobility (OECD, 2022b).

Figure 2.8. The housing market is undergoing a correction



Source: OECD STI Short term indicators database.

StatLink https://stat.link/3l7qsj

Non-bank financial institutions play a limited role in the Estonian financial system. The stock market is small, with a capitalisation of 13% of GDP in 2022 and 20 listed companies. An alternative market exists, "First North Alternative", although this too has a modest size with just 13 Estonian companies listed. At 12% of GDP in 2022, pension funds' assets have been decreasing following a policy change in 2021 that turned the second pillar into a voluntary savings scheme. Some risks exist in savings and loan associations that hold deposits of around 0.4% of GDP and lend mainly to businesses as not all of them have sufficient capital and liquidity buffers. The authorities are working on tightening oversight by obliging them to apply for authorisation on the same basis as other credit institutions (Eesti Pank, 2023b).

Table 2.4. Past recommendations and actions taken on financial and housing regulation

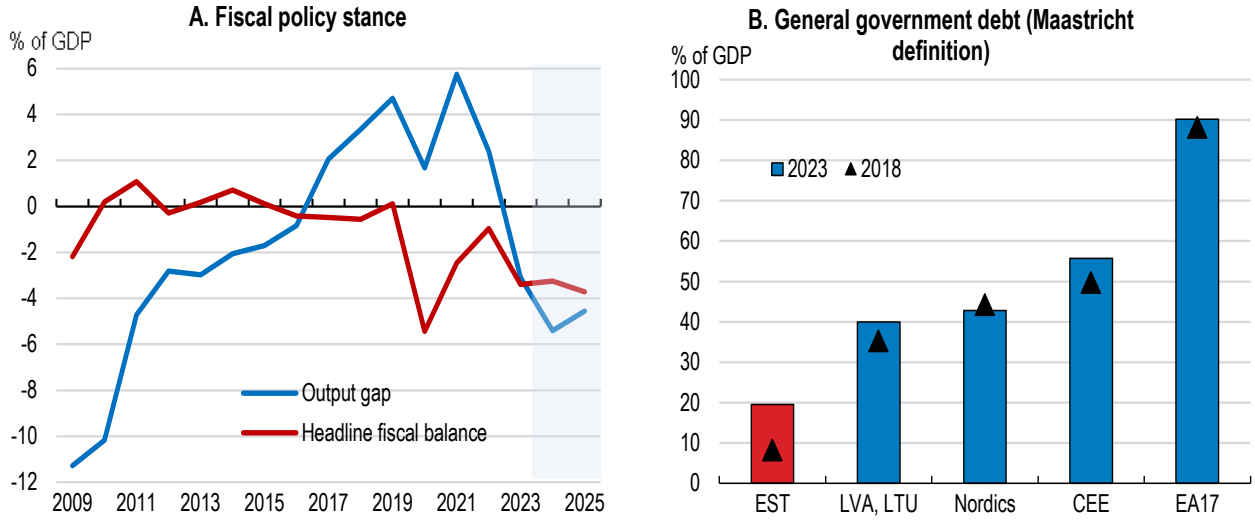
Recommendations	Actions taken
Monitor the developments in the housing market and adjust standard macro-prudential instruments, such as debt-to-income and loan-to-value ratios, when necessary.	An analysis was conducted by the central bank of effectiveness of housing loan requirements, and concluded that the current setup of the measures (DSTI limit, LTV limit, maximum maturity) has remained adequate and effective for framing loan conditions in Estonia.

Fiscal policy should continue to play a stabilising role

The tightening of euro area monetary policy has passed rapidly through into domestic financial conditions. The general government posted a deficit of 3.4% in 2023. The government debt ratio remains the lowest in the OECD, but is significantly higher than it was prior to the pandemic due to COVID and energy-related measures as well as some permanent budgetary changes (Figure 2.9). Given the downturn and conditional on inflation pressures remaining low, fiscal policy should be supportive of growth in the near term, while focusing on narrowing the deficit in the medium term and managing longer-term fiscal pressures.

Since a considerable pro-cyclical fiscal tightening during the Global Financial Crisis of 2008-09, when Estonia effectively did not have access to financial markets, fiscal policy has been broadly neutral, although considerable volatility of the output gap estimates complicates such an assessment (Figure 2.9). During the pandemic fiscal policy supported the economy, leading to a sizeable government deficit. With the onset of the war in Ukraine and the energy crisis in 2022, a supplementary budget of around 3% GDP provided resources for the integration of Ukrainian migrants and to mitigate the impact of increased energy prices. Energy-related fiscal measures reached around 1.8% of GDP over 2021-23. At the same time, significant permanent increases in spending were put in place. National security spending increased from 2% in 2020 to 2.8% in 2023. Increases in social benefits, pensions and the tax allowance during 2020-23 helped to raise the incomes across the distribution: the lowest income households by 7.5% and by 0.8% the highest income decile (Ministry of Finance, 2023b). While this social spending supported demand, it has come at a cost. The impact of fiscal policy in 2023 was broadly supportive.

Figure 2.9. With low debt, fiscal policy can stabilise the economy



Note: In Panel A 2024 and 2025 corresponds to Economic Outlook 115 projection.
Source: OECD Economic Outlook 115 database.

StatLink https://stat.link/4fr6vd

A consolidation of 0.75 % of GDP is under way this year. The authorities are clawing back some of the past family benefit increases, and VAT and excise tax rates have been increased, although 0.3% of GDP is of a temporary nature based on taxes on the banking sector (Box 2.2). The authorities estimate general government deficit of 3.5% of GDP this year. Rebuilding the fiscal buffers is a key objective of the government and the domestic fiscal rules, which largely mirror the existing EU fiscal rules, require yearly consolidation until it reaches a structural deficit of -1% of GDP but allow for postponement in economic downturn. OECD estimates suggest that a part of the budget deficit is cyclical, given the scale of the downturn. Although there is uncertainty about the permanent impact of the trade shocks on potential output, a part of the budget deficit appears to be structural and would need to be reduced in the medium term to comply with the fiscal rules. This reflects an earlier increase in family benefits in the magnitude of 0.5% of GDP, a permanent increase in defense spending, which has already risen by 0.8% of GDP, and debt-servicing costs, expected to rise by 0.5% of GDP between 2022 and 2024 (Table 2.6).

Box 2.2. Current and planned consolidation measures

Based on a fiscal strategy approved in the spring of 2023 and measures that have been legislated so far, most of the consolidation for 2024 and 2025 is concentrated on the revenue side. Spending reviews by individual ministries are planned and have been so far completed by three line ministries (Ministry of Finance, Ministry of Social Affairs and Ministry of Economy). The fiscal strategy suggests expenditure savings annually between 0.3-0.6% of GDP.

Table 2.5. Fiscal impact of consolidation measures (% GDP)

	2024	2025
Revenues		
VAT increase from 20% to 22%, changes in lower rate (for accommodation services, press)	0.58	0.62
Increase in excise taxes on tobacco, cigarettes, and alcohol	0.01	0.09
Increase in fuel and electricity excise rates	0.03	0.09
Changes in corporate taxation (increase of the rate from 20% to 22% and other changes)	0.10	0.24
Changes in personal income taxation (increase of the rate from 20% to 22%, increase of basic tax allowance, and other changes)		-0.86
Introduction of vehicle tax		0.46
Other revenue measures (e.g., increase of environmental charges)	0.11	0.24
Dividends from state-owned enterprises and bank tax	0.31	0.02
Possibility to increase contributions to second pension pillar		-0.04
Expenditures		
Increase of other expenditures	-0.57	-0.65
Decrease of family benefits	0.20	0.27
Increased funding for education	-0.15	-0.18
Expenditure savings	0.11	0.45
Total	0.73	0.75

Source: Ministry of Finance, April 2024 and August 2023 Macroeconomic forecast.

The government's fiscal strategy announced in the spring of 2023 aimed for headline deficit of 2.8% in 2024, 1.9% in 2025 and 1.2% in 2027 but was based on macroeconomic assumptions that turned out too optimistic (Ministry of Finance, 2023c). Next year, corporate tax on distributed profits and personal income tax (PIT) rates will increase although other changes in the PIT will result in a revenue loss of 0.86% of GDP (Box 2.2). Several revenue raising measures have been agreed, such as new motor vehicle tax but not yet legislated. To reach the initial budgetary strategy targets around 1% of GDP of consolidation effort remains to be identified for 2025. OECD projections include all legislated measures as well as the new car tax and savings from spending reviews. This year, automatic stabilisers should be allowed to work freely, although their size is limited due to a small size of the government, limited progressivity of the tax system and modest unemployment benefits. A recent reform of the unemployment benefit made its duration dependent on the labour market situation. The structural budget deficit will ultimately have to be reduced, and maintaining low debt is welcome in such a small and volatile economy. The downturn, currently concentrated in several sectors, and weak outlook call for caution in pressing ahead with consolidation in the near term. For 2025, a careful balance will need to be struck between any fiscal adjustment and the state of the economy at the time.

Table 2.6. Expenditures have increased in recent years

General government, % of GDP

	2018	2019	2020	2021	2022
Total revenues	38.8	39.3	39.5	38.8	38.9
Taxes on production and imports	13.8	14.1	13.3	13.5	13.2
Taxes on income and wealth	7.4	7.3	7.7	8.4	8.0
Social contributions	11.8	11.9	12.5	12.0	11.8
Other revenues	5.8	5.9	6.0	5.5	5.9
Total expenditures	39.3	39.2	44.9	41.9	39.8
Social protection	12.8	13.1	14.7	13.3	12.6
Education and health	11.6	11.8	13.0	12.4	11.7
General public services	3.9	3.6	4.0	3.9	3.7
Economic affairs	4.0	4.0	5.7	5.0	4.7
Others including defence[1]	7.0	6.8	7.5	7.4	7.0
Net lending	-0.6	0.1	-5.4	-2.5	-1.0
Gross debt, Maastricht definition	8.2	8.5	18.6	17.8	18.5

Note: Other items includes public order and safety, housing and community amenities, recreation, culture and religion, environmental protection.
Source: OECD National Accounts database.

EU funds provide a considerable funding for public investment and other policies, with up to 1.8% of GDP available annually over the period of 2021-26, including both from Recovery and Resilience and Cohesion funds. These estimates depend on national capacity to implement the policies, but Estonia has a good track record of successfully drawing EU structural funds. While cost-benefit analysis is applied for EU funded projects, there is no standard appraisal methodology and a comprehensive pipeline of investment projects for domestic programmes (IMF, 2019). Given elevated planned investment spending, it is important that a sound cost-benefit analysis is used systematically.

Fiscal policy in Estonia is guided by the domestic fiscal rules, which have largely mirrored the provisions of the existing EU fiscal rules and have strong national ownership. The reform of the EU fiscal rules is likely to make them less constraining for Estonia as a low debt country, which increases the onus on the domestic framework (OECD, 2023i). The current government lowered the medium-term objective (MTO) to a structural deficit of 1% of GDP rather than 0.5% as was the case prior to the pandemic, which implies a somewhat faster increase in the debt ratio. The fiscal rules were amended last year to be able to take into account exceptional circumstances, such as economic downturns, and to reinforce the domestic objective for the structural balance. According to the revised rules, the required minimum structural deficit would revert to 0.5% of GDP in 2030 or if the general government debt (Maastricht definition) reaches 30% of GDP. Current macroeconomic analysis of the cyclical position of the economy supplements the output gap measure based on the EU Commonly Agreed Methodology with a heatmap of a broad set of indicators. Yet, the experience of recent exogenous shocks to the economy illustrates the difficulty of implementing such an approach. With continued use of the structural balance in the domestic fiscal framework, developing a national measure of the output gap as many other countries have done, subject to the oversight of the Fiscal Council, may help to provide better guidance about the state of the economy.

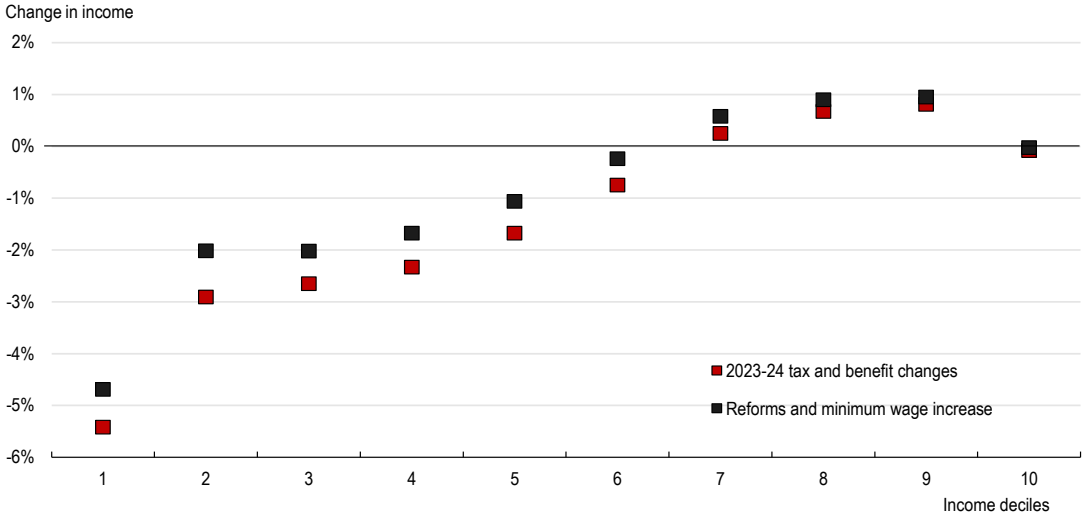
Strengthening the resources and analytical capacity of the Fiscal Council would help to inform the domestic policy debate about the fiscal path and rules. The current remit of the Council includes assessment of the macroeconomic and fiscal forecasts of the government, as well as compliance with the fiscal rules. Unlike some other fiscal councils, it does not perform analysis of long-term fiscal sustainability beyond the government approved medium-term framework. The board of the Council is composed of six members, nominated for five years upon a proposal of the governor of the central bank. In 2020, the Council's budget was EUR 80 000 and employed three analysts, similar to that of Latvia and other small countries but lower than in many other countries (OECD, 2021c). This constrains its ability to undertake analysis that would

allow the Council to play a more effective role in the fiscal policy debate. The *OECD Principles for Independent Fiscal Institutions* highlight the need for sufficient financial resources to ensure satisfactory performance of its tasks (OECD, 2014).

The planned tax and benefit changes for 2024 and 2025 are regressive, although transfers and the minimum wage have increased in recent years (Figure 2.10). The main VAT rate has increased by 2 percentage points this year. In 2025, a reform will raise the personal income tax by 2 percentage points and alter the basic tax allowance. Under the current system, personal income is taxed at 20% with a basic tax allowance of around EUR 8 000 phased out one-for-one between EUR 14-25 000 (average annual income is just under EUR 22 000). From 2025, the tax allowance will be applicable to all incomes without any phasing out. While this removes the high marginal tax on middle incomes and raises the rate, the change is regressive because the basic allowance is extended to people with the high incomes. At the same time, it reduces personal income tax revenues. The combined impact of these tax and benefit changes on lower income households is only partly offset by the higher minimum wage.

Figure 2.10. Planned tax and benefit changes will lower real incomes for low-income households

Tax and benefit simulation model (Euromod) of 2024-25 tax and benefit changes



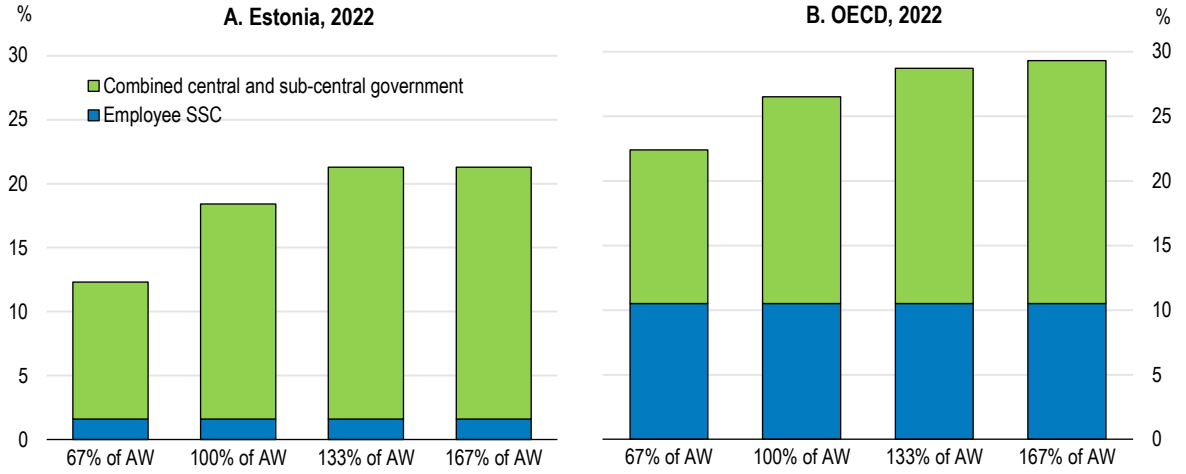
Note: The model is static and does not include possible behavioural and other dynamic effects. Measures include VAT, excise and partial land tax increases and PIT changes, as well as changes in child benefits.
Source: Ministry of Finance (2023).

StatLink https://stat.link/dfgqxh

The overall labour tax burden is expected to fall by 1 percentage point as of this year (Ministry of Finance, 2023). The authorities' estimates suggest that these tax changes could increase poverty, putting at risk the progress made in recent years. Increases in subsistence benefits, which could party offset this impact, are planned, although the details have not yet been specified. Over time, moving away from a personal income tax with a flat rate towards a progressive rate schedule used in the vast majority of OECD countries would allow the tax system to raise revenues in a more equitable way. To this end, the authorities could set up an *ad hoc* tax commission or review including outside experts that would look at the overall incidence of the current taxes and explore avenues for introducing more progressivity, for instance by applying a higher tax rate for higher incomes, introducing taxes on immovable property and inheritance taxes, as recommended in previous *Surveys*. Such commissions have been used for instance in Australia, Ireland and Norway. A recent report by the Foresight Center, a think-tank under the Parliament, has outlined

several possible scenarios for raising revenues in an ageing society with an increasing role of digitalisation and green transition (Foresight Centre, 2021).

Figure 2.11. Despite considerable reliance on labour taxation, the labour tax wedge on both high and low incomes is below OECD average



Note: AW – average wage. Data refer to single person without dependents.
Source: OECD Tax Database.

StatLink https://stat.link/uq0omg

Table 2.7. Past recommendations and action taken on fiscal policy

Recommendations	Actions taken
Withdraw fiscal support gradually but maintain support for hard-hit sectors that do not benefit from the recovery. Allow the free play of automatic stabilisers.	No continued measures related to energy crisis or pandemic for companies.
Review whether the stocks of housing and business properties should be included in the land tax.	Under consideration.
Evaluate the costs and benefits of the recent lower corporate tax regime.	An external evaluation showed a positive but modest impact.
Review the basic income tax allowance rule to restore progressivity in the personal income tax schedule.	No action taken.
Consider support measures for pensioners to keep pace with rapid economic developments.	Additional increase in the average pension took place in 2023. Pensions up to the average level are exempt from PIT. The authorities are considering an introduction of occupational pensions.
Reform unemployment benefits to increase their generosity during downturns and lower it during upturns.	This reform has been implemented.
Reduce employees' social security contributions for low wage earners.	No action taken.

Despite low debt, there are long-term fiscal pressures

The general government gross debt ratio was the lowest in the OECD at 19.6% of GDP last year. The share of government revenue in GDP was 33% in 2022, slightly below the OECD average of 34%. Favorable debt dynamics imply that following the government's fiscal target of a structural deficit of up to 1% of GDP would see the debt ratio rising only modestly over the coming decades (Figure 2.12). However,

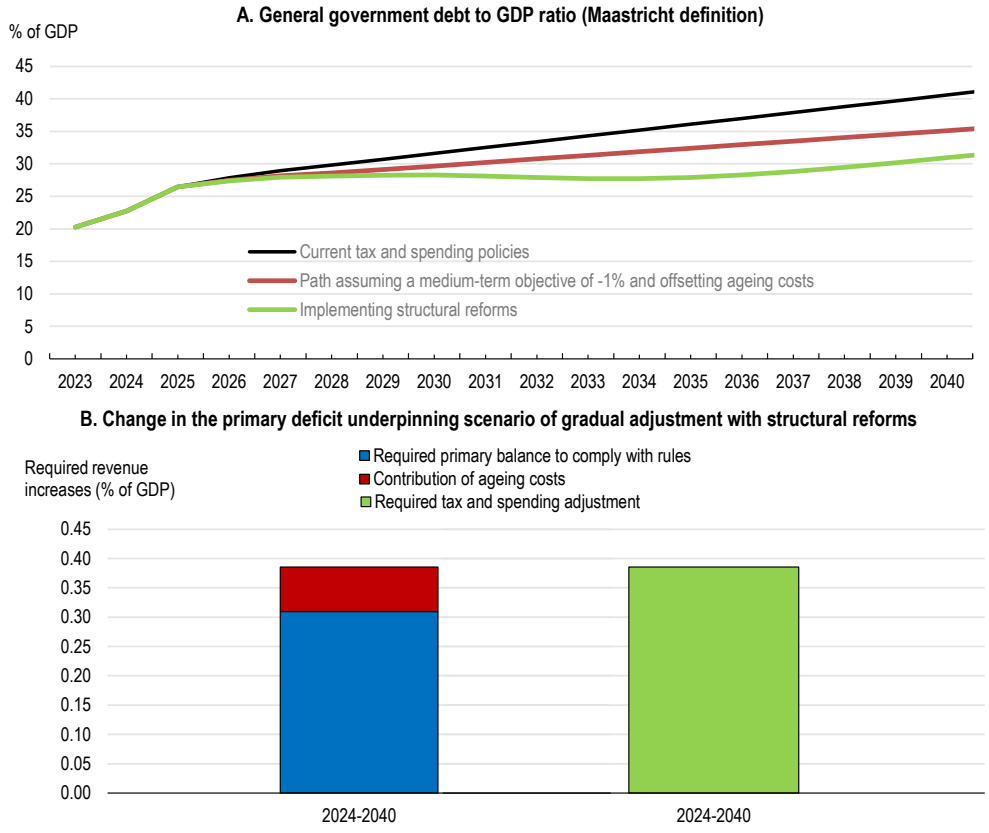
there are long-term fiscal pressures due to population ageing, climate change, defense spending and other factors.

The pension system is based on three pillars with a first pillar composed of a basic and earnings-related pay-as-you-go scheme, a second pillar based on a funded defined-contribution system and a third voluntary pillar. The current contribution rate to the public pillar is 16% and 6% for the second pillar, where the employee contributes 2% and the state 4% from a social tax paid by the employer. As of 2025, participants in the second pillar will be able to raise their contribution rate to 4% or 6%. For those who do not take part in the defined contribution pension, the contribution rate to the PAYG is 20%. Over time, the relative value (the replacement rate) of the first-pillar pensions is set to decline, reducing fiscal costs. However, the current and future adequacy of the first pillar public pensions is low. The future net replacement rate from the public pillar stands at around 34% for a worker earning an average wage, one of the lowest in the OECD. Old-age poverty remains an issue: 35% of people over 65 have incomes below half of the median equivalised household disposable income, the third highest share among OECD countries (OECD, 2023h). For the future, there is uncertainty about whether people's savings in the other pillars will be sufficient to support a decent income in retirement, but recent withdrawals make this less likely. This gap could ultimately lead to pressures on the public finances from the low incomes that many pensioners are likely to face.

Recent policy reforms have both strengthened and undermined pensions sustainability. The current retirement age of 64.5 years is increasing to 65 by 2026 and will thereafter be linked to developments in life-expectancy (with a partial indexation capped at 3 months per year), which will improve the sustainability of the public pension system as the population ages. However, in 2021, Estonia followed some other central and eastern Europe countries in abolishing the obligation to participate in the funded scheme. This is expected to have a negative impact on future pension adequacy for those opting out: over a third of participants have left already, often those with low income and who were credit constrained (ERR, 2023). This increases the risk that the state may need to help these people in future years. The authorities are currently exploring options for introducing an occupational pensions scheme.

Population ageing will bring additional fiscal pressures, both in terms of rising costs and falling tax revenue from labour (Figure 2.12). In particular, government healthcare expenditures are set to rise from 5.4% of GDP in 2022 to 6.8% of GDP in 2060 even if the increase is among the lowest in the OECD (EC, 2021). As set out in Chapter 5, health outcomes could be improved by a package of reforms, including efficiency saving, additional spending to increase the renumeration of doctors and nurses and boosting training to reduce staff shortages.

Figure 2.12. Public debt is expected to rise moderately but ageing will create fiscal pressures



Note: In Panel A the "Current tax and spending policies" scenario assumes that the structural primary fiscal balance before accounting for ageing-related costs remains constant at 2025 levels and the balance declines with rising ageing costs and interest expenditure. The "Path assuming a medium-term objective of -1% and offsetting ageing costs" scenario assumes that the underlying primary structural balance of -1% of GDP is achieved in 2026 and is held constant thereafter. The "Implementing structural reforms" scenario adds to the scenario with achieving medium-term objective of -1% implementation of the package of structural reforms reported in Table 1.1 in Chapter 1. In Panel B, the change corresponds to the path under fiscal rules with medium-term objective of -1%, offsetting ageing costs and with structural reforms (green line in Panel A). The net ageing costs are defined as changes in expenditure on old-age pension, health and long-term care minus changes in expenditure on education.
Source: OECD calculations based on OECD Economic Outlook database and OECD Long-Term Model.

StatLink https://stat.link/e6wy9k

Reducing net GHG emissions of the economy to zero requires significant investments of around 4% of GDP during 2021-30, and 2% of GDP annually by 2040 (SEI, 2019). While the private sector is expected to undertake three quarters of the investment, public sector investment in energy, transport infrastructure that enables decarbonisation, and upgrades of public sector buildings is estimated at 0.5% of GDP annually (SEI, 2019) (Chapter 4).

Taking rising ageing and health costs alone, current tax and spending settings would imply a modest increase in the debt ratio in the years ahead, albeit likely remaining lower than most other OECD countries (Figure 2.12, Panel A). Complying with the existing fiscal rule with a structural deficit of 1% would result in debt ratio rising to 35% of GDP in 2040. This is estimated to require fiscal consolidation of around 0.4% of GDP over the coming years and some additional savings or tax increases over the medium-run to offset the rising costs of ageing (Figure 2.12, Panel B). A package of measures proposed in this Survey to boost growth and improve health outcomes (Table 1.1), together with an illustrative set of measures achieve the necessary fiscal consolidation in Table 2.8. This consolidation requirement could be struck in different

ways using other combinations of tax and spending policies, although spending pressures and the ambition to improve health outcomes would necessitate reallocation of spending from other areas or higher taxes.

Table 2.8. Medium term fiscal impact of recommended reforms

Illustrative estimates, no second-round effects

Recommendation	Scenario	Impact on fiscal balance (% GDP)
Expenditures		-1.4
Healthcare sector reforms	Extending insurance coverage to the whole permanent population and increasing spending to improve outcomes	-1.0
Green transition investments	Further increase in public investment into infrastructure	-0.5
Increased ALMP expenditure	Increase in ALMP spending to other brown jobs, digital and managerial upskilling	-0.2
Efficiency gains	Spending gains to be identified by spending reviews	0.3
Revenues		1.8
Increasing property taxation[1]	Update of land valuation and introduction of a new recurrent tax on immovable property	1.0
Further increase in carbon taxes and excise duties	Further increase and harmonisation of effective carbon prices including in non-ETS sectors	0.3
Reforming motor vehicle taxation	Introduction of a new vehicle tax based on the vehicle's environmental impact	0.5
Net impact		0.4

Notes: 1. Based on the assumption that the property tax will be in the same magnitude as in the average OECD country in terms of ratio to GDP.
2. OECD (2022) Economic Survey of Estonia, based on estimates of the Ministry of Finance of Estonia.
Source: OECD calculations.

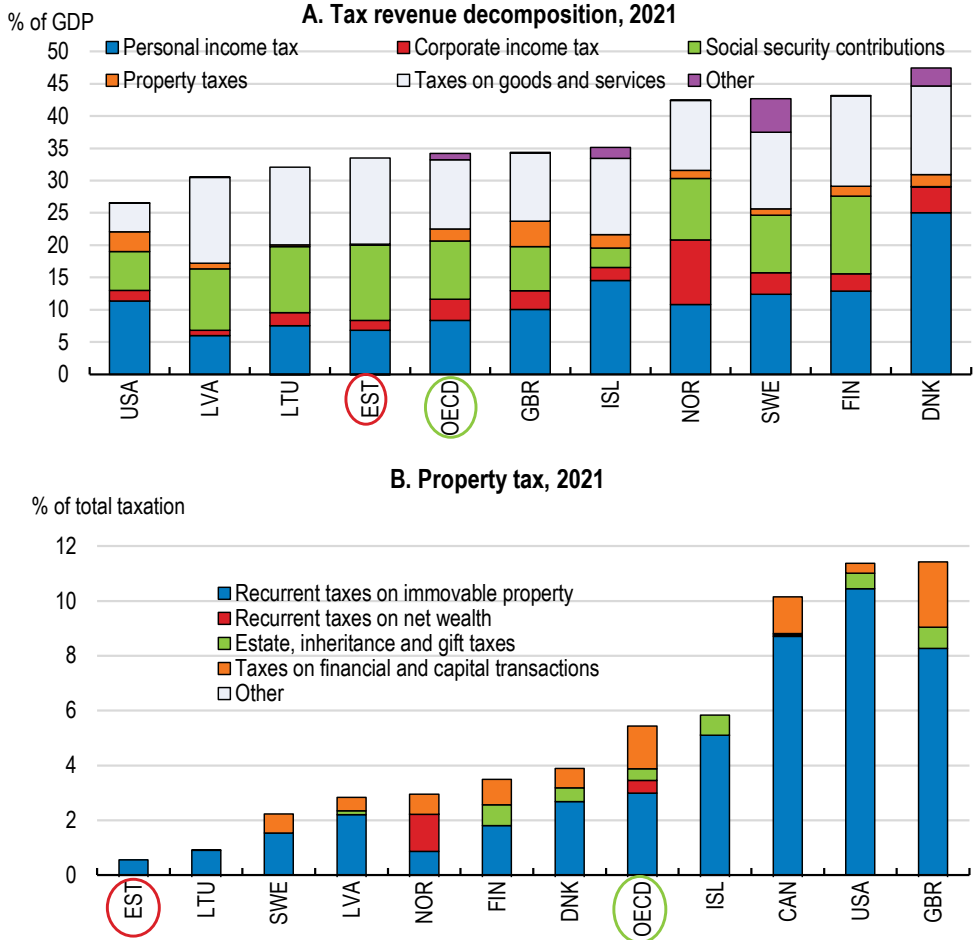
While many of the consolidation measures identified by the government so far were on the revenue side, spending reviews by line ministries are being undertaken with a view to identify areas to reduce spending. There is a separate review of existing social benefits that aims to introduce more means testing, which is welcome. Family benefits increased significantly prior to the pandemic. The parental benefit, linked to wages, is capped at triple of the average wage, but child benefits (EUR 80 month per child for the first two and EUR 100 month from 3rd child onwards) and those for large families are universal (Annex A.1). The parental benefit is comparatively generous, as it provides one of the longest full-rate equivalent paid leave periods among OECD countries (OECD, 2021b). These policies, aimed at increasing the birth rate, as well as reducing child poverty, merit review (OECD, 2021b). Overall, Estonia spends around 3% of GDP on family benefits, three quarters in the form of cash benefits. As recent analysis of OECD countries illustrates, labour market outcomes, as well as family policies, are important factors influencing fertility (Fluchtmann et al, 2023). Targeted childcare benefits can increase the amount of support for people on lower incomes without the cost of paying them to those with higher incomes. Any reform of these benefits should avoid withdrawing means-tested benefits too quickly as incomes rise to avoid creating disincentives to taking on additional hours of work.

The size of the government in Estonia is slightly below the OECD average, suggesting some scope to raise additional revenues. The tax system is based on a flat-rate income tax with little progressivity, significant VAT rates and a corporate tax only on distributed earnings (Figure 2.13, Panel A). There are relatively few tax expenditures in this system, estimated to amount to only around 1% of GDP (Ministry of Finance, 2023a). Elimination of various fuel tax exemptions would bring additional revenue of 0.1% of GDP and additional revenues could be raised from the carbon tax (see Chapter 4). Any increase in tax revenues should include raising property taxation. Recurrent taxes on immovable property taxes are considered economically efficient and the least damaging taxes to long-run economic growth (OECD, 2022c;

Johansson 2016; Cournede et al, 2018). Advanced OECD countries tend to rely more on immovable property taxation (OECD, 2022c). For example, in the United States, Canada or the United Kingdom, housing taxation accounts for 8% of tax revenues (Figure 2.13).

Estonia collects property tax revenues of 0.2% of GDP in the form of a land tax and there is no tax on immovable property. A number of exceptions to the land tax are in place, such as for land plots where a principal residence is located (of up to 0.15 hectares in residential areas and up to 2 hectares elsewhere). This year, an updated land valuation will be applied for the first time since 2001 and an automatic upgrade of the land valuation is scheduled every four years. Although the land value has increased on average 8 times since 2001, it will be phased in gradually and municipalities will now have the right to exempt primary residencies. Moreover, it is no longer possible to deduct mortgage interest rate costs. The revenues from the land tax are fully assigned to the municipalities, which can also set the rate within a given bracket (between 0.1% to 2.5% of taxable values). Most municipalities have so far opted to tax at the highest rate allowed (OECD, 2022c). Lifting the limits on the rate would give municipalities larger revenue-raising autonomy. Once the land tax revaluation has been phased in, an introduction of a tax on immovable property should be considered. The tax should be carefully designed and implemented to avoid unfavorable impacts on lower-income households. To avoid the 'home-rich, income-poor' phenomenon and improve the political acceptability of such reforms, deferral mechanism could be introduced, as done for instance in Denmark (Box 2.3).

Figure 2.13. Property taxation in Estonia remains low



Source: OECD Tax Database.

StatLink https://stat.link/huwzet

Box 2.3. Strategies to enhance public acceptability of property tax reforms

Reforms of housing taxes have traditionally been met with public resistance (OECD, 2022c). One of the frequent policy issues has been how to avoid unintended effects on low-income households who, as a result of such reform, can find themselves with housing wealth but little means to pay the tax, especially in areas that experienced considerable increases in valuation (the so-called 'house-rich, income poor' phenomenon). To address such issues and improve public acceptability, several measures can be included:

- To alleviate liquidity issues, allow for tax payments in instalments, third-party remittance and/or tax deferral (e.g., until when the house is sold or transferred). Typically, only certain taxpayers are eligible for tax deferrals, such as low-income or senior taxpayers. Countries that use tax deferrals include Canada, Denmark, Ireland and United States.
- To increase income progressivity, a flat amount of tax relief or a cap on tax liabilities to low income low-wealth households can be part of the reform.
- Bundling the reform with other tax changes (e.g., reduction in transaction or labour taxes).
- Improvement in local public services, proactive dissemination of information on how the new tax revenues will be spent.
- Higher tax rates on secondary residences.

Source: OECD (2022c), Housing taxes in OECD countries.

Main findings and recommendations

MAIN FINDINGS	RECOMMENDATIONS
The economy has experienced a relatively severe downturn. Fiscal consolidation is planned for 2024 and 2025.	**In the short term, allow full operation of the automatic stabilisers. Ensure that future consolidation strikes a balance between rebuilding fiscal buffers and managing economic activity.**
The new EU fiscal rules will be less constraining on Estonia which increases the onus on the domestic framework, but the Fiscal Council has limited resources.	Strengthen the resources and analytical capacity of the Fiscal Council.
Spending on defence, social benefits and interest payments has increased, opening up a structural budget deficit.	**Review the tax system to explore avenues for increasing revenues in the medium term, alongside the planned spending reviews.**
Planned consolidation measures will fall harder on low-income households, while targeting of family benefits is limited.	Extend targeting of family benefits.
The government debt-to-GDP ratio remains low, but over the long-term ageing and other pressures need to be managed.	**Develop a sustainable system to finance adequate retirements in the future.**
Revenues from property taxation are low, as Estonia taxes only land, but valuations have been updated and will be phased in gradually. Municipalities are allowed to grant exemptions for primary residence.	**Give municipalities more autonomy to set the land tax rates. In the medium term, introduce an annual tax on immovable property.**
Estonia has experienced a strong inflow of Ukrainian war refugees.	Accompany labour market entry of refugees by training opportunities and continued counselling to facilitate the transition into sustainable employment commensurate with their education and skills.

Annex 2.A. Overview of main monetary social benefits

Table 2.9. Overview of main social benefits

Benefit title	Characteristics	Eligibility conditions	Duration	Factors impacting payment
Unemployment benefit	Contributory – at least one year during past three years. 60% of salary for first 3.3 months, then 40% for the rest of the year. Possible to combine with temporary work (no more than 8 days a month) and remuneration does not exceed 40% of minimum wage.	Need to comply with individual action plan, take suitable work, attend appointments with the Unemployment Insurance Fund.	One year. The duration of the benefit is shorter is contributory period shorter than 10 years.	Taxable.
Unemployment allowance	Non-contributory, **means tested.** 50% of the minimum wage. Possible to combine with temporary work of 8 days a month.	Work history for at least 180 days during past year required. Need to comply with individual action plan and attend meetings.	9 months	Non-taxable. Linked to minimum wage.
Subsistence benefit	**Means tested**, granted by local authorities. In 2022, 200 Euros/month for a single person and first member of a family, Euros 240 for children.		Unlimited as long as means test and other conditions met.	Non-taxable.
Housing benefit	Party covered under the subsistence benefit.	People living in privately rented accommodation.		Non-taxable.
Family benefits				
Child allowance	Non-contributory, **universal**. 1st and 2nd child 80 Euros/month/child; 3rd and subsequent children 100 Euros/month/child.		Up to 16 years of age or if in education up to 19 years.	
Allowance for big families	**Universal**. In 2023: 3-6 children: 650 Euros/month; 7 and more children: 850 Euros/month. As of 2024: 3-6 children 450 Euros/moth; 7 and more children 650 Euros/month.			
Parental benefit	At previous wage and at least 654 euros/month and up to 4 291 euros/month (triple of the average wage in the previous year). Flexibility in terms of who takes the benefit and for how long, up to 60 days can be taken by both parents at the same time.		1.5 years, up to 3 years of the child	Possibility to earn income, when not exceeding half of the parental benefit, no impact on the benefit.
Maternity benefit	100 % of previous wage with no upper limit	Contributory history of health insurance.	Up to 100 days for mother that has worked prior to birth, 30 days for those not working.	
Sickness benefits				
Work ability allowance	316 euros/moth for those with partial ability to work. 558 euros/month for those with no ability to work. The amounts are reduced if income exceeds 1674 euros/month (2023).	Workability assessment	Unlimited	Taxable.
Sickness benefit	70% of previous wage from 4th day of sickness (five days paid by employer, then by Health Insurance Fund); 100 % of previous wage with no upper limit for work accident or occupational disease.	Contributory history of health insurance.		3 day waiting period, not possible to combine with earning from work.

Source: OECD (2022), The OECD Tax-Benefit database.

References

Brzezinski M. and K. Salach (2021), *Factors that account for the wealth inequality differences between post-socialist countries*, Economic Modelling 105 (2021).

Brzezinski et al (2019), *Wealth inequality in Central and Eastern Europe: evidence from joined household survey and rich lists' data*.

Castel et al (2023), *Aiming better: Government support for households and firms during the energy crisis*, OECD Economic Policy paper no 32, OECD Publishing, Paris.

Eesti Pank (2022), *The Estonian economy and monetary policy 4/2022*, Eesti Pank, Tallinn.

Eesti Pank (2023b), *The Structure of the Estonian Financial Sector*, Eesti Pank, Tallinn.

Eesti Pank (2023c), *Financial Stability Review*, 2023/2, Eesti Pank, Tallinn.

Eesti Pank (2023d), *Labour market review*, 2023/2, Eesti Pank, Tallinn.

Eesti Pank (2023e), *Labour market review*, 2023/1, Eesti Pank, Tallinn.

Eesti Pank (2023a), *The Estonian economy and monetary policy 2/2023*, Eesti Pank, Tallinn.

Eesti Pank (2024*), Inflation in January was driven by tax increases*, Eesti Pank, Tallinn.

Eesti Pank and Finantsinspektsioon (2024), *Competition between banks in the Estonian lending market*, Eesti Pank and Finantsinspektsioon, Tallinn.

European Commission (2021), *Ageing report 2021*, DG ECFIN, European Commission, Luxembourg.

European Commission (2023), *Recommendation for a Council recommendation on the 2023 National Reform Programme of Estonia and delivering a council opinion on the 2023 Stability Programme of Estonia*, European Commission, Brussels.

Eurostat (2023), *Gender pay gap statistics*, website accessed November 10, 2023.

ERR (2023), *Economists: Second pension pillar closures mainly in low saving households*, ERR New, accessed September 28, 2023

Foresight center (2021), *A future-proof tax structure*. Scenarios up to 2035, Foresight center, Tallinn.

Fluchtmann, J., V. van Veen and W. Adema (2023), *Fertility, employment and family policy: A cross-country panel analysis*, *OECD Social, Employment and Migration Working Papers*, No. 299, OECD Publishing, Paris.

Foresight Centre (2023a), *The impact of Ukrainian war refugees on employment and economy*, Tallinn.

Maravalle A. and Rawdanowicz L., (2020), *How effective are automatic fiscal stabilisers in the OECD countries*, Economics department working paper, OECD Publishing, Paris.

Merikull and Tverdostup (2021), *The gap that survived the transition: the genre wage gap over three decades in Estonia*, Eesti Pank Working Paper Series, 4/2021, Tallinn.

Merikull J. and T. Room (2023), *Survey shows that the wealth of Estonian families has increased substantially over past decade*, Eesti Pank, Tallinn.

Ministry of Finance (2024), *Macroeconomic forecast – April 2024*, Ministry of Finance, Tallinn.

Ministry of Finance (2023a), *Macroeconomic forecast – August 2023*, Ministry of Finance, Tallinn.

Ministry of Finance (2023b), *Draft state budget for 2024*, Ministry of Finance, Tallinn.

Ministry of Finance (2023c), *State budget strategy 2024-2027*, Ministry of Finance, Tallinn.

OECD (2014), *Recommendation on Principles for Independent Fiscal Institutions*, OECD Publishing, Paris.

OECD (2021a), *Improving the provision of active labour market policies in Estonia, Connecting people with jobs*, OECD Publishing, Paris.

OECD (2021b), *The economic case for more gender equality in Estonia*, OECD Publishing, Paris.

OECD (2021c), *OECD IFI Independent Fiscal Institutions Database, Version 2.0*, OECD Publishing, Paris.

OECD and AIAS (2021), *Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Societal Pacts, Estonia-main indicators and characteristics of collective bargaining*, OECD Publishing, Paris.

OECD (2022a), *OECD Economic Surveys Estonia*, OECD Publishing, Paris.

OECD (2022b), *OECD Regions and Cities at a Glance 2022,* OECD Publishing, Paris.

OECD (2022c), *Shrinking smartly in Estonia*, OECD Publishing, Paris.

OECD (2023a), *OECD Economic Outlook, Volume 2023 Issue 2: Preliminary version*, OECD Publishing, Paris.

OECD (2023b), *OECD Economic Outlook, Volume 2023 Issue 1*, OECD Publishing, Paris.

OECD (2023c), *Housing sector Country Snapshot: Estonia*, OECD Publishing, Paris.

OECD (2023d), *OECD Energy Support Measures Tracker*, accessed 19 October, 2023.

OECD (2023e), *OECD Gender data portal*, accessed 10 November, 2023.

OECD (2023f), *What we know about the skills and early labour market outcomes of refugees from Ukraine*, OECD Policy reposes: Ukraine, OECD Publishing, Paris.

OECD (2023g), *Working towards dual intent integration of Ukrainian refugees*, OECD Policy Responses on the Impacts of the War in Ukraine, OECD Publishing, Paris.

OECD (2023h), *Pensions at a Glance 2023*, OECD Publishing, Paris.

OECD (2023i), *OECD Economic Surveys: European Union and Euro Area 2023*, OECD Publishing, Paris.

Stockholm Environment Institute (2019), *Reaching climate neutrality in Estonia*, Stockholm Environment Institute, Tallinn.

Statistics Estonia (2023a), *Ukrainians in the Estonian labour market*, accessed 10 November, 2023.

Statistics Estonia (2023b), *Number of people living in absolute poverty rose by two and a half times*, accessed Nov 19, 2023.

3. Enhancing productivity across firms

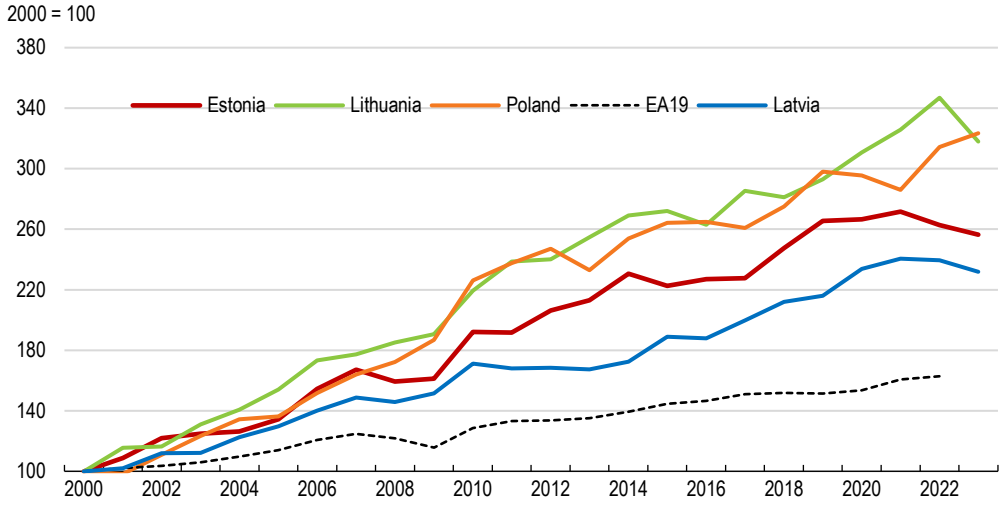
Zuzana Smidova

The shrinking of the working-age population will slow potential growth in the years ahead. Productivity trends since the pandemic are difficult to assess given the volatility of the economy, but productivity growth had already decelerated before the pandemic and the labour market has been marked by a large skills mismatch. Adoption of digital technologies in traditional sectors of the economy lags behind, and managerial skills are average. Grants for digital diagnostics, as well as access to programmes for upskilling, should be extended. R&D investments have been rising. Barriers to competition in professional services, such as notaries and lawyers, could be lowered further.

Productivity growth had decelerated in Estonia before the pandemic and it is unclear what path it will return to as the economy recovers (Figure 3.1). With the population ageing, steady productivity convergence will be key to raising living standards. Estonia is a highly open, small economy and has prospered through participation in regional value chains, particularly in machinery and equipment, wood products and fast-growing exports of ICT services. Nevertheless, despite the innovative ICT sector and being a frontrunner for e-government, traditional sectors lag behind in productivity and the use of digital technologies. Raising performance of firms outside the ICT sector is needed through improvements in business conditions, helping SMEs to adopt digital technologies and upgrading managerial and digital skills.

Figure 3.1 Labour productivity growth has slowed

GVA per hour worked, constant prices



Source: OECD Productivity database.

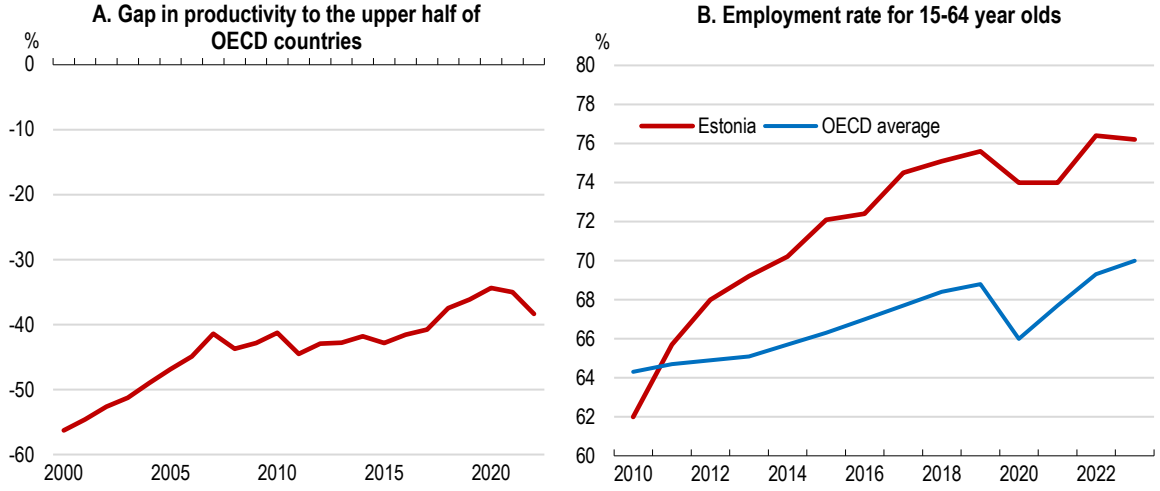
StatLink https://stat.link/6jhlko

Stronger productivity convergence needs to be restored

Estonia made great progress in terms of productivity convergence over past decades, but productivity growth decelerated in the years running up to the pandemic (Figure 3.1). Many OECD countries experienced a productivity slowdown since the mid-2000s, reflecting both weaker multifactor productivity (MFP) developments and slower capital accumulation (Unsal et al, 2024, *forthcoming*). The Estonian economy has converged to the levels observed in the upper half of OECD countries in terms of capital intensity, although substantial past investment in real estate played a role. However, it lags behind in terms of labour productivity due to weak multifactor productivity with a gap of around 30% to the upper half of OECD countries (Figure 3.2). With the employment rate on an increasing trend and already above the OECD average, productivity growth is key to raising living standards as the population ages.

Productivity trends since the pandemic are difficult to assess given the volatility of the economy over this period and large shocks to different sectors, notably wood processing and manufacturing, but the current data suggest a fall in the level of labour productivity (Figure 3.1). Although this likely largely reflects cyclical factors with a fall in output and resilient employment, it underlines the uncertainty about future productivity prospects.

Figure 3.2. There is scope for further productivity convergence



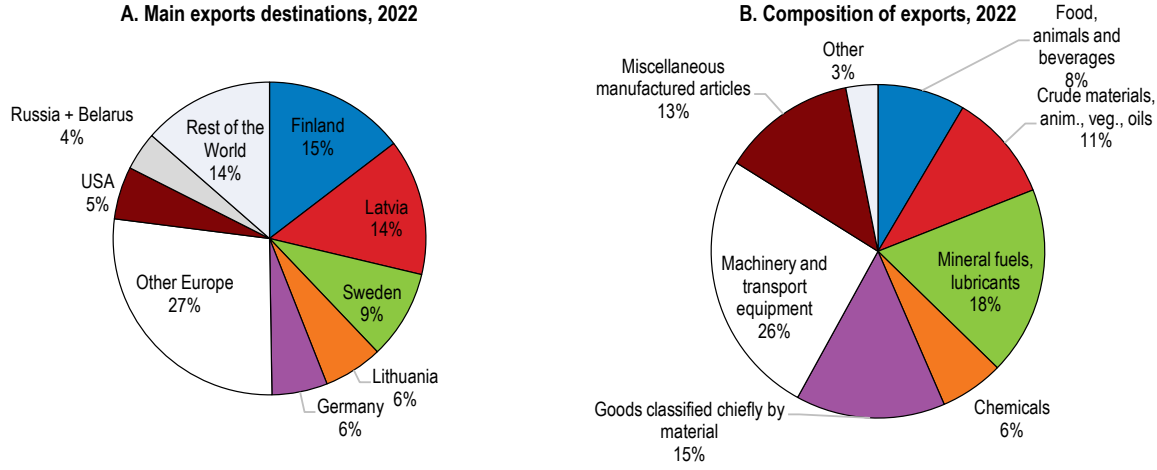
Source: OECD, Economic Outlook Database.

StatLink https://stat.link/ktdrqc

Estonia has prospered through its connections to regional value chains, particularly in machinery and equipment manufacturing (including foreign owned businesses), through domestic wood products and a dynamic ICT sector that has spurred productivity improvements. Empirical research has shown that exporting firms tend to be more productive, and this is also true in Estonia (Benkovski et al, 2018). Finland, Latvia and Sweden have been traditionally the main exporting markets, while Germany and the United States are also among the top destinations for exports in terms of domestic value added. Goods account for around two-thirds of exports, with a large share of machinery, transport equipment, plastics, minerals and chemicals and further significant share in wood and related products (Figure 3.3). In services, exports are dominated by business services (28%), transport (26%) and telecommunications (21%) (Eesti Pank, 2023a). Exports have grown by an annual average of 5.5% over past five years driven by growth in services and outpacing GDP growth.

More recently, the fallout of trade with Russia and Belarus and weak demand for Estonian products in the Nordic countries has cast some uncertainty about the future performance of Estonian exports. Ithough trade with Russia and Belarus represented only 10% of imports and 4% of exports in 2022, Russian imports were used in 40% of Estonian exports, notably in transport, wood, chemicals, manufacturing and fuel re-exports, leading to considerable disruptions in exporting industries since the start of the war (Eesti Pank, 2022a). The slowdown in Nordic export markets for construction materials has added further strain as weakening of their housing markets spilled over to Estonian manufacturing exports, in particular to construction services, wood and furniture. The future performance of this sector will depend to a large extent on the ability to find new suppliers and markets, while maintaining the cost competitiveness of exports.

Figure 3.3. Main export markets and export structure



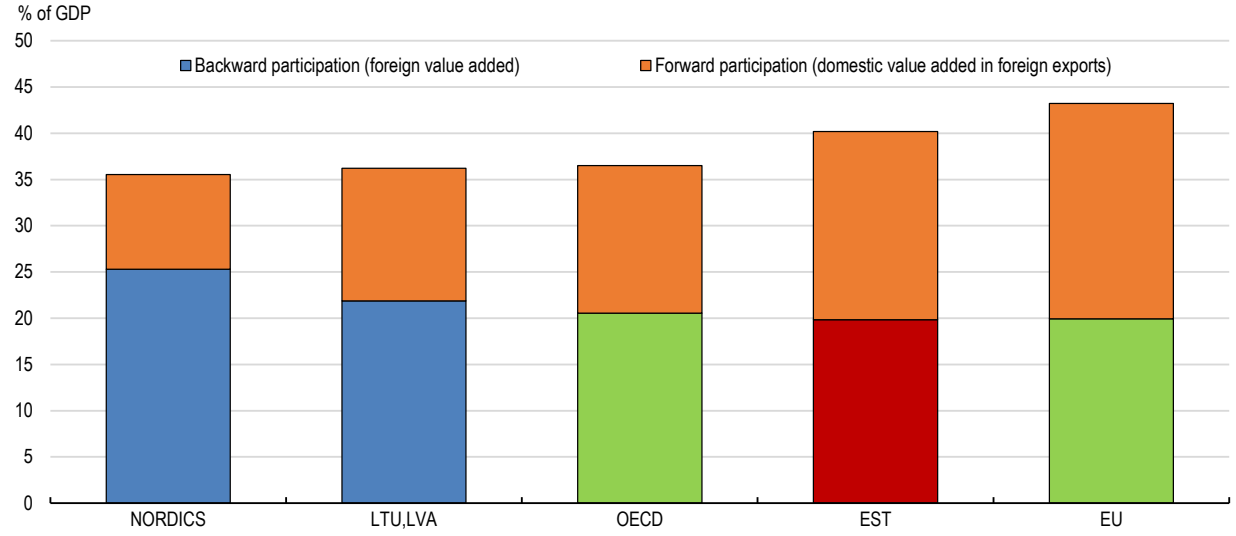
Source: OECD.

StatLink https://stat.link/aubs4w

Estonia relies heavily on foreign inputs and external demand through its integration in global value chains (GVCs) and moving up these value chains would help to boost productivity. The foreign content of Estonia's exports and the share of domestic value added driven by foreign demand are higher than in neighbouring countries and the OECD average (Figure 3.4). Dependency on foreign markets, measured by the ratio of domestic output used in foreign production to domestic output, is the third highest in the OECD, following Luxembourg and Ireland, although the majority of this exposure relates to OECD countries (Schwellnus et al, 2023). The ICT and electrical equipment and machinery sectors are the most dependent on foreign demand and have a high rate of foreign ownership (OECD, 2023a).

Participation in GVCs has been shown to increase productivity (Masso and Vahter, 2022). Estonian firm-level data confirm that GVC participation at the industry level significantly boosted productivity at both industry- and firm-level: while the impact differed across firms, frontier firms and large firms in terms of sales benefited more from participation in upstream GVCs (Banh et al., 2020). Nevertheless, there has been a longstanding concern that Estonia has been too reliant on foreign inputs of more complex products and that it needs to move to higher value-added activities in value chains (OECD, 2019). The largest shares of exports are of high and low productivity goods, but much of the growth of good exports during 2016-2021 came from moderate complexity products (Hausman et al, 2021).

Figure 3.4. Estonia is well integrated in the GVCs as a supplier and user of imported inputs



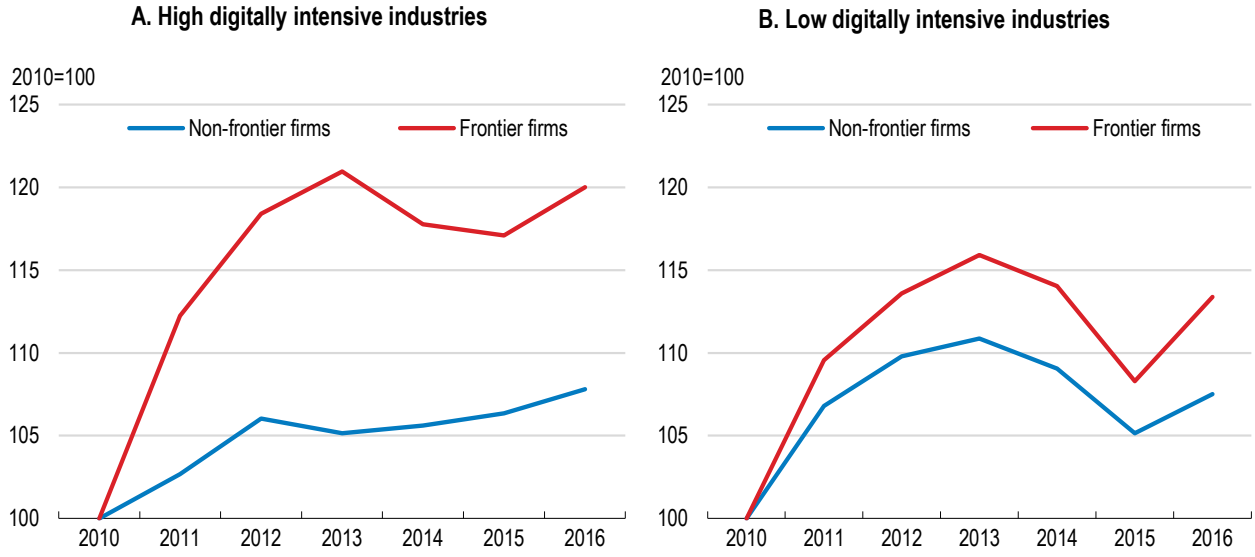
Source: OECD TIVA database.

StatLink https://stat.link/evrtbk

A key challenge is improving productivity of firms outside the digital sector, including by increasing the uptake of digital technologies to allow them to move up the value-chain (OECD, 2019). While Estonia is home to a number of successful ICT start-ups (e.g., Skype, Bolt and TransferWise), firms in other part of the economy fare less well in terms of productivity and digital take up and these differences have been increasing over time (Mosiashvili and Pareliussen, 2020) (Figure 3.5). Firm-level wage premia appear to be particularly high between firms within a given sector, which may reflect these large differences in firm-level productivity (Criscuolo et al, 2021). The performance of laggard firms is partly the result of weaker digitalisation across parts of the economy, including in the adoption of digital tools and advanced management techniques (OECD, 2019).

Estonia has a solid and secure digital infrastructure but take-up of high-speed connections by companies has been lagging pointing to lack of investment in digital technologies and organisational capital needed to employ them (OECD, 2019) (Figure 3.7). Intense competition for labour from the ICT sector itself may also make it harder for other industries to bring in these skills. It may also reflect a combination of a small home market in the geographic periphery of the EU and traditional reliance on low labour costs (OECD, 2019). Recent research suggests that firm-to-firm transactions are an important channel for diffusion of good practices between Estonian firms (Box 3.1).

Figure 3.5. Productivity dispersion across Estonian firms has increased



Note: Based on an unbalanced panel of a full population of Estonian firms, using unweighted averages. "Frontier firms" are those whose log labour productivity is among top 5% of companies with highest productivity levels in 2-digit industry and year. "Non-frontier" firms capture averages for the log productivity distribution in each industry and year, excluding the top 5%. "High" and "low" digital intensities classifications follow Calvino et al (2018).
Source: Mosiaschvili and Pareliussen (2020)

StatLink https://stat.link/b1ztja

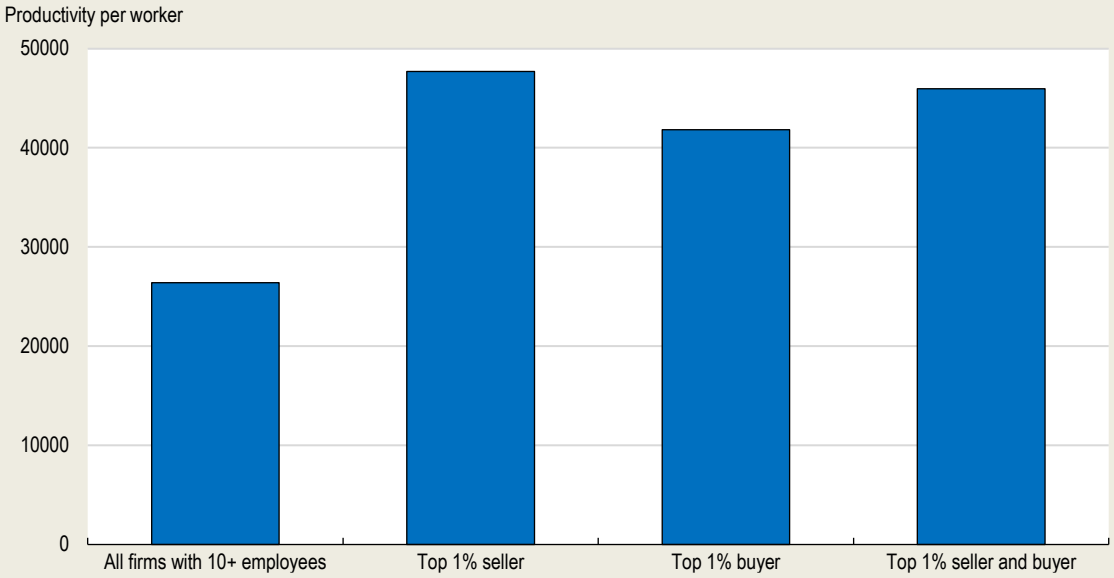
Box 3.1. Insights on the Estonian economy from business-to-business transactions

Estonia is one of a small but growing number of countries that make high-quality firm-level data on business-to-business transactions made available to researchers. This covers all value-added tax (VAT) transactions between businesses worth more than 1 000 euros each month, covering around 100 000 firms (around 85% of the total number of firms that employ 99% of the total number of workers).

Such data provide rich insights into the behaviour of firms and firm-level networks that can be relevant to policy design (Criscuolo et al., 2023). Most firms depend on a small number of suppliers and customers. However, some firms have a large number of connections to other businesses and play a central role in the Estonian production network, as well as being more likely to be involved in international trade. Larger, older and better performing firms in terms of productivity, digitalisation and CO_2 emissions tend to have more connections to customers and suppliers and play a more central role in the networks (Figure 3.6)

An algorithm-based approach identifies 13 industrial clusters, "communities", of firms that are closely linked covering 95% of firms. The largest one consists mostly of firms operating in the ICT sector and located near the capital city, while the second largest community gathers together both construction firms and wood manufacturing firms. A large majority of VAT transactions (75%) happen within these communities, that correspond to the main domestic value chains of the Estonian economy.

Figure 3.6. Highly connected firms are more productive



Source: Criscuolo et al. (2023), A firm-level portrait of the Estonian production network, OECD STI Working Paper, *forthcoming*.

StatLink https://stat.link/n2ua5d

Diffusion between customers and suppliers along supply chains within communities can help to raise good practices and know-how. New OECD research shows that, following the 2018-19 emissions price increases in the EU ETS, the energy-efficiency of firms not directly involved in the EU ETS but buying from or selling to EU ETS participants increased by 5% on average, compared to firms operating in similar sectors but not connected to ETS participants. In a similar way, firms which traded with partners that were more digital-intensive increased their own technology adoption by 3 percentage points (or 10%) following the pandemic compared to other firms (Criscuolo et al., 2023, *forthcoming*).

Estonia's transaction data suggest the existence of important green and digital technology spillovers rippling through the production network. The design of business support policies such as those supporting technology adoption or the green transition should take into account relationships between firms and between sectors, for instance by adopting a community or an ecosystem approach.

Source: Criscuolo et al. (2023), A firm-level portrait of the Estonian production network, OECD STI Working Paper, *forthcoming*

More support for digitalisation, closing skills gaps and ensuring favourable business conditions would boost productivity

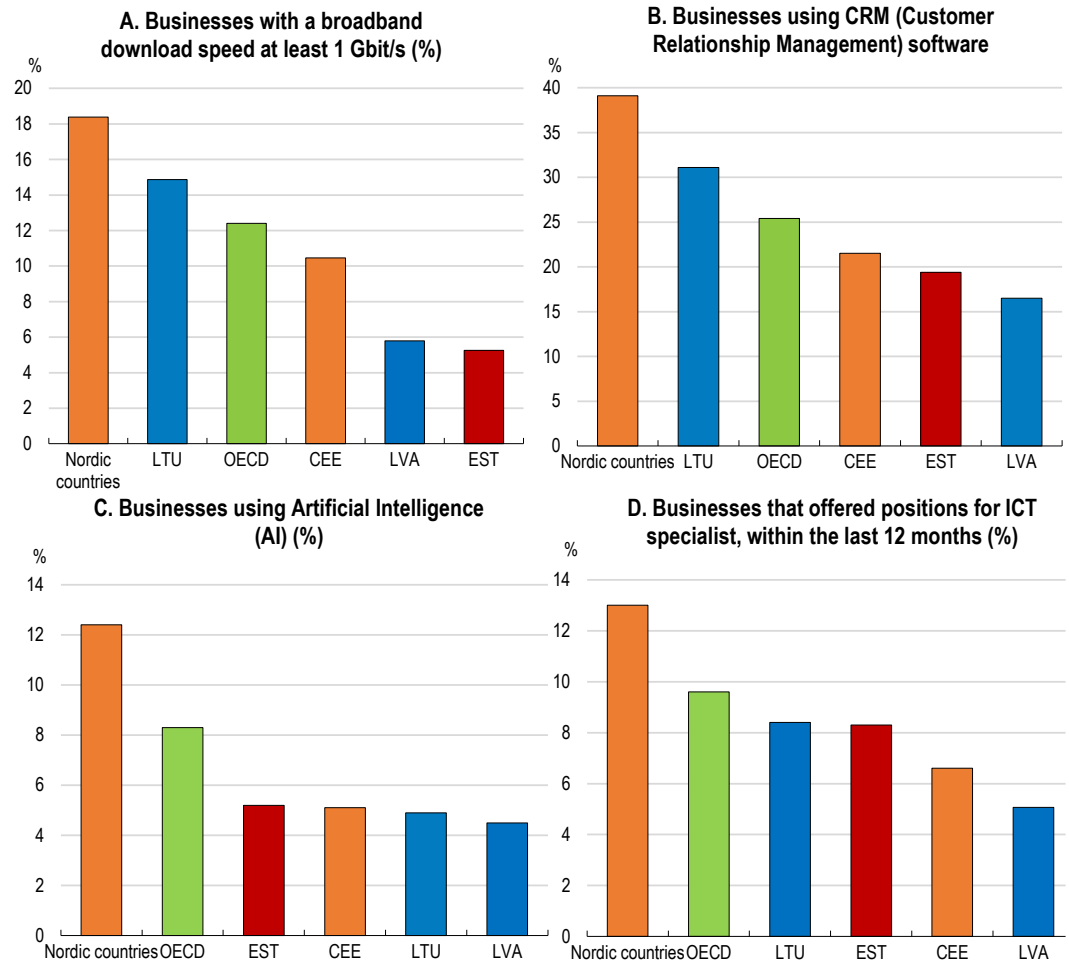
Strengthening productivity requires measures to enhance performance of firms across the economy. A broad range of policies can impact productivity growth with their effectiveness depending on the type of firms that they impact (Unsal et al, 2024, *forthcoming*). Given that the more productive firms in Estonia are already well integrated into global trade, policy attention should be on the rest of the economy. This section focusses on strengthening digitalisation, skills and the business environment, as well as reducing the risk of distortions caused by corruption.

Boosting productivity through further digitalisation and R&D

Advancing the use of digital tools could accelerate productivity growth across the business sector (Figure 3.7). Illustrative estimates show that wider use of high-speed broadband and upgrading of technical and managerial skills could increase productivity by around 7% in 3 years (Sorbe et al, 2019). At the firm level, productivity premiums can also be important, ranging from 0.15 to 5% (Mosiashvili and Pareliussen, 2020).

Figure 3.7. Use of digital technologies among firms should advance

All businesses, 2023 or latest available



Note: Panel D refers to 2021, the rest of the panels to 2023.
Source: ICT Access and Usage by Business Database, OECD.

StatLink https://stat.link/ohuigy

In the private sector, investment in intangible assets (research and development, software, training or business processes) accounted for a quarter of total investment, below the EU average of 31% in 2022 (EIB, 2022). This may reflect a lack of awareness of potential gains, a prerequisite for motivating forms to adopt digital technologies (OECD, 2019). Estonian Business and Innovation Agency, a public agency, offers grants to cover the costs of digital diagnostics. These are however administratively challenging and only firms with annual sales above EUR 200 000 are eligible. This program could be simplified and extended to all SMEs, as they often lack the knowledge and skills to choose appropriate ICT tools, which results in low demand for ICT investment. OECD countries use a wide range of policies to help SMEs to

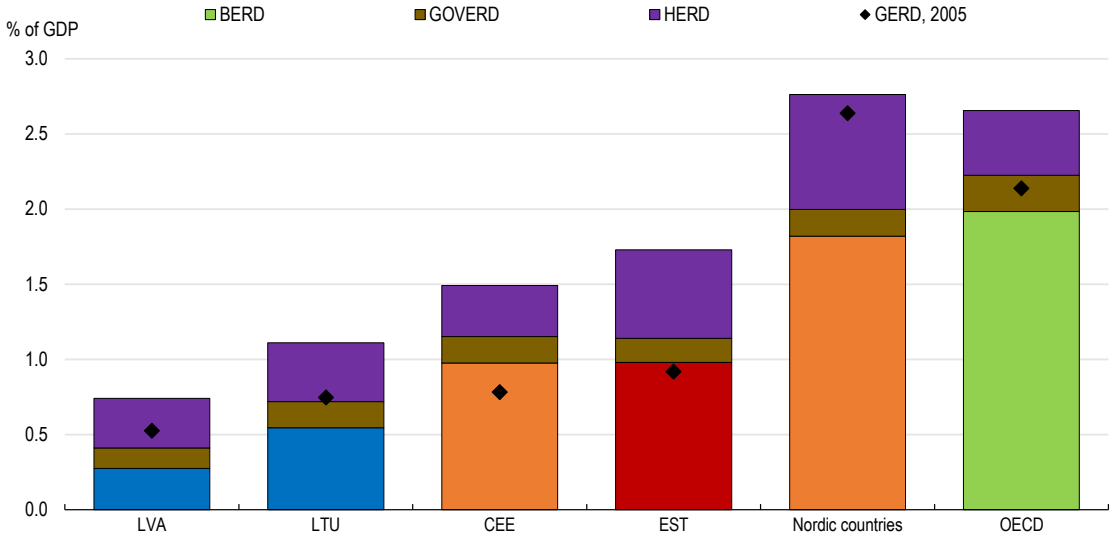
digitalise, including grants, awareness raising schemes to training. Training and seminars are also offered by AI&Robotics Estonia, another public agency led by the Tallinn University of technology, funded largely by the European funds and focused on the manufacturing industry.

Broad-based government support for R&D, training programmes and infrastructure can help to increase productivity in the long term and make domestic firms more innovative (Appelt, 2015; Criscuolo et al., 2022; Criscuolo et al., 2022). Spending on R&D activities has been increasing in recent years, from 1.5% in 2015 to 1.8% in 2022, with a broadly stable share of public financing of around a half (Figure 3.8). The authorities are committed to allocating at least 1% of GDP annually to public research, with around a quarter earmarked for the private sector, and expect an additional 2% of GDP to come directly from the private sector.

A new a centre for applied research aims to bring together the business and research sectors, which is welcome. The authorities should ensure active involvement of the private sector in the management of the centre. In 2022, around 400 businesses reported R&D investments and around a half of the businesses were large (i.e. with more than 250 employees). With innovation vouchers in place since 2009, SMEs are already able to work with universities. As recommended in the previous Survey, one way of incentivising more cooperation between business and research sectors is to allow academic staff or researchers to share the returns on patent commercialisation as permitted in other OECD countries.

Figure 3.8. Investment into research and development could be increased further

2022 or latest available



Source: OECD.

StatLink https://stat.link/sril5b

Improving skills and matching workers better to jobs

Estonian firms and the economy benefit from a well-educated workforce and a flexible labour market. Past reforms and strong demand in recent years have attracted a growing share of people into the labour market. Employment rates reached 77% in the second quarter of 2023, well above the OECD average of 71%, although structural unemployment (particularly of younger and less well-educated people) has been elevated compared to similar countries. Educational attainment is high, with over 40% of the population having tertiary education. The country scores near the top of international rankings on educational

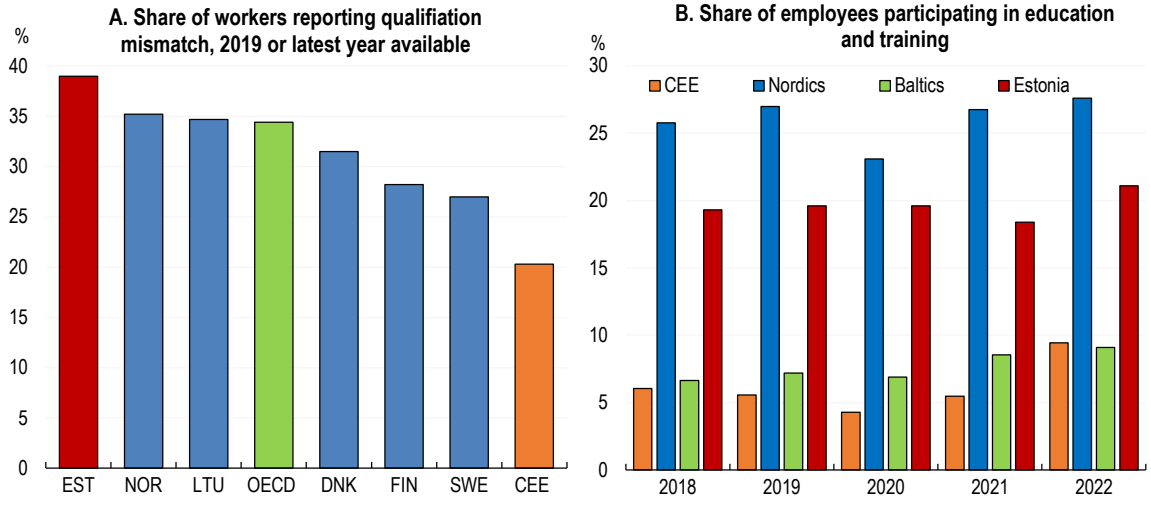
outcomes of 15-year-olds, as well as of the adult population (OECD, 2023). Nevertheless, lack of skilled staff has been a long-standing barrier to further investment across the economy with as many as 80% of firms reporting it as a main obstacle to further investments (EIB, 2019; EIB 2023). There is a persistent skills mismatch, with almost 40% of workers over or underqualified in 2019 (Figure 3.9). Lowering the skills mismatch can improve allocative efficiency and is estimated to raise productivity by at least 4% (McGowan and Andrews, 2015).

Skills formation could be improved over the working life. Around 20% of employees participated in life-long learning in 2022, a share similar to Nordic peers (Figure 3.9). However, the share of businesses providing ICT training to staff is low. In 2021, only 14% of small and 34% of medium-sized firms did so, compared to 34% and 60% respectively in Finland, one of the top performers. Management and organisational skills, keystones in the digital transition, are on par with the OECD median and the use of high-performing work practices, a proxy for the quality of management practices, is at the OECD average (OECD, 2019). As recommended in the previous *Economic Survey*, the public sector can play a role in disseminating good management practices by adopting them internally and in SOEs, as this can spillover to the private sector over time. Moreover, programmes to improve managerial practices and the organisational performance of firms with a strong element of network building can help to disseminate good practice and mutual learning (OECD, 2019; OECD, 2021a). These could be organised for instance by Estonian Business and Innovation Agency.

The vocational education and training system (VET) underwent extensive reforms in the past. It is well-designed, with strong engagement of employers and a growing number of apprenticeships (OECD, 2019). Around a quarter of secondary students' study at 35 VET schools and the share of adult students has been growing. Nevertheless, as in many OECD countries, VET is perceived to have low social status and dropout rates remain an issue. The authorities plan to improve its attractiveness by increasing subjects that would allow continuation into higher education as done for instance in Switzerland, which is welcome.

Furthermore, the education system is undergoing significant reforms as compulsory schooling is being extended by one year to 18 years, and teaching in Russian is being phased out, both of which create pressures on providing adequate teaching staff. The language transition has started this year and should be completed by 2030. To ensure adequate teaching staff, wages were increased last year and additional resources have been allocated (Ministry of Education and Research, 2023).

Figure 3.9. Persistent skills mismatch despite high participation in lifelong learning



Source: OECD, Labour Force Survey.

StatLink https://stat.link/n2mu1s

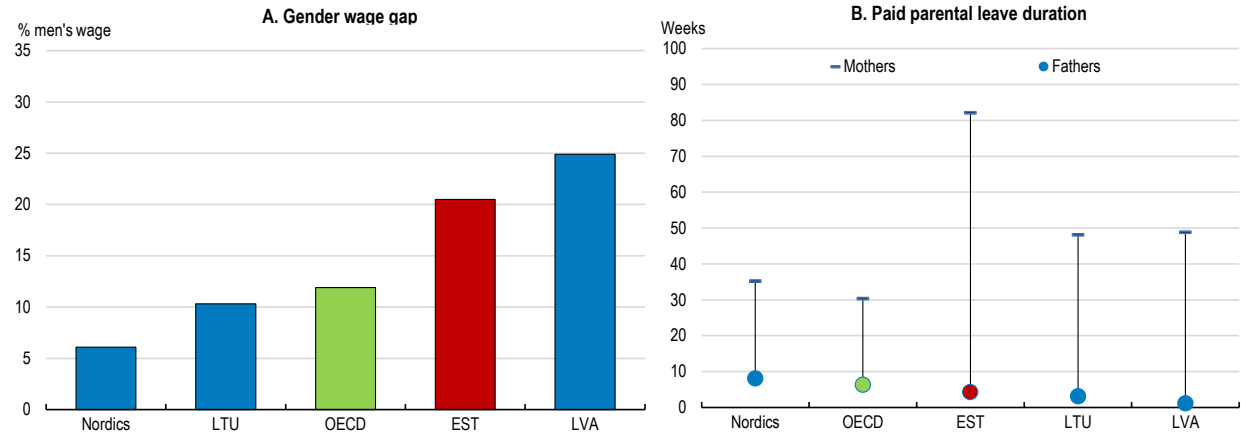
Closing the gender gap

The female employment rate, at 75% of working age population, is above the OECD average of 63% and the majority of Estonian women work full time. They are well educated with around half of 25–34-year-old women having attended tertiary education, compared to a third of men of that age. However, there is a large and persistent gender wage gap of around 20%, although this has decreased over time (Figure 2.13). Women tend to assume the bulk of childcare responsibilities within the family, often leaving the labour market for at least a year when a child is born, which contributes to gender pay gaps over a career. Moreover, women continue to do most of the unpaid work in the household. Recent OECD analysis illustrates that fully closing the gender gap in labour force participation and hours worked could boost GDP per capita by an additional 4% by 2050 or add 0.14 percentage points to growth each year (OECD, 2021b).

Around half of the gender wage gap reflects differences in tasks, responsibilities and skills, with the rest accounted for by differences in firm pay practices, the weak bargaining position of female employees and possible pay discrimination (OECD, 2021b). Legislation on equal pay has been in place for several years, but policy initiatives for more transparency on equal pay have had a limited impact as employers continue to show low awareness of the obligations imposed by the Gender Equality Act (Ministry of Finance, 2023c). As of 2027, EU-wide regulation on pay transparency will mandate companies with more than 100 employees to report regularly on the gender pay gap. To this end, the authorities are developing a digital tool, the so-called “pay mirror”, to help employers in analysing the situation in their company. Nevertheless, a significant share of employers is small and will not be affected by this requirement. Moreover, the coverage of collective wage bargaining is very low with most wages negotiated individually.

Estonia has comprehensive early childhood education and care, but there are gaps in availability. Spending on family benefits, at around 3% of GDP, focusses on cash support rather than investing in services (OECD, 2021b). While net childcare costs are well below the OECD average, access for children below the age of three is an issue, particularly in the main cities (OECD, 2023b; ERR, 2023). The share of children aged 0-2 enrolled in early childhood education and care services remains one of the lowest in the OECD as parents tend to be on parental leave. Redirecting some cash supports to increase family services, such as childcare, could encourage parents to return to work earlier and make it easier to do so. A number of policy initiatives have been launched to add flexibility in parental leave, including 30-day parental leave for fathers, a possibility to combine work with parental leave and flexible parental leave sharing between parents, that can help create a better balance in household duties. The proportion of fathers taking shared parental leave increased from 10% in 2013 to 19% in 2023 (Social Insurance Board, 2023). While the parental benefit can already be taken by either parent, the ‘father quota‘, a non-transferable 30 days of leave that is reserved for fathers who take time off to care for children, should be extended. A more even sharing of parental responsibilities and the normalisation of taking parental leave across genders could help to reduce the gender pay gap.

Figure 3.10. The gender pay gap remains high while paid parental leave is generous



Source: OECD Distribution of earnings database and OECD Family database.

StatLink https://stat.link/uknz8h

Box 3.2. A considerable gender pay gap undermines inclusiveness

Despite strong employment rates and educational attainment, Estonian women experience one of the largest pay differences vis-à-vis men in Europe and among OECD countries. Average gross hourly earnings of women were lower by 20% in 2021, well above the euro area's 13.6% difference or the OECD average of 11.6% (Eurostat, 2023; OECD, 2023e), although it is assessed to be smaller using national estimates. It has been decreasing steadily and past increases of the minimum wage have helped to narrow it.

The pay gap is pronounced in sectors such as health and social work that are traditionally female dominated. Nevertheless, a considerable part of the pay gap remains unexplained, and cannot be accounted for by sectoral or occupational segregation (Merikull and Tverdostup, 2021; OECD, 2021b).

Prevailing gender stereotypes lead to a gendered division of unpaid household work. In 2017, 70% of Estonians believed that the most important role of a woman is related to care and housework, which is around 20% higher than the OECD average. Women spent about 1.5 hours more per day on unpaid work than men, and more than half of Estonian women felt overburdened by housework, compared to one-fifth of men (OECD, 2021b).

Maintaining favourable framework conditions

Well-designed product market regulation promotes competition by removing unnecessary barriers to firm entry and facilitates the efficient allocation of resources across firms, as competition allows more efficient firms to enter markets and gain market share at the expense of less efficient ones (OECD, 2022). A favourable business environment has been one of the backbones of economic convergence in Estonia. Overall, the regulatory burden on business is low and has decreased even further in recent years. Barriers to trade are below the OECD average in most areas but can be decreased further to the OECD best performers.

While the restrictiveness of Estonia's regulation of most professional services covered by the OECD's product market indicator (PMR) is below the OECD average, the stringency of regulation for notaries and lawyers could be eased further. Notaries are subject to quantitative and territorial restrictions and several fees remain regulated. They face a ban on inter-professional cooperation and on advertising and marketing. Lawyers need to pass a final exam administered by the professional organisation and become its members (OECD, 2022b). Law firms can be owned only by lawyers and cannot be set up with other professionals. Such restrictions can limit the development of potentially innovative business models. Studies have demonstrated a negative correlation between the degree of regulation and productivity in several services including the legal professions (Paterson et al, 2007; Verboven and Yontcheva, *forthcoming*). Reviewing regulation of architects and civil engineers vis-à-vis the best practice in other OECD countries (e.g., Ireland or New Zealand) could also point to areas for further improvement.

Estonia has reformed its previously strict insolvency regime in 2020 by introducing an early warning mechanism and a pre-insolvency regime, limiting the length of stay on assets in restructuring and allowing creditors to initiate both liquidation and restructuring, as well as enabling courts to specialise and bringing transparency in remuneration of trustees. Enabling efficient restructuring can help to spur reallocation, lowering social costs and facilitating technological diffusion by promoting experimentation (Andrews et al, 2017). To align its procedures with the OECD best performers, the personal cost of insolvency could be decreased further and prevention and streamlining tools enhanced (for example, with special procedures for small and medium sized businesses). With advancing digitalisation, insolvency regimes are likely to have a greater impact on productivity as intangible-intensive industries imply a higher risk of failure. Recent OECD analysis illustrates that productivity gains from lowering barriers to efficient corporate restructuring increase with a sector's intangible asset intensity (Demmou and Franco; 2021a).

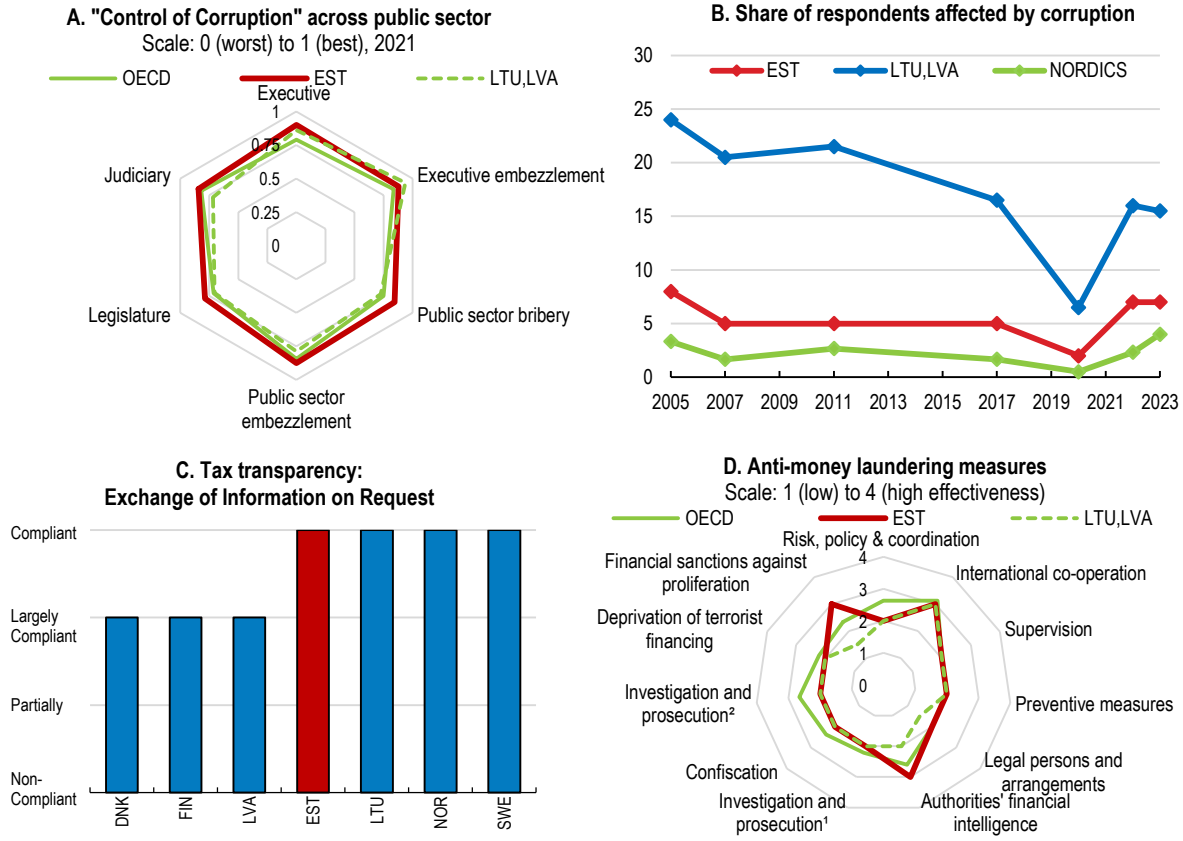
While the cost of corporate financing has increased along with the increase of interest rates (Chapter 1), access to finance was not identified as a structural barrier prior to the pandemic (OECD, 2019). Majority of firms (75%) uses internal funds for investment (EIB, 2023). With a small stock exchange, alternatives forms of financing such as factoring have become an important source of finance for SMEs (EC, 2018). Enterprise and Innovation Foundation (EISA), a public agency tasked with helping to finance businesses, offers credit guarantees, interest rate subsidies and loans to selected industries, that can be used for investment of intangibles as well (OECD, 2019).

Reducing distortions by lowering risks of corruption

Corruption can contribute to an inefficient allocation of resources in the economy by distorting competition, contributing to a misallocation of resources and undermining a good business climate. In Estonia, corruption in the public sector seems low as documented by business and population surveys of experience and perceptions of petty corruption (European Commission, 2023; World Bank, 2021) (Figure 3.11, Panels A and B).

Past episodes of money-laundering of foreign proceeds in the financial sector (e.g., Danske Bank) and concentration of virtual asset providers necessitate robust risk management. A recent assessment by MONEYVAL, a committee of experts on the evaluation of anti-money laundering measures and the financing of terrorism, a permanent body of the Council of Europe. recommended enhancing the understanding of money laundering and terrorist financing risks across key stakeholders in both public and private sector, including in the financial intelligence unit, prosecutors' office as well as developing a further understanding of risks in misuse of legal persons in e-residency program and company service providers (Council of Europe, 2022). New OECD data on internal control and risk management in the public sector identify weaknesses in terms of limited assessment of integrity and corruption risks (OECD, 2023c).

Figure 3.11. Low corruption but anti-money laundering policies can be improved



Note: Panel A shows subcomponents of the Control of Corruption indicators that is built based on expert perceptions by Varieties of Democracy Project. Panel C summarises the overall assessment on the exchange of information in practice from peer reviews by the Global Forum on Transparency and Exchange of Information for Tax Purposes. Peer reviews assess member jurisdictions' ability to ensure the transparency of their legal entities and arrangements and to co-operate with other tax administrations in accordance with the internationally agreed standard. The figure shows results from the ongoing second round when available, otherwise first round results are displayed. Panel D shows ratings from the FATF peer reviews of each member to assess levels of implementation of the FATF Recommendations. The ratings reflect the extent to which a country's measures are effective against 11 immediate outcomes. "Investigation and prosecution¹" refers to money laundering. "Investigation and prosecution²" refers to terrorist financing.

Source: Varieties of Democracy, Eurostat, OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes; and OECD, Financial Action Task Force (FATF).

StatLink https://stat.link/im5wld

Main findings and recommendations

MAIN FINDINGS	RECOMMENDATIONS
Take up of digital technologies among traditional industries is low.	Extend grants for digital diagnostics to all SMEs**.**
While the employment rate has been increasing, lack of skilled labour has been an obstacle. Managerial quality is average and provision of digital training in business sector low.	**Expand access to programmes for upskilling to improve digital and managerial skills.** Ensure that these programmes contain a strong element of network-building to disseminate good practice and mutual learning. Improve access to upskilling and take up of digital tools among traditional sectors of the economy by expanding the scope of Enterprise Estonia programs.
R&D spending is moderate at 1.8 % of GDP. To strengthen public private cooperation the authorities established an applied center to bring business and academia together.	**Continue enhancing cooperation between the public and the private sector in terms of R&D.** Ensure involvement of the private sector in the management of the new center for applied research.
Regulation of professional services can be made more competition friendly.	Review and relax territorial restrictions on notaries and allow inter-professional cooperation. Review the need for membership in a professional organization for lawyers and of restrictions on the ownership of law firms.
The insolvency regime has been reformed significantly to make it more growth friendly.	Further decrease the personal cost of insolvency and enhance prevention and streamlining tools.
The gender pay gap remains considerable and women continue to shoulder the bulk of the unpaid work in the household. Spending on family policy is tilted to cash benefits while there are capacity issues in access to childcare.	**Extend the 'father quota' in parental leave and develop more childcare services.**
Estonia faces risks of money laundering and terrorist financing.	**Strengthen understanding and management of the risks of corruption and money laundering in both the public and the private sectors.**

References

Andre, Ch. and L. Demmou (2022), *Enhancing insolvency frameworks to support economic revival*, OECD Economics Department Working Papers, No. 1738, OECD Publishing, Paris

Andrews, D. and F. Petroulakis (2017), *Breaking the Shackles: Zombie Firms, Weak Banks and Depressed Restructuring in Europe*, OECD Economics Department Working Papers, No. 1433.

Banh et al (2020), *Global value chains and productivity: Micro evidence from Estonia*, IMF Working Paper, WP/20/117, Washington.

Council of Europe/MONEYVAL (2022), *Anti-money laundering and counter-terrorist financing measures – Estonia: Fifth Round Mutual Evaluation Report*, Council of Europe, Strasbourg.

Criscuolo et al (2023), *A firm-level portrait of the Estonian production network*, OECD STI Working Paper, *forthcoming*.

Demmou, L. and G. Franco (2021a), *Mind the financing gap: Enhancing the contribution of intangible assets to productivity*, OECD Economics Department Working Papers, No. 1681, OECD Publishing, Paris.

Eesti Pank (2023), *Estonian Competitiveness Report*, Eesti Pank, Tallinn.

EIB (2023*), European Investment Bank Investment Survey Country Overview 2022: Estonia*, European Investment Bank, Luxembourg.

ERR (2023), *Thousands of kids on kindergarten waiting list in Tallinn suburbs*, Err.ee.

European Commission (2023), *Eurobarometer Survey – Citizens' attitudes towards corruption in the EU in 2023*, Eurostat.

Hausman R., et al (2011), *The Atlas of Economic Complexity: Mapping paths to prosperity*, accessed July 15, 2023.

Masso, M. and J. Vahter (2022), *Joining and exiting the value chain of multinationals and the performance of suppliers: Evidence from inter-firm transaction data*, University of Tartu, School of Economics and Business Administration, Tartu.

McGowan M., and A. Andrews (2015), *Skills Mismatch and Public Policy in OECD Countries*, OECD Economics Department Working Paper No.1210, OECD Publishing, Paris

Ministry of Education and Research (2023), *Transition to Estonian-language education*, Ministry of Education and Research, Tallinn.

Mosiashvili, N. and J. Pareliussen (2020), *Digital technology adoption, productivity gains in adopting firms and sectoral spill-overs: Firm-level evidence from Estonia*, OECD Economics Department Working Paper No. 1638, OECD Publishing, Paris.

OECD (2019), *OECD Economic Surveys: Estonia 2019*, OECD Publishing, Paris.

OECD (2021a), *Incentives for SMEs to Invest in Skills: Lessons from European Good Practices, Getting Skills Right*, OECD Publishing, Paris.

OECD (2021b), *The economic case for more gender equality in Estonia*, OECD Publishing, Paris.

OECD (2022), *Assessment of the links between the European National Recovery and Resilience Plan and the OECD Product Market Regulation Indicators*, OECD Publishing, Paris.

OECD (2023a), *ICO-TIVA Highlights: GVC Indicators for Estonia*, OECD Publishing, Paris.

OECD (2023b), *PISA 2022 Results – The state of learning and equity in education*, OECD Publishing, Paris.

OECD (2023c) *Public Integrity Indicators - Estonia, Internal control and risk management indicators*, OECD publishing, Paris.

Paterson et al (2007), *Economic Impact of Regulation in the Field of Liberal Professions in Different*

Member States, WP Institute for Advanced Studies, Vienna.

Sorbe, S. et al (2019), *Digital Dividend: Policies to harness the potential of digital technologies*, *Economic Policy Papers*, No. 26, OECD Publishing, Paris.

Schwellnus et al (2023), *Global value chain dependencies under the magnifying glass*, OECD Science, Technology and Industry Policy Paper No 142, OECD Publishing, Paris.

Verboven, and F. Yontcheva (2024), *Private Monopoly and Restricted Entry – Evidence from the Notary Profession*, Workshop presentation, *forthcoming.*

Unsal et al (2024), *Reviving productivity growth: A review of policies*, OECD Economics Department Working Paper, *forthcoming.*

World Bank (2021), *Enterprise Business Survey*, World Bank, Washington.

4. Accelerating the green transition

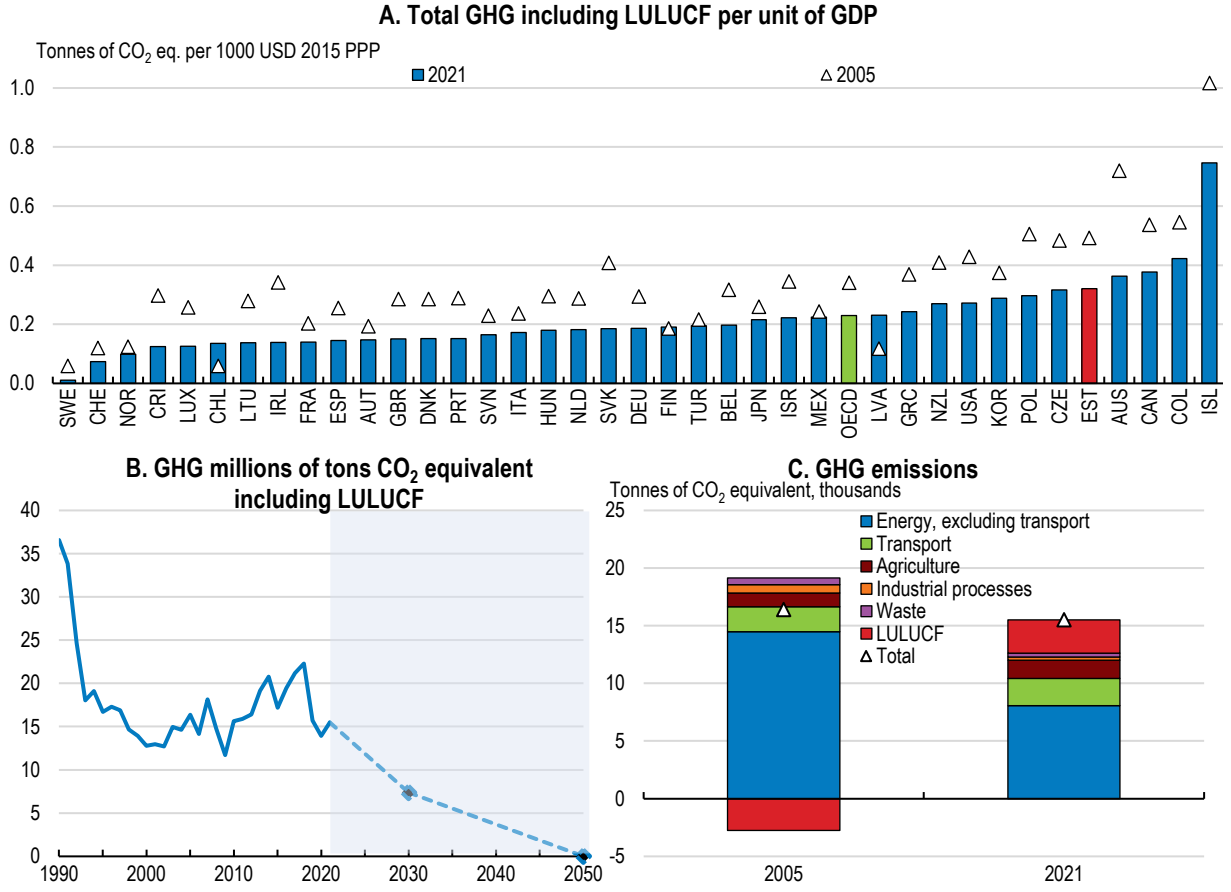
Srdan Tatomir

Estonia has made substantial progress in reducing greenhouse gas emissions, but it will need to accelerate the pace of decarbonisation to halve emissions by 2030 relative to 2005. Carbon prices have risen over time due to higher EU ETS prices, but they will need to rise further. The energy sector remains carbon intensive due to continued reliance on oil shale but, despite its recent contribution to energy security, the government needs to commit more firmly to phasing out oil shale from energy production over time. Biomass will continue to be important but Estonia will need to reduce rising emissions from forests and changing land use. The use of wind and solar energy has expanded and administrative barriers have been removed to encourage further development. The electricity grid needs to be further strengthened to accommodate more renewable energy and enable greater interconnectivity. Transport emissions have been broadly unchanged, but the introduction of the new motor vehicle tax, increasing electrification and public transport investment should reduce emissions. Improving the energy efficiency of buildings will help support decarbonisation. Estonian labour markets are flexible and well placed for the shift to a greener economy, and targeted support is being provided to the Ida-Viru region, where the oil shale industry is concentrated.

Progress on reducing greenhouse gas emissions needs to accelerate

Estonia has made progress in reducing greenhouse gas (GHG) emissions over time, but it will need to accelerate the pace of decarbonisation in order to achieve climate neutrality by 2050. The GHG intensity of the economy has decreased by a third since 2005, but it remains one of the more energy-intensive OECD economies (Figure 4.1, A). Overall, emissions were only slightly lower in 2021 than in 2005 (Figure 4.1, B). Energy sector emissions have decreased substantially, while transport emissions have not fallen and land use, land use change and forestry (LULUCF) is now emitting net positive GHG emissions (Figure 4.1, C). This puts Estonia's new targets, part of the EU Fit for 55 goals, at risk. Climate adaptation costs are likely to be lower than in many countries, but Estonia will still be affected by more extreme weather events and rising sea levels (Maes et al, 2022). In order to halve its GHG emissions by 2030, Estonia will need to significantly accelerate its pace of decarbonisation and reduce annual emissions by around 5% each year, requiring a concerted effort across the economy.

Figure 4.1. Estonia will need to reduce greenhouse gas (GHG) emissions at a faster pace



Note: LULUCF stands for land use, land use change and forestry. The targets in Panel B are Estonia's goals consistent with Fit for 55 objectives.
Source: OECD Greenhouse Gas Emissions database.

StatLink https://stat.link/9wx3q1

Ensuring energy security during the transition to climate neutrality is a key issue. Estonia was one of the most energy independent European countries in 2022 as it imported less than 10% of its energy needs. However, as it shuts down its oil shale industry, Estonia will need to replace this with new energy production and imports. Ensuring electricity connectivity and sufficient domestic energy production will be crucial to achieving a stable energy supply.

A comprehensive set of policies will be necessary to achieve the transition to net zero (D'Arcangelo et al, 2022). Many of Estonia's GHG emissions rules and regulations are set at the EU level, including through the EU Emissions Trading System (ETS). Higher and consistent pricing of carbon will provide market incentives to decarbonise, while well-designed standards and regulations can create a supportive market framework conducive to green investment in energy, transport and buildings. A range of policies at the national level can contribute to this effort and the effectiveness of EU measures. Complementary policies that facilitate the labour market transition, while protecting the socially vulnerable, are important in ensuring a broad-based and inclusive green transition.

The investment required to achieve climate neutrality by 2050 is substantial and will rely both on private and public sector finance. Many of the measures will be capital-intensive and investment needs to be made up-front. In 2019, the research institute SEI estimated that the green transition would require investing 4% of GDP each year in 2021-2030, 2% by 2040 and 1% between 2040 and 2050 (SEI, 2019). The private sector is expected to account for three quarters of the total, or 3% of GDP this decade, by investing in renewable energy, low-carbon transport and building renovation. Public sector investment will be crucial to develop the energy and transport infrastructure that enables decarbonisation and to upgrade public sector buildings. EU funds including the Recovery and Resilience Plan (RRP) and ETS revenues are expected to finance around half of Estonia's climate-related needs over 2021-2027.

Carbon pricing plays a key role in reducing emissions

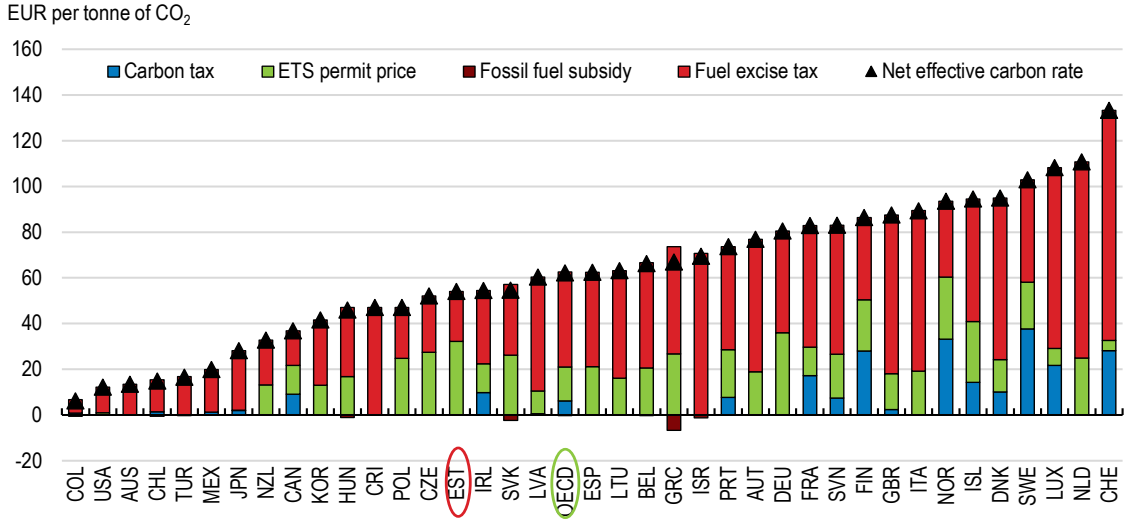
The reduction of Estonia's GHG emissions has significantly been influenced by EU rules and regulations, including through the EU ETS. In 2021, 61% of Estonia's GHG emissions were covered by ETS prices. The EU plans to cover non-ETS sectors, such as transport, buildings and agriculture, in the ETS 2 emissions trading scheme from 2027 onwards. Carbon prices will need to increase to drive further decarbonisation: a recent OECD study suggests that ETS prices in the EU might have to rise to EUR 180 per CO_2 tonne by 2030 to achieve Fit for 55 targets and will need to be even higher to achieve climate neutrality by 2050 (Chateau, Miho and Borowiecki, 2023).

Estonia has set carbon taxes domestically to support climate goals and further measures would contribute to reaching the targets efficiently. The national carbon tax that applies to small heating systems (6% of all emissions) will be raised from EUR 2 to EUR 25 in mid-2024. However, as in many countries, the taxation of carbon content varies across fossil fuels. It ranges from EUR 35 per tonne of CO_2 equivalent on coal to EUR 225 on gasoline (OECD, 2023a). In Estonia, the average net effective carbon price in 2022 has been below neighbouring Baltic EU countries and below most OECD countries (Figure 4.2).

To price carbon emissions more consistently and in line with climate goals, a number of measures should be undertaken. First, the government should restore excise duties to pre-pandemic levels by 2027 as planned (IEA, 2023). To minimise the risk of a sharp adjustment later on, Estonia could further raise carbon taxes ahead of ETS 2 that will apply from 2027. Second, exemptions from excise duties, such as for fuels used in fishing and maritime transport, and reduced rates, such as for diesel fuel used in agriculture, should be removed. The excise rate on diesel should be increased so that it at least aligns relative to petrol in terms of carbon emissions. An ongoing government review of environmental charges and taxes presents an opportunity to increase effective prices on GHG emissions and will be facilitated by upcoming climate legislation and reforms that give more emphasis to climate policy (see Box 4.1). Raising the magnitude of planned increases in excise duties by another EUR 6 per CO_2 tonne equivalent, that is by 50%, could bring additional revenue worth around 0.3% of 2022 GDP.

Figure 4.2. Relatively low effective taxes on carbon emissions need to be increased

Net effective carbon tax rates, 2021



Note: Net effective average carbon rates are calculated as weighted average carbon prices across sectors net of fossil fuel support.
Source: OECD Net Effective Carbon Rates database.

StatLink https://stat.link/nz9txh

Box 4.1. Latest legislative changes and reforms to boost the implementation of climate policies

Estonia is updating its National Energy and Climate Plan for 2030 to reflect the new and more ambitious EU climate targets. This is informing the development of a new Climate Law, which will provide the legislative framework for achieving climate neutrality by 2050. The aim is to provide a legal basis for procedures, a framework, and tools that future governments can use to execute climate policies. The government is conducting a broad public consultation on the Climate Law with the aim to send a draft law to parliament in mid-2024 in order to enforce it from 2025 onwards.

Recent reforms have also focused on improving administrative capabilities to deliver the green transition. The responsibilities for climate policy have previously been spread across several ministries and government agencies. Reforms enacted in July 2023 have consolidated several functions within a new Ministry of Climate expanding its scope to cover 90% of all GHG emissions. The new ministry is centred around the previous Ministry of Environment but now includes construction, transport, energy and maritime departments from the Ministry of Economic Affairs and Communication. The Minister of Climate is responsible for achieving Estonia's climate change goals while ensuring conditions for balanced and sustainable development of the economy (IEA, 2023). This reform should improve cooperation across different policy areas and lead to a more integrated approach to the green transition.

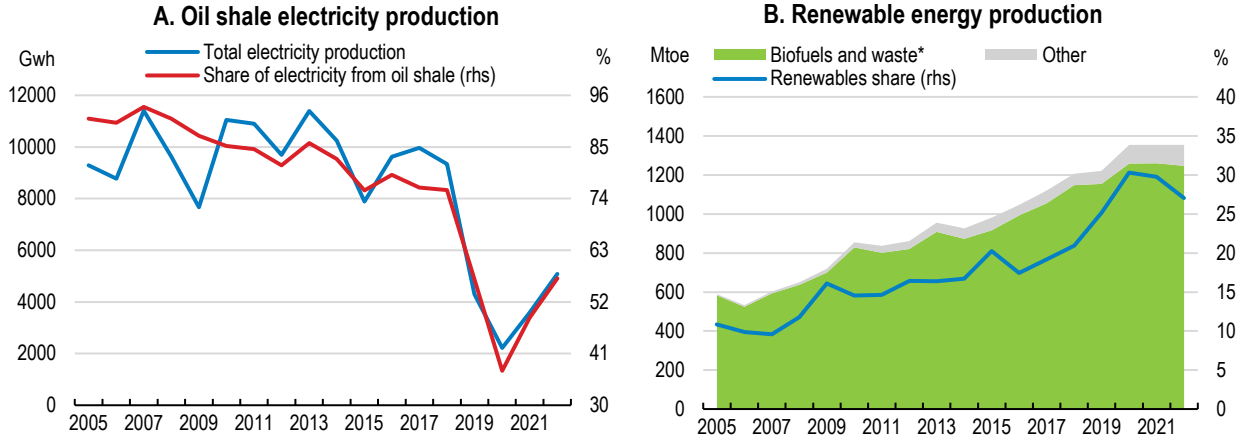
Furthermore, Estonia has established a Climate Council in 2023 as recommended by the previous Survey. Its initial role will be to advise on climate strategy and legislation, but it will also be expected to monitor progress and assess performance on Estonia's climate goals in the future. The 15-member Climate Council is made up of a diverse set of scientists and specialists, including those from the energy, transport and information technology sectors. The advisory council will be complemented by an executive group comprising ministries and government to ensure continued progress on Estonia's climate goals (IEA, 2023).

Decarbonising the energy supply

Decarbonising electricity production and deepening electrification will be key to achieving the green transition. Electricity demand in Estonia could rise by 7.5% between 2025-2030 and by around 60% by 2050 (Elering, 2022). Historically, domestically produced oil shale has generated most of Estonia's electricity (see Box 4.2). Renewable energy will not only need to replace oil shale, but also expand electricity production to meet higher demand. Around a third of all energy used was from renewable sources in 2021, close to the Fit for 55 target, but the ambition is to double this by 2030. Estonia's targets are ambitious and aim to cover 100% of its electricity consumption from renewable sources, primarily wind, by 2030. Diversifying renewable energy and improving interconnections to other countries to manage intermittent production are needed to further expand renewables use.

Oil shale remains an important source of energy, but it will need to be phased out. The use of the carbon-intensive oil shale to generate electricity decreased since 2018 although it bounced back during the energy crisis in 2022, providing energy security as it was used to produce around 60% of the electricity production (Figure 4.3). Rising EU ETS prices have increasingly shifted activities towards oil shale liquefaction, which is 40% less carbon intensive to produce, and now accounts for a third of overall output. The government has invested in the development of a new shale oil liquefaction plant in 2020, although in 2023 the Supreme Court reduced the number of years it will be able to operate. While liquefaction renders the pace of winding down oil more flexible, fossil fuel subsidies and further investment are inconsistent with meeting climate goals (IEA, 2023). The current government does not intend to give out new licences to open new oil shale mines and remains committed to ending its use in electricity production by 2035 and to ceasing use of oil shale in any energy production by 2040. To ensure market expectations are aligned with the government's climate goals, it should include this commitment in the upcoming Climate Law. A legal commitment would raise the bar for future governments to reverse course.

Figure 4.3. Oil shale remains important while renewables are not yet diversified



Note: * Bioenergy includes solid primary biofuels, liquid biofuels biogases and renewable municipal waste.
Source: Statistics Estonia (KE033), IEA.

StatLink https://stat.link/jx4rtz

Biomass, an important and reliable domestic source of renewable bioenergy, has limited room to expand. It overwhelmingly comes from domestic forests as a by-product of forestry activities and 40% was exported in 2021. However, the LULUCF sector has changed from a carbon sink to a carbon emitter (Figure 4.5, A) due to an increase in forest land emissions that has resulted from maturing forests and increased felling rates. Wetlands emitted GHG due to peat extraction and peat use. The need to reduce LULUCF emissions provides limited room for felling rates to increase and requires more emphasis on afforestation and peat extraction (Figure 4.5, B). This will constrain domestic biomass availability. While the Forestry

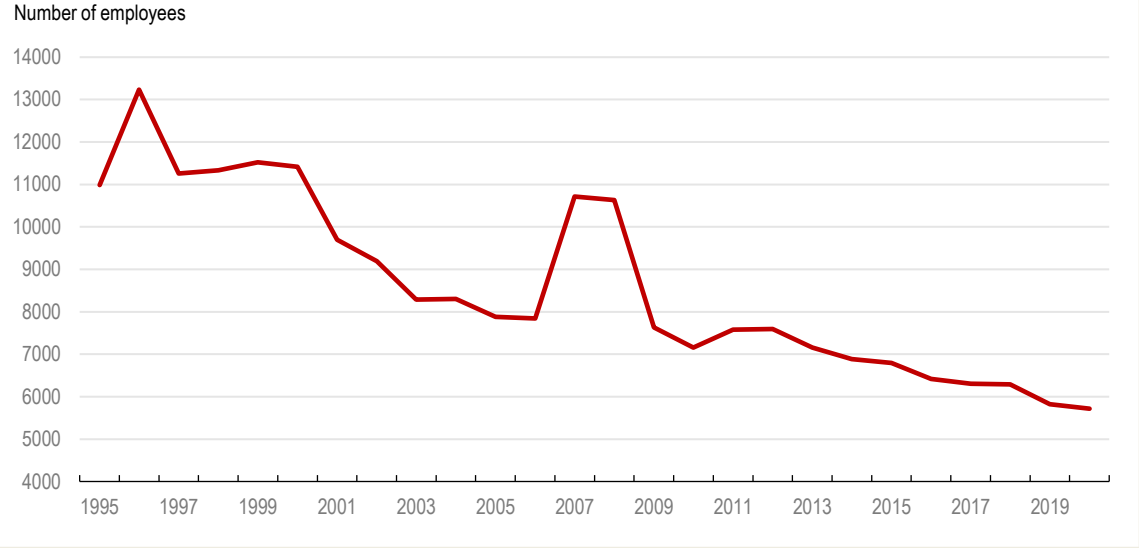
Development Plan 2021-2030 has been delayed, the upcoming Climate Law will explicitly set national LULUCF targets and provide a framework and policy instruments to achieve reductions in emissions. The government has widened the state forest management company's environmental objectives, but will need to follow up with a LULUCF strategy once the Climate Law is passed. Given the scale of the challenge, this could benefit from an increased role of outside expertise and advice on how best to boost LULUCF carbon sequestration. Monitoring will be essential in managing LULUCF emissions. While Estonia has a well-developed national forest inventory system, it should invest more resources to better analyse the collected data and improve the frequency of data collection. Further developing remote sensing capabilities, such as multispectral satellite imaging, could help (Laing et al, 2021).

Box 4.2. The importance of oil shale in Estonia

Oil shale is a hydrocarbon-rich sedimentary rock, different to light crude oil that is sometimes referred to as shale oil. Most of the reserves are in the United States but Estonia's reserves, accounting for 5% of the global total, have the highest energy value and are similar to brown coal. Oil shale can be burned to produce electricity and one of its by-products is a gas that can be used for district heating. It can be used to produce oil for maritime use, a process which is 40% less CO_2 intensive than generating electricity. Waste products, such as ash, can also be used for making concrete.

In the 1990s, as Estonia regained independence, it faced falling export demand from Russia and low oil prices. This led to a rapid reduction in oil shale output and employment (Figure 4.4). Despite a trend decline, oil shale continued to be a significant source of Estonia's energy over the past three decades. The oil shale industry accounted for around 3% of GDP in 2021 and 1% of all employees (Statistics Estonia, 2023). It remained responsible for 62% of total energy supply in 2022. Within Ida-Viru, it continues to employ around 5,000 workers and contributes to 40% of the region's GDP.

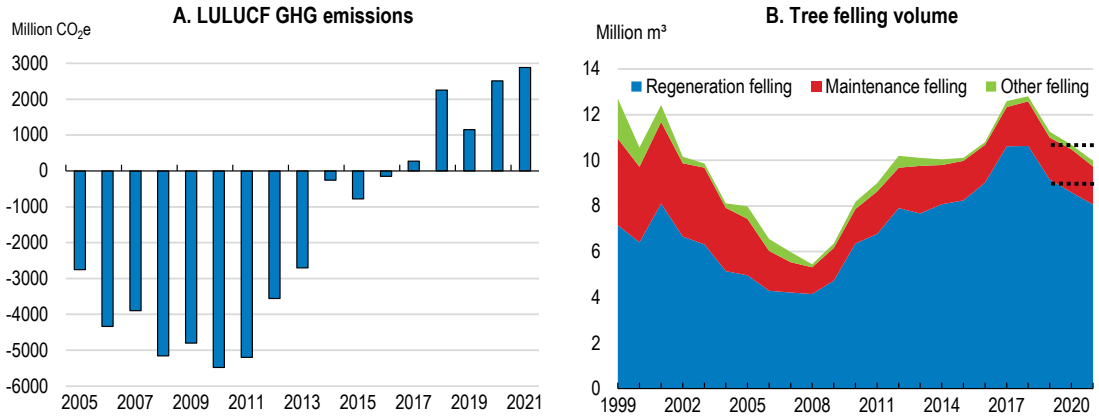
Figure 4.4. Employment in the oil shale industry has declined since 1995



Note: The employee figures are indicative and only refer to the Ida-Virumaa region.
Source: Ministry of Finance; Statistics Estonia.

StatLink https://stat.link/stjc4d

Figure 4.5. Higher LULUCF emissions could limit the role of biomass

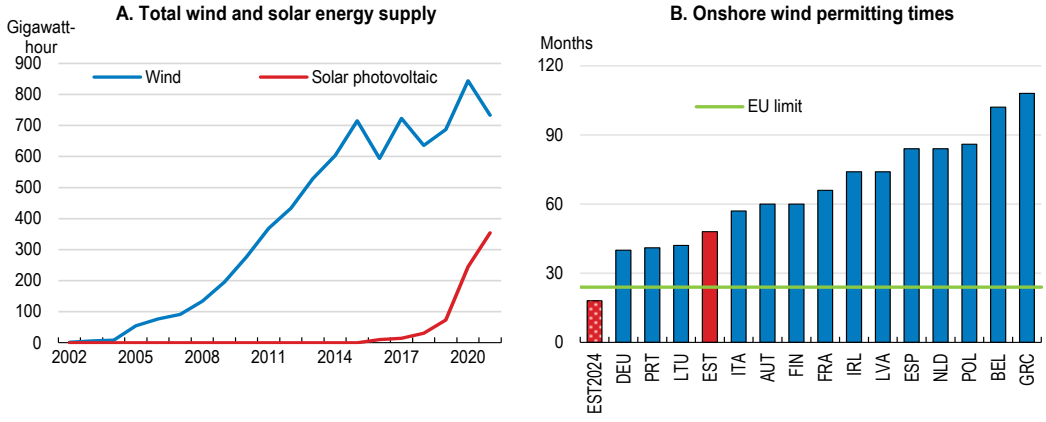


Note: The dashed lines in Panel B represent national estimates of the sustainable net felling rates for 2020-30.
Source: OECD Forest database; and Statistics Estonia.

StatLink https://stat.link/0kqw6n

The development of renewable wind and solar energy will need to accelerate from 1TWh to around 9TWh of electricity supply to achieve the target of covering 100% of electricity demand by 2030 (Figure 4.6, A). Producing electricity from renewable sources is now cheaper than producing it from fossil fuels and there has been plenty of investor demand for developing renewables in Estonia, despite some of the lowest feed-in premia in Europe (IEA, 2023; Wind Europe, 2022). However, administrative barriers remain. Estonia has upgraded its defence radars, which have previously limited onshore wind parks, and it has conducted an audit as part of the EU RePowerEU scheme to identify and remove the biggest bottlenecks in planning, permitting and building renewable energy projects (MEAC, 2023). This should significantly reduce permitting times (Figure 4.6, B). Moreover, it is designating special go-to areas that have been pre-approved for renewables. To support this process, it should establish a single contact point, such as a one-stop shop for all regulations and permits, to streamline renewable development as has been done for offshore wind in Denmark.

Figure 4.6. New reforms should significantly shorten permitting times and boost renewables



Note: In Panel B, the EU limit of 24 months is stated in the Renewable Energy Directive (2018/2001). Countries analysed make up 96% of installed 2021 wind capacity. Data only available for the countries presented in Panel B. Estonia's estimates come from the draft update of the National Energy and Climate Plan 2030.
Source: Eurostat Complete energy balance database (nrg_bal_c); WindEurope; EMBER; and GlobalData.

StatLink https://stat.link/83g4vx

Deeper electrification will necessitate investments in the grid to expand its capacity and flexibility in order to accommodate renewables. The electricity grid will require investment throughout the country, but

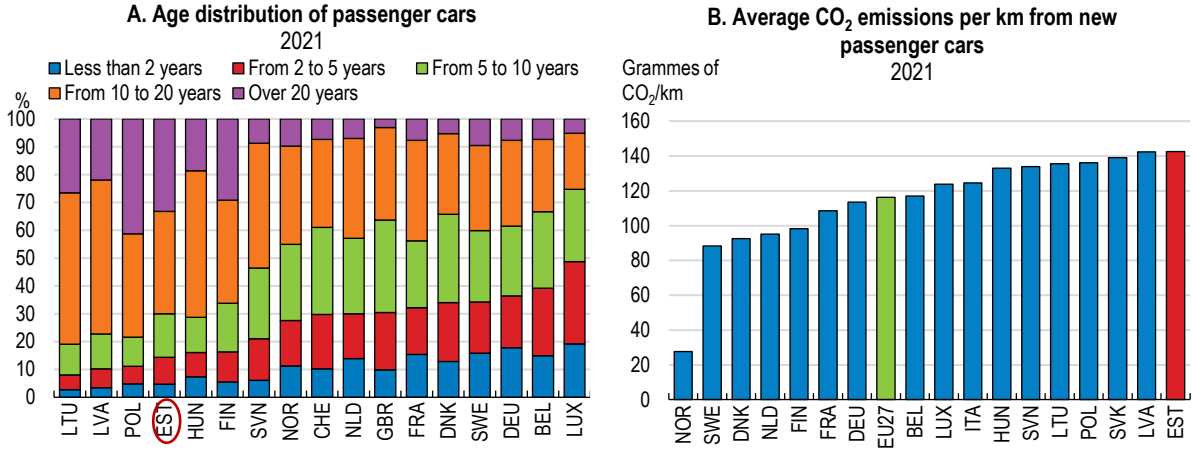
especially in the western regions and coastal areas where there is more wind. Elering, the transmission service operator, is building a connection for ELWIND, a joint Estonian-Latvian government offshore wind project. RePowerEU funds, part of Estonia's RRP, will support grid infrastructure investment with EUR 70 million over 2023-26. Private investors need to apply and pay for a grid connection, but grid investment plans and connection costs can still lack sufficient details, which hampers investment (Tallat-Kelpšaitė et al, 2020). Nevertheless, overall demand for connections rose 250% in 2022 and, given the number of renewables projects in planning phases, there is a risk of insufficient grid capacity to accommodate them (Elering, 2022; Renewables Estonia, 2023). To support renewable development, Estonia should invest more resources, including additional workers, into expanding the grid and provide more clarity on its development plans.

Enabling more interconnections with other countries will be key to managing fluctuations in demand and supply and ensuring adequate energy security. While Estonia has been among the least energy-import dependent countries in the EU, it has recently become a net importer of electricity. In natural gas, despite the recent damage to the Finnish-Estonian gas pipeline, access to Latvian storage facilities has provided sufficient energy security in natural gas. However, the electricity grid remains exposed to sudden disruption from Russia. Estonia has been cooperating with Latvia and Lithuania to speed up the switch to the continental European grid and now plans to do so in February 2025. Additional interconnections, such as EstLink 3 with Finland, would help boost interconnectivity.

On the road to lower transport emissions

A comprehensive approach will be required to reduce transport emissions, which account for 15% of total GHG emissions. Estonia is aiming to reduce transport emissions by 24% in 2030 relative to 2005. This will be a significant challenge given that transport emissions in 2021 were higher than in 2005 and 90% came from road transport. Rising living standards and relatively low vehicle taxation has led to more car purchases and driving over the past three decades (IMF, 2022). Car ownership is higher than in most other EU countries and the car fleet is one of the oldest, with some of the largest engines (Figure 4.7, A) (EC, 2023). New vehicles have the highest average CO_2 emission levels in the EU (Figure 4.7, B). Current policies outlined in the Transport and Mobility Development Plan 2021-2035 should reduce emissions by only 13% by 2030 (SEI, 2022). To accelerate the pace of emission reductions, transport energy efficiency and emissions intensity need to improve.

Figure 4.7. Estonia's car fleet is relatively old and new cars have high CO_2 emissions



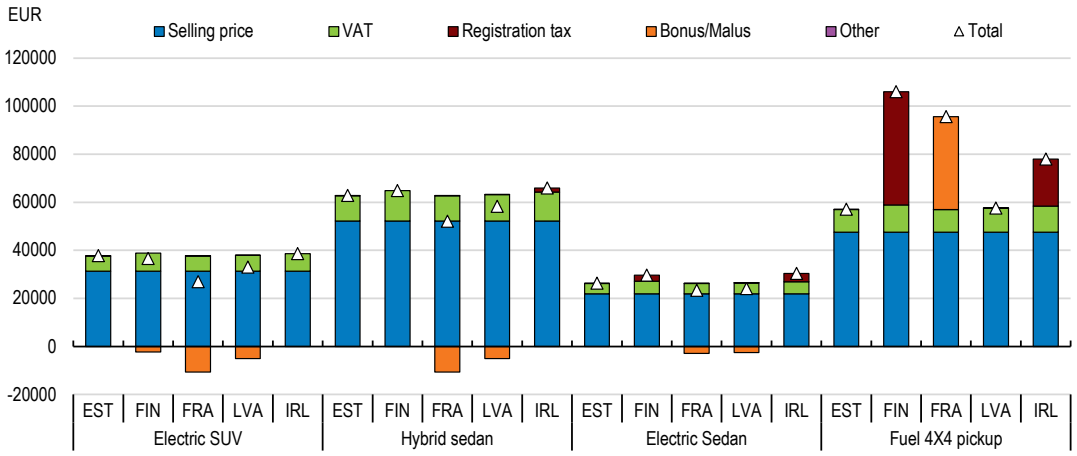
Source: Eurostat (road_eqs_carage, sdg12_30).

StatLink https://stat.link/5kmgu9

Until now, Estonia's current vehicle taxation has not been related to GHG emissions (Figure 4.8). New vehicles are subject to VAT and there was a low and flat vehicle registration fee for new and used vehicles imported to Estonia (EUR 192). Heavy goods vehicles pay a toll (EUR 500-1300), but there are no road user charges on private vehicles. Fuel excise duties are high and make up most of the transport-related tax revenue. In OECD countries, there has been an increasing emphasis on using vehicle taxes for environmental goals (see Table 4.1 in the Annex for examples). The government is now introducing a new motor vehicle tax where the registration fee and an annual vehicle tax will each combine a fixed fee with taxes related to the vehicle's gross weight and CO_2 emissions. The motor vehicle tax will cover all vehicles from 2025 onwards with few exceptions. However, the annual tax decreases with vehicle age to make it more affordable for those on lower incomes who tend to have older cars. For example, owners of vehicles older than 15 years will pay only 10% of the annual tax their vehicle is liable for based on its weight and emissions. Given that 70% of the current passenger car fleet is older than 10 years, the new taxes risk being too low to significantly reduce emissions. This underlines the importance of targeted measures to help low-income households meet their transport needs in a cleaner way that would allow more effective action against more polluting vehicles.

Figure 4.8. Taxation for new cars in Estonia has not been related to their environmental impact

A comparative overview of components of car taxation for different types of cars in selected OECD countries, 2022



Note: The purpose of this chart is to allow a comparison of the level of taxation across selected member countries and not to reflect the actual local market prices. Therefore, to ease cross-country comparisons on the level of taxes it is assumed, for the purpose of this table, that the selling price before tax of the vehicles is the same in all countries. To ease comparison between countries, the cars are divided into four categories of vehicles considered typical cars: electric SUV, hybrid sedan, electric sedan and fuel 4X4 pick-up.
Source: Annex Table 4.A.2. in OECD Consumption Tax Trends 2022.

StatLink https://stat.link/t1srp0

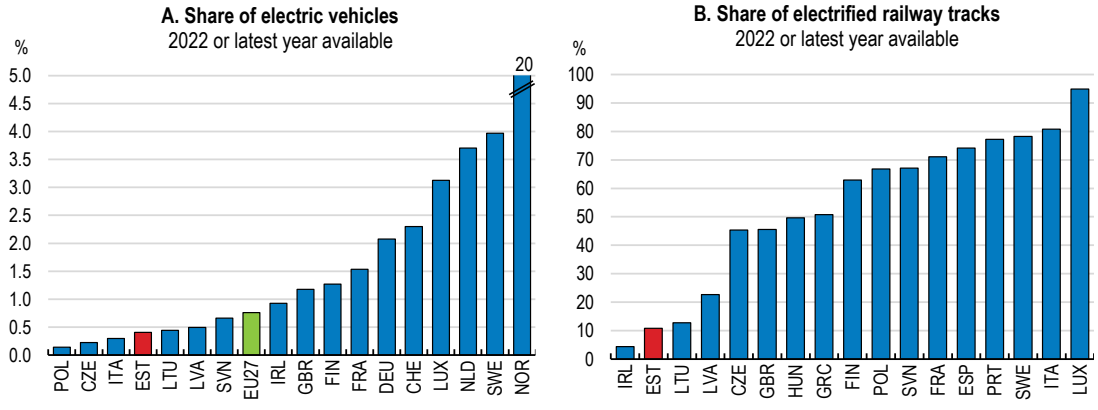
Estonia should also consider a targeted scrappage scheme for older vehicles that would incentivise drivers to upgrade to more fuel-efficient vehicles. This could be subsidised by newly generated vehicle tax revenues and should focus on those with lower incomes. Some European countries have proxied for low income based on the vehicles' age and mileage with higher subsidies for older vehicles (Svoboda et al, 2023). Experience from the US, Germany and France shows that such schemes, if well-designed and well-targeted, can effectively lower emissions (OECD, 2011). This could be coupled with introducing minimum emissions standards that rise over time and are consistent with reducing transport emissions. For example, in February 2023, the EU Parliament has voted for a ban on sales of new internal combustion vehicles from 2035. Setting legally binding emissions targets can influence market expectations and strengthen government accountability (D'Arcangelo et al, 2022).

In the medium to long term, distance-based charging is more efficient and can better align usage with the 'polluter pays' principle. It allows prices to be differentiated based on geography and time. For example, charges could be higher on routes where alternative modes of transport exist and where congestion is an issue. Equally, lower charges could be set for rural and lower income areas. Furthermore, distance-based charges could guard against future declines in transport-related tax revenue. Excise duties levied on fuels currently account for about 4% of Estonia's total tax revenue, which the rising share of zero-emission vehicles will erode over time. For example, in Slovenia, simulations suggest a 56% decline in total tax revenues derived from passenger cars in 2050 relative to 2017 levels (OECD/ITF, 2020). The state of Victoria in Australia has piloted distance-based charging, albeit with charges at a low level. Estonia would have to invest in technology solutions to monitor driving distances but, given its relatively advanced levels of e-government, it is well placed to benefit from distance-based charging.

Despite the country's compact geographic area, the share of electric vehicles (EVs) is among the lowest in the EU (Figure 4.9, A). While low excise taxes on electricity and upcoming registration fees and annual taxes make EVs relatively more attractive than petrol and diesel cars, EVs can still be expensive to purchase given modest income levels. Zero-emission vehicles continued to be subsidised with the latest scheme worth EUR 8.5 million introduced in 2023 (KiK, 2023). However, the scheme is too small. It provides support for fewer than 2,000 vehicles and should be better targeted with more generous support for less expensive EVs in order to broaden affordability. Purchase incentives by different types of bands exist in Hungary, Italy, Germany and France (ACEA, 2023). The scheme could also directly target high-mileage vehicles, such as taxis, as done in Greece. In addition, many countries offer financial assistance with setting up charging infrastructure at home or at workplaces. This is done in Austria, Italy, Spain, Sweden and the UK (ACEA, 2023). Estonia's bus fleet is mainly fuelled by natural gas and could also benefit from electrification to reduce emissions (IEA, 2023).

Rail transport has considerable potential to reduce emissions by encouraging further modal shifts away from road transport for both passengers and freight. However, most of the trains still run on diesel and only 10% of 2,143 kilometres of the rail network are electrified, the lowest share in Europe (Figure 4.9, B). With the help of EU Structural Funds and ETS revenue, Estonia plans to invest EUR 361.5 million, or around 1% of GDP, to achieve full electrification by 2028, but has only signed a contract for the first stage of electrification in 2023 (Estonian Railways, 2022). Rail Baltica, set to be finished by 2030, is expected to boost passenger and freight volumes as it connects Tallinn to Warsaw. However, the project has been beset by delays in the past. In Estonia, land acquisition has fallen behind schedule by five years (Riigikontroll, 2021). However, construction should start on a quarter of the Estonian mainline in 2024. Good risk management and cost control will be key to ensuring successful completion (Riigikontroll, 2019).

Figure 4.9. The degree of car and rail electrification is low



Source: Eurostat (road_eq_carpda, RAIL_IF_TRACKS).

StatLink https://stat.link/qhikds

Public transport should play a bigger role. Estonia's transport plan is aiming for 55% of people to commute by public transport, by bicycle or on foot, but only 34% of people did so in 2021 and this share has been steadily declining over the past decade. As Tallinn and the surrounding Harju county account for half of all transport emissions, public transport use in these areas can significantly reduce emissions. To this end, the Tallinn Old Port tram line will be extended by 2024 and bicycle infrastructure is being expanded. The second largest city, Tartu, should also bolster public transport. In more rural regions, people are less satisfied with public transport. As fixed routes and timetables do not serve all residents in some areas, demand-based transport could improve efficiency and accessibility as in Sweden. Given its potential the government is planning to develop demand-driven mobility over 2023-26 (Kirsimaa and Suik, 2020).

The increasing share of remote work could reduce emissions by reducing the need to commute (Hook *et al*, 2020). The potential for teleworking depends on the sector, with higher estimated shares of teleworkable jobs in financial services, ICT and public administration (Sostero et al, 2020). About 35% of all jobs in Estonia are estimated to be amenable to telework and two additional days of teleworking per week could reduce emissions by 6% (EEA, 2022). Urban sprawl and reliance on cars have increased and the provision of public transport links is not a compulsory requirement for new developments within or outside urban areas (OECD, 2022). To boost energy efficiency over time, spatial planning needs to prioritise increasing density, particularly around public transport links. Limits on land taxes should be relaxed to encourage more efficient land use. Furthermore, spatial policy needs to be better coordinated with public transport planning.

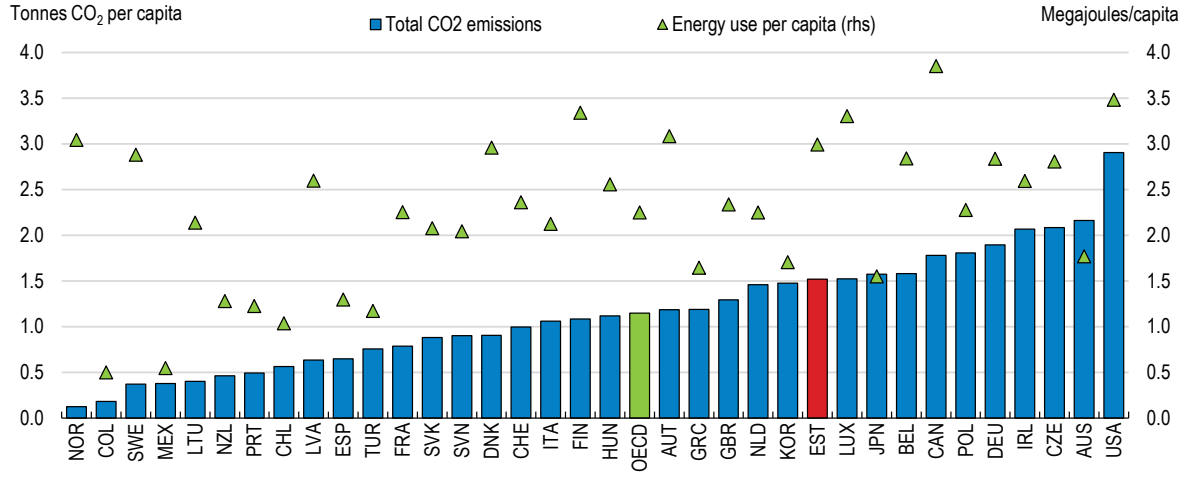
Efficient buildings can contribute to lower emissions in the long run

Emissions from buildings, which consume around half of Estonia's energy, have fallen slightly since 2005 (IEA, 2023). Although buildings mostly consume renewable energy, particularly in smaller homes, further electrification can lower emissions and improving energy efficiency would reduce energy demand and free up renewable capacity. About 90% of buildings were built before 2000 and many are not well insulated, leading to relatively high residential energy consumption (Figure 4.10). Stringent energy efficiency standards were introduced for new buildings in 2019, but renovation of existing buildings is a very cost-effective way of reducing emissions. Full renovation could lower heating consumption up to 70% and electricity consumption up to 20%, resulting in 90% fewer emissions by 2050 (MEAC, 2020). However, progress on renovation has been uneven and insufficient.

Policies supporting residential renovations should be broadened. The Enterprise and Innovation Foundation (EISA), a government agency, offers state-backed guarantees and grants for improving energy efficiency with higher generosity for rural dwellings and low-income regions, and for larger efficiency improvements. With the support of EU Structural Funds, it has almost doubled its support for renovating apartment buildings over 2021-2027 to around EUR 400 million. However, this is expected to support the renovation of less than 5% of buildings built before 2000 and the first round of grants was quickly exhausted (IEA, 2023). Furthermore, setting up one-stop-shops, which provide technical assistance and financing advice, can accelerate the renovation process as has been done in Sønderborg, Denmark.

Figure 4.10. Residential energy use and emissions are relatively high

Total CO_2 emissions and energy use of the residential sector, 2020



Source: OECD Greenhouse Gas Emissions database; and IEA World Energy Balance database.

StatLink https://stat.link/ldzu27

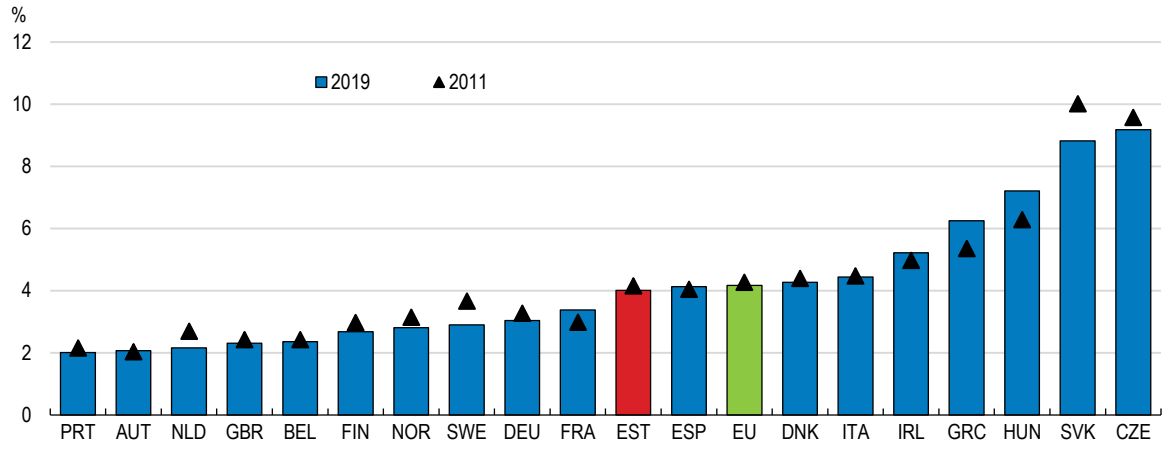
Further progress is needed on renovating non-residential buildings. The pace of renovations seen in 2017-2020 needs to quadruple to achieve national targets (SEI, 2022). Landlords have little incentive to improve energy efficiency as energy costs have usually accounted for 2-3% of operating costs and are paid by the tenants. Moreover, uncertainty regarding building regulations has made long-term real estate investment planning more difficult (Kuivjogi et al, 2021). To incentivise building owners to upgrade, Estonia should introduce minimum energy efficiency requirements for all existing non-residential buildings and gradually increase them over time to lower emissions.

Renovation of public buildings should be accelerated. The government aims to renovate 3% of all public buildings per year by 2030, but the rate of planned renovation is 60% of the required volume to reduce emissions sufficiently (IEA, 2023). More funding needs to be allocated for renovating public buildings. Future renovation should be prioritised based on efficiency but less than 10% of all buildings have a valid energy performance rating (EPC). Estonia will calculate EPCs based on energy usage by 2025 and plans to merge the data with an e-construction platform that it is developing. This is welcome as higher transparency on energy efficiency will help better inform public and private investment.

Ensuring a fair and just green transition

Policy will need to support workers to ensure a fair and just green transition. Employment is expected to shift towards low-carbon sectors, such as services and renewable energy, and away from energy-intensive sectors due to decarbonisation of the economy (Borgonovi et al, 2023). Estimates for Estonia suggest that the share of GHG-intensive jobs is similar to the EU average and many of these jobs might be at risk during the transition (Figure 4.11). A quarter of GHG-intensive employment is in the oil shale industry in Ida-Viru, the poorest region of Estonia, where they account for 10% of the region's jobs.

Figure 4.11. The share of GHG-intensive jobs is similar to the EU average



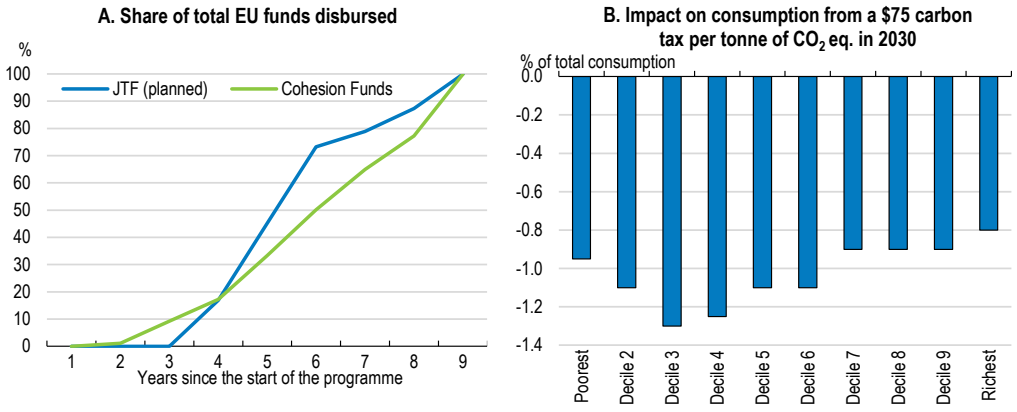
Source: Causa, O., and E. Soldani (2023), *Lost in Transition? Labour Market Effects of Greening the Economy*, OECD Publishing, Paris.
StatLink https://stat.link/yfnglo

The EU Just Transition Fund is essential in supporting Ida-Viru in the green transition. EUR 354 million in grants, equivalent to almost 5% of the region's annual GDP, will be allocated over 2023-27 towards diversifying economic activity away from fossil fuels in collaboration with local institutions. There are also plans for reskilling and upskilling of around 11,000 local workers and jobseekers with a special focus on helping oil shale workers transition to other jobs. The funds are distributed until 2029 but, given the experience of coal transitions in other countries, long-term support will be required. Estonia should also develop a longer-term regional development plan, at least until oil shale in the energy sector is phased out in 2040. Furthermore, there are risks around timely implementation. By 2025, projects accounting for nearly half the allocated amount are expected be completed. This is faster than previous EU-funded projects (Figure 4.12, A). After some delay, the government has appointed an official to coordinate the transition in late 2023. Estonia should consider allocating more resources to coordinating and executing the development plan.

There are more jobs at risk than those in the oil shale sector. Heavily polluting industries account for 4% of all jobs. The labour market is well placed to adjust due to its flexibility and good rates of training and further education among workers. A forward-looking system, OSKA, helps anticipate labour market trends and inform policies accordingly, and spending on training in active labour market policies has risen steadily since 2017. However, specific workers in sectors such as manufacturing might find it difficult to switch jobs (OECD, 2023). Active labour market programmes for oil shale workers should be extended to other occupations at risk of unemployment, such as plant machine operators and wood workers.

Redistributive policies will be essential in cushioning the financial impact of the green transition on socially vulnerable households. The transition is likely to be regressive, on balance, as lower income households spend proportionally more on carbon-intensive goods and have fewer means to invest in more efficient cars and houses. Simulations for Estonia confirm that higher carbon prices could have an uneven impact on households (Figure 4.12, B) (IMF, 2022). Surveys suggests redistributive policies can help build broad public support for the green transition (Dechezlepretre et al, 2022). Estonia has recycled half of its ETS revenues up to 2023 into green infrastructure projects, such as improving the energy efficiency of public transport and buildings. However, the recycled revenues are not directly used to support lower-income households. A recent study for Lithuania suggested broad lump-sum transfers or targeted support, financed by carbon tax revenue, could significantly offset income losses due to higher carbon prices for most households (Immervoll et al, 2023). In Austria, a lump-sum has been paid to residents since 2022, varied regionally, as part of its Klimabonus programme. Estonia should consider more progressive support, particularly as carbon prices rise and transport is decarbonised.

Figure 4.12. The Just Transition is ambitious while higher carbon prices are likely to be regressive



Note: Panel B shows the fall in household consumption across income deciles from a linear phase-in of a $75 per tonne of CO_2 equivalent (tCO_2e) on non-ETS emissions over 2024-2030.
Source: IMF (2022); European Environmental Agency database.

StatLink https://stat.link/97oz25

Main findings and recommendations

Key Findings	Main Recommendations
The EU ETS prices a large share of emissions and is set to expand, but effective carbon prices in other sectors are too low. The carbon content of fossil fuels is not consistently taxed.	**Increase effective carbon prices by restoring taxes on fossil fuels to their pre-pandemic levels faster and by removing exemptions.** Tax carbon content more consistently across fossil fuels.
The electricity grid needs to be upgraded and expanded to connect and accommodate additional renewable wind and solar power.	**Further increase investments to strengthen the electricity grid.**
The national energy strategy aims to phase out oil shale in the energy sector by 2040. During the recent energy crisis, the use of oil shale increased.	Consider including an explicit target in the Climate Law to phase out oil shale from energy production by 2040.
Renewables generation needs to expand at a fast pace to transition away from oil shale and meet higher demand due to electrification.	Provide more detailed information on grid connection costs and investment plans. Ensure the transmission service operator allocates more resources to and expands grid connections in a timely manner. Establish a one-stop-shop for regulatory permits for wind and solar energy.
Transport GHG emissions have remained above their 2005 levels. Reliance on car transport has increased, while the use of public transport, cycling or walking has fallen. The car fleet is large and polluting. With much of the population living in the main urban areas, public transport can significantly reduce emissions. Most of the trains still run on diesel and only 10% of the rail network is electrified.	Implement new motor vehicle taxes in 2025. Consider a car scrappage scheme for those on low incomes. **Increase the availability public transport and accelerate decarbonisation of the rail and bus networks.** Increase EV incentives and target them better. Prioritise densification in spatial planning, particularly around public transport. Relax limits on land taxes to boost more efficient land use.
LULUCF GHG emissions have risen. The upcoming Climate Law will specify emission goals and policy instruments to achieve them, but this will need to be followed up by a LULUCF strategy.	Conduct an external review of cost-effective options to reduce LULUCF GHG emissions.
Buildings' energy efficiency is relatively low, but progress on renovation has been slow.	Broaden funding and technical support for residential renovations. Introduce minimum energy efficiency requirements for all existing non-residential buildings and gradually increase over time to lower emissions.
The Just Transition Fund provides substantial development support over 2023-2026 to the oil shale producing Ida-Viru region. GHG-intensive jobs in other sectors are also at risk.	Ensure adequate administrative resources to effectively implement the Just Transition Plan for the Ida-Viru region and develop a comprehensive long-term plan. Extend special ALMPs for oil shale workers to specific workers in other sectors who may be at high risk of losing their jobs during the green transition.

References

ACEA (2023), *Vehicles in Use Europe 2023*, European Automobile Manufacturers' Association.

Borgonovi, F., et al (2023), *The effects of the EU Fit for 55 package on labour markets and the demand for skills*, OECD Social, Employment and Migration Working Papers, No. 297, OECD Publishing, Paris.

Chateau, J., A. Miho and M. Borowiecki (2023), *Economic effects of the EU's 'Fit for 55' climate mitigation policies: A computable general equilibrium analysis*, OECD Economics Department Working Papers, No. 1775, OECD Publishing, Paris.

D'Arcangelo, F. et al (2022), *A framework to decarbonise the economy,* OECD Economic Policy Papers, No. 31, OECD Publishing, Paris.

Dechezleprêtre, A. et al (2022), *Fighting climate change: International attitudes toward climate policies*, OECD Economics Department Working Papers, No. 1714, OECD Publishing, Paris.

Environment Agency (2021), *The analysis of the sequestration capacity of the land use, land use change, and forestry sector until 2050*, Estonian University of Life Sciences.

EEA (2022), *Transport and Environment Report 2022*, European Environment Agency.

Elering (2022), *Annual Report 2022*, Elering.

Estonian Railways (2022), *Annual Report 2022*, AS Eesti Raudtee.

IEA (2023), *Estonia 2023 Energy Policy Review*, IEA, Paris.

Immervoll, H., et al (2023), *Who pays for higher carbon prices?: Illustration for Lithuania and a research agenda*, OECD Social, Employment and Migration Working Papers, No. 283, OECD Publishing, Paris.

IMF (2022), *Republic of Estonia: Selected Issues*, Country Report No. 2022/290, International Monetary Fund, Washington D.C.

Maes, M. J. A., et al (2022), *Monitoring exposure to climate-related hazards: Indicator methodology and key results*, OECD Environment Working Papers, No. 201, OECD Publishing, Paris.

MEAC (2020), *Hoonete rekonstrueerimise pikaajaline strateegia* [Long-term strategy for building reconstruction], Ministry of Economic Affairs and Communication, Tallinn.

Ministry of Finance (2023), *Mootorsõidukimaksu suurus lähtub sõiduki keskkonnamõjust* [the amount of motor vehicle tax is based on the environmental impact of the vehicle], Ministry of Finance, Tallinn.

MEAC (2023), *National Energy and Climate Plan*, Ministry of Economic Affairs and Communication, Tallinn.

KiK (2023), *Purchase of zero-emission vehicles*, Keskkonna Investeeringute Keskus, Tallinn.

Kuivjõgi, H., Uutar, A., Kuusk, K, Thalfeldt, M, and J. Kurnitski, *Market based renovation solutions in non-residential buildings – Why commercial buildings are not renovated to NZEB*, Energy and Buildings, Volume 248, 2021, 111169, ISSN 0378-7788.

Lang, N., Jetz, W., Schindler, K. et al (2023), *A high-resolution canopy height model of the Earth*, Nat Ecol Evol 7, 1778–1789.

OECD/ITF (2011), *Car Fleet Renewal Schemes: Environmental and Safety Impacts*, International Transport Forum, OECD Publishing, Paris.

OECD/ITF (2020), *The Future of Passenger Mobility and Goods Transport in Estonia: Input Study for the Estonian Transport and Mobility Master Plan*, International Transport Forum Policy Papers, No. 78, OECD Publishing, Paris.

OECD (2022), *Shrinking Smartly in Estonia: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris.

OECD (2023a), *Net effective carbon rates database*, accessed on September 15, 2023, OECD, Paris.

OECD (2023b), *Housing policy toolkit*, OECD, Paris.

Renewables Estonia (2023), *On the way to 100% electricity from RES by 2030*, Tallinn.

Riigikontroll (2019), *Implementation of the Rail Baltica project*, Cooperative Audit by the National Audit Offices of Estonia, Latvia, and Lithuania.

Riigikontrol (2021), *The design and land acquisition of Rail Baltica is years behind schedule*, National Audit Office of Estonia.

Riigikontrol (2023), *Eesti elektrisüsteemi valikud* [Estonian electricity system options], National Audit Office of Estonia.

SEI (2019), *Reaching Climate Neutrality in Estonia*, Stockholm Environmental Institute in Tallinn.

SEI (2022), *Reaching Climate Neutrality in Estonia – a progress update*, Stockholm Environmental Institute in Tallinn.

Sostero, M, Milasi, S, Hurley, J, Fernandez Macias, E, and M. Bisello (2022), *Teleworkability and the COVID-19 crisis: a new digital divide?*, European Commission Joint Research Centre.

Statistics Estonia (2023), *Energy and transport database*, accessed on August 20, 2023.

Svoboda M, Fanta M, and J Mošovský (2023), *Effectiveness of Car Scrappage Schemes: Comparative Analysis of European Countries*, IES Working Papers 28/2023, Charles University, Prague.

Tallat-Kelpšaitė, J., Brückmann, R., Banasiak, J. et al, (2022), *Technical support for RES policy development and implementation – Simplification of permission and administrative procedures for RES installations (RES simplify) – Interim report*, European Commission Directorate for Energy, Publications Office of the European Union.

Wind Europe (2022), *Wind Energy in Europe: 2022 Statistics and the outlook for 2023-2027*, WindEurope asbl/vzw.

Annex 4.A. Motor vehicle purchase and registration taxes in selected OECD countries

Table 4.1. Taxes on the purchase and registration of motor vehicles in selected OECD countries

Country	Taxes/Malus	Criteria determining the tax base and/or amount of bonus/malus	Rebates/Bonuses/Exemptions
Lithuania	VAT: 21 % Registration fee: a flat rate fee of EUR 14.48 is payable on the first registration of a new vehicle (passenger cars, heavy vehicles) and a flat rate fee of EUR 12.45 is payable on the first registration of other vehicle – e.g. used cars (passenger cars, heavy vehicles). From 1 July 2020, a car registration tax applies payable by all car owners (individuals and legal entities) when registering the car. The fee will vary depending on CO_2 emissions and fuel type and will range from 14.96 to 598.92 Euro.	Value Age of vehicle Type of fuel CO_2 Emissions	Registration fee: rebate for people with disabilities (only owners of passenger cars - once every 3 years): 90% rebate on registration fee for owner with a disability percentage of 75-100% 75% rebate on registration fee for owner with a disability percentage of 60-70% 50% rebate on registration fee for owner with a disability percentage of 45-55%
Latvia	VAT: 21% Vehicle registration (state fee): for registration, registration certificate and registration number plates - EUR 43.93. Natural resource tax: EUR 55 per vehicle.	Value Electric propulsion Bonus	Electric vehicles are exempt from the vehicle registration fee. A bonus is provided upon first registration of electric vehicles.
Finland	VAT: 24% Vehicle Registration Tax is based on CO_2 emissions. Rates vary from 0% of the general consumer price of the vehicle for cars emitting 0g/km to 48.9% for cars emitting 360g/km or more. For delivery vans there is a deduction based on maximum laden weight of the vehicle for vans weighing over 2 500 kg. For motorcycles rates vary from 9.8% to 24.4% according to the cylinder capacity; the tax base is generally the retail value.	Value CO_2 emissions Utilisation Cylinder capacity Type	Exemption for people with disabilities, taxis, motor homes, cars used for veterinary purposes, rescue vehicles and funeral cars.
Germany	VAT: 19%	Value Bonus Electric propulsion	A purchase subsidy is available for electric and hybrid vehicles.
Ireland	VAT: 23% Registration Tax: based on CO_2 emissions and NOx emissions for passenger vehicles with not more than 9 seating positions and certain commercial vehicles with more than 4 seats. For the CO_2 element of the charge, rates vary from 7% of the value of such a vehicle with CO_2 emissions of up to 50 g/km to 41% for such a vehicle with CO_2 emissions above 190 g/km. The NOx element of the charge is EUR 5 per mg/km for the first 40 mg/km, EUR 15 per mg/km for the next 40 mg/km, and EUR 25 per mg/km thereafter. The NOx element of the charge is capped at EUR 4 850 for diesel vehicles and EUR 600 for other vehicles. Flat rate applies to vehicles designed and constructed for the carriage of goods and having a maximum laden mass not exceeding 3.5 tonnes not included above and motor caravans (13.30% of the value). Motorcycles are charged EUR 2 per cc up to and including 350cc and EUR 1 per cc above. Large vehicles designed and constructed for the carriage of goods (maximum laden mass over 3.5 tons), buses, tractors and “vintage” (over 30 years old) vehicles are charged EUR 200. Special purpose vehicles such as ambulances and fire engines are subject to a nil rate.	Value CO_2 emissions NOx emissions Electric propulsion Type Age of vehicle Max laden mass Body type	Registration tax: Relief for new series production electric vehicles: subject to a maximum of EUR 5 000 Remission/repayment for vehicles specially adapted for persons with certain severe and permanent physical disabilities: subject to a maximum of EUR 10 000, EUR 16 000 and EUR 22 000 for a disabled driver and EUR 16 000 and EUR 22 000 for a disabled passenger. The amount is depended on the adaptations carried out on the vehicle. Relief for certain charitable organisations is subject to a maximum of EUR 16 000 when the vehicle is adapted to carry less than five such persons. Exemptions: Transfers of permanent residence, transfers of permanent business undertakings, inheritances, donations by certain organisations, international air services, diplomatic agents and EU officials, vehicles for use by EU or UN organisations.

Source: OECD Consumption Tax Trends 2022.

Annex 4.B. Progress on past recommendations on climate-related policy

2022 Survey recommendations	Action taken since the last Survey
Carbon pricing in the economy	
Ensure comprehensive carbon pricing across sectors. Gradually increase effective carbon prices in the medium term while mitigating the impact on vulnerable groups.	The share of the economy covered by carbon prices has remained unchanged. Carbon prices increased driven by higher ETS prices. Policy has focused on mitigating the social impact in one region.
Transforming the energy sector from brown to green and managing the transition	
Reduce oil shale output over time as planned but mitigate the social impact on the Ida-Viru region through a funded comprehensive and long-term development plan. Use regional development policies to incentivise and support new industries in Ida-Viru, particularly those that capitalise on existing capital and labour resources. Deploy targeted active labour market policies to retrain and reallocate workers in the oil shale industry. Provide extended income support to those workers during the transition to prevent a rise in poverty.	The use of oil shale has increased in 2022 due to reduced electricity and natural gas imports from Russia. The territorial Just Transition Plan, lasting until 2029, is being implemented. This is a comprehensive and generous regional development support to Ida-Viru. Targeted active labour market policies focusing on job transition and reskilling/upskilling measures for oil shale workers have been implemented. There are no long-term funded regional development plans beyond 2030.
Encourage private investment to shift district heating, where appropriate, towards new technologies in the medium-term, such as large capacity heat pumps, that can also utilise other renewable energy sources.	Structural fund measures from the Environmental Investment Centre that support renovating the district heating system and its production facilities have been continued.
Provide a more certain regulatory and business environment through clear and definitive spatial plans and permitting processes.	Permitting procedures have been streamlined as part of the RePowerEU scheme. It is developing special pre-approved go-to areas to further accelerate renewable development.
Invest to strengthen and expand the electricity grid, based on cost-benefit analysis. Continue with implementing investment plans by Elering, the transmission service operator, that develop and strengthen energy infrastructure in a cost-effective manner.	Elering has continued investments in the electricity grid in preparation for a switch to the continent European frequency in early 2025. It is developing a third connection with Latvia and, following a study, has agreed with Finland to build Estlink 3. Elering has also implemented a number of cybersecurity-enhancing development projects, reducing the impact of data leaks and attacks.
Continue and enhance regional cooperation to ensure sufficient electricity generation and to avoid volatility in the network by ensuring a stable and secure energy supply.	Estonia has worked closely with Latvia and Lithuania to disconnect earlier from the BRELL network and synchronize with the Central European electricity grid. A Baltic Regional Security Coordinator was established in 2022 by the Baltic TSOs to improve operational cooperation and stability of the Baltic market. Regional cooperation with Finland and Lithuania has ensured a sufficient supply of natural gas. Estonia is collaborating with Latvia on developing offshore wind electricity production as part of the ELWIND project.
Further encourage low-carbon technology innovation by expanding public R&D investment and by increasing the share of funding on environment-related issues. Focus public research on environment-related issues. Support deployment of new technologies.	The share of GDP accounted for by public R&D was broadly unchanged in 2021. The Environmental Investment Centre and the Ministry of the Environment have a support scheme for green technology start-ups under the Recovery and Resilience Facility. Estonia is also supporting green hydrogen-related projects and R&D.
Reducing transport emissions	
Provide and encourage the development of user-friendly and low carbon alternatives to private car use by making active mobility, public transport, low-carbon shared mobility more attractive and adapt land management in order to reduce the need for private car use.	The Tallinn Old Port tram line will be extended by 2024 and bicycle infrastructure is being expanded. Additional trains have been procured. No policy measures were taken to further discourage private car use.
Broaden subsidies for EV purchases, up to a limit, and offer a scrappage bonus for old cars. Boost investment in charging infrastructure. Electrify public transport, including rail, and consider expanding the regional and national public transport network. Accelerate the adoption of sustainable biofuels such as biomethane.	EV subsidies have been continued but remain limited and are not targeted. There is no scrappage bonus for old cars. The government has approved rail electrification plans and is due to commence works. One ferry has been converted into a hybrid vessel with another due to be electrified. The share of renewable energy in transport, has expanded strongly from 0.3% to 6.7% between 2017 and 2021.
Increasing buildings' energy efficiency	
Provide more extensive financing and counselling support for renovations and retrofitting through EISA. Focus on the least energy efficient buildings, where appropriate, while considering the impact on vulnerable households.	EISA is expanding funding support to apartment associations and private house owners to renovate and upgrade buildings efficiency. Some of the programmes are targeted for older buildings and are more generous for buildings outside of major urban areas.
Increase the supply of skilled construction workers through increased training provision. Consider boosting labour market participation and/or increasing immigration to ensure adequate supply of required skills.	The overall number of construction employees has bounced back in 2022. Training in active labour market programmes has increased. The number of migrant workers in the economy remains low.

5. Towards better and more sustainable healthcare for all

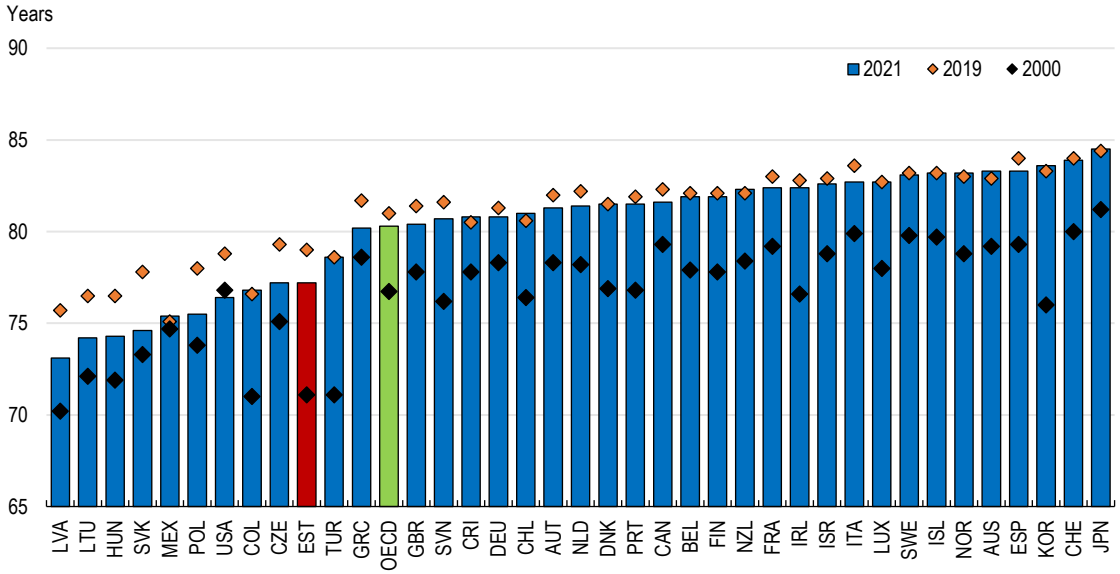
Srdan Tatomir

Estonia has made significant progress in improving the health of its citizens, but life expectancy remains below most OECD countries. Inequalities persist with worse health outcomes among older men and low-income groups while access to healthcare varies across regions. To achieve the better health outcomes outlined in its national strategy, Estonia needs to address several key challenges. Insurance coverage should be extended towards a more universal system and out-of-pocket expenses reduced in a targeted way. The public health insurance system will need additional financing from 2025 to ensure sustainability. Funding should be increased further over the medium term to meet the increase in healthcare demand due to an ageing population, but this needs to be matched by improvements in efficiency. Widespread shortages of healthcare staff pose a significant challenge to delivering healthcare services. Better pay, working conditions and training can attract more nurses and doctors to work in the system. Better treatment and more prevention, which is highly cost-effective, can reduce inequality and improve the health of Estonia's people.

Progress and challenges in Estonia's healthcare system

Estonia has made significant progress in improving health outcomes over the past two decades. Life expectancy at birth rose by nearly eight years between 2000 and 2019, the largest increase in the OECD, to 79.0 years (Figure 5.1). This was driven by large declines in mortality from cardiovascular disease, cancer and injuries. However, life expectancy fell in 2021 due to COVID-19. It partly recovered to 78.1 in 2022 and should recover further. For men, life expectancy at birth was 73.6 years, while for women it was higher at 82.3 years (Statistics Estonia, 2023). Although life expectancy in Estonia is higher than in neighbouring Baltic countries, it remains below most European and OECD countries.

Figure 5.1. Life expectancy at birth has risen significantly since 2000 but remains below average



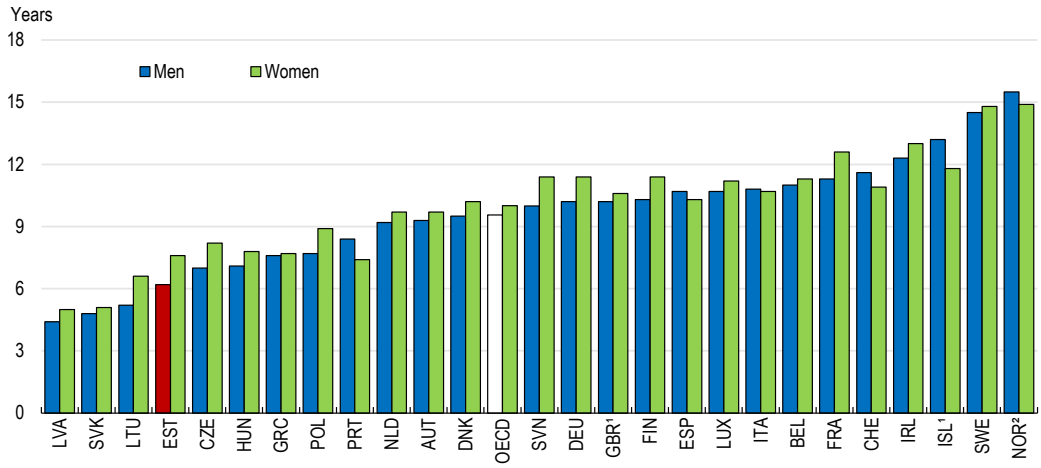
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/n91sl4

While Estonians have been living longer, they are not necessarily spending those additional years in good health. Healthy life years at birth, defined as the number of years spent free of long-term activity limitations or disabilities, were 57.9 years for men and 60.6 for women in 2022 (Statistics Estonia, 2024). Despite having increased over the past two decades, healthy life years at age 65 are lower in Estonia than in most OECD countries, particularly for men (Figure 5.2).The share of adults aged 65 and over who report their health to be fair, poor or very poor is the fourth highest in the OECD (OECD, 2023a). 8% of the population reported unmet health needs in 2021, the highest in the OECD. This is predominantly driven by high waiting times for specialist doctors, where there are acute shortages.

Figure 5.2. Fewer years are spent living a healthy life after age 65 than in most OECD countries

Healthy life-years at age 65, by gender, 2021 (or nearest year)



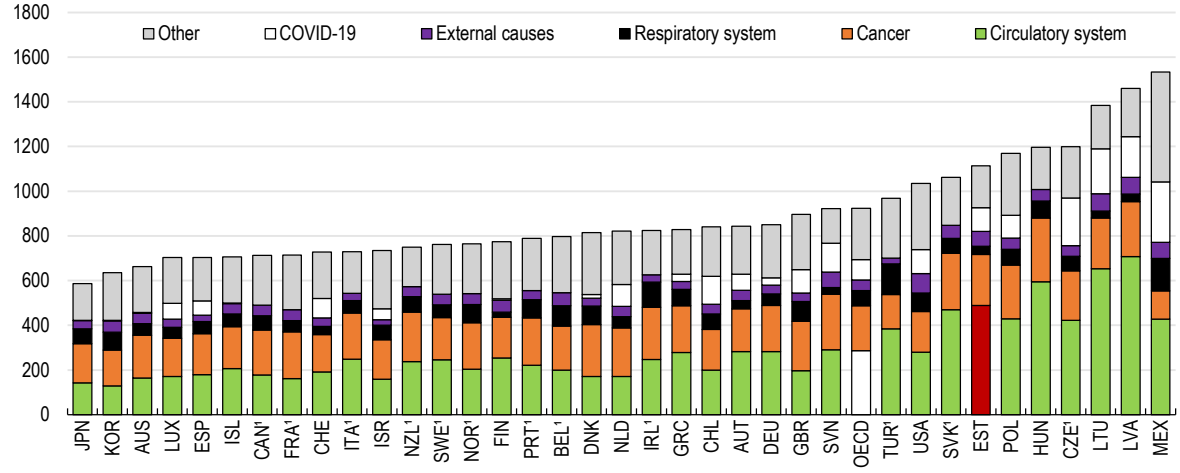
Note: Data comparability is limited because of cultural factors and different formulations of question in EU-SILC. Data for Iceland and the United Kingdom is for 2018 Data for Norway is for 2020. Based on Eurostat data.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/23ak9u

Almost half of all deaths are due to circulatory system disease, such as ischaemic heart diseases, hypertension and stroke. These diseases were 70% more prevalent than the OECD average (Figure 5.3). Cancer contributes to around a fifth of all deaths, and the cancer mortality rate is 13% higher than the OECD average. Treatable mortality, deaths that could be avoided through earlier detection and treatment, are relatively high for circulatory diseases. Moreover, a third of all deaths could be prevented through better public health programmes that address behavioural risk factors, such as obesity and overall alcohol consumption, both of which are prevalent in Estonia (OECD, 2023b).

Figure 5.3. Mortality rates are driven by relatively high circulatory diseases and cancer deaths

Death rates per 100 000 inhabitants (age-standardised), 2021 or latest available



Note: 1. Most recent data point corresponds to 2016-2019. External causes of death include accidents, suicides, homicides, and other causes.
Source: OECD Health at a Glance 2023.

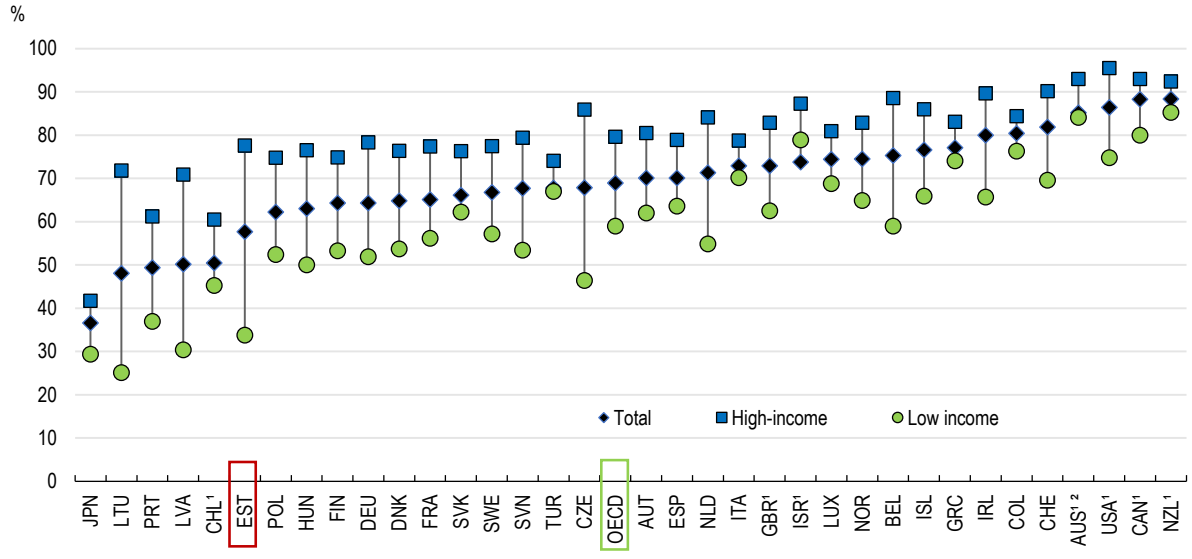
StatLink https://stat.link/g1vy2n

Estonia's health system fared better than those other OECD countries during the COVID-19 pandemic, although the pandemic impacted the health of the population significantly. The highly digitalised healthcare system supported the provision of healthcare through the pandemic with a third of medical consultations occurring remotely during 2020-21. Overall, hospital bed capacity is relatively high by international standards and was sufficient to manage COVID-19 patients as there was no shortage of beds, although bed occupancy was at its maximum during the peak in October and November 2021 (Health Board, 2023). Nevertheless, workloads for doctors and nurses during the pandemic were intense and this led to a higher rate of quitting in subsequent years. Mortality rates rose in 2021-22 partly due to COVID-19 deaths, but also due to other reasons such as an increase in alcohol-related deaths during lockdown. Mental health problems increased and have remained elevated (OECD, 2023a). The impact of the pandemic on waiting times was less pronounced than in other EU countries (OECD, 2023b).

Inequalities in health outcomes remain substantial and are wider than in most OECD countries. Many of the poor health outcomes are more prevalent among men: life expectancy at birth for Estonian women is broadly the same as the OECD average, but it is significantly lower for men (OECD, 2023a). Estonia has the third largest gender gap in life expectancy in the EU after Lithuania and Latvia. Socioeconomic status strongly influences health outcomes with people on lower income much less likely to report being in good health than those earning a higher income (Figure 5.4). These differences in health outcomes by income are among the largest in the EU. Furthermore, there are significant regional health inequalities. For example, there is a 14-year gap in life expectancy between regions (NIHD, 2021).

Figure 5.4. The differences between the health of high- and low-income adults are large

Share of population aged 15 years and over with good/very good health, 2022 or latest available



Notes: 1. Results for these countries are not directly comparable with those for other countries owing to methodological differences in the survey questionnaire resulting in a bias towards a more positive self-assessment of health. 2. Most recent data point corresponds to 2017.
Source: OECD Health at a Glance 2023 (EU-SILC for EU countries).

StatLink https://stat.link/hsxv72

Estonia's National Health Plan 2020-30 aims to improve health outcomes and reduce inequalities by 2030. It aims raise life expectancy at birth to 78 years for men and 84 years for women and increase the number of healthy life years at birth to 62 years for men and 63 years for women by 2030. Furthermore, Estonia

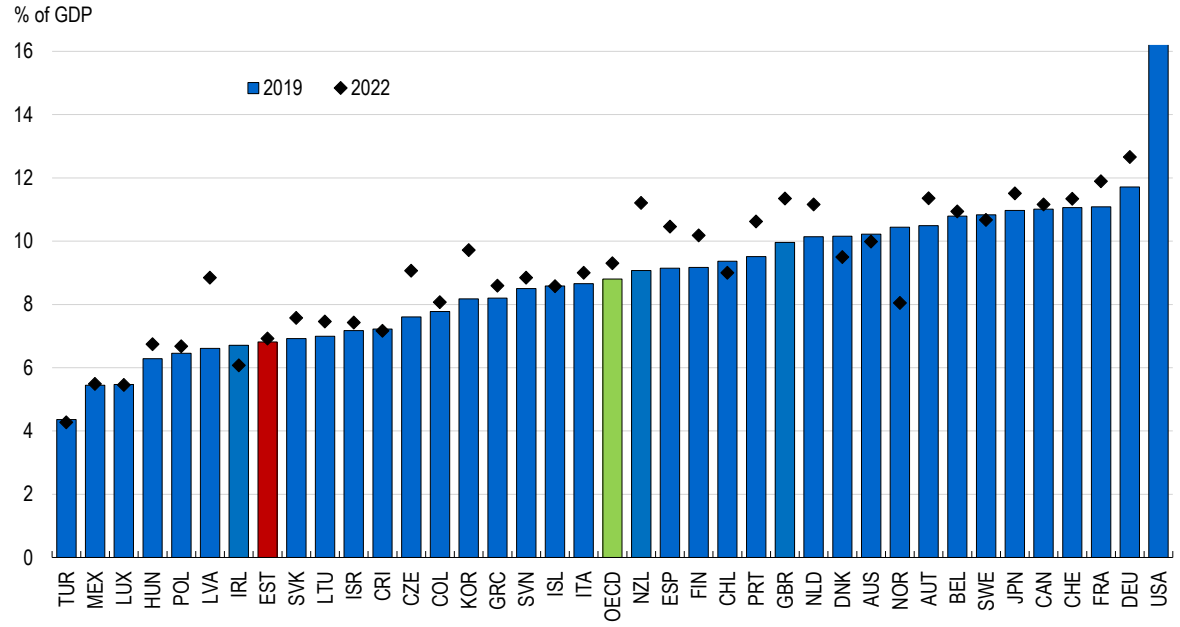
aims to reduce health inequalities by improving the life expectancies of those with low education and low income, as well as narrowing the regional variation across the country (MoSA, 2023a). Better health should lead to higher well-being, as well as a healthier and more productive workforce, contributing to higher incomes and stronger public finances.

Ensuring the sustainability of the health care system and improving social protection

Estonia's health care system is built around public health insurance with wide coverage across the population that funds primary care, hospital care and long-term care (see Box 5.1 for an overview). Healthcare expenditure has increased over the past two decades, but overall healthcare spending remains relatively low as a share of GDP. Total healthcare spending increased from 5% of GDP in 2005 to 6.8% in 2019, having briefly risen to 7.5% during the pandemic. It represents a significant share of the government's budget, but the overall level of healthcare spending is well below the OECD average, which is close to 10% of GDP (Figure 5.5). Almost three quarters of health expenditure is covered by the government, mostly through the public insurance scheme, and the range of healthcare benefits is broad (OECD, 2023a). Hospital care is mainly covered by public insurance. While patients do not have to pay to see their family doctors, some degree of co-payment is required for specialist outpatient medical care services, such as laboratory tests. Co-payment is much larger for medicines and the majority of dental care is not covered by public insurance. Public spending on healthcare also includes funding long-term care and sick leave.

Figure 5.5. Total spending on healthcare remains relatively low

Healthcare expenditure as a share of GDP



Source: OECD Health at a Glance 2023.

StatLink https://stat.link/weg0fh

Box 5.1. An overview of Estonian healthcare

Healthcare policy is legislated by the Parliament of Estonia which provides oversight of the system, particularly through the Social Affairs Committee. The government plays the executive role by planning and regulating the healthcare sector through the Ministry of Social Affairs and its subordinate agencies, that develop and implement overall health policy and supervise health service quality and access.

There are a few key agencies that support the Ministry. The Health Board licenses healthcare providers and registers healthcare professionals, supervises the safety of medical devices, and ensures the health system is prepared for emergencies. It monitors communicable diseases, provides epidemiological services and runs vaccination programmes. It enforces standards by monitoring compliance and healthcare quality. The State Agency of Medicines is responsible for the marketing authorisation and quality control of pharmaceuticals and promotes rational use of medicines. The Health and Welfare Information Systems Centre manages the e-health system, which is an information-exchange platform that connects all providers and allows data exchange between various databases. The National Institute for Health and Development (NIHD) is a research and development agency. NIHD conducts applied research, public health monitoring and evaluation, produces and disseminates official health statistics and maintains national medical registries. This helps inform national health strategies and policies. It also promotes health by marketing and supporting public health activities. Moreover, it trains and builds capacity in public health, management and social care.

The Estonian Health Insurance Fund (EHIF) is central to managing the public financing of healthcare. It is governed by a 6-member supervisory board consisting of representatives from state, employer and insured individuals' organisations. To ensure political accountability, it is chaired by the Minister of Health while the Ministry of Finance is also represented. EHIF defines the benefits package and price list for health services, pharmaceutical and medical products. It sets delivery and quality standards, contracts out healthcare services, and finances healthcare services consistent with national health strategy and policy.

Primary care is a key pillar of the healthcare system (Figure 5.11). Family doctors are the first point of contact. They mostly work in independent practices, although around 40% are part of a primary health centre. They are required to work with at least one family nurse and are expected to take care of 1200-2000 patients. The Health Board determines a family doctor's geographical service area, while the EHIF sets a minimum level of required service provision. Patients are free to choose their doctors. Family doctors exercise a partial gatekeeping function and control most access to specialist care. The Family Doctor Hotline service offers around-the-clock access to primary care.

Specialised medical care is provided by a network of hospitals. Hospitals are publicly owned and widely spread around the country and 94% of the population is within a 30-minute drive of a hospital. Regional hospitals offer a full range of services, while central hospitals do not offer certain surgery and oncology treatment. General and local hospitals provide 24/7 emergency care and fewer services. For emergency medical care, the Estonian Rescue Board operates a call centre, while ambulatory care is provided by hospitals and, to a lesser extent, by specialised private companies.

Nursing care is available in both hospitals and care institutions, as well as at home. Patients that need help and treatment following a trauma, serious illness or worsening chronic conditions can be admitted to inpatient care in hospitals. Nursing homes provide more constant health monitoring and care. For patients without the need for constant medical care but with reduced mobility, home nursing is available through regular visits by nurses. In all cases, a doctor decides whether a patient needs nursing care and refers them to the service.

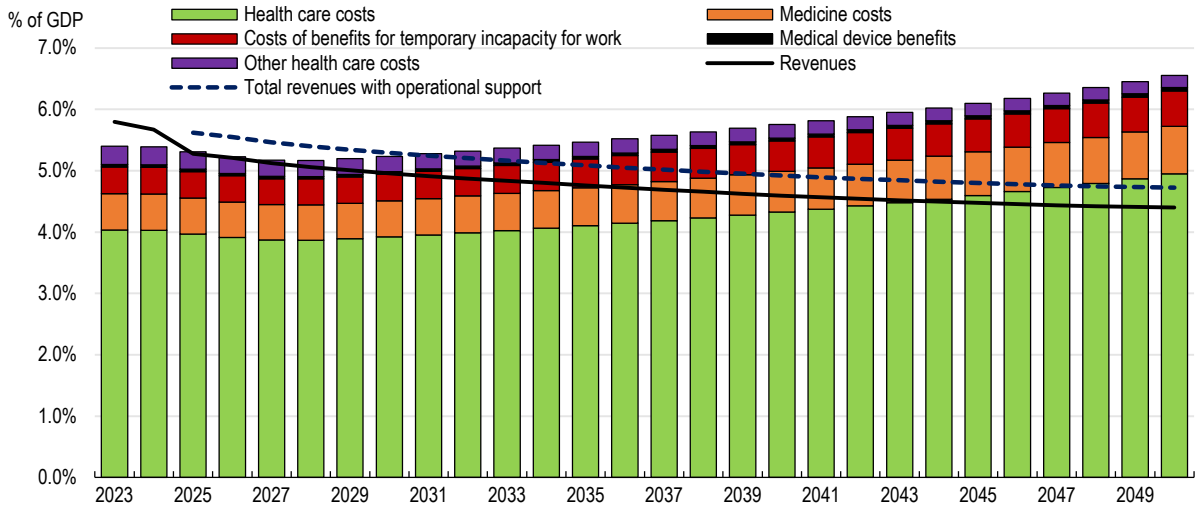
Source: OECD/EO (2023b), Riigikontroll (2022), Tervisekassa, (2023a), Kasekamp et al (2023).

Ensuring an adequately funded healthcare system

The public health insurance system is largely funded on a pay-as-you-go basis. The revenues are raised through earmarked social contributions and government transfers to cover retirees. In 2022, EUR 1.6 billion or around 80% of total revenue was funded by social contributions paid by employees and the self-employed. Direct government transfers for pensioners, introduced in 2017, contributed another EUR 220 million or around 10%. Additional funds, amounting to around 6% of EHIF revenues in 2022, have been transferred from the state budget since 2021 in order to cover healthcare costs and ensure the availability of health services during the COVID-19 pandemic. However, these supplemental funds are set to end in 2025.

According to the Ministry of Finance, public health insurance spending will exceed revenues from 2025 onwards when the additional funds expire, potentially resulting in healthcare rationing as the Estonian Health Insurance Fund (EHIF) is legally not allowed to go into deficit. At the same time, demand for healthcare is expected to continue a trend increase in the years ahead, partly driven by population ageing, while revenues are expected to rise at a lower rate in line with income growth. When the additional funds expire, the deficit in 2025 would amount to EUR 161.5 million or 0.6% of GDP, rising to 1.4% of GDP in 2040. Assuming the additional funds are extended beyond 2025, the fund would be close to balance in 2025 but the deficit would still rise to around 1% of GDP in 2040 (Figure 5.6).

Figure 5.6. Public healthcare insurance spending would exceed revenues from 2025 onwards



Source: Ministry of Finance and OECD calculations.

StatLink https://stat.link/mp3y4w

Given these funding pressures, Estonia needs to broaden and diversify the revenue base of the health insurance fund to ensure long-term viability while continuing to meet the population's needs and providing comprehensive insurance. The additional funding introduced in 2021 should be maintained beyond 2025, which would retain the greater role of funding from general taxation. Further increases to cover rising funding needs should be tied to specific reforms to ensure increased spending is efficient. Additional funding needs should either be met through raising social contributions, which are already relatively high at 11.4% of GDP, or through general taxation. Raising additional revenues through general taxation is likely to be more efficient and less reliant on labour taxes, while earmarking funds through social contributions may help to link the spending and revenue from a political economy perspective. One option would to be require better-off pensioners to pay social health contributions and contribute towards the financing of the system. Pensioners pay health contributions, albeit at a lower rate in many OECD countries, such as in France or the Netherlands. With many pensioners in poverty or on low incomes, this

approach needs to be targeted at pensioners with high incomes. Other options to raise additional funding by increasing the role of private provision would be difficult to implement in the Estonian context. The public insurance system works well, while the market would likely be too small for efficient private insurance (Habicht et al, 2018). Out-of-pocket payments are relatively high and cannot easily be raised.

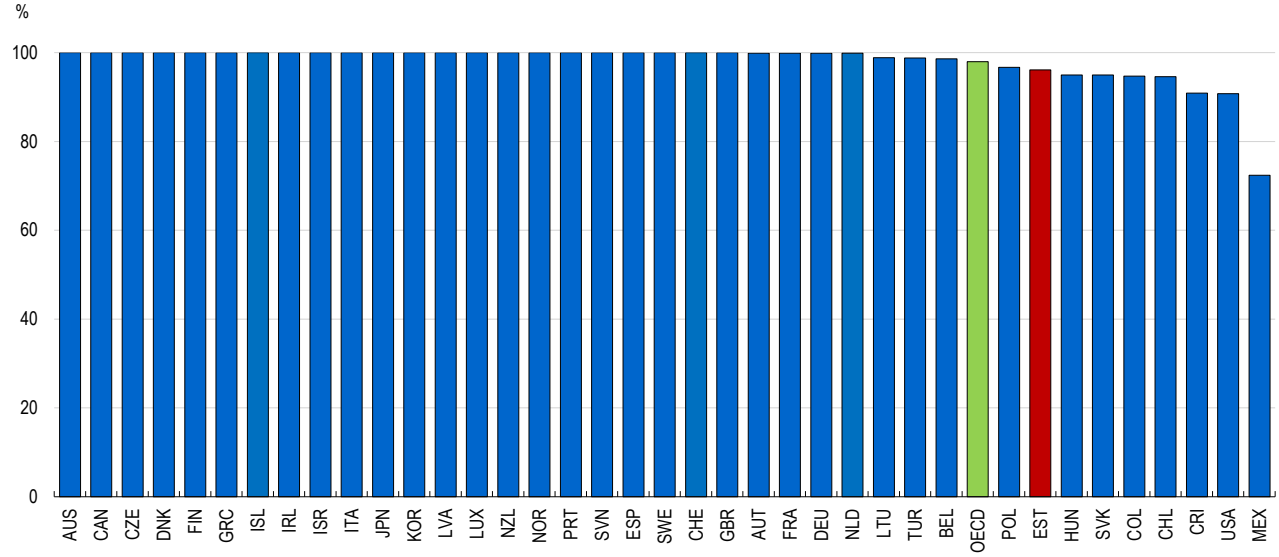
Capital expenditure in the healthcare system partly relies on external funding. Estonia spent 0.5% of GDP on investment in healthcare in 2022, slightly above the OECD average (OECD, 2023a). Since 2004, it has modernised its healthcare infrastructure by building new, and renovating existing nursing care facilities and hospitals, and upgrading primary care centres. However, some infrastructure funding has come from EU structural funds. Over 2014-2020, the EU contributed EUR 132 million of EU funding to healthcare infrastructure in Estonia, accounting for around 16% of all health infrastructure spending. Estonia initially requested EUR 326 million for healthcare over 2021-2027 as part of the EU Recovery and Resilience Plan, but this has been reduced in the revised plan. In addition, as Estonia's GDP grows, EU contributions towards healthcare infrastructure will decline.

Improving health insurance for all

The health insurance system has broad coverage of the population, but there are gaps that contribute to health inequalities that could be addressed at a reasonable cost. Health insurance coverage is not universal but 96% of the population was covered in 2022 (Figure 5.7). Almost half of the uninsured are estimated to work in Finland. Nonetheless, more than 10% of Estonia's population experiences a temporary loss of health insurance during any given year. People in part-time, unstable or informal employment are more likely to be uninsured because most eligibility criteria are related to employment. Uninsured people are likely to be working-age, male, non-Estonian speaking and less educated (Habicht et al, 2018). They have limited access to public healthcare. Nevertheless, the uninsured generate healthcare costs that are one third higher than for insured people due to higher use of emergency care (Riigikontroll, 2018). Universal healthcare coverage should be gradually extended to all people permanently residing in Estonia in line with the norm in most other OECD countries. Cooperation with the Finnish tax authorities could help determine eligibility. While there is a concern that this could undermine incentives to work in the formal economy, Estonia has a robust system to ensure compliance and declaration of work. A gradual extension of coverage to different groups could help to manage any risks. Given most of the healthcare costs incurred by the uninsured are already reflected in total costs, it is estimated that it would only cost an estimated additional EUR 70 million or 0.2% of GDP to move to a universal system (Foresight Centre, 2021).

Figure 5.7. Healthcare coverage is very high but not universal

Share of total population, 2022

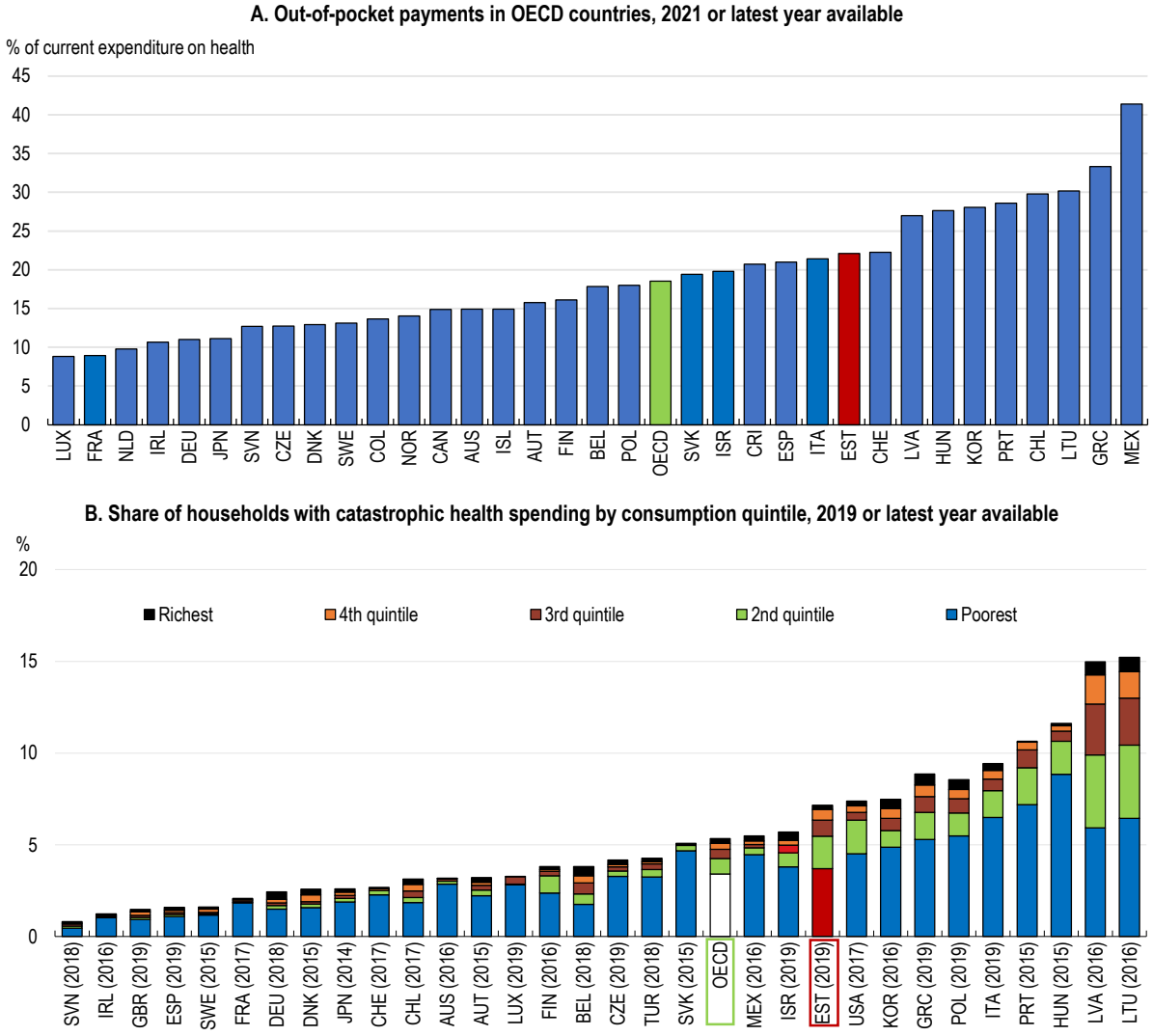


Note: Healthcare coverage is defined as a sum of total public coverage and primary private health coverage.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/w9kh3g

While co-payments are low across most of the system, total out-of-pocket payments are relatively high. Households paid for 23% of all healthcare costs out of their own pocket in 2022, accounting for 1.6% of GDP (Figure 5.8, Panel A). Most out-of-pocket spending went on dental care, which is mainly paid directly by households, and medicines where public insurance only covers 57% of the costs on average (OECD, 2023a). While these expenses are lower than in other Baltic countries, they are higher than in most OECD countries and twice the EU average. The WHO recommended limit for out-of-pocket spending is 20% of household income as higher payments can lead to financial difficulties. In 2019, 7.2% of all households experienced catastrophic out-of-pocket spending, where payments exceed 40% of household income (Figure 5.8, Panel B). Around two thirds of those households were among the poorest in Estonia. Medicines are the main driver of financial hardship, accounting for around half of catastrophic health spending (Vork et al, 2023).

Figure 5.8. Out-of-pocket payments are higher than in most OECD countries



Note: Catastrophic health spending is defined as out-of-pocket expenditure greater than 40% of household income.
Source: OECD Health at a Glance 2023; WHO Regional Office for Europe, 2023 (countries in Europe); European Observatory on Health Systems and Policies, 2021 (countries outside Europe).

StatLink https://stat.link/a8r3wh

Recent reforms targeted an expansion in pharmaceutical and dental care benefits to reduce out-of-pocket payments. In 2017, the dental care benefits for essential services were expanded to all insured adults with public insurance paying for half of the cost up to a maximum limit of EUR 40 per year (OECD/EO, 2023b). In 2024, this limit has increased to EUR 60 per year. For pharmaceutical benefits, reforms in 2018 lowered the eligibility threshold for annual co-payments from EUR 300 to EUR 100 and automated the administration of benefits through the centralised e-prescription system that automatically applies the benefit when patients purchase medicines. The reform improved financial protection as it increased uptake and lowered out-of-pocket payments (Habicht, Kasekamp and Webb, 2023). The share of households at risk of impoverishment fell to 4.4% in 2020, from 5.4% in 2015 (Vork et al, 2023). However, there is no cap on spending.

Given Estonia's target level for out-of-pocket spending is 15%, there is still room to broaden healthcare services eligible for co-payments and improve targeting towards socially vulnerable groups. Estonia has higher annual dental care benefits of EUR 105 for socially vulnerable groups, such as pensioners and

people with limited work capacity. This has been extended to those on subsistence benefits and the unemployed since 2022 and is the first benefit to be linked to household income (OECD/EO, 2023b). Some municipalities, such as Tallinn, support low-income households and older people but this is not widespread (Kasekamp et al, 2023). More targeting of dental and pharmaceutical benefits could further boost financial protection and efficiency. There remains scope to reduce co-payments for people on lower incomes and those with multiple chronic conditions. Introducing a cap on payments for low-income households would help to guard against catastrophic payments. Given Estonia's digitalised health system and public administration, income-based targeting could be efficiently implemented.

Expanding long-term care

The demand for long-term care is rising as the population ages. Older Estonians are more likely to be in poorer health than their peers in most other OECD countries, particularly among lower income groups. Around 60% of people aged 65+ are limited in their daily activities. Many require social care to help with daily life and this is often provided by informal carers such as friends and family (OECD, 2023a). In addition, some require permanent healthcare. This can be provided in private homes or in more institutional settings such as a care home. While the number of places and workers in care homes is higher than the OECD average, demand continues to exceed supply and it is expected to rise significantly (OECD, 2021c). The share of the 65+ population is projected to rise from a fifth in 2019 to a third by 2050 while the population aged 80+ will almost double. Moreover, due to smaller and more geographically dispersed families, fewer elderly people will be able to rely on relatives than in the past (Foresight Centre, 2021).

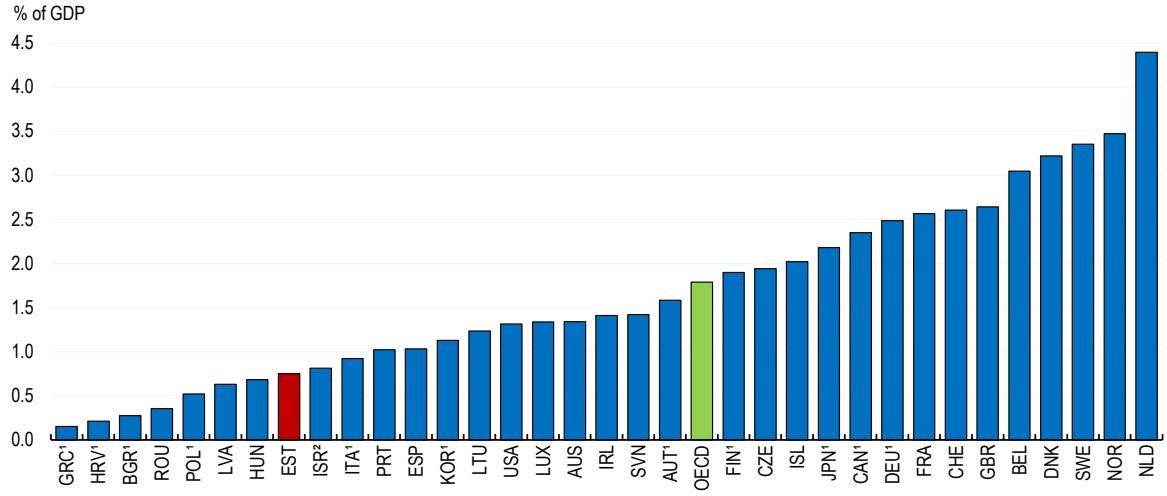
Total long-term care spending on health and social care is relatively low. In Estonia, long-term care is financed by the public health insurance system (nursing care), state (special care services), local governments (social care), and through private spending. Around 0.7% of GDP is spent on overall long-term care (Figure 5.9). The public sector funds 0.4% of GDP, lower than the EU average, while 0.3% of GDP is financed privately (Foresight Centre, 2021). Total long-term care spending is substantially higher in some OECD countries with similar levels of income and shares of older people, such as Czechia, Slovenia and Lithuania, and ranges between 1.2% and 2%.

Reforms to long-term care benefits in 2022/23 boosted public funding for long-term care and have introduced more flexibility. Funding for long-term care was boosted by around EUR 40 million or 0.1% of GDP in 2023 and should rise to EUR 68.4 million by 2026. Municipalities are responsible for assessing a person's needs and organising appropriate care. Previous support prioritised sending people to care homes, which is expensive, and provided little support to those in need of home care, which can be cheaper for those with low to moderate needs. Since 2022, municipalities are required to first offer home care services and only refer people to institutional care as a last resort. Combined with additional public funding introduced in 2023, this should make long-term care more cost-effective and is often also more in line with people's preferences. This should allow informal caregivers, two thirds of whom do not work, to join the labour market. Estimates suggest this could add another 20,000 workers to the economy (MoSA, 2023c).

Measures to raise the supply of long-term care services should accompany the reforms. With more reliance on cost-effective home care services, additional care workers will be needed. However, care workers are low paid and endure poor working conditions (Kurmiste et al, 2022). As demand for formal care rises as a result of the reforms, market-based salaries for care workers should grow and encourage more people to work in long-term care. However, the government could further increase the attractiveness of the sector by regulating working conditions (Kurmiste et al, 2022). The recent reforms partly address this by setting maximum workloads per care worker. Moreover, the government could make more use of immigration to boost the number of care workers (see Section 5.4.4). Demand for institutionalised care will increase over time, requiring an additional supply of beds. To expand the number of long-term care homes the government could repurpose and convert smaller regional hospitals into additional care homes to support comparatively older populations in more rural areas.

Figure 5.9. Long-term care spending in Estonia is relatively low

Long-term care expenditure as a share of GDP, 2021 or latest available



1. Countries not reporting spending for LTC (social). In many countries this component is therefore missing from total LTC, but in some countries it is partly included under LTC (health). 2. Country not reporting spending for LTC (health).
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/p1lvy6

There remains scope to improve the targeting of support for long-term care. The benefits reformed in 2022/23 are means tested with higher benefits provided to those on lower incomes. However, the benefits are capped and not closely linked to need. Previous OECD simulations suggested that the costs of long-term care homes for people with severe needs would exceed median incomes (OECD, 2023a). While this will apply to a minority of people, those affected might face health and poverty risks. To better address this, the size of the benefit should vary based on an assessment of different degrees of need as is done in Germany and Slovenia. The needs-based benefits could then be scaled by income while ensuring benefits are sufficiently generous to provide adequate access to long-term care and avoid poverty.

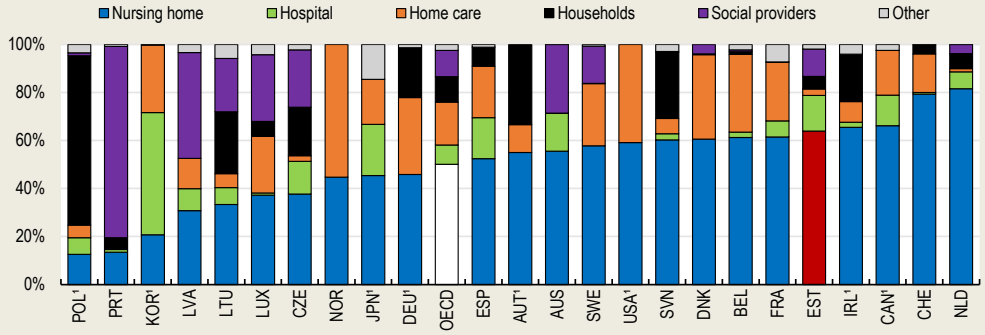
Total spending on long-term care should increase further to address rising demand. To maintain existing levels of care and meet increased demand due to population ageing, public spending on long-term care will need to rise to 0.6% of GDP by 2050 (European Commission, 2021). The risks are on the upside. For example, to the extent that costs converge to EU averages, this could rise to as much as 2.1% of GDP by 2050. Funding models for long-term care vary across OECD countries, but government support tends to be a key component (Box 5.2). In Estonia, sustainable and efficient long-term care should be centred around public support with an appropriate social safety net. This could be funded by a well-defined mixture of public and private provision. Private insurance markets may be difficult to operate, but different ways to manage the risks around long-term care could be explored. Since long-term care costs are uncertain, it may make sense to set aside funds for the future. In Germany, a share of social long-term care contributions is reserved to pre-fund and smooth future care costs.

Box 5.2. Long-term care financing in OECD countries

Long-term care is provided by a diverse set of stakeholders such as nursing homes, healthcare institutions, and families. Home care tends to be more cost effective while institutionalised care, provided in a care home or hospital, tends to be expensive. The importance of each varies across OECD countries. Estonia spends a total 0.7% of GDP on long-term care, of which close to 70% is on nursing homes and just under 10% occurs in hospitals. Other OECD countries, such as Korea and Spain, spend around 1% of GDP on long-term care but provide more home care compared to Estonia (Figure 5.10). Care provided by households, that is, informal paid care plays a prominent role in Austria and Lithuania. However, in some countries such as Greece, Türkiye, Chile and Mexico, much of the care is provided by unpaid family members.

Figure 5.10. Total long-term care spending in Estonia is focused on institutional care

Long-term care spending by provider, 2021 (or nearest year)



Notes: 1. Countries not reporting social LTC. The category "Social providers" refers to providers where the primary focus is on help with IADL or other social care.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/0gzk1e

Most long-term care is supported through public funding and compulsory social insurance, although the share of public funding varies across countries. In Estonia, the share of public funding is on the lower side at under 60%. For example, public funding accounts for around 70% of total long-term care spending in Slovenia and Austria and around 90% in Denmark and the Netherlands. Spending on long-term care tends to be predominantly focused on health but some OECD countries also spend on social support such as personal care services that help with daily living activities.

Most OECD countries finance long-term care spending from a number of sources. Public funding relies mainly on long-term care insurance in a few countries such as Belgium, Germany, Japan, Korea, Luxembourg and the Netherlands. In Germany, a share of future long-term care costs is pre-funded from current contributions. Other OECD countries rely on taxes only or on a combination of social contributions and taxes. In Scandinavian countries, central government funds are distributed across municipalities based on income and needs. Private funding for long-term care mostly comes out-of-pocket. Private insurance is available in the United States and Japan, but it only covers a fraction of the costs. Reverse mortgages and home equity schemes exist in the United States, United Kingdom, France, New Zealand, Spain and Canada, but they are not used widely and are often concentrated in areas with high real estate prices.

Source: OECD (2020), OECD (2022b).

Improving healthcare efficiency

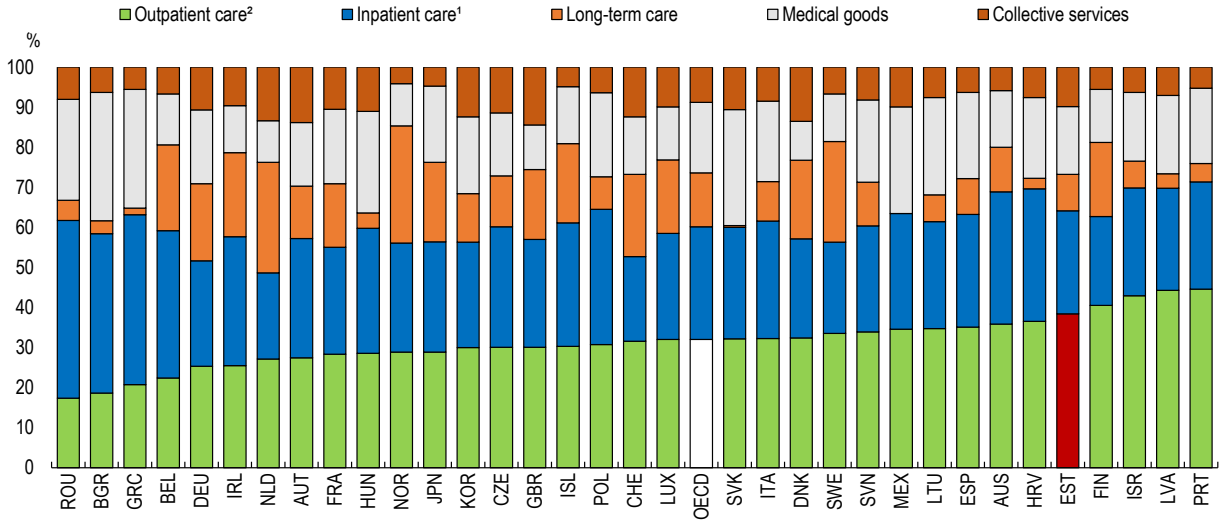
Outcomes and efficiency in Estonia's healthcare system

Overall, Estonia's healthcare system is well-designed and creates incentives to provide appropriate care in an efficient way, although there are some further improvements that could help to manage cost pressures. The delivery of healthcare is overseen and managed by the Ministry of Social Affairs (MoSA) and its various agencies (see Box 5.1). Policy is guided by the National Health Plan that integrates existing sectoral health plans, strategies and development plans. The Estonian Health Insurance Fund (EHIF) mainly finances healthcare services, which are organised into four categories: primary healthcare, emergency medical care, specialised medical care and nursing care. The provision of these services is decentralised among public and private providers (Habicht et al, 2018a).

The efficiency of the healthcare system has increased over time. Estonia has been centralising its healthcare management since the late 1990s. The Ministry of Social Affairs has assumed more planning responsibilities, while more administrative powers given to EHIF helped lower healthcare costs and boost analytical capacity. Estonia has increasingly focused on strengthening primary healthcare alongside specialist outpatient care, which plays an important role and has contributed to relatively low avoidable hospital admissions (Figure 5.11) (Habicht et al, 2018a). Further financial incentives have been put in place since 2017 to encourage the consolidation of individual practices into primary health care centres. Healthcare records and services have been largely digitalised which has reduced the administrative workload and costs. As a result, Estonia has managed to significantly raise life expectancy, while only increasing the share of health expenditure in GDP by 2 percentage points over the past two decades.

Figure 5.11. Estonia places relatively more emphasis on outpatient care

Health expenditure by type of service, 2021 or latest



Note: Countries are ranked by curative-rehabilitative care as a share of current expenditure on health.1. Refers to curative-rehabilitative care in inpatient and day care settings. 2. Refers to outpatient care, including specialist care, as well as home care and ancillary services.
Source: OECD Health at a Glance 2023.

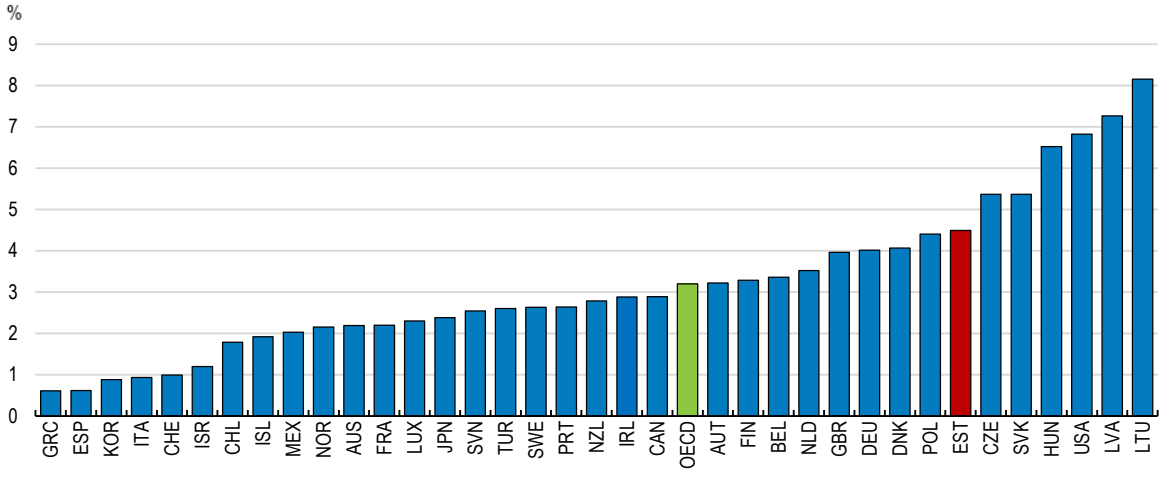
StatLink https://stat.link/4afiwl

While health outcomes are consistent with a comparatively low level of spending, other countries have managed to achieve better outcomes with a similar budget. This suggests that there may be further room for improvement in efficiency. A recent OECD study by Dutu and Sicari (2020) uses a non-parametric

technique to estimate a frontier of countries that are best in maximising health outcomes based on the resources they spend. Although subject to caveats, this analysis suggests that Estonia, given its current spending, could potentially raise life expectancy by 4.5% relative to the best performing countries without increasing spending (Figure 5.12), although this may be difficult to achieve. Many of the recommended prevention and treatment policies discussed in Section 5.5 would boost life expectancy at small additional cost, leading to higher efficiency. There are other areas which could yield additional efficiency gains. The EHIF's analysis suggests that efficiency savings up to 1% of total public health expenditure could be made through better use of technology, improved administration and enhanced financial incentives (Tervisekassa, 2023b).

Figure 5.12. Efficiency in healthcare has improved but could be increased further

Potential gains in life expectancy



Note: Efficiency is estimated using data envelopment analysis to explain healthcare outcomes, as proxied by life expectancy at birth, by inputs such as health expenditure and a composite indicator that captures effects of the socio-economic environment and life-style factors. The estimates refer to potential gains in output efficiency while keeping inputs constant.
Source: Dutu and Sicari (2020).

StatLink https://stat.link/sw9djr

Increasing efficiency through financial incentives

Different elements of the healthcare financing system could be adjusted to improve incentives and boost efficiency in the context of funding pressures. The EHIF offers mostly in-kind benefits to patients by contracting services from private and public providers. As a single payer with the healthcare system, it has strong bargaining power and expertise that allows it to achieve lower costs and set differential prices for healthcare services to achieve national goals, such as improving health outcomes in specific areas, driving efficiency improvements and ensuring a broad geographical availability of healthcare across Estonia (see Box 5.3 for more details).

Box 5.3. Payment mechanisms in Estonian healthcare

Funds from the Estonian Health Insurance Fund (EHIF) pay for the provision of medical services. The EHIF negotiates standard contract conditions with provider associations such as the Estonian Family Physicians Association, the Estonian Hospital Association and emergency care providers. This ensures contract terms are universal and apply to all providers. In addition, financial details are negotiated by each provider individually for one year. Service prices, the benefits package and payment methods are included and regulated in a single government-approved health service list.

In primary care, family doctors and nurses are paid through a combination of a basic allowance, capitation payments, fees for services and quality-related bonuses. The system is designed to incentivise doctors to take more responsibility for diagnostic services and treatment, to provide continuity of care and to compensate them for the financial risks of caring for older people and working in remote areas. For example, the quality bonus scheme pays doctors when they achieve targets in disease prevention, chronic disease management and additional professional competence areas. This is measured based on a selection of indicators agreed by EHIF and the Estonian Family Physicians Association.

Specialist care is remunerated at different levels through fees for services, per diem fees and diagnosis-related group payments. Diagnosis-related payments cover all inpatient care and outpatient care that involves surgeries. Per diem fees cover the costs of basic examination, diagnosis and treatment planning, nursing, meals, simple medical procedures, laboratory tests and pharmaceuticals. The EHIF also pays for amortisation costs while EU regional funds have supported healthcare infrastructure in general.

Source: Habicht et al (2018a).

Further development of primary health centres should be encouraged. Primary health centres are more efficient than individual practices due to lower administrative and management costs. They can also increase accessibility as they offer a range of additional services such as physiotherapy, midwifery, and home nursing. Financial incentives introduced in 2017 offered additional funding to incentivise family doctors to form health centres and 43% of all family doctors had joined by the end of 2022. However, health centres are not evenly distributed across Estonia. They are present in 35 municipalities, most of which only have one centre. The remaining 44 municipalities, many of which are rural, do not have any primary health centres (Riigikontroll, 2022). Financial incentives should be expanded for those regions, where feasible, to increase support for investments necessary in setting up a health centre and attracting staff to provide additional services (Habicht, Kasekamp, and Webb, 2023). Moreover, municipalities have the right to establish health centres, but have rarely used it (Habicht et al, 2018a). The Ministry of Social Affairs should provide advisory and technical support to those municipalities with few primary health centres in order to develop them.

Making more use of user charges could boost the efficient use of scarce resources. Primary care is free in order to maximise access to basic healthcare and to avoid unnecessary use of specialist and emergency care. Introducing a small user charge could reduce unnecessary visits. Specialist care, which requires a referral from a family doctor, is charged EUR 5 per visit. This was raised from EUR 3.20 in 2013 but has not been reviewed recently. Referrals should be conducted as e-consultations by default while user charges for specialists should be raised. In addition, requiring specialists to decide whether a referral is necessary could potentially free up scarce resources. Exemptions for those on low incomes and others in need will be necessary to preserve accessibility. Raising user charges could also increase revenues for the public health insurance fund but this is likely to be modest given the exemptions needed.

Increasing the role for performance payments could boost healthcare outcomes and lower costs. Estonia introduced quality bonuses in 2006, before many OECD countries, with the aim to increase the quality and effectiveness of preventive healthcare and improve chronic disease management. All family doctors now participate in the quality bonus scheme. This has improved health and lowered costs (Lai et al, 2015). However, the relative size of the bonus scheme could be increased to incentivise further efficiency gains. Estonia's bonus scheme accounts for 3% of family doctor incomes, while such incentive payments in OECD countries typically range between 5% and 15%. In the United Kingdom, up to 10% of GP practice income comes from incentive payments in the quality and outcomes framework; in Türkiye, around 20% of primary care provider salaries comes from incentive payments. Furthermore, higher performance could better differentiated and rewarded more within the scheme (NHS England, 2018; Forde et al, 2018).

Greater use of outpatient care could lower healthcare costs. Advancements in surgical techniques and technology have widened the range of procedures that can be done within a day and would avoid overnight stays in hospitals. Day care is advanced in ophthalmology, where all cataract surgeries are completed on the day. However, the use of day care for other procedures varies. For example, only 37% of tonsillectomies are done within a day, less than in most other OECD countries (OECD, 2023a). The use of day care also varies widely between hospitals. There is room to further increase the use of day care in areas, such as varicose vein operations and several orthopaedic and gynaecological surgeries (Habicht et al, 2018a). The EHIF funds day care separately and could sharpen incentives to transfer surgeries from inpatient to day care settings to further lower costs.

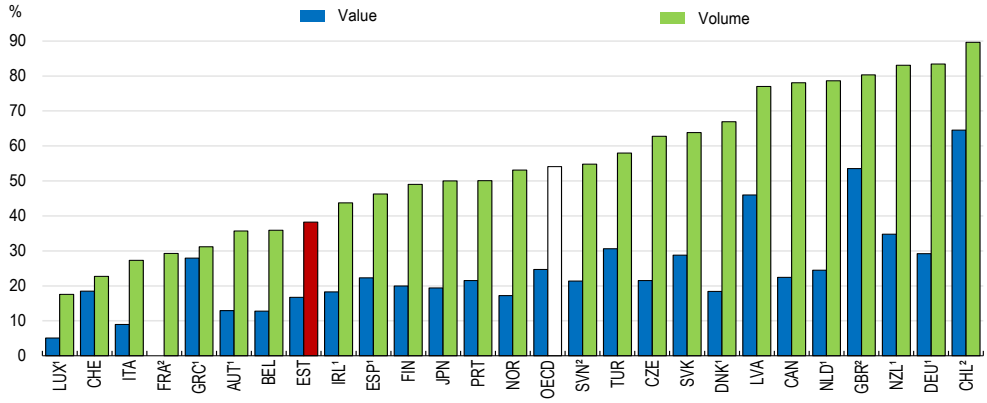
Additional efficiency and cost savings could be achieved through consolidating the hospital network. Previous estimates suggested that the recommended number of hospitals was 13, but the number of hospitals in 2022 totalled 20. The optimal number of hospitals will depend on healthcare needs and geographical coverage, but the government's goals are unclear as the hospital network development plan has not been updated since 2015. However, many hospitals across Estonia have reduced the number of specialised healthcare services, mainly due to a shortage of medical specialists (Riigikontroll, 2022). As workforce shortages will not be immediately resolved and a high volume of services is needed to achieve efficiency and maintain patient safety, a consolidation of the hospital network may be needed to ensure hospitals can offer a range of services while minimising their fixed costs. However, this should be balanced against the need for resilience as experience during the pandemic showed that some degree of spare capacity is essential for managing a surge in health demand during a crisis (OECD, 2023f). Supported by EU funds, the Ministry of Social Affairs has commissioned technical analysis of the hospital network and is moving towards developing a new hospital network development plan. This should be accelerated and accompanied with a concrete plan for consolidation if required.

Reducing pharmaceutical costs

Pharmaceutical prices are likely to be higher than needed given obstacles to competition, inefficient purchasing practices and low use of generic medicines. In 2022, Estonia spent EUR 359 million on medicines sold in pharmacies, 70% of which were composed of prescription medicines and the remainder were sold over the counter (Estonian Medicines Agency, 2023). On a purchasing power basis, pharmaceutical spending per capita is broadly similar to the OECD average but the share of generic medicines remains relatively low. In 2022, 16.7% of medicines sold by value were generic, while the volume of generic medicines made up 37% of the total. The use of generics is below the OECD average and significantly below neighbouring Latvia (Figure 5.13). The market share of generics is correlated with pharmacies' profit margins which suggests that, despite regulatory pricing incentives, competition in the retail market could be higher (Holmas, Brekke and Straume, 2013). In addition, the wholesale market is dominated by a couple of large companies.

Figure 5.13. The share of generic drugs is below the OECD average

Share of generics in the total pharmaceutical market, 2021



Note: 1. Reimbursed pharmaceutical market refers to the sub-market in which a third-party payer reimburses medicines. 2. Community pharmacy market.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/7xzsik

Estonia has implemented policies to reduce pharmaceutical costs and encourage competition with some success. A regressive cost-plus markup system, used to determine maximum prices for medicines, has been in place for around two decades. Mark-ups are highest for low priced medicines in order to make cheaper pharmaceuticals more profitable for wholesalers and retail pharmacies. A reference pricing system in Estonia uses prices from different manufacturers and a comparison with Latvia, Lithuania, and Slovakia is used to set reimbursable medicine prices. Doctors are required to prescribe pharmaceuticals by their International Non-proprietary Name (INN) as the default option, which is supported by the e-prescription system, and pharmacies have to offer a range of medicines including the cheapest alternative. This has led to lower prices and an increase in the volume of generic medicines since 2010 (Habicht, 2018b; OECD, 2023a). However, reforms made in 2015 that prohibited wholesalers from owning retail pharmacies have not led to an increase in retail competition. This was partly due to franchise agreements between wholesalers and retailers that incentivise kickbacks and limit the pharmacies' ability to work with competing wholesalers (Habicht, 2018b).

Easing restrictions on supply could lower pharmaceutical prices. Hospitals account for about a third of pharmaceutical consumption and each individual hospital is responsible for procuring medicines. This is done through direct purchases and tenders from wholesalers licensed in Estonia. However, the wholesale pharmaceutical market is concentrated with the largest two wholesalers accounting for 81% of the market share. To increase their bargaining power and reduce prices, hospitals should jointly purchase medicines. Furthermore, hospitals should also be granted the right to buy medicinal products in other EU Member States and directly from manufacturers if the medicine is cheaper and included in the EHIF benefits list (ECA, 2022). Moreover, building on the success of the Baltic Procurement Initiative for vaccines, Estonia should make more use of joint procurement with other Baltic countries for a wider range of pharmaceuticals (Vogler et al, 2021). This could further lower prices.

Competition among retail pharmacies should be increased and supervision in the pharmaceutical market strengthened. The indicator of product market regulation has not changed between 2019 and 2023, and suggests regulation in the retail pharmacy lags behind best practice. This is because existing rules prescribe limits on geographical density of pharmacies and restrict the sale of non-prescription medicines to pharmacies. Moreover, there are ownership restrictions. A new law introduced in 2015 requires retail pharmacies to be majority owned by pharmacists, rather than owned by wholesalers, and limits ownership to 4 pharmacies. Easing product market regulations would boost competition and lower prices. Removing

geographical limits could increase the number of pharmacies. Ownership restrictions, particularly given the declining number of pharmacists, could restrict competition and should be eased. In addition, there are concerns about exclusive franchise agreements limiting competition between wholesalers and non-transparent medicine pricing leading to higher prices (ECA, 2020a, 2020b). To increase competition, Estonia should conduct an in-depth audit of the pharmaceutical market to reduce barriers to competition.

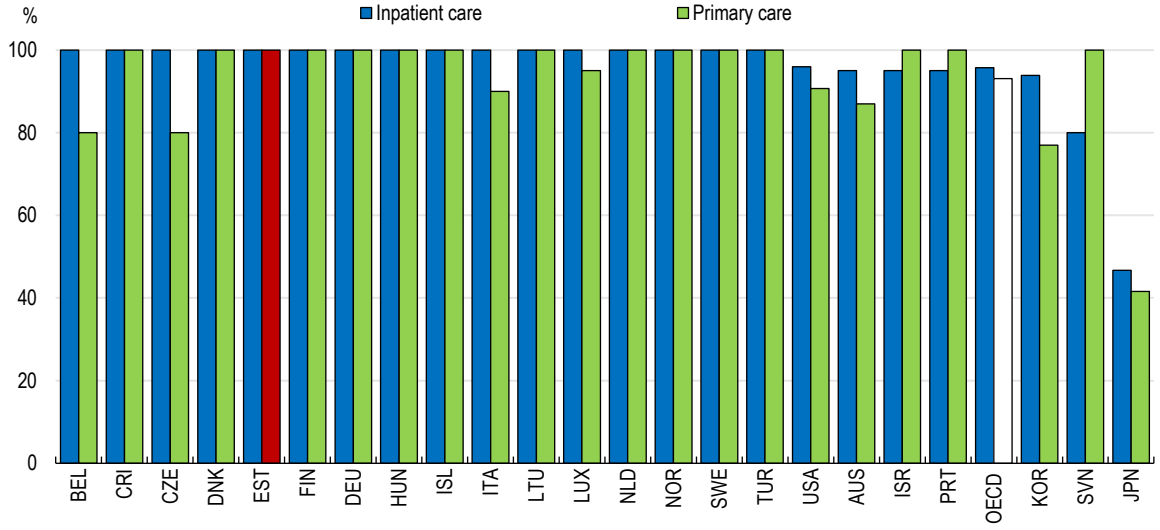
Upgrading digital healthcare through better data use

Digitalising healthcare further could help to improve efficiency. Estonia is highly advanced in digitalising public services. It provides many healthcare services and tools online. All Estonians have an electronic health record (Figure 5.14). The use of online consultations is high, and all prescriptions are electronic. A secure data exchange system, X-road, allows eServices between the public and private sectors to be connected which, for example, supports eAmbulance services by providing direct access to health records in an emergency. Additionally, the EHIF has used electronic billing data since the late 1990s, ahead of many other EU Member States (OECD, 2022c).

Data can be used better to monitor healthcare services and improve health outcomes. Estonia performs well in primary data use. There is a significant amount of information collected and all databases are structured to support the functions of each healthcare institution. This has facilitated digitalisation of healthcare services. Despite the broad availability of healthcare data, health statistics are not designated as official statistics and they are interspersed between multiple institutions. This makes linking datasets difficult and time consuming, which has hampered wider secondary use of data for healthcare performance monitoring, analysis and research. For example, Estonia uses health data for monitoring public health and patient safety and it is starting to use it for monitoring health system performance such as waiting times (Oderkirk et al, 2021). Effective use of data and digital technologies can yield large economic benefits with estimated savings of 8% across OECD countries, on average, of total health expenditure (OECD, 2019a). It can also boost resilience as the pandemic has shown that more digitalised health systems can cope better in crises (OECD, 2023f).

Figure 5.14. Estonia has digitalised all of its health records

Percentage of primary care physician offices and acute care hospitals using electronic medical records, 2021



Source: OECD Survey of Electronic Health Record System Development and Use, 2021.

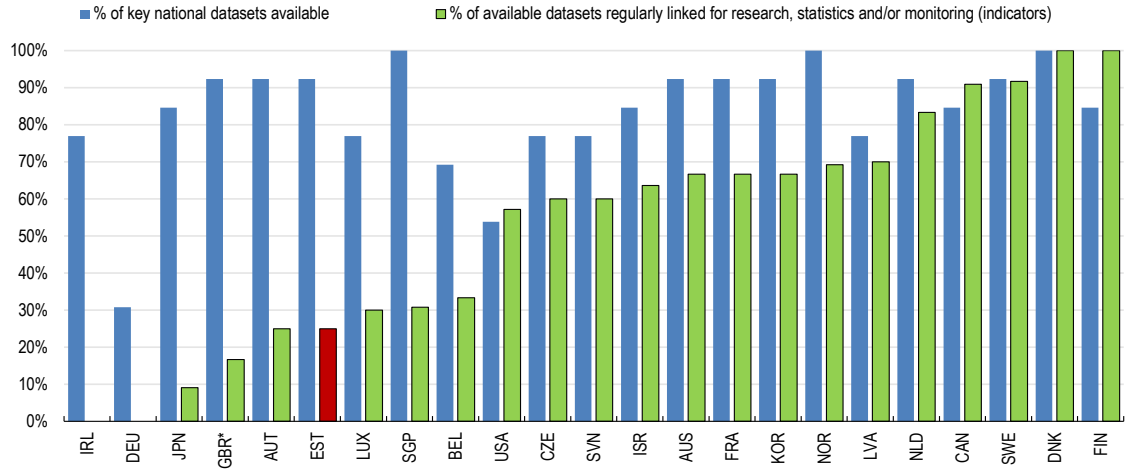
StatLink https://stat.link/92vpqc

Addressing challenges with data collection and quality is necessary to further leverage healthcare data. There are concerns with manual data inputs as the quality of electronic health records does not meet the requirements for compiling reliable health statistics. There is a need for more automated quality controls, but current healthcare software design does not sufficiently consider quality data entry and processing (Kirpu & Eigo, 2018; Liivlaid, 2019; Maasoo, 2022). The coverage of collected data varies by dataset and non-standardised definitions reduce data comparability. Some reports from healthcare providers are provided in aggregated format, which makes it difficult to verify and impossible to link to other datasets (OECD, 2023c). Estonia should invest more in improving the quality of administrative healthcare data collection.

Further obstacles need to be removed to improve database linking and interoperability. Estonia collects almost all key national health datasets recommended by the OECD except for diabetes data. Many datasets have the same unique patient ID that allows for linking. However, just a quarter are inter-linked, which is below most OECD countries (Figure 5.15). Currently, only mortality data and certain disease registry data, such as cancer and tuberculosis, are linked on a regular basis (OECD, 2023c). Some data collected by NIHD is reported in aggregated format and should be replaced with statistics underpinned by individual records. Furthermore, it is difficult to link health and tax data, which is important for improving the targeting of health benefits. Estonia is implementing the latest global standards to improve interoperability. However, the key obstacle to linking databases is that health data are not classified as official statistics. This makes accessing each database for regular statistical purposes a complicated process. While data access needs to be balanced with data privacy and security concerns, countries such as Denmark, Canada and Finland have successfully managed to link their healthcare data. Estonia should find a solution to add health statistics to the official statistical programme in order to allow for quicker and wider access while ensuring data remains secure and private.

Figure 5.15. A high share of key healthcare datasets is available but only a fraction is inter-linked

2019-20



Note: Includes 10 national datasets of hospital in-patients, mental hospital in-patients, emergency care, primary care, prescription medicines and long-term care; national cancer, cardiovascular disease, diabetes registries; and national mortality data. Time lapse of 1 week or less between when a data record is created and when it is included in the dataset used for analysis. * refers to Scotland.
Source: OECD Survey of Health Data and Governance, 2019-20; Oderkirk (2021), "Survey Results: National Health Data Infrastructure and Governance", https://doi.org/10.1787/55d24b5d-en.

StatLink https://stat.link/srmlkn

Efforts to improve data collection and linking should be centralised. Data ownership and use is fragmented across several healthcare institutions that work separately and have little interaction with each other on data issues (OECD, 2023c). Many of the barriers to better healthcare data use are common and central coordination could benefit from economies of scope in improving data quality, implementing common standards and definitions, leading in linking datasets and enabling open and secure access to healthcare data. The Ministry of Social Affairs, alongside stakeholders across the health system, is currently undertaking a comprehensive health system performance assessment (HSPA), which is expected to help identify how to practically improve governance structures, policies, and processes which would ensure the consistent and systematic generation of health-related indicators. Following this assessment and the upcoming European Health Data Space framework, Estonia should adopt a clear structure for the governance of its health data and develop a detailed action plan on how to centralise and improve data collection and availability.

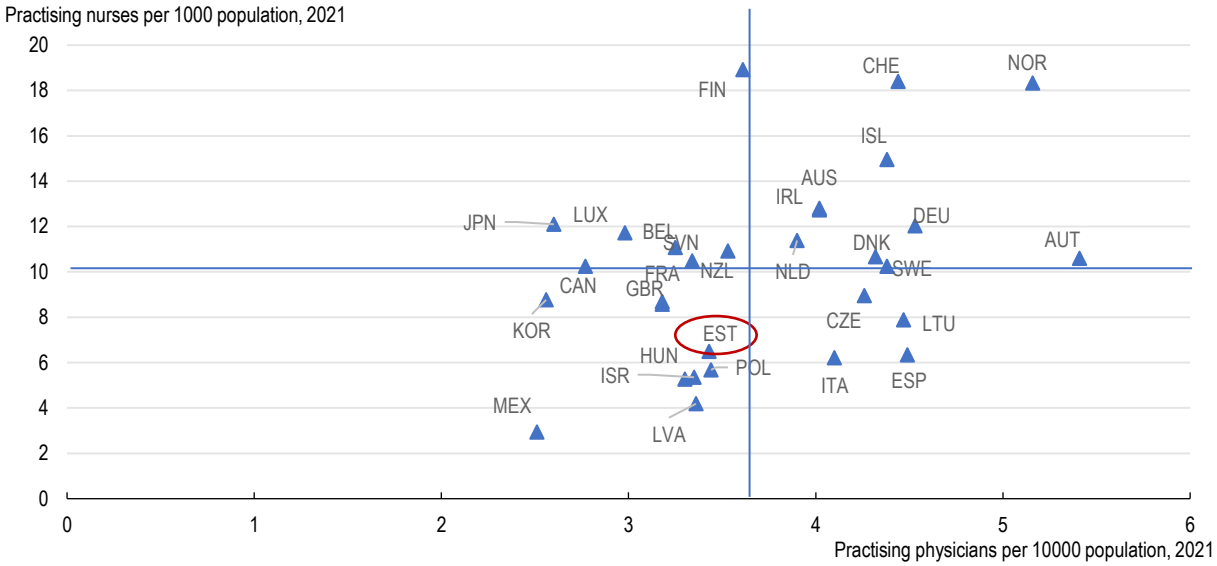
Ensuring an adequate workforce to deliver healthcare services

Estonia is facing a shortage of doctors, nurses and other health professionals

A key challenge to delivering quality healthcare and the government's objectives is ensuring a sufficient number of health workers. Adequate healthcare staff levels are also key to a resilient healthcare system since workloads can surge during a crisis as the pandemic has shown (OECD, 2023f). Estonia has experienced a persistent shortage of health workers as a result of an ageing workforce, migration and an insufficient number of medical and nursing graduates. This has led to long waiting times and lower access to healthcare. There is a nationwide shortage of nurses as the Estonian Nurse Association reported 1000 vacancies in 2023, accounting for 12% of all nursing jobs across the country (ENA, 2023). The average age of nurses has risen to 45 years, and it is higher in areas such as rehabilitation, schools and long-term care. Similarly, the average age of doctors is 51 and almost half of all doctors are aged 55 or older, the fourth highest share in the OECD. In 2021, there were vacancies for at least 52 family doctors (about 5% of all practicing family doctors). To compensate for the shortage of staff, doctors worked overtime hours amounting to an additional 116 full-time doctors (around 3% of the total medical workforce). There is an acute shortage of family doctors, especially outside the biggest cities and shortages of medical staff in emergency care, psychiatry and psychology (Riigikontroll, 2022).

The number of health workers relative to the population is low compared to other OECD countries. The ratio of nurses relative to the population has been broadly the same over the past two decades, while it has risen in most OECD countries (OECD, 2023a). The ratio of doctors in Estonia has increased although this increase has been among the lowest in the OECD. In 2021, there were 6.4 nurses per 1000 people, well below most OECD and EU countries. The ratio of doctors was 3.4 per 1000 people, slightly below the OECD average and lower than in most EU countries (Figure 5.16). To reach EU average levels, Estonia would need to boost the number of doctors by 14% or 650 doctors and increase the number of nurses by 31% or 2600 nurses.

Figure 5.16. The number of nurses per capita is significantly below the OECD average



Notes: The OECD average is unweighted.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/lhu9gd

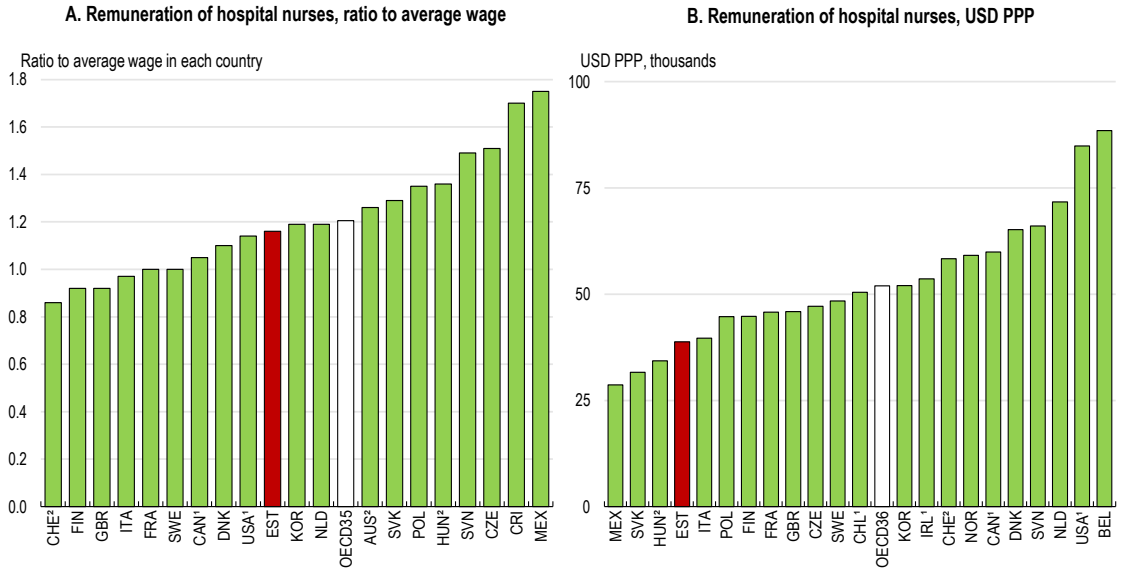
In the context of a declining workforce and a tight labour market, increasing the numbers of nurses and doctors will be a significant challenge. As the demand for healthcare grows more healthcare staff will be needed, but the ageing workforce is likely to worsen the shortage further (Riigikontroll, 2022). Addressing this will require a sustained multi-pronged policy effort. While pay is more of an issue for nurses, retaining both nurses and doctors will be increasingly important and improving working conditions can play a key role. More doctors and nurses will need to be trained. Estonia could also make more use of immigration to boost its medical workforce.

Raising pay, increasing retention and improving working conditions

Boosting pay could increase the supply of healthcare staff. Higher pay levels can attract new nurses while, at the same time, discourage existing nurses from leaving. In Estonia, nurses' wages are above the average wage, but slightly lower than the OECD average (Figure 5.17, A). The latest two-year collective agreement in Estonia increased salaries in healthcare by 20% in April 2023 and will raise them by a further 10% in 2024. This should bring the ratio of nursing salaries broadly in line with the OECD average. However, given freedom of movement within the EU, remuneration in other countries matters. In neighbouring Finland nurses can earn more than a quarter more than in Estonia adjusted for differences in purchasing power and significantly more in cash terms (Figure 5.17, B). This strengthens the case to ensure that nurses' pay is sufficient, including for younger nurses who might be more inclined to emigrate. All general practitioners in Estonia are private and those who were self-employed were paid 3.1 times the average wage in 2021, which is among the highest ratios in the OECD (Figure 5.18, A). However, remuneration for salaried general practitioners and specialist doctors could be improved. Specialists, who mostly work in hospitals, were paid 2.3 times the average wage (Figure 5.18, B). This ratio is higher in Finland and in most other OECD countries.

Figure 5.17. Remuneration for nurses has been lower in relative terms than in other countries

Remuneration, 2021 or nearest year

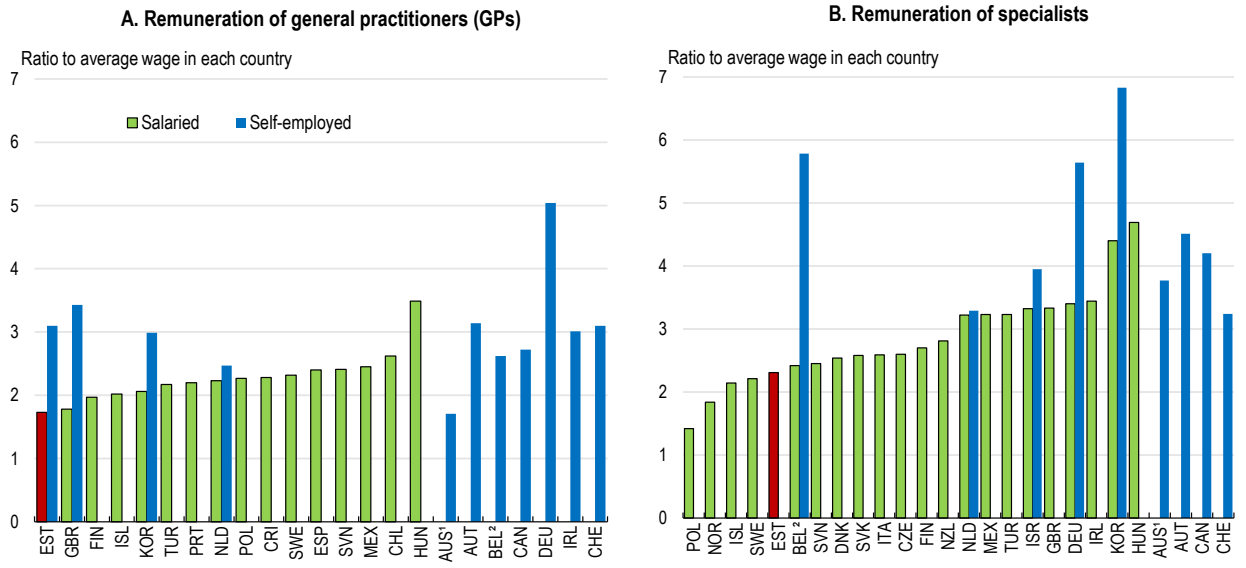


Note: Panel A: 1. Data refer to registered ("professional") nurses only in the United States, Canada, Ireland and Chile (resulting in an overestimation). 2. The data for New Zealand and Switzerland include "associate professional" nurses, who have lower qualifications and revenues. Panel B: 1. The data also include "associate professional" nurses who have lower qualifications and revenues.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/uksx92

Figure 5.18. Remuneration for specialist doctors is lower in relative terms than in most OECD countries

Remuneration relative to the average national wage, 2021 or latest available



Note: 1. Includes physicians in training (resulting in an underestimation). 2. Includes practice expenses (resulting in an overestimation).
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/u2bxoq

Better working conditions can make nursing more attractive. Heavy workloads contribute to higher staff turnover and make the profession less attractive to prospective entrants. The workload has increased in Estonia as the population has aged (Ernits et al, 2019). The use of overtime hours to partly address the shortage of nurses has risen by 50% since 2016. During the pandemic, the need for nurses rose sharply as in many OECD countries. This was particularly acute among nurses working in emergency services and intensive care. The average number of patients per nurse grew to 20, up from 12-14 patients before the pandemic (Riigikontroll, 2022). Workload pressures continued in 2022 as the amount of overtime hours was equivalent to hiring an additional 3% full-time nurses. The situation is similar for doctors where overtime hours in 2022 also accounted for around 3% of the workforce. Heavier workloads can also worsen healthcare quality. For example, an additional patient per nurse increases the likelihood of inpatient death by 7% within 30 days (Lancet, 2021).

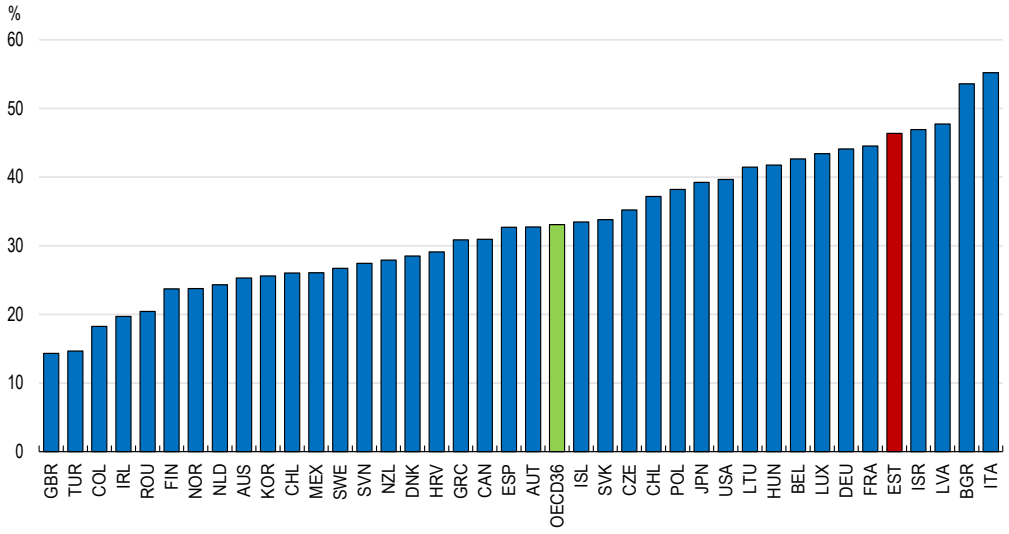
Setting personnel standards for the whole healthcare sector would improve general working conditions. More explicit guidance on working practices, such as setting limits on the number of patient consultations in a given time period and overtime hours, should be provided. The Occupational Health and Safety Act regulates the physical safety of workers but regulations that prescribe quality standards and working hours in healthcare are largely missing. In 2012, the collective agreements acknowledged the need to develop personnel standards, but these have only been implemented in intensive care and inpatient nursing care. They are absent in other specialties, leading some hospitals to increase workloads (Riigikontroll, 2022).

Nurses no longer working in healthcare could help to fill current vacancies. According to the Healthcare Providers' Information System, a little more than half of qualified nurses worked in healthcare in 2022. The Ministry of Social Affairs has recognised this and started return programmes for nurses in 2015. Six-month courses taught at Tallinn Health Care College, funded by the Ministry, help participants refresh their knowledge and skills. Around 20-30 nurses complete the course each year and, in the past, 85% have returned to work as nurses (ERR, 2019). Given their success and as part of wider efforts to increase the nursing workforce, these programmes should be expanded to attract more former nurses back into healthcare.

The shortage of family doctors is particularly acute and will be exacerbated by ageing as almost half of all doctors were 55 years of age or older in 2021 (Figure 5.19). More family doctors are retiring than new ones are joining (Riigikontroll, 2022). The inflow of Ukrainian refugees has increased the demand for healthcare further. Around 5.5% of the population is covered by substitute doctors who, in addition to their own patients, temporarily look after those without an assigned doctor. But substitute doctors have their own patients, and a quarter are approaching retirement age. It is increasingly difficult to replace family doctors and some patients have been covered by a temporary doctor for many years. Elderly populations in rural regions are expected to increase much more than in urban regions, adding pressure on the relative shortfall of family doctors in rural areas (OECD, 2022a). Persistent shortages of family doctors could lead to worsening healthcare access and decrease the efficiency of healthcare as more patients rely on emergency services (Riigikontroll, 2022).

Figure 5.19. Older doctors make up a large share of the current medical workforce

Share of doctors aged 55 and older, 2021



Source OECD Health at a Glance 2023.

StatLink https://stat.link/l6w1eg

Since many doctors are close to or over retirement age, policies that incentivise postponing retirement could boost the number of doctors. In Denmark's Northern Jutland, GPs received additional payments between the ages of 62 and 65, while in the German state of Thuringia, GPs aged 65 and above are eligible for additional pay in underserved rural areas (OECD, 2016). Nonetheless, non-financial incentives can be equally as important. Studies suggest that reducing working hours and workload intensity can encourage doctors to practice longer (Silver et al, 2016; Cleland et al, 2022). But the EHIF rules on opening hours and patient lists for practices run by family doctors make it difficult for smaller practices to flexibly adjust hours. These rules should be relaxed to facilitate the retention of older doctors.

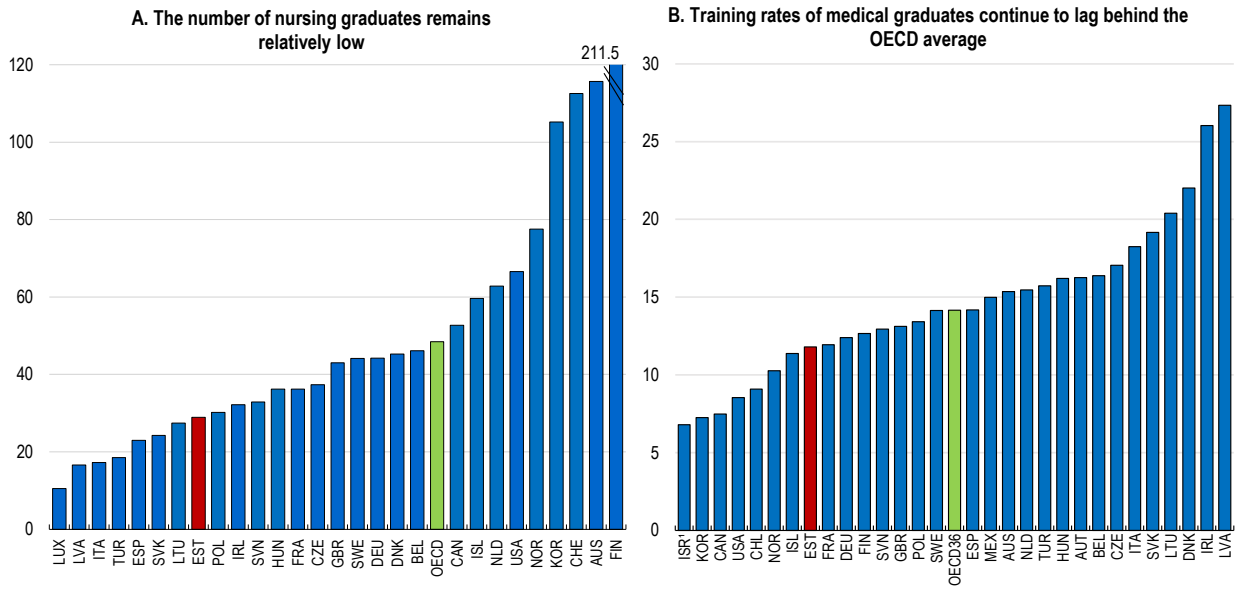
Hiring more administrative staff could lighten nurses' workloads. There is a shortage of administrative staff in the health system and this puts an additional burden on nursing staff (NIHD, 2023). Administrative staff do not necessarily require clinical qualifications and can be more effective than nurses. Such task shifting could then provide nurses with more time to provide healthcare to patients.

Training more nurses and doctors

Overall, the rate of training remains too low given the need to improve healthcare, persistent shortages and an ageing workforce; and needs to be increased further. Around 350-400 nurses have been graduating annually in recent years, but the rate of training has decreased overall since 2012. Estonia remains below OECD and EU average levels of training of nurses (Figure 5.20, A). However, the number of training places has been raised to 700 in 2023-24, just reaching the annual requirement of 700-800 graduates that was the estimated number of graduates required each year from 2014 in order to achieve OECD and EU averages by 2032. More will be needed to make up for previous shortfalls. In addition, there are 170 Ukrainian refugee nurses and 22 are studying towards Estonian qualifications (ERR, 2023a).

Figure 5.20. The number of nursing graduates remains relatively low

Training rates per 100,000 inhabitants, 2021



Note: A large number of medical graduates are international students in some countries (e.g. Ireland, the Slovak Republic, Czechia and Hungary). Data excludes international students, resulting in an under-estimation (about 15% of graduates in Israel and 5% in New Zealand were international students in 2021).
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/mv3c1z

More doctors need to be trained as well. All doctors are trained at the University of Tartu, where it takes 6 years of studies to qualify as a doctor and be able to practise medicine. Afterwards, doctors can continue with postgraduate specialist medical training in a residency at a medical institution to qualify as a specialist doctor. Doctors of family medicine are defined as specialists in Estonia as in most other countries. The previous Survey recommended increasing medical admission quotas (OECD, 2022d). While the number of admission places almost doubled between 2000 and 2022, it has remained broadly unchanged since 2021. Training rates continue to lag behind most OECD and EU countries (Figure 5.20, B). The level of admissions is still below that needed to cover future needs, estimated by the Ministry of Social Affairs to be 200 admissions per year (Habicht et al, 2018a). For postgraduate specialist training, the number of residency places grew by 15% between 2019 and 2022 (Riigikontroll, 2022). Residencies for family medicine have been boosted from 35 to 40 places but this continues to be below 50, which is the estimated level necessary to overcome the shortage of family doctors (De Maeseneer, 2016).

The additional supply of doctors should be balanced across different specialisations. Interest in specialisations is not perfectly aligned with existing shortages. For example, applications for emergency medicine amount to only 25-30% of available residency places because of high work intensity, difficult working conditions, and limited development prospects (Riigikontroll, 2022). Resident doctors have fixed term employment contracts with teaching hospitals and this education is funded by the Ministry of Social Affairs. To encourage more doctors to specialise in disciplines in high demand, residency salaries should be increased for specialisations where the need is higher and lowered where there is plenty of interest. A similar system has been effectively implemented in Lithuania, where higher education grants vary depending on future shortages in different disciplines (Eurydice, 2023).

Trained nurses should be based widely across regions to ensure adequate access to and quality of healthcare. Today, nurses are trained in health colleges in Tallinn and Tartu, the two biggest cities, and training lasts 3.5 years. Tallinn Health College already has cooperation agreements with Parnu hospital while Tartu Health College has established a new agreement with Narva hospital to provide practical nursing training (ERR, 2023b). This progress should be continued and, where feasible, the authorities could develop additional teaching centres in different regions to boost training and attract local workers.

A broad geographical spread of doctors is needed as well. However, most resident doctors only want to practice in Tallinn and Tartu. Retiring family doctors in rural areas are increasingly not replaced (Riigikontroll, 2022). The Ministry of Social Affairs already differentiates salaries based on regional demand as attracting doctors at an earlier age would increase the likelihood that they stay in the local area. While financial incentives may compensate for the disadvantage of locating in less attractive regions, they are not a 'game changer' for location choice (OECD, 2016). The Ministry of Social Affairs should invest in modern equipment and facilities in general, and invest in county and local hospitals as this can boost the attractiveness of facilities located outside larger cities. The authorities could admit more students from rural areas by offering scholarships, for example, as this can also increase regional mobility (MacQueen et al, 2017).

Making more use of immigration

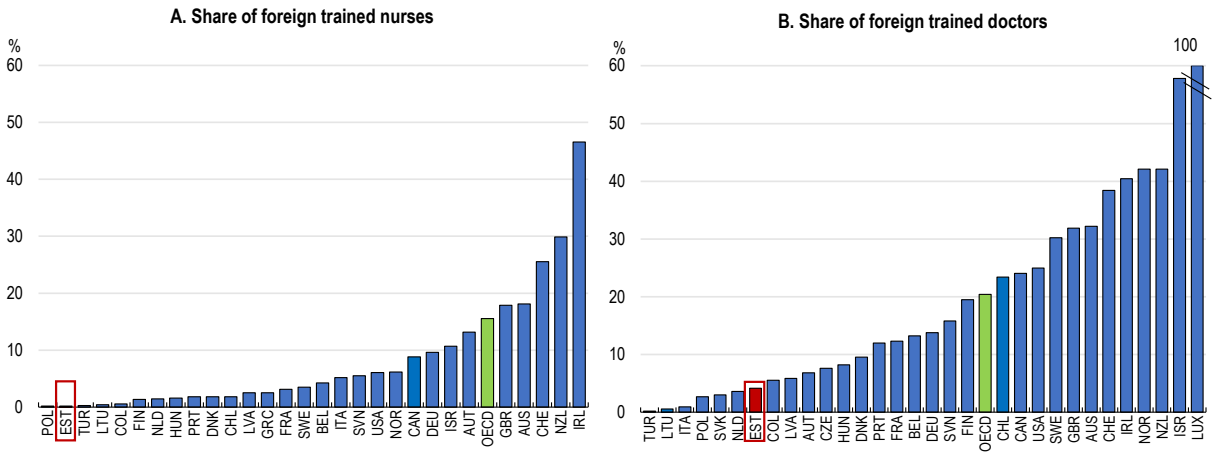
Immigration could help alleviate labour shortages in healthcare. Foreign-trained nurses only account for 0.2% of nurses in Estonia, one of the lowest shares among OECD countries (Figure 5.21, A). More foreign nurses should be attracted to help address shortages in the short term and mitigate the loss of nursing staff to other countries. Increasing the number of foreign-trained doctors can also fill vacancies. Only 4% of doctors are foreign-trained in Estonia, well below the OECD average (Figure 5.21, B). They mostly come from Russia and Ukraine while some are from Finland.

There is significant potential to attract more foreign doctors and nurses as the barriers to entry into the medical profession are high. Non-EU qualifications are not easily recognised. The government is developing legislation for recognising foreign non-EU medical qualifications. This should be accelerated while ensuring foreign qualifications meet minimum quality criteria. Estonia currently requires practicing healthcare professionals to possess a high-level of Estonian language knowledge. While it is important for people to be able to access medical care in Estonian, there is scope to relax this requirement initially and allow for greater flexibility so that foreign nurses and doctors can start practising earlier, while further improving their knowledge of Estonian and without compromising patient care as some other countries have done. More use of translation services, as practiced in Sweden, could be relied on where necessary to ease communication. Furthermore, Estonia could expand the number of foreign medical students trained in the country. The University of Tartu offers a medical study programme in English for fee-paying students. The programme teaches Estonian language and allows graduates to work in local hospitals and offers pathways to specialise through residency programmes.

Bilateral migration programmes could boost the supply of foreign medical professionals. Several OECD countries have set up mutually beneficial migration programmes for healthcare professionals in order to facilitate migration between countries. The United Kingdom has signed memoranda of understanding with India, Kenya, Malaysia, Nepal, the Philippines and Sri Lanka to develop migration pathways that benefit the UK and the sending countries (Department of Health and Social Care, 2023). Germany established a similar bilateral agreement with Vietnam in 2012 to train and recruit geriatric nurses, while also providing German language training (OECD, 2016). Estonia could benefit from a similar bilateral programme to facilitate migration from non-EU countries. It should launch campaigns in other countries to attract more nurses and doctors while respecting the WHO's global code of practice on the international recruitment of health personnel.

Figure 5.21. Foreign-trained healthcare professionals could alleviate shortages

2021 or latest year available



Source: OECD Health at a Glance 2023.

StatLink https://stat.link/fy5bod

Enhancing data collection and workforce planning

Better data collection can underpin better health workforce planning. The relative magnitude of shortages in the system is unclear. The National Institute for Health Development collects statistics on the number of healthcare professionals, their salary and overtime hours. However, overtime hours tend to be underreported and inconsistently measured across healthcare institutions. For example, some documentation work and handover of shifts is not included in working time (Riigikontroll, 2022). There is no regular data collection on the number of patients per doctor or nurse. To support better decision-making at the system level, the government should improve data standards and collection for workforce statistics.

Health workforce planning needs to be long-term, more coordinated, and responsive to successfully address staff shortages. The planning for training places is currently negotiated between the Ministry of Social Affairs, the Ministry of Education and Research, education institutions and healthcare organisations. The responsibility for funding education and practical training is split between two ministries. There is no long-term plan and the number of admissions for each specialty is agreed separately each year (Riigikontroll, 2022). An effective planning approach would make more use of data to forecast the demand for and supply of healthcare staff and would benefit from a dedicated budget and policy tools to boost training rates. So far, Estonia has mapped its planning system with other EU countries to identify areas for improvement and it is developing it within the scope of the EU Joint-Action HEROES project that runs until 2026. It should continue this progress.

Advancing treatment and prevention to improve health outcomes

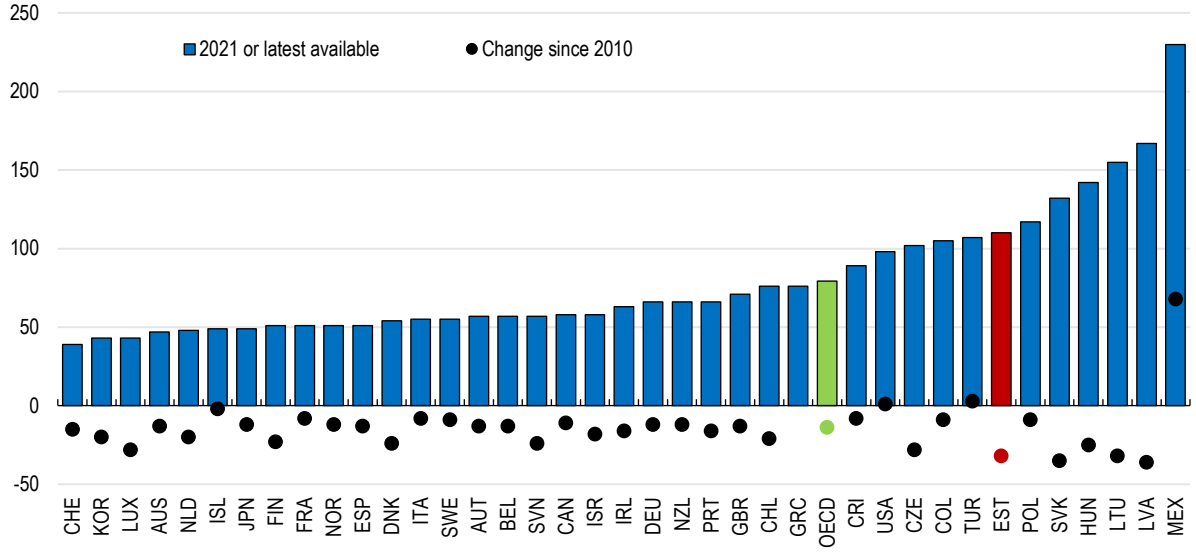
Detecting diseases earlier and treating them faster

Mortality rates from treatable conditions have declined but remain elevated. Close to 10% of all deaths in 2019 could have been avoided through better healthcare interventions. Estonia has reduced treatable mortality by a quarter over the past decade, twice as much as the average decrease in the OECD, albeit from a high level. Nonetheless, treatable mortality remains a third above the OECD average (Figure 5.22). The most common causes of death are ischaemic heart disease, hypertension, stroke, and cancer, which

remained slightly more frequent than the OECD average in 2021, despite significant improvement over the past decade. Treatable mortality tends to be comparatively worse for men. For example, cancer mortality for Estonian men was among the highest in the OECD. To reduce the number of premature deaths, it is essential to detect disease early and proceed to treatment quickly and effectively.

Figure 5.22. Treatable mortality has improved but continues to remain elevated

Deaths per 100,000 inhabitants (standardised rates)



Source: OECD Health at a Glance 2023.

StatLink https://stat.link/a7vxgz

The risk factors that lead to coronary heart disease, hypertension and stroke need to be better monitored. These risk factors are unhealthy diets and insufficient physical activity, obesity, high cholesterol, irregular heartbeats and diabetes. Monitoring is partly opportunistic as patients visiting their family doctors will have blood pressure and cholesterol checked. Patients are also specifically invited to participate in screening. However, many patients are not tested. For example, only half of all adults that have hypertension in Estonia were diagnosed in 2019 (WHO, 2023b). While the EHIF provides financial incentives to family doctors for chronic disease management, such payments only make up around 3% of family doctors' earnings, whereas such incentive payments in OECD countries typically range between 5% and 15%. Moreover, most of the incentive payments in Estonia are skewed towards hypertension. Other chronic conditions, such as diabetes, should be given more attention and their screening and treatment incentivised accordingly.

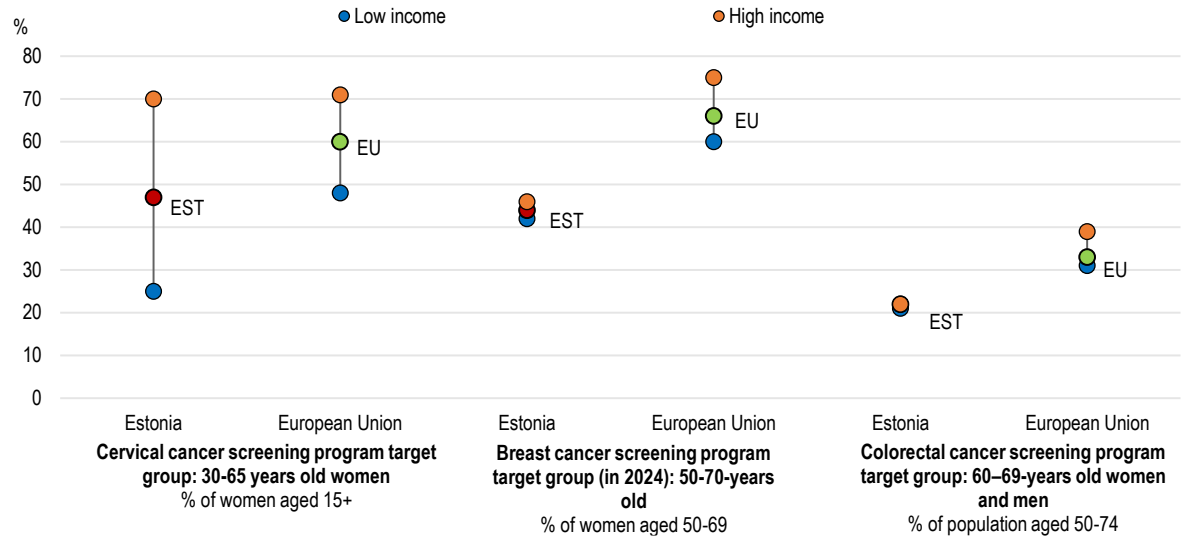
Estonia should expand general monitoring of health conditions in a targeted manner. While general health check-ups are free, participation is insufficient to detect many of the risk factors early enough. In France, employees need to undergo a health assessment every five years, although those at high risk are required to be checked more frequently. In Korea, companies are required to provide health checks for employees aged 40+ (Chu, 2017). Ensuring routine health checks are targeted is important for maximising the effectiveness of such programmes (Gmeinder et al, 2017). Estonia already requires firms to provide occupational health assessments in certain sectors. To boost health monitoring, firms should be asked to extend health assessments of their older workers.

Detection of cancer still needs to improve. The incidence of cancer in Estonia is below the OECD average but mortality rates tend to be higher than the average. The most common forms of cancer are prostate, lung, breast, colorectal, uterus and cervical cancer. Estonia has been running national cancer screening

programmes for breast and cervical cancer for almost two decades, while colorectal cancer screening was introduced in 2016. However, only around half of those invited attend a screening (Riigikontroll, 2021b). This is below the EU average and well below the national target of 70% (Figure 5.23). As a result, when cancer is detected, it is often detected at a later stage. For example, only around 29% of cervical cancer, 35% of colon cancer and 49% of breast cancer were detected in the early stages of the disease in 2018 (Riigikontroll, 2021a). Late diagnosis is associated with higher cancer mortality.

Figure 5.23. Cancer screening rates could be higher

Screening rates, 2020



Note: The data refer to self-reported screening rates.
Source: Eurostat.

StatLink https://stat.link/talyce

Low awareness and access to tests have led to low participation in cancer screening programs in Estonia. A key determinant of low screening uptake is the amount of previous interaction with the health system (Niglas and Haller-Kikkatalo, 2021). This is particularly pronounced among people with low income and low education (Lubi et al, 2021). There are also geographical disparities with participation varying by as much as 20 percentage points between high and low participating counties (NIHD, 2022). Estonia regularly runs public awareness campaigns and promotes nationwide cancer screening. For example, its mobile mammography buses have improved breast cancer screening in remote areas. For colorectal cancer testing, tests can be done at home and sent to laboratories by mail (OECD, 2023d). Furthermore, people who are invited but do not attend cancer screening are repeatedly reminded by phone, email and their family doctor. These efforts should be continued and intensified for less educated groups and in regions with low screening participation.

Estonia should consider broadening screening to other cancers. Currently, there are no lung or prostate cancer screening programmes. Detecting prostate cancer and lung cancer can have health costs. The rate of false positives in prostate-specific antigen tests can lead to misdiagnosis while lung screening can involve harmful radiation. A few EU countries, such as Sweden and Germany, are piloting prostate cancer screening programmes and Estonia is assessing its feasibility. For lung cancer, a recent study in Estonia concluded that family doctors and nurses could be involved in identification of long-term smokers for screening via low-dose computed tomography (Laisaar, 2022). Regional pilot programmes to assess lung cancer screening cost-effectiveness are ongoing (Tervisekassa, 2024). To the extent that local evidence

points to public health benefits outweighing the costs, including possible false detection and overtreatment, Estonia should test for other cancers as well.

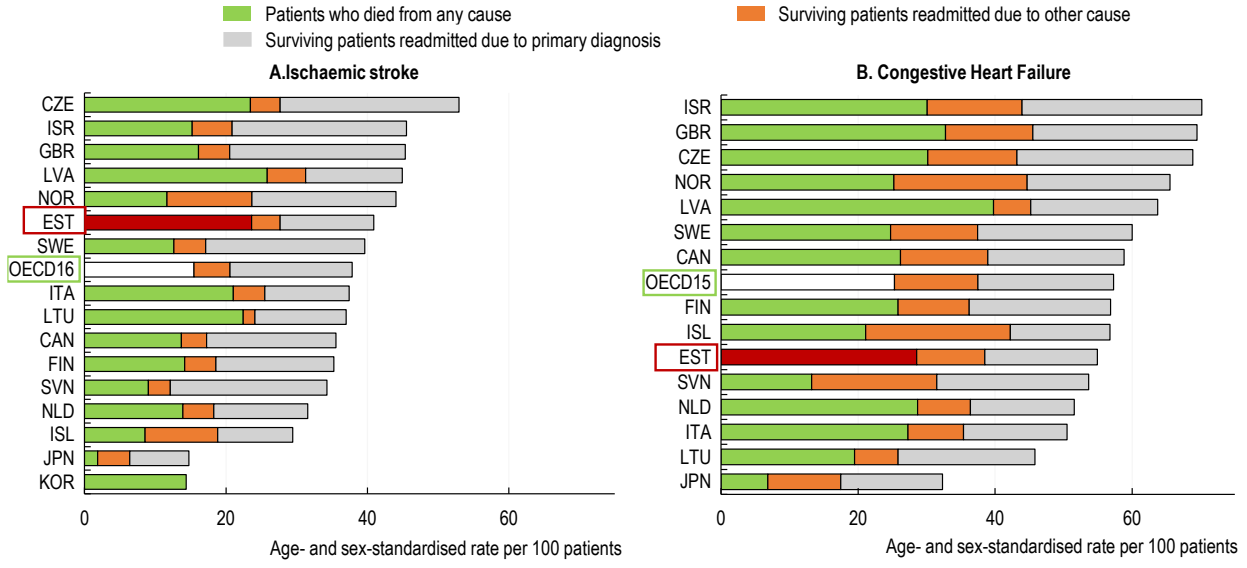
Treatment needs to be timelier and more comprehensive. For cancer, treatment should start within 9 weeks of diagnosis, but this was only the case with patients with breast cancer. It takes cervical, lung and colorectal patients longer than 100 days to start treatment (Riigikontroll, 2021a). More healthcare staff and equipment would help ensure faster treatment. However, waiting times need to be better monitored and, once cancer is identified, patients should be given priority at further stages of care to reduce their waiting times (OECD, 2023d). These issues have been identified in Estonia's Cancer Control Plan 2021-30. There were initial delays in completing the plan, but its implementation is now underway (Riigikontroll, 2022).

More integrated care can contribute to lower treatable mortality. Primary healthcare providers need to better coordinate with hospitals, particularly for chronic patients (AARC, 2022). Moreover, despite having specialised cancer centres, follow-up healthcare after treatment is poor. There is a lack of awareness among healthcare professionals about rehabilitation services and psychological support due to fragmented services. Support for returning to work is not systematic (OECD, 2023d). This is evidenced by all-cause readmission and mortality after a stroke that is higher than the OECD average (Figure 5.24). There should be more integrated care across all levels of healthcare, particularly after treatment.

Establishing more patient-centred care through patient pathways can better define a patient's journey to recovery and identify the necessary healthcare services. This can speed up treatment but also save costs and improve efficiency. Estonia has recently piloted a stroke patient pathway, which has resulted in improved health outcomes and, with bundled payments for the provided care, has led to lower costs. If fully adopted, it could lead to savings of at least 0.2% of total health spending (Tervisekassa, 2023b). Patient pathways should be broadened out to other treatable high risk health conditions. So far, the EHIF has started new pilot programmes for hip and knee replacements and is developing a pathway for mental health treatment (Kasekamp et al, 2023).

Figure 5.24. Mortality rates following treatment for stroke and heart failure could be lower

Patients with adverse outcomes within one year of discharge, 2021 or nearest year



Source: OECD HCQO Data Collection on Integrated Care 2022-23.

StatLink https://stat.link/9f620p

Boosting health through more prevention

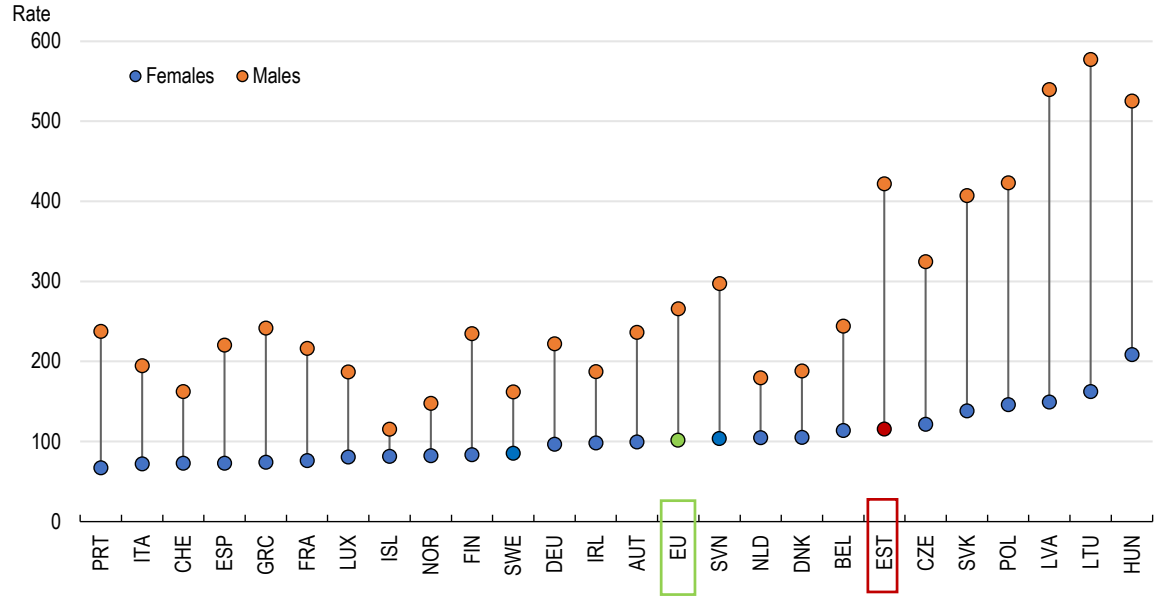
Lifestyle factors play a significant role in weak health outcomes in Estonia, and prevention policies typically have a high return on investment. Spending on programmes that address risky behaviour and prevents people from developing disease is highly beneficial. Estonia spent 0.2% of GDP in 2019 on preventive healthcare, broadly in line with the OECD average, and this has risen to 0.6% of GDP in 2022, partly as a result of the pandemic. Since Estonia has some of the highest avoidable mortality rates in the OECD, boosting preventive spending in a targeted and cost-effective manner could improve health outcomes and raise overall healthcare efficiency. Better health can also make the population more resilient in a crisis as experience during the pandemic has shown, when people in poor health were particularly at risk (OECD, 2023f).

Preventable death rates continue to be relatively high. About a third of all deaths in 2020 were due to preventable causes, that is, they could have been mainly avoided through public health and primary prevention programmes. Estonia had made progress in reducing preventable mortality rates between 2015 and 2019 although these had increased in 2020 due to COVID-19. Preventable mortality remains well above the EU average, particularly among men (Figure 5.25).

Many preventable deaths are related to a handful of key risky behaviours. Nearly a fifth of all deaths could be attributed to dietary risks, while physical inactivity accounted for 2%, broadly similar to the OECD average (OECD, 2023a). Tobacco use (including second-hand smoke) is the second most important behavioural risk factor contributing to mortality, accounting for 15% of deaths, although smoking is less prevalent than in other OECD countries. However, alcohol consumption is among the highest in the OECD (Figure 5.26). Alcohol consumption was responsible for 8% of all deaths in 2019, and alcohol-related mortality increased during the COVID-19 pandemic (NIHD, 2023).

Figure 5.25. Preventable mortality rates remain high

Standardised death rates for preventable diseases/conditions, persons aged less than 75 years, by sex, 2020 (per 100 000 inhabitants)

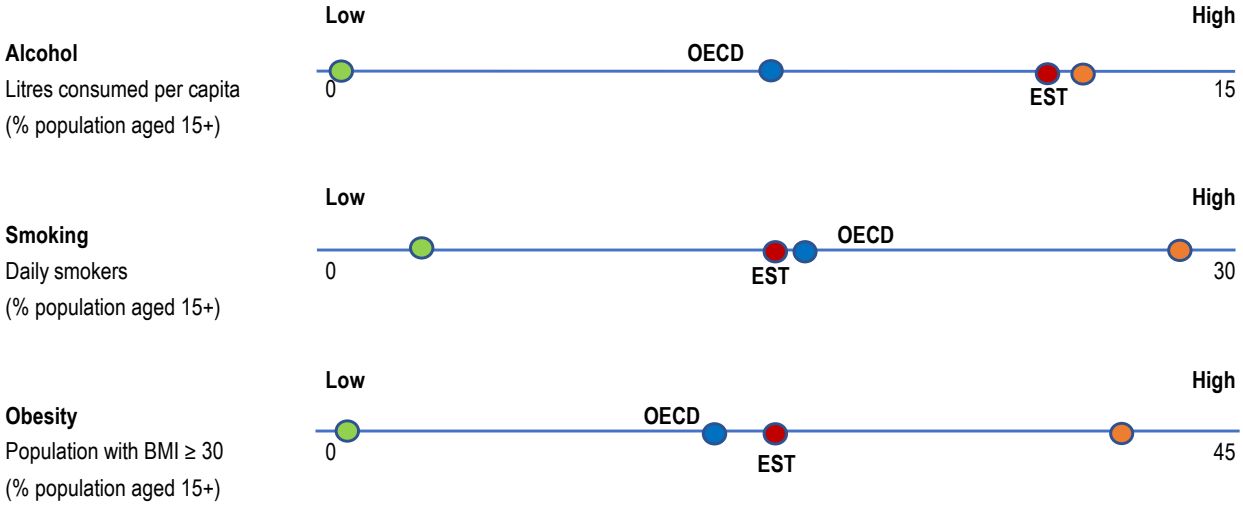


Source: Eurostat.

StatLink https://stat.link/wqrg2o

Figure 5.26. Risks from alcohol consumption and obesity are higher than the OECD average

2021



Source: OECD Health at a Glance 2023.

StatLink https://stat.link/uze8bw

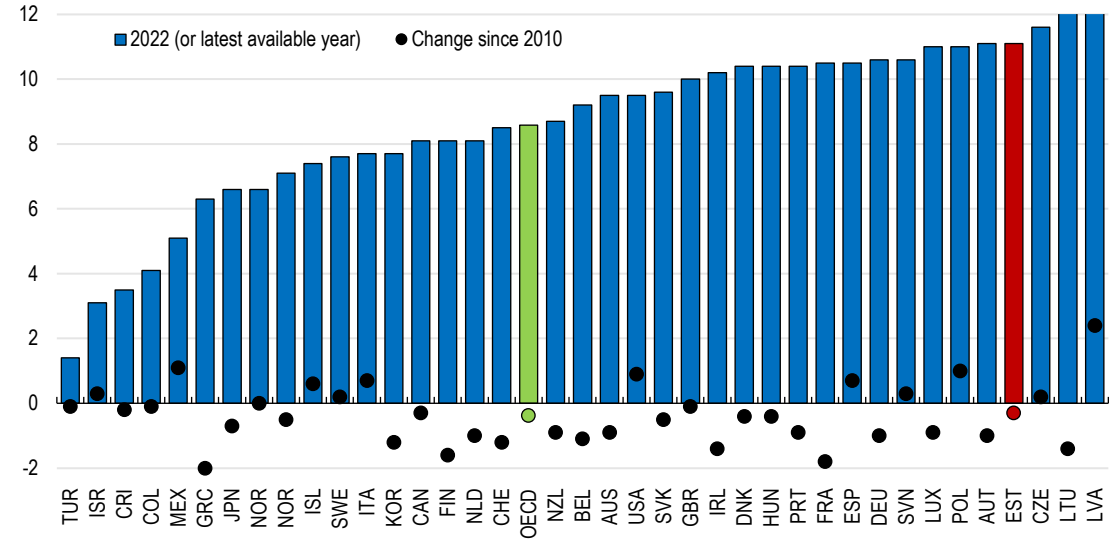
Alcohol consumption is high. Alcohol dependency rates are some of the highest in the OECD, with around 10% of men addicted to alcohol (OECD, 2021b). Estonians tend to drink beer and spirits consuming 11.1 litres of pure alcohol per person in 2022, which was among the highest in the OECD (Figure 5.27). Around 40% of adults engage in heavy drinking each month, defined as consuming six or more drinks on a single occasion, with men drinking three times more alcohol than women. Harmful alcohol use leads to many non-communicable diseases and premature deaths. It lowers economic growth through lower employment and productivity. According to OECD simulations, on average, excessive alcohol use is estimated to pull down on life expectancy by 1.5 years, push up on health expenditure by 3.5%, and lower the level of GDP by 3.4%, by 2050 (OECD, 2021d).

Comprehensive policies have reduced alcohol consumption. Since alcohol use reached 14.8 litres per person in 2007, Estonia restricted advertising, banned late night off-premises alcohol sales, introduced awareness campaigns, stepped up random breath tests among drivers and established yearly increases in excise duties. After comprehensive consultation, it adopted an official policy on alcohol in 2014, aiming to eventually reduce consumption to 8 litres per person per year. This was accompanied by further increases in excise tax, wider restrictions on displays in shops and stricter advertising (WHO, 2019). Tighter policy had been successful in reducing alcohol consumption to 10.4 litres by 2019. However, further increases in excise taxes were scrapped in 2019 as large alcohol price differentials between Estonia and Latvia had led to a four-fold increase in cross-border trade limiting the effects of excise taxes as a policy tool (WHO, 2023a). Alcohol use increased during the pandemic reversing some of the gains made.

Alcohol prices should be increased. The most effective policies tend to be financial measures such as excise taxes and minimum unit prices on alcohol. In Estonia, alcohol affordability has increased in recent years due to rising incomes (NIHD, 2022). The government is planning to raise excise duties by 5% per year in 2024-2026. These taxes should be indexed to inflation and real income growth to ensure a persistent reduction in affordability levels. Estonia should coordinate health policies with Latvia to avoid widening price differentials and an increase in cross-border trade (WHO, 2023a). This will be important to ensure that higher excise duties are effective given that 41% of the population went to Latvia specifically to purchase alcohol 4 times or more during the year (NIHD, 2022).

Figure 5.27. Alcohol consumption per capita is among the highest in the OECD

Consumption of alcohol among the population aged 15 years old and over (litres per capita)

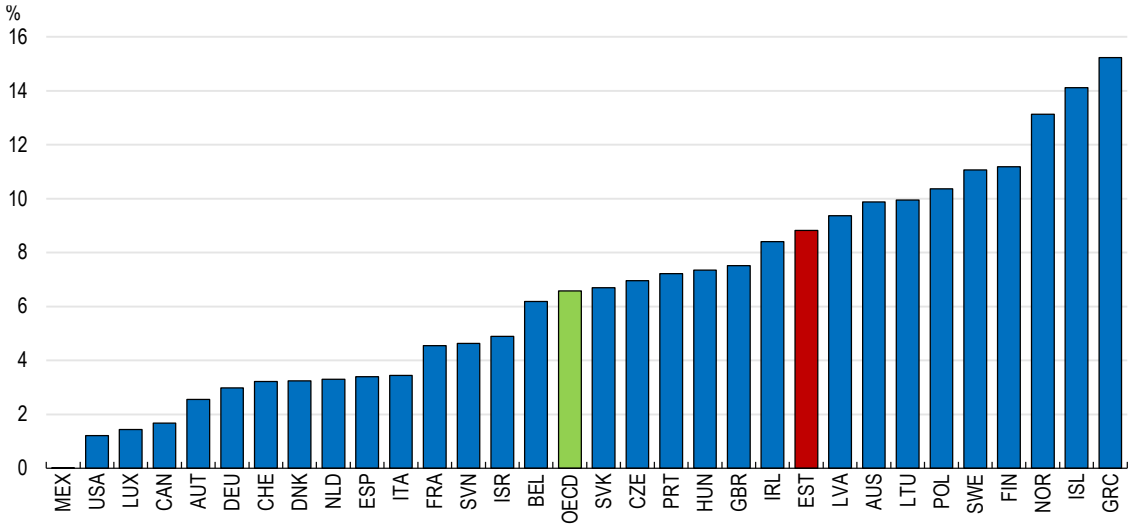


Source: OECD Health at a Glance 2023.

StatLink https://stat.link/jv1s4h

Figure 5.28. Excise duties on spirits are higher than the OECD average

Excise duties per hectolitre of absolute alcohol as a share of annual average wages, 2022



Note: The excise duties refer to tax per hectolitre of absolute alcohol in alcoholic beverages other than beer and wine.
Source: OECD Tax Trends 2022, OECD database and OECD calculations.

StatLink https://stat.link/tsgnhz

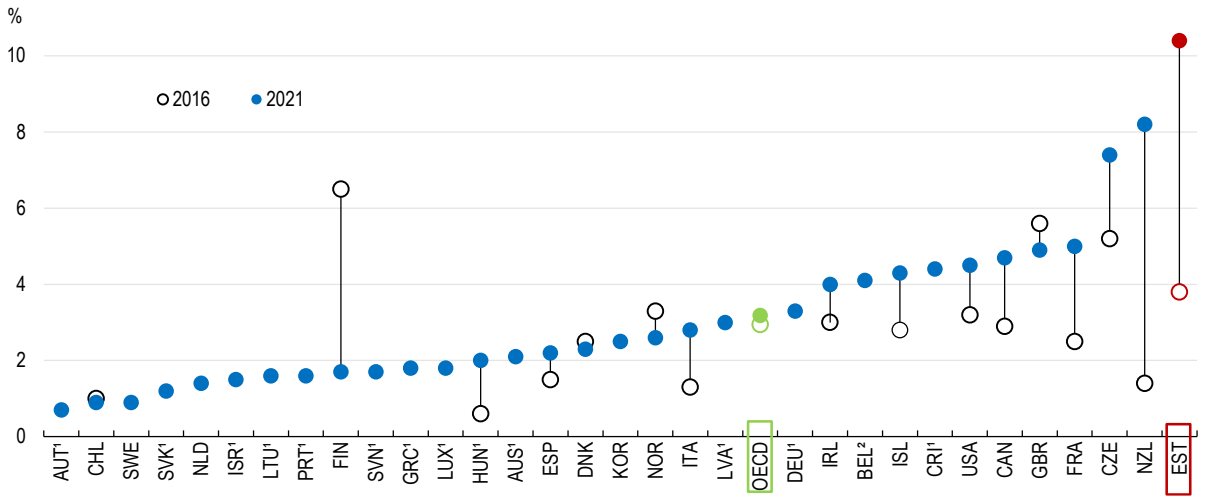
Alcohol availability can be restricted further. Sherk et al (2018) found that one additional day of sales leads to a 3.4% increase in total per capita consumption of alcohol. Hours should be restricted further by, for example, banning sales on Sundays as done in the Nordic countries or by restricting on-premise hours such as in Lithuania. The density of alcohol sales outlets could also be lowered. The number of shops selling alcohol is more than twice as high than in Finland, Sweden or Norway and 88% of Estonians are a

10-minute drive away from a shop selling alcohol (NIHD, 2022). Latvia restricted sales in petrol stations, while Lithuania banned sales of strong alcohol on beaches and in pavilions (OECD, 2021d). A longitudinal analysis by Brenner et al (2015) found that a one standard deviation decrease in outlet density resulted in a 7% fall in alcohol consumption for men and 11% for women. This should be complemented with further restrictions in advertising. Social media regulations forbid alcohol advertising on social media networks, except on alcohol brands' official accounts. Alcohol brands cannot share user-generated content or content that is intended to be shared. However, Estonia does not have any restrictions on alcohol brands sponsoring sports. In response to public health concerns, most OECD countries have implemented some form of ban to restrict the alcohol industry's influence in sport. For example, Spain, France, Norway and Türkiye have implemented legally binding bans on sport sponsorship across all beverages (OECD, 2021d).

Smoking has become less common but still remains a public health risk. Smoking rates have fallen from 26% in 2009 to 16% in 2022. Smoking continues to be more prevalent among men who are twice as likely to smoke daily than women. However, regular use of vaping products rose to 10.4% in 2022, the highest in the OECD (Figure 5.29). This was mostly driven by young adults aged 15-24. Policies should continue to restrict tobacco use. Excise taxes, one of the most effective policy tools to disincentivise tobacco use, have been rising by 5% in recent years and the government will continue increasing them by 5% annually between 2024-2026 (OECD, 2015). To help long-term smokers quit, Estonia should invest more in smoking cessation campaigns carried out by primary care providers to target male smokers.

Figure 5.29. Use of e-cigarettes among adults is high

Share of population aged 15 years old and over



Note: 1. Data from 2019. 2. Data from 2018.
Source: OECD Health at a Glance 2023.

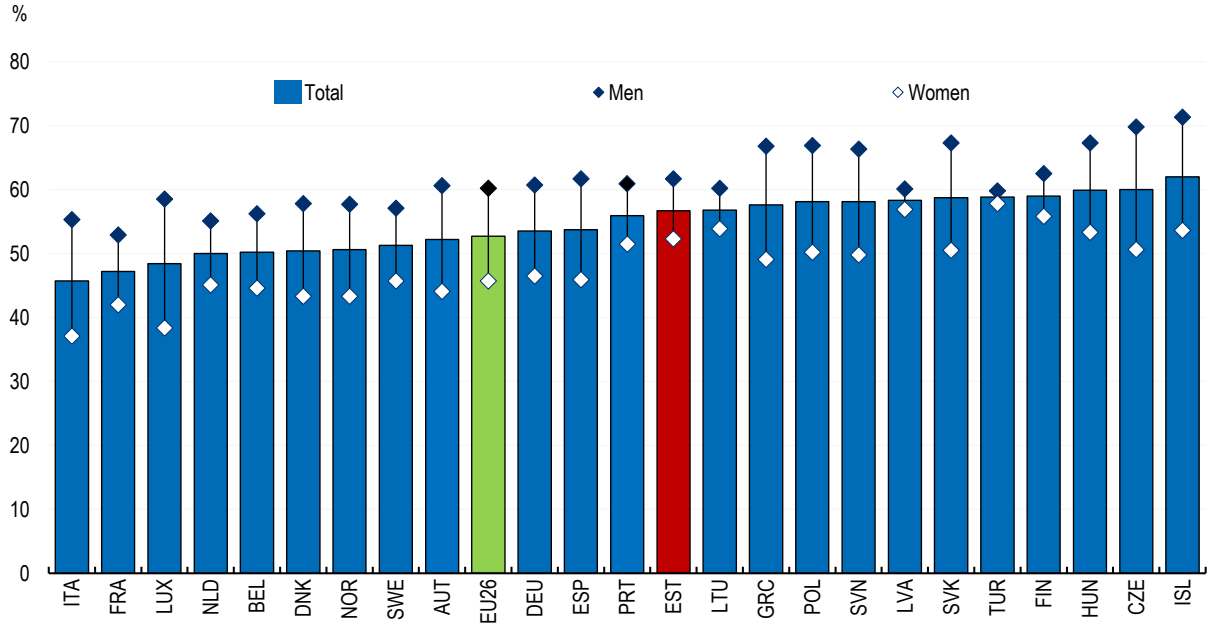
StatLink https://stat.link/4e621u

Compliance with regulations on tobacco sales needs to be strengthened. The 2017 Tobacco Act bans the use and possession of combusted cigarettes and vaping products by minors under the age of 18 (Snell et al, 2018). But enforcement of rules is too lax in Estonia. A recent study by the National Institute for Health and Development found that e-cigarettes are easily available to minors. In special e-cigarette stores and small shops, no documents were requested when purchasing e-cigarettes in 40-50% of cases tested, although this decreased in larger stores and petrol stations. Younger employees asked for proof of age less often than older employees. Moreover, visible notices about sales bans of e-cigarettes to minors were present in only 30% of larger stores (Mall and Tarlap, 2023). To increase compliance with the rules, supervision and application of higher fines for repeated violations is needed.

In 2019, more than half of all adults in Estonia were overweight, above the EU average (Figure 5.30). Overweight and obesity rates are increasingly becoming an issue for adolescents, as the rates have increased substantially over the past two decades, reaching 19% in 2018 among 15-year-olds, up from only 7% in 2002 (OECD/WHO, 2023e). The rise in obesity can be ascribed to increasingly unhealthy lifestyles, including a poor diet and nutrition, and insufficient levels of physical activity and sedentary behaviour (OECD, 2019). Overweight adults and associated diseases such as diabetes, cardiovascular diseases and cancer lead to worse outcomes across a range of measures and higher health spending. Estimates show that such conditions could reduce life expectancy by 3.3 years between 2020 and 2050, reducing the level of GDP by 4% due to lower employment and productivity, above the OECD average (OECD, 2019).

Figure 5.30. More than half of Estonians are overweight

Overweight (including obesity) rates among the adult population, by gender, 2019



Note: Adults defined as people aged 18 years old and over. The EU average is weighted. No data is available for Ireland.
Source: OECD Health at a Glance EU 2023.

StatLink https://stat.link/umxb8f

Prevention policies that aim at improving nutrition and boosting physical exercise, both key determinants of obesity, tend to have a high return on investment and could reduce these potential costs (OECD, 2019). Estonia has an action plan on adult and child obesity and has developed national food and dietary guidelines to help people make better nutritional choices. The National Institute for Health Development collects data on nutrition and exercise, conducts research, and supports public policy through advice, training and informational campaigns. In schools, meals are provided for free and volumes of salt, fat, and sugar are regulated. However, nutrition still needs to improve. Although the share of people who eat fruit and vegetables has consistently risen over time, fewer than one in seven adults in Estonia consume at least five portions of fruit and vegetables per day, recommended by the WHO as a key element of a healthy diet (OECD/WHO, 2023e). Recent measures have gone further by implementing a voluntary code on responsible food marketing to children in 2023 (Ringhaaling, 2023).

The relative price of an unhealthy diet should be increased. Raising the relative price of unhealthy food and drinks can improve nutrition through lower consumption of unhealthy products and lead to improved

nutritional composition of food and drinks. Many OECD countries such as Finland, France, and the United Kingdom tax sugary drinks and this has been found to reduce sugar consumption (Griffith et al, 2019). The Estonian Parliament approved legislation taxing sugar in soft drinks in 2017, but this was not implemented by the government. Estonia should introduce a sugar tax. More broadly, taxes on unhealthy foods are less common in OECD countries but Mexico and Hungary have introduced them. In 2011, Hungary introduced an excise levy on the salt, sugar, fat, and caffeine content of pre-packaged foods for which there were healthy alternatives. Some studies have suggested that this had led to lower consumption of the targeted products, particularly by overweight and obese consumers (Giles et al, 2019). It also resulted in manufacturers reformulating products where taxes exceeded a minimum threshold, leading to a reduction or removal of sugar or fat content (Wright et al, 2019).

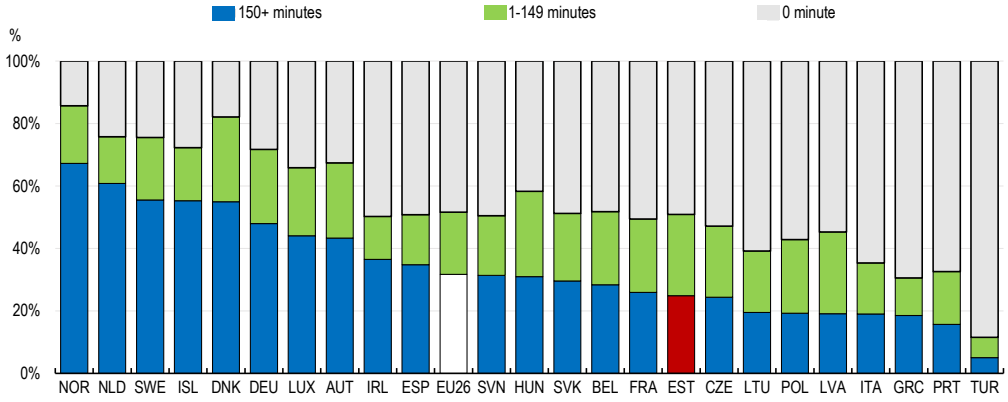
Food labelling could further improve to steer people towards healthy choices. Currently, nutrition label standards and regulations refer only to EU regulations, but more can be done at a national level (WCRF, 2023). Estonia only has a mandatory back-of-pack nutrition label, but front-of-pack labels can be more effective in influencing people's dietary choices (OECD, 2019). For example, Sweden operates the Keyhole logo, a voluntary scheme, that allows business to label products if they have less fat, sugar or salt, dietary fibre and whole grains, compared to other foods in the same category. In France, businesses can voluntarily apply a Nutri-Score label based on a five-colour scale that summarises the healthiness of a product, and provides a single, compound score (OECD, 2019). This can be particularly effective in encouraging healthier food choices (EUPHA, 2023). There are no health warnings on food products in Estonia. For example, as part of its mandatory labelling system for pre-packaged foods, Chile requires products that exceed calorie, salt, sugar, or fat thresholds to have health warnings. Furthermore, nutritional information should also be extended to restaurant menus as this can also help lower calorie intake (OECD, 2019).

Increased physical exercise needs to accompany better nutrition in order to reduce overweight and obesity rates. Insufficient levels of physical activity can make chronic health conditions, such as cardiovascular disease, diabetes, and back pain, more likely. Time use survey data suggests that time spent on physical exercise each day increased to an average of 40 minutes in 2019-2021, which is a third more than ten years ago (Statistics Estonia, 2023). While some people exercise enough, only a minority of Estonians exercised 150 minutes per week or more in 2019, a minimum threshold for sufficient physical activity recommended by the WHO (Figure 5.31). Physical exercise among adolescents is also insufficient, despite more than half of the children participating in organised sport (Maestu et al, 2022). In 2018, a little under 15% of 15-year-olds exercised at least one hour per day recommended by WHO, around the OECD average (OECD/WHO, 2023).

Raising physical activity levels among adolescents is important. A new physical education curriculum was accepted by the government at the start of 2023 and is being implemented by the Ministry of Education and Research with priority (Maestu et al, 2023). However, there needs to be more emphasis on increasing the opportunities for children to move. In Estonian schools, it is not very common to have outdoor recess throughout the year, although this is increasing slowly. Boosting outdoor time can lead to more physical activity. A good example of such a policy is Estonia's "Schools in Motion" programme (see Box 5.4 for more details), which should be broadened to more schools. The government should invest more in infrastructure to raise the availability of playgrounds. While 92% of schools have a sports hall, it can only be used outside of school time in a third of all schools. Moreover, local governments should promote general and recreational sport activities through youth sport associations to attract more children, particularly during puberty when many drop out as they lose interest in competitive sports (Maestu et, 2023).

Figure 5.31. Many people do not engage in enough physical activity during the week

Share of adults reporting time spent on enhancing (non-work related) aerobic physical activities, 2019



Note: Adults defined as people aged 18 years old and over. The indicator of insufficient physical activity is defined as attaining less than 150 minutes of moderate-intensity physical activity per week, or less than 75 minutes of vigorous-intensity physical activity per week.
Source: OECD Health at a Glance EU 2022.

StatLink https://stat.link/u1kmi8

Box 5.4. Estonia's Schools in Motion programme

In 2016, Estonia started a "Schools in Motion" programme with the aim of boosting physical activity among children. The programmes take a whole-school approach, covering physical education, active recess, active lessons and active transport to and from school (Mooses et al, 2021). Participating schools are supported through seminars, workshops and skills training, and have access to easy-to-use materials and research, for example, tips on how to make the indoor and outdoor environment more physical activity friendly, and techniques for reducing sedentary time during classes. Using these resources, each school can develop their own action plan.

The programme has been successful. The number of participating schools increased from 10 in 2016 to 209 in 2023, accounting for 28% of all general education schools and more than 63,000 students. Many schools that joined the programme did not initially have outdoor recesses but by 2020 three quarters offered it, leading to a near doubling of students that had access to at least 20 minutes of an active break.

Source: Education Estonia (2023).

Existing policies to boost physical exercise among adults should be expanded. Estonia updated its national guidelines on nutrition and physical activity in 2017 and has a strategy for sports policy until 2030. It has promoted exercise through annual European Week of Sports since 2015 and organised "Kondimootriga Tööle" (Walk2Work) campaigns. Since 2018, companies could claim up to EUR 400 of health and sports expenses per employee each year as tax-exempt benefits. Workplace-based interventions are increasingly considered as an effective tool to influence lifestyle (OECD/WHO, 2023e). Estonia could expand informational campaigns to also boost cycling to work and complement this with a government-sponsored cycle to work scheme introduced in other OECD countries like the United Kingdom. More importantly, Estonia should renew its push to boost physical activity by finalising the green paper on physical activity that has been in development since 2014.

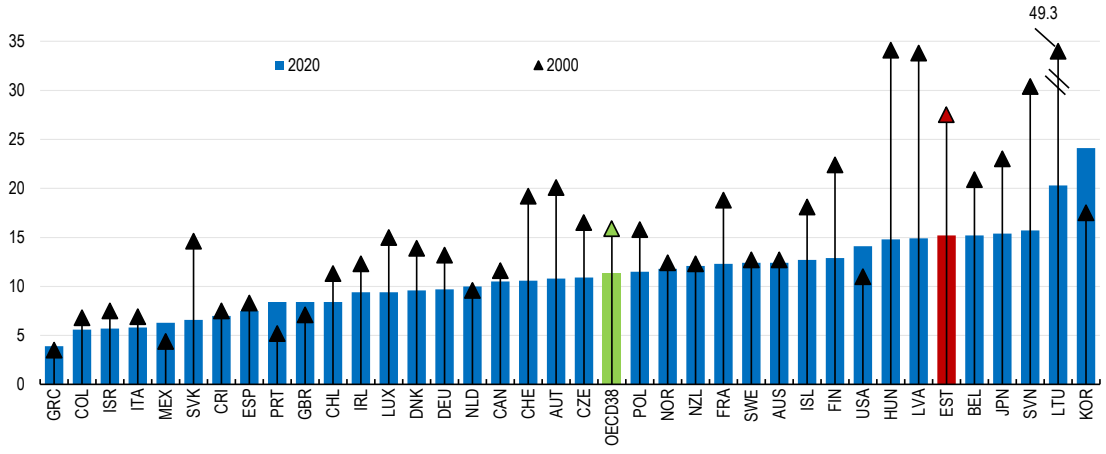
Healthcare interventions could drive obesity rates down. For high-risk groups, physical activity prescription programmes run by family doctors, nurses or other health professionals could boost physical exercise.

While doctors in Estonia can provide counselling on nutrition or brief interventions, there is scope to expand and align with best practices. For example, Sweden has been running such programmes for 20 years and they have proved to be effective (OECD, 2022). Such interventions are now being implemented in nine other EU countries with EU funding support (OECD/WHO, 2023e). In the Netherlands, health insurance covers a broader combined lifestyle intervention for overweight and obese patients. Doctors in primary healthcare refer patients to programmes which are provided by lifestyle coaches, dieticians, physiotherapists or exercise therapists. Participants receive diet and physical activity advice, as well as structured exercise classes over a two-year period (RIVM, 2023).

Mental health problems remain significant. One in four adults was at risk of depression in 2022 according to the Estonian National Mental Health Study (NIHD, 2022). Lower income groups, particularly men, are more likely to report chronic depression. Suicide rates remain high with male suicide rates higher than the OECD average (Figure 5.32) (OECD, 2023b). Around a quarter of unmet health needs were related to mental healthcare in 2021-22 (Eurofound, 2022). The economic cost of mental disorders is substantial and previous estimates put the cost at 2.8% of GDP in 2015 (OECD/EU, 2018).

Figure 5.32. Suicide rates have decreased substantially but remain high

Deaths per 100 000 inhabitants (age-standardised rates), 2020 or latest available



Note: Latest available data for Norway and New Zealand 2016; Italy and France 2017; Ireland, Sweden and Belgium 2018; and the Slovak Republic, Portugal, Canada and Hungary 2019.
Source: OECD Health at a Glance 2023.

StatLink https://stat.link/s9h57c

Renewed efforts are aiming to improve mental health and should be fully implemented. In 2021, the Green Paper on Mental Health was completed and the following year the Mental Health Action Plan for 2023-26 was put in place. The policies aim to create a comprehensive, intersectoral and multi-level mental health system. The EHIF started reimbursing family doctors for e-consultations for mental health diagnosis and treatment in 2021 and psychiatric help for people under 18 has become available without the consent of a legal representative. A mental health department was established within the Ministry of Social Affairs in 2022, while total funding for mental health services more than tripled to EUR 7 million (Ministry of Finance, 2022). Estonia is also developing its first suicide prevention action plan. This progress should be continued, but to fully reap the benefits of these policies the authorities should also run a national awareness campaign to introduce the new range of support services. It will also need to ensure that a sufficient number of staff specialised in mental healthcare is available, as discussed in Section 5.4. This will improve mental health, as well as resilience, as the pandemic has shown how mental health particularly among young people can deteriorate quickly in a crisis (OECD, 2023f).

Main findings and recommendations

MAIN FINDINGS	RECOMMENDATIONS
Ensuring the sustainability of the health care system and improving social protection	
Revenues of the public health insurance fund are insufficient to maintain the current level of healthcare, meet rising costs due to ageing and improve health outcomes.	Ensure that the current level of health funding is at least maintained in 2025. **Raise revenues of the health insurance fund over time through higher contribution rates or general taxation while ensuring spending remains efficient.** Extend health insurance contributions to retirees subject to an income threshold**.**
Health insurance covers most but not all residents, leaving some exposed to healthcare risks.	**Gradually extend health insurance coverage to all permanent residents.**
Out-of-pocket spending remains high, causing financial difficulties for households, especially those on lower incomes.	**Further reduce out-of-payment expenses in a targeted way for dental care and pharmaceuticals for low-income households and cap overall expenses.**
Long-term care expenditure is low while demand for care is expected to increase.	Continue to encourage greater use of home care. Expand the supply of long-term care services by increasing the attractiveness of the caring profession and converting smaller hospitals to care homes. **Consider sustainable funding models for long-term care using a combination of public and private funding and ensure benefits are based on both income and needs.**
Improving efficiency	
Around half of family doctors practice independently. Visits are free of charge. Incentive payments make up a relatively small share of doctors' total incomes.	Encourage further development of primary health centres by extending support, where feasible, in regions with few health centres. Introduce user charges for visits to family doctors and raise them for specialists, but exempt people on low incomes. **Increase the size of performance-linked payments.**
Day care is underused for some procedures. Hospitals have reduced many specialised healthcare services.	Increase incentives for outpatient procedures where appropriate. Complete the hospital network development plan and create a consolidation strategy.
Competition in the wholesale and retail pharmaceutical market is limited.	Make more use of joint medicine purchases in hospitals and allow them to buy medicinal products from other EU countries**.** Increase competition in the retail and wholesale pharmaceutical markets by removing restrictions and promoting competitive practices.
Data collection is comprehensive, but data is of variable quality, definitions are not harmonised and many healthcare databases are not inter-linked.	Invest more in improving health datasets and coordinating information across the health system.
Ensuring an adequate workforce to deliver healthcare services	
There is a nationwide shortage of nurses and ageing of the workforce will lead to additional shortages in the future. There is an acute shortage of family doctors, especially outside the biggest cities and in emergency care, psychiatry and psychology. A high share of doctors is old and will need to be replaced.	Ensure that pay for nurses and doctors is competitive. Improve working conditions by setting personnel standards for the healthcare sector. Continue programmes to attract nurses back into healthcare and use a combination of financial and non-financial incentives to encourage doctors to stay in the labour force. **Raise the number of places in nursing colleges and at medical school.** Differentiate residency contracts and pay in order to encourage specialisation where there are shortages.
The share of foreign-trained healthcare workers is low.	Boost immigration of nurses and doctors by implementing legislation for integration of non-EU healthcare workers. Ease initial language requirements. Set up a bilateral migration programme to facilitate immigration.
Healthcare access varies by region. Shortages are more pronounced in rural areas and are expected to worsen due to faster population ageing.	Improve regional medical facilities to attract resident doctors and recruit more medical graduates from rural areas.
Healthcare workforce planning is short-term and insufficiently responsive.	Make more use of data and modelling to forecast healthcare demand and staffing needs in the long term.

Advancing treatment and prevention to improve health outcomes	
Treatable mortality rates are high. Monitoring for risk factors and cancer screening participation is below OECD and EU averages.	Increase incentives for family doctors to monitor risk factors. Introduce compulsory routine health checks for older workers in companies. **Target cancer awareness programmes to less educated and low-income people. Broaden cancer testing to lung cancer.**
Healthcare after cancer treatment is low and readmission rates for stroke and heart failure are relatively high.	Increase the integration of care to improve healthcare services after treatment. Move towards more patient-centered care by establishing patient pathways for key health risks.
More than half of all adults in Estonia were overweight, above the EU average. Among some population groups, nutrition is poor.	**Implement the proposed sugar tax and introduce taxes on unhealthy foods more generally.**
Smoking has become less common but still remains a public health risk. Regular use of vaping products among young adults has risen and is among the highest in the EU.	Increase monitoring and fines to strengthen compliance with tobacco laws and reduce the availability of e-cigarettes and vaping products to young adults.
Alcohol consumption is among the highest in the OECD. Alcohol dependency rates are high, particularly among men.	Restrict availability of alcohol further through shorter opening hours and a lower density of shops selling alcohol and curb alcohol advertising in sports.

References

AARC (2022, *Map of the current hospital system: Person-centred integrated hospital master plan in Estonia,* AARC Ltd, Dublin.

Brenner, A. et al (2015), *Longitudinal associations of neighborhood socioeconomic characteristics and alcohol availability on drinking: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)*, Social Science and Medicine, Vol. 145, pp. 17-25.

Chu, M. (2017), *Medical screening often ends up representing status symbols here*, Korea Biomedical Review.

Cleland, J., Porteous, T., Ejebu, O., Ryan, M., and D. Skåtun (2022), *Won't you stay just a little bit longer? A discrete choice experiment of UK doctors' preferences for delaying retirement*, Health Policy, Volume 126, Issue 1, pages 60-68, ISSN 0168-8510.

De Maeseneer, J. (2016), *Strengthening the Model of Primary Health Care in Estonia*, Assessment report, World Health Organisation.

Department of Health and Social Care (2023), *Code of practice for the international recruitment of health and social care personnel in England*, London.

DESI (2023), *Estonia in the Digital Economy and Society Index*, European Commission, Brussels.

Dutu, R. and P. Sicari (2020), *Public spending efficiency in the OECD: benchmarking health care, education and general administration*, Review of Economic Perspectives, Vol. 20, No. 3, pp. 253-280.

ECA (2020a), *Annual Report on Competition Policy Developments in Estonia*, Estonian Competition Authority, Tallinn.

ECA (2020b), *The price regulation of pharmaceuticals is illusory*, Estonian Competition Authority, Tallinn.

ECA (2022), *Annual Report on Competition Policy Developments in Estonia*, Estonian Competition Authority, Tallinn.

Eesti Haigekassa (2021), *Eesti Haigekassa 2021. aasta majandusaasta aruanne* [Estonian Health Insurance Fund 2021: Annual report], Estonian Health Insurance Fund, Tallinn.

Education Estonia (2023), *Schools in Motion: Extending thinking and enhancing well-being through movement*, Tallinn.

Estonian Medicines Agency (2023), *2022 Yearbook*, Estonian Medicines Agency, Tallinn.

ENA (2023), *Estonian Nurses Union*, Tallinn, interview held online on 14 June 2023.

EO (2023), *Estonia Country Overview*, European Observatory on Health Systems and Polices, Brussels.

Ernits, Ü., Talvik, M., and T. Tulva (2019), *Nursing Education in the Wind of Changes: Estonian Experience*, Proceedings from the International Conference on Research in Education, Barcelona.

ERR (2019), *Ministry scheme bring nearly 100 back to nursing profession*, Estonian Public Broadcasting, Tallinn.

ERR (2023a), *23 Ukrainian nurses start studying at Tallinn Health Care College*, Estonian Public Broadcasting, Tallinn.

ERR (2023b), *Health care college to train nurses in Narva*, Estonian Public Broadcasting, Tallinn.

EUPHA (2023), *Statement on front-of-pack nutrition labelling in the European Union*, European Public Health Association, Utrecht, Netherlands.

Eurofound (2022), *Living, working and COVID-19 survey, rounds four and five (November 2021 and May 2022)*, Dublin.

European Commission (2021), *The 2021 Ageing Report: Economic and Budgetary Projections for the EU*

Member States (2019-2070), Directorate-General for Economic and Social Affairs, Institutional Paper 148, Brussels.

Eurydice (2023), *National Education Systems: Lithuania*, European Commission, Brussels.

Forde, I., Ploetz, M., Dozol, A., and I. Postolovska (2018), *Revising Estonia's Quality Bonus Scheme in Primary Care*, World Bank Group, Washington DC.

Foresight Centre (2021), *The future of long-term care. Development trends up to 2035*, Foresight Centre, Tallinn.

Giles, A., Costigan, D., Graff, H., Stacey, R. and M. Mwatsama (2019), *Case study: The Hungarian public health product tax*, UK Health Forum, London.

Gmeinder, M., D. Morgan and M. Mueller (2017), *How much do OECD countries spend on prevention?*, OECD Health Working Papers, No. 101, OECD Publishing, Paris.

Global Obesity Observatory (2023), *Estonia country profile*, accessed on September 2, 2023.

Griffith, R et al.(2019), *The evidence on the effects of soft drink taxes*, Institute for Fiscal Studies, London.

Habicht T, Reinap M, Kasekamp K, Sikkut R, Laura Aaben L, van Ginneken (2018a), *Estonia: Health system review. Health Systems in Transition*, World Health Organisation.

Habicht, T. (2018b), *Pricing and Reimbursement Policies in Estonian Pharmaceutical Market*, World Bank, Washington DC

Habicht, T., Kasekamp, K. and E. Webb (2023), *30 years of primary health care reforms in Estonia: The role of financial incentives to achieve a multidisciplinary primary health care system*, Health Policy, Volume 130.

Health Board (2023), *Coronavirus dataset*, Tallinn, accessed on June 23, 2023.

Brekke, R.K., Holmas, T.H, and O.R. Straume (2013), *Margins and market shares: Pharmacy incentives for generic substitution*, European Economic Review.

HSPM (2021), *The National Audit Office found significant delays in different stages of cancer care*, Health System and Policy Monitor, European Observatory on Health Systems and Policies, Brussels.

Kasekamp K. et al (2023), *Estonia: Health system review. Health Systems in Transition*, World Health Organisation.

Kirpu, V., and N. Eigo (2018), *Statsionaarselt ja päevaravilt lahkunute arvu võrdlus tervise infosüsteemi ja* [Comparison of the number of people who left inpatient and day care based on data from the health information system and the Health Development Institute], Tervise Arengu Instituut, Tallinn.

Kurmiste et al (2022), *Pikaajalise hoolduse teenuseid osutava tööjõu tagamise praktika teistes riikides ja soovitused Eestile* [The practice of ensuring labour providing long-term care services in other countries and recommendations for Estonia], Praxis and Haap Consulting, Tallinn.

Kutsekoda (2017), *Tulevikuvaade tööjõu- ja oskuste vajadusele* [A future view of the need for labour and skills], Kutsekoda, Tallinn.

Lai, T. et al (2015), *Estonia Country Assessment. Better Non-communicable Disease Outcomes: Challenges and Opportunities for Health Systems*, World Health Organization.

Liivlaid, H. (2019), *Dental Care Data in the Health Information System*, Tervise Arengu Instituut, Tallinn.

Lorenzoni, L. et al. (2019), *Health Spending Projections to 2030: New results based on a revised OECD methodology*, OECD Health Working Papers, No. 110, OECD Publishing, Paris.

Lubi, K., Savicka, V., Koor, M. et al (2021), *Practice theoretical approach on the reasons why target group women refrain from taking breast cancer screening*, Patient education and counseling, 104(12), 3053–3058.

Maasoo, K. (2022), *Ülevaade tervise infosüsteemi edastatud laste arengu hindamise teatistest* [An

overview of the child development assessment notifications sent to the health information system. Quality analysis], Tervise Arengu Instituut, Tallinn.

MacQueen, I.T., Maggard-Gibbons, M., Capra, G. et al (2018), *Recruiting Rural Healthcare Providers Today: a Systematic Review of Training Program Success and Determinants of Geographic Choices*, J GEN INTERN MED 33, 191–199.

McHugh MD, Aiken LH, Sloane DM, Windsor C, Douglas C, and P. Yates (2021), *Effects of nurse-to-patient ratio legislation on nurse staffing and patient mortality, readmissions, and length of stay: a prospective study in a panel of hospitals*, The Lancet, London.

Mueller, M, and D. Morgan, (2020), *Spending on long term care*, OECD Briefing Note, Paris.

Mall, T., and K. Tarlap (2023), *Alkohoolsete jookide ning tubaka- ja nikotiinitoodete testostlemine* [Test shopping for alcoholic beverages and tobacco and nicotine products], Tervise Arengu Instituut, Tallinn.

Mäestu, E. et al (2023), *Results from Estonia's 2022 Report Card on Physical Activity for Children and Youth: Research Gaps and Five Key Messages and Actions to Follow*, Children, Basel.

Ministry of Finance (2022), *Riigieelarve Seletuskiri* [Explanatory note to 2023 state budget], Ministry of Finance, Tallinn.

MoSA (2023a), *National Health Strategy 2020-30*, Ministry of Social Affairs, Tallinn.

MoSA (2023b), *The nursing care reform that will come into effect on July 1 will alleviate people's expenses on nursing home fees*, Ministry of Social Affairs, Tallinn.

MoSA (2023c), *Hooldereform*, Ministry of Social Affairs, Tallinn.

Mooses, K., Vihalemm, T., Uibu, M. et al (2021), *Developing a comprehensive school-based physical activity program with flexible design – from pilot to national program*, BMC Public Health 21, 92.

Niglas, K., and K. Haller-Kikkatalo (2021), *Sõeluuringute roll vähi diagnoosimisel* [The role of screening in cancer diagnosis], Estonian Health Insurance Fund, Tallinn.

NHS England (2018), *Report of the review of the Quality and Outcomes Framework in England*, London.

NIHD (2017), *Healthcare Personnel in Estonia 2017*, Tervise Arengu Instituut, Tallinn.

NIHD (2022), *Estonian National Mental Health Survey: final report of the population health survey*. Tervise Arengu Instituut, Tallinn.

NIHD (2023), *Health Statistics and Health Research Database*, Tervise Arengu Instituut, Tallinn.

Oderkirk, J. (2021), *Survey results: National health data infrastructure and governance*, OECD Health Working Papers, No. 127, OECD Publishing, Paris.

OECD (2016), *Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places*, OECD Health Policy Studies, OECD Publishing, Paris.

OECD/European Union (2018), *Health at a Glance: Europe 2018: State of Health in the EU Cycle*, OECD Publishing, Paris/European Union, Brussels.

OECD (2019a), *Health in the 21st Century: Putting Data to Work for Stronger Health Systems*, OECD Health Policy Studies, OECD Publishing, Paris.

OECD (2019b), *The Heavy Burden of Obesity: The Economics of Prevention*, OECD Health Policy Studies, OECD Publishing, Paris.

OECD (2020), *Spending on Long-term Care*, OECD Publishing, Paris.

OECD (2021a), *Delivering Quality Education and Health Care to All: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris.

OECD (2021b), *Health at a Glance 2021: OECD Indicators*, OECD Publishing, Paris.

OECD/European Observatory on Health Systems and Policies (2021c), *Estonia: Country Health Profile 2021, State of Health in the EU*, OECD Publishing, Paris/European Observatory on Health Systems

and Policies, Brussels.

OECD (2021d), *Preventing Harmful Alcohol Use*, OECD Health Policy Studies, OECD Publishing, Paris.

OECD (2022a), *Shrinking Smartly in Estonia: Preparing Regions for Demographic Change*, OECD Rural Studies, OECD Publishing, Paris.

OECD (2022b), *Integrating Services for Older People in Lithuania*, OECD Publishing, Paris

OECD/European Union (2022c), *Health at a Glance: Europe 2022: State of Health in the EU Cycle*, OECD Publishing, Paris.

OECD (2022d), *OECD Economic Surveys: Estonia 2022*, OECD Publishing, Paris.

OECD (2023a), *Health at a Glance 2023: OECD Indicators*, OECD Publishing, Paris.

OECD/European Observatory on Health Systems and Policies (2023b), *Estonia: Country Health Profile 2023*, State of Health in the EU, OECD Publishing, Paris/European Observatory on Health Systems and Policies, Brussels.

OECD (2023c), *Health System Performance Assessment Framework for Estonia*, OECD Publishing, Paris.

OECD (2023d), *EU Country Cancer Profile: Estonia 2023*, EU Country Cancer Profiles, OECD Publishing, Paris.

OECD/WHO (2023e), *Step Up! Tackling the Burden of Insufficient Physical Activity in Europe*, OECD Publishing, Paris.

OECD (2023f), *Ready for the Next Crisis? Investing in Health System Resilience*, OECD Health Policy Studies, OECD Publishing, Paris.

Oliveira Hashiguchi, T. and A. Llena-Nozal (2020), *The effectiveness of social protection for long-term care in old age: Is social protection reducing the risk of poverty associated with care needs?*, OECD Health Working Papers, No. 117, OECD Publishing, Paris.

Riigikontroll (2018), *Emergency Medicine*, National Audit Office of Estonia, Tallinn.

Riigikontroll (2021a), *The start of cancer treatment should be accelerated, and the participation in cancer screening should be increased*, National Audit Office of Estonia, Tallinn.

Riigikontroll (2021b), *Pahaloomuliste kasvajate avastamine ja patsiendi ravile suunamine* [Detection of malignant tumors and referring the patient to treatment], National Audit Office of Estonia, Tallinn.

Riigikontroll (2022), Eesti tervishoiu suundumused [Estonian healthcare trends], National Audit Office of Estonia, Tallinn.

Ringhaaling (2023), *Legislation and guides*, Association of Estonian Broadcasters, Tänassilma, Estonia.

RIVM (2023a), *Gecombineerde leefstijlinterventie* [Combined lifestyle intervention], National Institute for Health and Environment, Bilthoven.

Snell LM et al (2021a), *Emerging electronic cigarette policies in European Member States, Canada, and the United States*, Health Policy, 125(4):425-435.

Silver, M.P., Hamilton, A.D., Biswas, A. et al (2016), *A systematic review of physician retirement planning*, Hum Resources for Health, vol 14, 67.

Sherk, A. et al (2019), *Calorie intake from alcohol in Canada: Why new labelling requirements are necessary*, Canadian Journal of Dietetic Practice and Research, Vol. 80/3, pp. 111-115.

Statistics Estonia (2023a), *Life expectancy database*, accessed on July 20, 2023.

Statistics Estonia (2023b), *Time use database*, Statistics Office of Estonia, accessed on September 17, 2023.

Statistics Estonia (2024), *Healthy life years database*, Statistics Office of Estonia, accessed on January 15, 2024.

Tervisekassa (2023a), *Nursing care*, Estonian Health Insurance Fund, Tallinn.

Tervisekassa (2023b), *Tervishoiu rahastamise efektiivsuse analüüs* [Analysis of the effectiveness of health care financing], Estonian Health Insurance Fund, Tallinn.

Tervisekassa (2024), *Kopsuvähi sõeluuring* [Lung cancer screening], Estonian Health Insurance Fund, Tallinn.

Vork, A., Habicht, T., and K. Kohler (2023), *Can people afford to pay for health care? New evidence on financial protection in Estonia*, World Health Organisation.

Vogler, S. et al (2021), *European collaborations on medicine and vaccine procurement*, Bulletin of the World Health Organisation.

WCRF (2023), *Nourishing and Moving policy databases*, World Cancer Research Fund International, accessed on September 16, 2023.

WHO (2019), *Estonia. A multipronged alcohol policy involving all levels of society*, World Health Organisation.

WHO (2023a), *Lessons from the Baltic Alcohol Control Policy Project: policies that contribute to decreasing burden of mortality and disease*, WHO Regional Office for Europe, Copenhagen.

WHO (2023b), *Hypertension Estonia Country Profile 2023*, World Health Organisation.

OECD Economic Surveys

ESTONIA

Estonian living standards have doubled since 2000 and income convergence was steady prior to the pandemic, although per capita GDP and productivity remain below the OECD averages. The economy experienced a severe downturn due to disruptions in trade, weaker export demand, high inflation and tight monetary conditions. With improvements in external demand, growth should start to recover this year. Fiscal policy needs to balance stabilisation of the economy with narrowing the budget deficit. Although a part of the deficit reflects cyclical conditions, expenditures have increased in recent years. Alongside the planned spending reviews, Estonia should review the tax system to explore avenues for increasing revenues in the medium term. Further convergence in living standards requires strengthening productivity growth by boosting digitalisation, innovation, and skills across all firms. Due to continued reliance on domestic oil shale and increasing emissions in several sectors, decarbonisation needs to accelerate. Health and life expectancy have improved significantly, but years spent in good health are still among the lowest in the OECD. While the health system is well designed, a special chapter of this report looks at areas for improvement in order to enhance health outcomes.

SPECIAL FEATURE: TOWARDS BETTER AND MORE SUSTAINABLE HEALTHCARE FOR ALL

PRINT ISBN 978-92-64-92027-9
PDF ISBN 978-92-64-67819-4

ISSN 0376-6438
2024 SUBSCRIPTION
(18 ISSUES)

Volume 2024/12
May 2024