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Foreword

This Survey is published under 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 Israel were reviewed by the Committee on 1 December 2022. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 6 March 2023.

The Secretariat's draft report was prepared for the Committee by Oliver Roehn and Michael Koelle, with contributions from Sharon Kinory, under the supervision of Mame Fatou Diagne. Statistical research assistance was provided by Federico Giovannelli and editorial assistance by Robin Houng Lee.

The previous Survey of Israel was issued in September 2020.

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

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BASIC STATISTICS OF ISRAEL, 2022

(Numbers in parentheses refer to the OECD average)

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)[1]	9.4		Population density per km² [1]	432.7	(38.7)
Under 15 (%)	28.2	(17.4)	Life expectancy at birth (years)[2]	82.7	(79.0)
Over 65 (%)[1]	11.9	(17.7)	Men[2]	80.7	(76.2)
International migrant stock (% of population, 2019)	23.0	(13.2)	Women[2]	84.8	(82.0)
Latest 5-year average growth (%)	1.8	(0.5)	Latest general election	November-2022	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%, ISR: 2020, OECD: 2021)		
In current prices (billion USD)	524.3		Agriculture, forestry and fishing	1.4	(2.6)
In current prices (billion NIS)	1,759		Industry including construction	18.9	(26.6)
Latest 5-year average real growth (%)	4.2	(1.5)	Services	79.7	(70.8)
Per capita (thousand USD PPP)[1]	44.1	(50.7)			
GENERAL GOVERNMENT					
Expenditure (% of GDP)[1]	40.8	(46.2)	Gross financial debt (% of GDP)[1]	68.9	(111.8)
Revenue (% of GDP)[1]	37.2	(38.7)	Net financial debt (% of GDP)[1]	65.1	(70.6)
EXTERNAL ACCOUNTS					
Exchange rate (NIS per USD)	3.36		Main exports (% of total merchandise exports, 2019)		
PPP exchange rate (USA = 1)[1]	3.82		Machinery and transport equipment	28.1	
In per cent of GDP			Chemicals and related products, n.e.s.	26.6	
Exports of goods and services	31.9	(33.4)	Manufactured goods	25.6	
Imports of goods and services	28.4	(35.0)	Main imports (% of total merchandise imports, 2019)		
Current account balance[1]	4.3	(0.2)	Machinery and transport equipment	36.8	
Net international investment position[1]	31.7		Manufactured goods	17.2	
			Chemicals and related products, n.e.s.	11.9	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %, OECD: 2021)	60.9	(56.2)	Unemployment rate, Labour Force Survey (aged 15 and over, %, OECD: 2021)	3.8	(6.1)
Men[3]	64.0	(64.1)	Youth (aged 15-24, %)[3]	6.9	(12.8)
Women[3]	57.9	(48.7)	Long-term unemployed (1 year and over, %)[1]	0.4	(1.7)
Participation rate (aged 15 and over, %)[1]	61.8	(60.3)	Tertiary educational attainment (aged 25-64, %)[1]	49.7	(39.9)
Average hours worked per year[1]	1,753	(1,716)	Gross domestic expenditure on R&D (% of GDP)[2]	5.4	(3.0)
ENVIRONMENT					
Total primary energy supply per capita (toe) [1]	2.3	(3.8)	CO_2 emiss. from fuel combust. per capita (tonnes)[1]	6.2	(7.9)
Renewables (%)[1]	5.1	(11.6)	Water abstractions per capita (1 000 m³)[2]	0.1	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2019)	100.0	(61.7)	Municipal waste per capita (tonnes, ISR: 2021, OECD: 2020)	0.7	(0.5)
SOCIETY					
Income inequality (Gini coefficient, 2019, OECD: latest available)	0.342	(0.315)	Education outcomes (PISA score, 2018)		
Relative poverty rate (%, ISR: 2019, OECD: 2018)	17.3	(11.7)	Reading	470	(485)
Median disposable household income (thousand USD PPP, ISR: 2019, OECD: 2018)	20.9	(25.5)	Mathematics	463	(487)
Public and private spending (% of GDP)			Science	462	(487)
Health care[2]	8.3	(9.7)	Share of women in parliament (%)[1]	28.3	(32.4)
Pensions (ISR: 2021, OECD: 2019)	5.5	(9.5)	Net official develop. assistance (% of GNI, 2017)	0.1	(0.4)
Education (% of GNI)[2]	5.5	(4.4)			

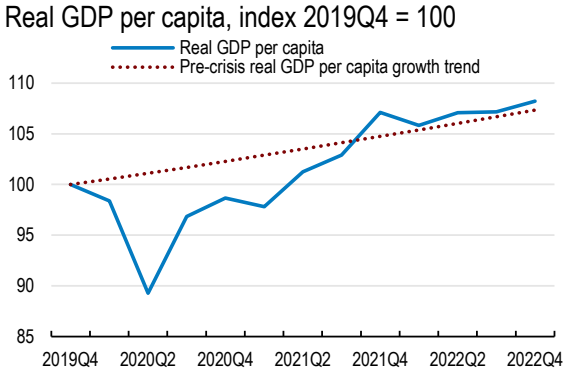
Note: 1. 2021 for Israel and the OECD. 2. 2020 for Israel and the OECD. 3. 2021 for the OECD. Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries.
Source: Calculations based on data extracted from databases of the following organisations: OECD, International Energy Agency, International Labour Organisation, International Monetary Fund, United Nations, World Bank.

Executive Summary

The recovery is well advanced but headwinds have increased

The economy has rebounded strongly from the COVID-19 pandemic and has proven resilient to the repercussions of Russia's war of aggression against Ukraine. Timely policy support, a fast vaccination campaign, the strength of the high-tech sector and self-sufficiency in natural gas have mitigated both shocks. Growth is set to moderate but remain robust. Risks are elevated.

Figure 1. The economy has been resilient



Source: OECD Economic Outlook: Statistics and Projections database; and OECD calculations.

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The economy has recovered but inflationary pressures emerged. Buoyant exports from the high-tech sector helped activity to rebound swiftly from the pandemic (Figure 1). The labour market has recovered and is tight despite some recent easing. Inflation has increased above the central bank's 1-3% target range, and is broad-based. The authorities have mitigated some of the impact of the rise in the cost of living through income and energy price support measures.

Growth is set to moderate but will remain robust (Table 1). Israel's self-sufficiency in natural gas mitigates global energy price pressures. Nevertheless, elevated inflation will slow real private consumption growth. The global slowdown is set to weaken demand from trading partners. Increasing interest rates will weigh on investment growth. Risks are skewed to the downside, related to high global and domestic uncertainty.

Table 1. Economic growth is moderating

	2021	2022	2023	2024
Real GDP (% change)	8.6	6.4	3.0	3.4
Unemployment rate (%)	4.9	3.8	4.3	4.3
Consumer price inflation (%)	1.5	4.4	3.8	2.2
General government debt (% of GDP)	68.9	61.0	58.5	56.8

Source: OECD Economic Outlook Statistics and Projections database, OECD Annual National Accounts Database.

Monetary policy has tightened. Quantitative easing measures ended in late 2021 and the policy rate has been raised from 0.1% to 4.25% between April 2022 and February 2023. Given above-target inflation and robust domestic demand, tight monetary policy conditions should be maintained to bring inflation back into the target range.

Risks from the real estate sector should continue to be closely monitored. Non-performing loans are low and capital ratios exceed regulatory minima, but property prices have been rising fast. The high exposure of banks to the real estate sector requires close monitoring.

The budget balance has improved. The strong rebound has boosted revenues and the decline in morbidity allowed the authorities to withdraw pandemic support measures. Revenue growth has started to slow as the recovery moderates and some transitory factors, for example related to high real estate valuations, wane. Maintaining a neutral fiscal policy stance would avoid adding to inflationary pressures. Additional support to households and firms, if needed, should be temporary, targeted and maintain incentives for energy savings. Much higher tax rates of non-residential properties compared to residential properties discourage municipalities from expanding housing supply.

Long-term fiscal sustainability pressures need to be addressed. Demographic challenges, related to ageing and the rising share of population groups with weak labour market attachment will put pressure on spending. So will much-needed investment to boost infrastructure and skills. Maintaining long-term fiscal sustainability will require improved spending efficiency, gradually raising the retirement age, and increases in tax revenues. The fiscal

framework can be strengthened including with a regular review of the fiscal rules to enhance their role as effective anchors of fiscal policy. A strong public integrity and anti-corruption framework is crucial to ensure the efficient use of public resources and foster business dynamism.

Addressing labour market challenges to sustain progress in living standards

Employment gains have been strong and have supported progress in living standards in the past. Accelerating the integration of population groups with historically weak labour market attachment, which are projected to reach 50% of the population in 2060, from 30% today, is vital for future growth and fiscal sustainability. In addition, reducing large labour market income disparities (Figure 2) **would improve opportunities for all and strengthen social cohesion.**

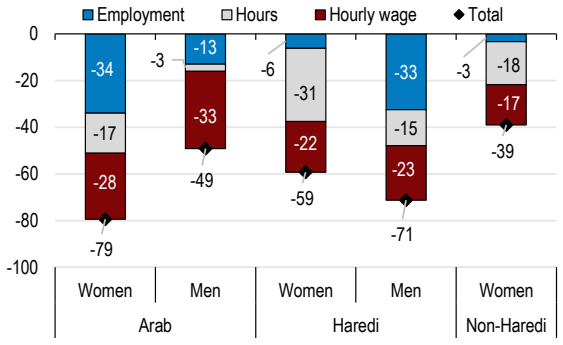
Labour force participation has increased especially for women, but remains very low among Haredi (ultra-orthodox) men and Israeli-Arab women. Further expanding the earned income tax credit, especially for second earners, would support the working poor while strengthening incentives to work. Reforming childcare and seminary (yeshiva) student subsidies and conditions for draft exemptions would remove negative work incentives for Haredi men. Increasing the provision of child-care facilities in Arab municipalities would reduce participation barriers for Arab women.

The quality of schooling and skills varies widely, hampering labour market opportunities for a large share of the population and holding back productivity growth. Moderating the differences between the different school streams would improve employability and access to higher education. Strengthening work-based vocational training and pathways between educational levels, supported by a national qualifications framework, can improve opportunities for adults who left schools with inadequate skills for the labour market.

Reforms to foster labour mobility are needed to facilitate access to better-paying jobs. A comprehensive strategy to broaden the high-tech talent pool would alleviate the labour shortages of the sector and improve inclusiveness. Better transport, digital and housing infrastructure would help connect people to employment centres and tackle high costs of living in thriving regions.

Figure 2. Labour income disparities are large

Contributions to labour income gap, relative to non-Haredi Jewish men, %, 2022



Note: Data for hourly wage refer to 2019. Contributions are illustrative and only concern the direct contribution of each dimension, without considering interaction effects between dimensions. The size of each contribution is proportional to the gap in this dimension relative to all other dimensions for the same demographic group.

Source: Israel Central Bureau of Statistics; OECD calculations.

StatLink https://stat.link/tmsea7

The healthcare sector faces several challenges

Health outcomes are good overall and health spending is low, thanks to a young population and a focus on primary care. Ageing will aggravate doctor shortages especially in the northern and southern districts. The interaction between the public and private health care sector needs reform.

The number of domestically trained doctors is insufficient to meet the demands of strong population growth and ageing. Increasing the number of physicians can improve access to health care especially in the northern and southern districts, and mitigate wage pressures.

Reimbursement systems in the health care sector are not sufficiently cost-reflective, which may create distortions in service delivery. Refining and regularly updating payment systems can improve efficiency and

reduce long waiting times in the public health sector.

Interactions between the public and private health care system have led to efficiency and equity concerns. The private health care sector expanded strongly, financed by voluntary health insurance. While over 80% of the population is covered by voluntary health insurance, coverage is lower for low-income groups. Competitive advantages of the private sector have led to outmigration of scarce human resources from the public sector, raising pressures on health costs.

Reducing digital divides can boost productivity

Business R&D spending is the highest in the OECD. The pandemic has accelerated the digital transformation but gaps in internet use across population groups remain wide and firms lag in the adoption of advanced digital technologies especially in traditional sectors. Reducing these gaps can boost productivity growth and narrow the productivity divide between the high-tech sector and the rest of the economy.

High-speed internet access is lagging behind other OECD countries but is expanding fast, and so are digital government services. The government should closely monitor the deployment of high-speed internet in underserved areas and align subsidies with actual deployment costs if needed. A more flexible public pay system could help attract IT specialists to the public sector to boost digital government services.

Digital skills need to be strengthened for a large part of the population. Enrolment in ICT training should be further encouraged, for example via personal training accounts, and targeted in particular to workers with the weakest skills.

Fostering competition can strengthen incentives to adopt new technologies. Despite significant progress, barriers to foreign trade and investment remain high, with Israel's foreign trade exposure lower than in other small OECD countries.

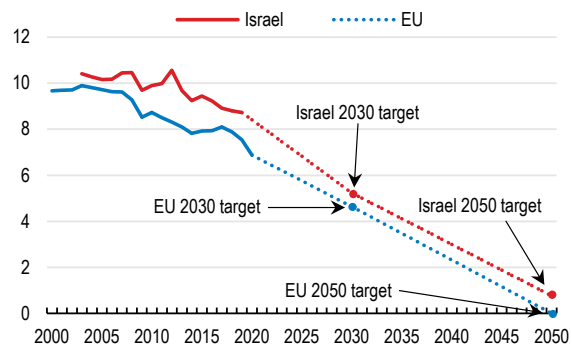
Financial market imperfections can hinder investment in intangible assets. Targeted support for technology adoption, especially for small firms in traditional sectors, can help overcome financing constraints.

Accelerating the green transition will foster more sustainable growth

The carbon intensity of the economy declined but reaching the new and more ambitious national climate targets requires stepping up policy efforts (Figure 3**)**

Figure 3. Reaching environmental targets requires accelerated policy action

Net greenhouse gas emissions, tonnes of CO_2 equivalent per capita



Note: Greenhouse gas (GHG) emissions include those from the land use/land use change and forestry sector (LULUCF).
Source: OECD Environment database; OECD Population database; OECD calculations.

StatLink https://stat.link/0hukge

Carbon prices outside the transport sector are too low to achieve environmental goals. Only 1% of Israel's electricity-related carbon emissions are priced above EUR 5, one of the lowest shares across OECD countries. The planned increase of fuel excise taxes outside of transport should align carbon prices with environmental costs. Revenues can be used to mitigate distributional impacts, enhance energy efficiency and improve public transportation.

The share of renewable energy in electricity generation is one of the lowest in the OECD. Solar energy resources are abundant, but their expansion faces several barriers including available land, grid and storage capacity. Further developing the electricity wholesale market could strengthen investment incentives.

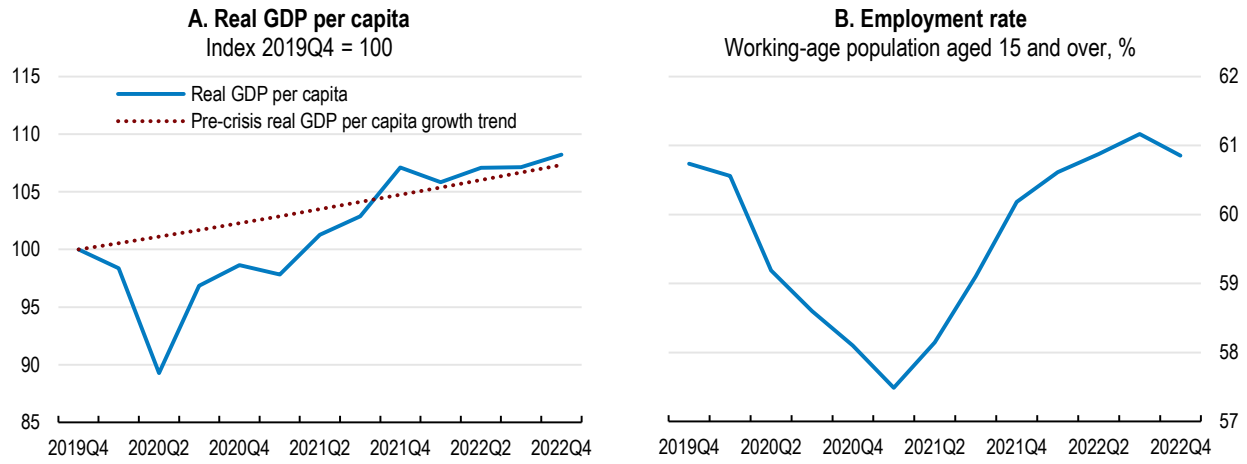
Main findings	Key recommendations
Ensuring macroeconomic stability	
The recovery is well advanced, but inflation has increased above the 1-3% central bank target. The budget has improved considerably in 2021-22. Risks to growth are elevated.	Maintain a tight monetary policy stance to bring inflation back to the target range. Maintain a neutral fiscal policy stance and ensure that fiscal support to vulnerable households and firms affected by higher costs is targeted and temporary.
Exceptional revenues and the phasing out of pandemic support reduced debt, but spending needs remain large in several areas.	Formulate a medium-term fiscal strategy to ensure fiscal sustainability while encouraging adequate spending on infrastructure, education and labour market programmes.
The property tax system provides incentives to favour commercial over residential real estate, contributing to housing shortages.	Reduce the difference between non-residential and residential property tax rates.
Women's statutory retirement age will rise from 62 to 65 years in the coming decade but will remain below that of men (67).	Gradually increase the retirement age of women to that of men. Thereafter link the future statutory retirement age to changes in life expectancy.
Perceived levels of corruption are higher than on average in the OECD.	Continue efforts to fight corruption.
Addressing labour market challenges	
Employment of Haredi men rose only moderately over 2010-20, and remains significantly below other groups and short of employment targets. Several specific benefits and exemptions for Haredi men discourage and delay their labour force participation.	Remove government subsidies for yeshiva students and condition childcare support on fathers' employment in addition to mothers' employment.
The share of the working poor in the population is high.	Permanently re-introduce the bonus for second earners in the Earned Income Tax Credit and align fathers' benefits with those of mothers.
The gender employment gap is highest among Arab-Israelis. The gender pay gap is one of the highest in the OECD.	Increase the provision of accredited child-care in Arab municipalities. Introduce paid paternity leave.
Resources allocation is unequal across schooling systems.	Increase funding for Arab schools to equalise their budget to schools with similar socio-economic profiles in the Hebrew sector.
VET qualifications are often not perceived as attractive by young adults. The VET landscape is fragmented. Workplace training is low. Few students progress from post-secondary VET to higher degrees.	Create a National Qualifications Framework and improve pathways for mobility between upper-secondary schooling, post-secondary VET, and tertiary degrees.
The high-tech sector faces labour shortages. Women, Arab-Israelis and Haredim are underrepresented in the high-tech sector.	Implement a comprehensive strategy to broaden the high-tech talent pool, including foundational skills in middle school, post-graduate degrees and short-cycle technical certificates, coding bootcamps, internships and mentoring activities.
Sustaining good health outcomes in the future	
The supply of physicians is insufficient to keep up with population growth and ageing, especially in the northern and southern districts. Physician shortages create cost pressures in the health care sector.	Increase the student intake in medical schools. Strengthen incentives for newly-trained doctors to work in the periphery.
Reimbursement systems in the health care sector are not sufficiently cost-reflective, creating distortions, incentives for harmful competition and contributing to the waiting problem in the public health care sector.	Regularly update diagnosis-related groups to ensure cost-reflectiveness and adjust them according to the complexity of cases.
Interactions between the public and private health care system have created inefficiencies.	Regulate prices in private health care and establish a compensation mechanism for services provided by the public sector to the private health care sector.
Reducing the digital divide	
Broadband connections vary widely across regions.	Closely monitor the deployment of fibre broadband connections in underserved areas and align subsidies with actual deployment costs if needed.
Targeted firm support for technology adoption is of small scale and largely focused on the manufacturing sector.	Evaluate existing grants for technology adoption and digital training and expand effective programmes targeted towards SMEs in traditional sectors.
Accelerating the green transition	
Only about 20% of carbon emissions from energy use are effectively taxed at EUR 60 or above, exclusively in the transport sector.	In the medium term, increase excise taxes on non-transport fuels to reflect environmental costs and introduce consistent carbon pricing across all sectors. Partially use environmental tax revenues to mitigate distributional impacts, enhance energy efficiency and improve public transportation.
Despite vast solar potential, the share of renewable energy in electricity generation is one of the lowest in the OECD.	Streamline permit procedures and increase public land available for utility-scale solar installations while further strengthening incentives for distributed solar installations.

1 Key policy insights

Israel's economy recovered swiftly from the pandemic and has proven resilient to the repercussions of Russia's war of aggression against Ukraine. Inflation has risen above the central bank's target range amid strong demand and a tight labour market. In response, monetary policy has been tightened. Fiscal policy has consolidated and should remain neutral to not add to inflationary pressures. In light of demographic challenges and much-needed investment to boost productivity and narrow socio-economic gaps, ensuring fiscal sustainability will require a medium-term fiscal strategy and an enhanced fiscal framework. To maintain the good overall health outcomes, emerging doctor shortages need to be addressed and the interaction between the public and private health care sector reformed. Reducing digital gaps across households and firms, by improving digital infrastructure, skills, competition and reducing financing constraints, can boost productivity growth and narrow the productivity divide between the high-tech sector and the rest of the economy. Fully harnessing Israel's solar energy potential can help accelerate the green transition.

The economic recovery from the COVID-19 pandemic is well advanced and has proven resilient to the repercussions of Russia's war of aggression against Ukraine. Substantial fiscal and monetary measures were rolled out swiftly and supported the health system, households and businesses during the pandemic. One of the fastest vaccination campaigns in the world helped mitigate the health impact and allowed to open the economy earlier than in other OECD countries. The buoyant high-tech sector drove Israel's strong recovery. GDP rebounded quickly after the COVID-19 shock and surpassed its pre-crisis trend in 2021 (Figure 1.1). Growth remained strong in 2022. The labour market has recovered and is tight despite some recent easing. The war in Ukraine impacts the economy mainly via lower demand from trading partners and adds to inflationary pressures, although Israel's self-sufficiency in natural gas is a mitigating factor. Global and domestic uncertainty is elevated.

Figure 1.1. The economy has been resilient



Source: OECD Economic Outlook: Statistics and Projections database; OECD Labour Statistics database; and OECD calculations.

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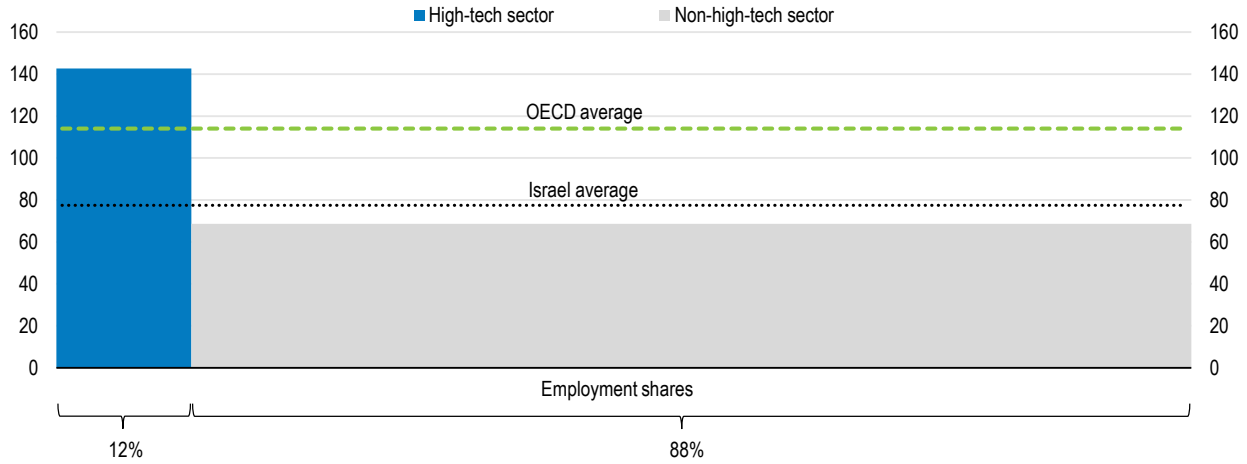
Addressing Israel's structural challenges is crucial to sustain progress in living standards. The country remains a two-speed economy, with its highly productive high-tech sector on the one hand, and low productivity traditional sectors, which employ most of the workforce, on the other hand (Figure 1.2). This divide holds down aggregate productivity convergence (Figure 1.3). In order to boost aggregate productivity, barriers that hinder the high-tech sectors' expansion should be removed, and the productivity of poorly performing sectors lifted. This will require addressing longstanding weaknesses in educational outcomes, low private investment, including in digital technologies, in traditional sectors, lagging infrastructure investment and barriers to competition.

Socioeconomic gaps remain wide. The duality in the business sector contributes to large labour market inequalities. Certain groups, especially the Haredim (ultra-Orthodox Jews) and Arab-Israelis, are underrepresented in the thriving high-tech sector, and have low employment rates, working hours and wages. For Haredi men, this also reflects an explicit choice to focus on non-material benefits and engage in life-long religious studies. As a result, income inequality is wide, and poverty remains an important concern (Figure 1.4). Moreover, with the population share of Haredim and Arab-Israelis projected to increase from currently around 30% to 50% in 2060, labour market integration is vital for growth and fiscal sustainability. While health outcomes are good overall, they are much weaker for Arab-Israelis, and the pandemic has exposed strained resources in the health care sector. High air pollution adds to health concerns and carbon emissions are still a long way from targets.

Figure 1.2. Israel is a two-speed economy

Value added per worker in the business sector, thousand USD PPP, 2018



Note: Productivity is measured as value added per employee and weighted by sectoral employment shares. Data is for 2018 and is limited to agriculture, forestry, fishing, mining, quarrying, manufacturing, electricity, gas, water, waste, construction and market services (i.e. categories from A to N according to the ISIC Rev.4 classification).
Source: Bank of Israel; Israel Central Bureau of Statistics; and OECD calculations.

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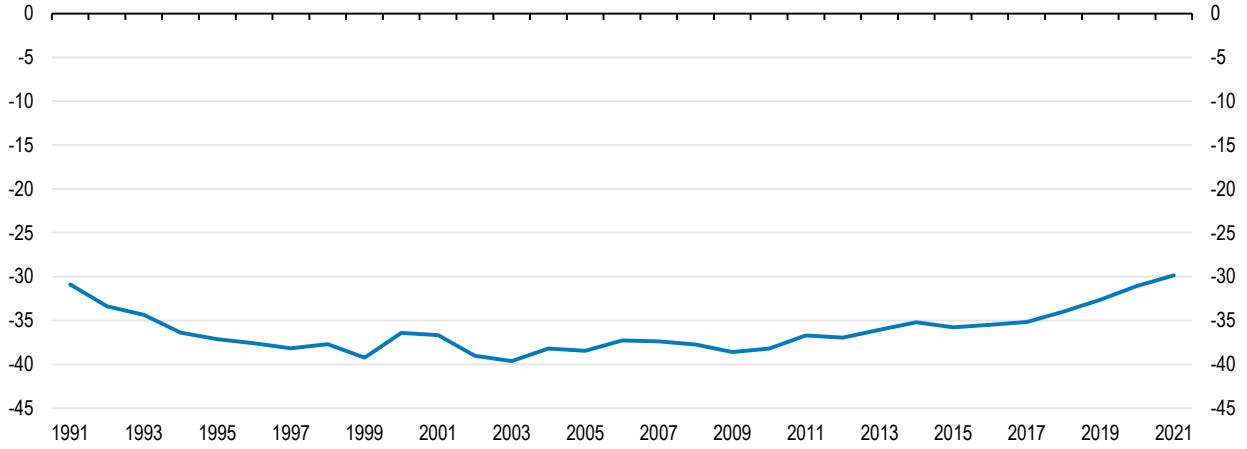
Figure 1.3. Aggregate productivity convergence has been slow

Productivity gap to the OECD upper half, %



Note: Productivity is calculated as GDP per hour worked.
Source: OECD Productivity database; and OECD calculations.

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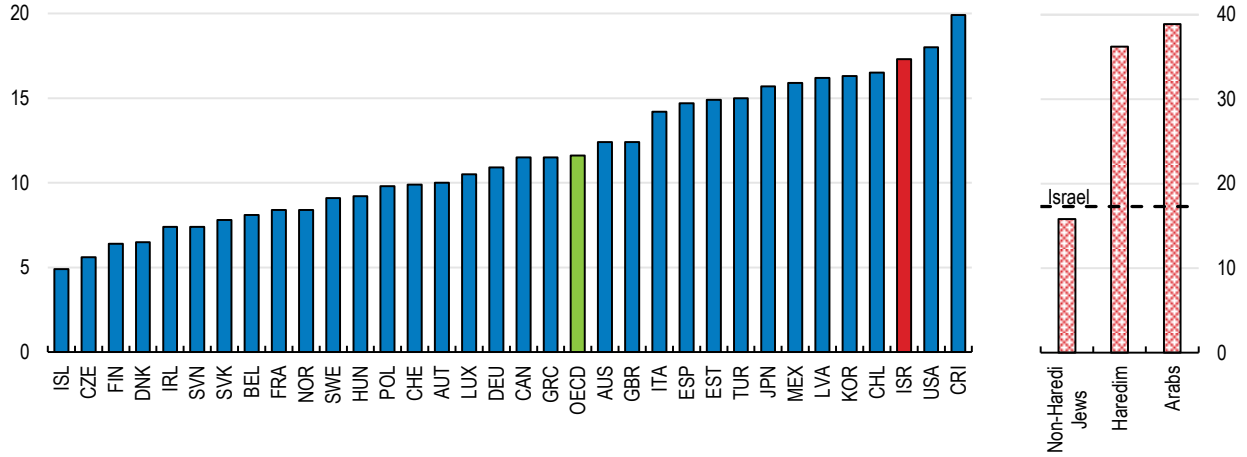
Figure 1.4. Poverty is high and socioeconomic gaps remain wide

Relative poverty, %, 2019 or latest available year



Note: Percentage of persons living with less than 50% of median equivalised disposable income. 2019 data for Israel.
Source: OECD Income Distribution database; National Insurance Institute (2021), Poverty and Social Gaps Report, 2022, Table 4.

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

- Monetary conditions should remain tight and the fiscal policy stance should be neutral to not add to inflationary pressures, while maintaining flexibility to react to risks and uncertainty through temporary and targeted support if needed. Ensuring fiscal sustainability while allowing for productivity-enhancing investment calls for further efforts to enhance spending efficiency, increase tax revenues and strengthen the fiscal framework.
- Fostering productivity and more sustainable and broad-based growth requires further measures to accelerate the green and digital transitions and to reduce the wide digital divide, including through policies to promote product market competition, strengthen private investment incentives and better price the environmental impacts of economic activity.
- Reforms to enhance labour market participation, improve skills, foster labour mobility and address labour shortages in the high-tech and health care sectors are needed to address demographic challenges, and can improve equality of opportunity, reduce socioeconomic gaps, sustain growth and ensure fiscal sustainability.

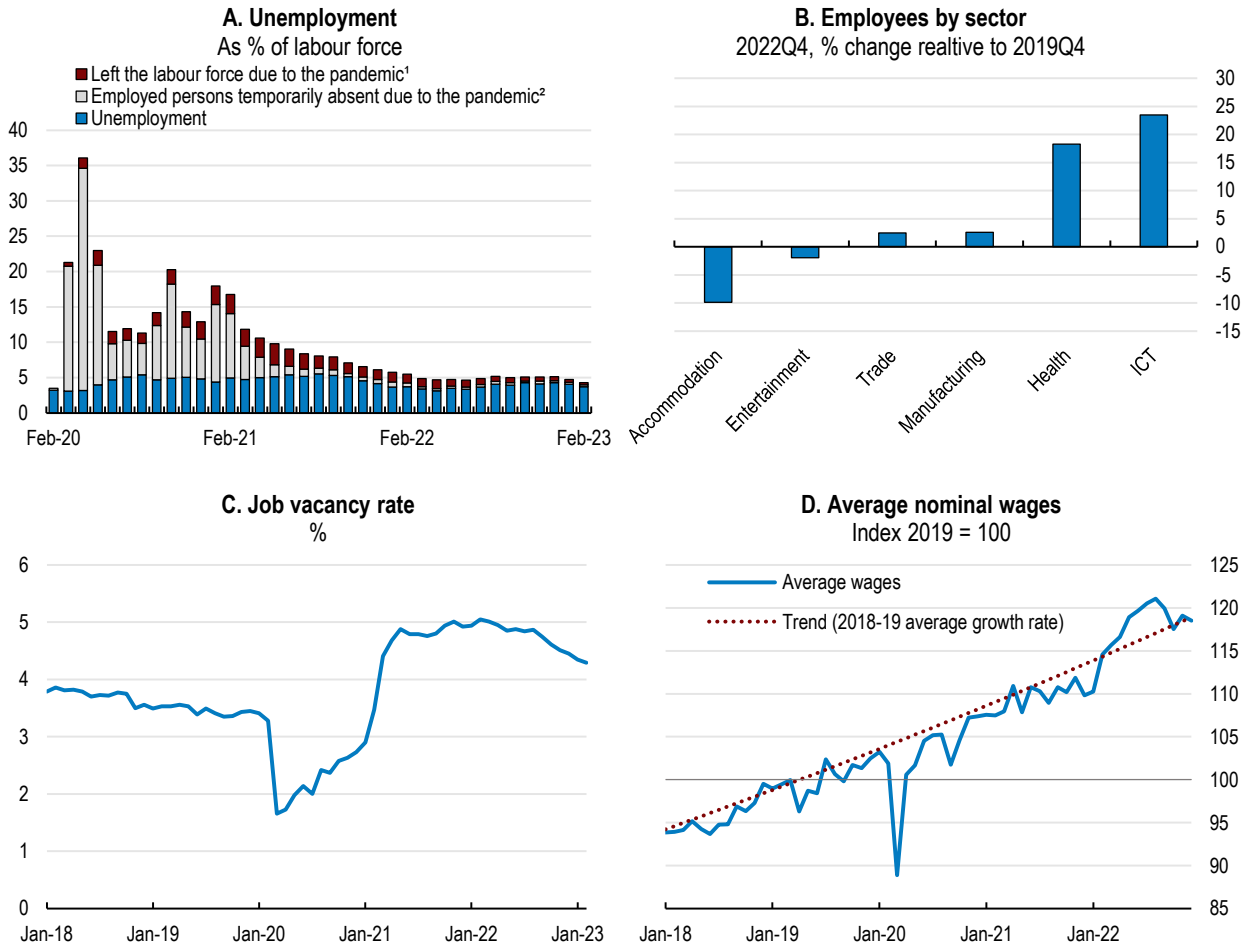
Economic growth is robust but risks are elevated

After a relatively mild GDP downturn in 2020 (1.9%), the economy recovered strongly in 2021 (8.6%). The vibrant high-tech sector, which accounts for more than 15% of GDP, proved to be particularly resilient, thanks to its ability to shift to telework more easily and government policy to facilitate the activity of high value-added sectors during the lockdowns. The sector also benefitted from increased demand especially for software products. High-tech sector exports continued to grow strongly throughout the crisis, making up over half of total exports. Employment increased strongly, and accounts for around 12% of total employment. However, in 2022 the sector faced some headwinds from the pronounced decline in stock markets, especially for technology stocks, in Israel and the United States, where many Israeli high-tech firms are listed.

Economic activity remains robust, and the labour market is tight, although recent data indicate some easing. Overall, growth was strong in 2022, at 6.4%. Confidence in the business sector remained positive in early 2023. The labour market has recovered and is tight, with employment rates in most sectors around or above pre-pandemic levels (Figure 1.5). Despite some decline in recent months, the high vacancy rate

suggests continued strong labour demand. The unemployment rate has increased somewhat in the second half of 2022. The tight labour market is leading to robust nominal wage growth. However average real wages have moderately declined in recent months.

Figure 1.5. The labour market is tight



Note: In Panel A, (1) Series includes persons not in the labour force who stopped working due to dismissal or closure of the workplace since March 2020. (2) This includes employees on unpaid leave, employees who were absent during the week due to reduced workload, work stoppage or other reasons related to the pandemic and excludes quarantined persons. Panel D: The nominal wage series is adjusted for compositional effects during the pandemic.

Source: Israel Central Bureau of Statistics; Bank of Israel; OECD calculations.

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The war in Ukraine has put pressure on global energy and food prices, although energy price effects in Israel are more limited given the country's self-sufficiency in natural gas. Regulated electricity prices were increased by 8.6% in August 2022 and again by around 6.5% in early 2023 due to increasing costs of imported coal used in electricity generation. In the medium term, an expansion of natural gas exports in particular to Europe may support growth. Israel has discovered several major offshore natural gas reserves in the past decade. Natural gas accounts for around 40% of total energy supply. In 2021, the country produced about 20BCM and exported around 7BCM to Egypt and Jordan. Gas production and exports increased in 2022. Gas exports and reduced imports have increased GDP growth by around 0.2-0.3 percentage points in recent years (OECD, 2020[1]). Israel, Egypt and the EU have signed an agreement in June 2022 to boost gas exports to Europe likely via LNG terminals in Egypt, which will require additional investment in the pipeline and LNG infrastructure. Direct trade volumes with Russia and Ukraine only accounted for around 1% of total trade before the war. Russia's war against Ukraine may also boost defence exports in the medium term.

The war has led to a significant increase in immigration. In 2022, around 58 000 (0.6% of the population) new immigrants from Ukraine (about 16 000) and Russia (42 000) arrived in Israel, a significant increase over previous years. Most of the immigrants are Jewish, which entitles them under Israel's Law of Return to immediate citizenship. In addition, the strong labour market and Israel's experience with large waves of immigrants in the past is likely to facilitate integration of the immigrants.

GDP is projected to grow at a robust, albeit more moderate, pace in 2023 and 2024 (Table 1.1). The global slowdown will lower demand from Israel's trading partners. Elevated inflation is weighing on real disposable income and private consumption growth. The increase in real interest rates and high uncertainty is set to slow investment. The labour market will slightly cool as growth moderates. Inflation should gradually slow towards the mid-point of the central bank target, supporting a pickup in domestic demand in 2024.

Table 1.1. Macroeconomic indicators and projections

	2019	2020	2021	2022	2023[1]	2024[1]
	Current prices (NIS billion)	Annual percentage change, volume (2015 prices)				
Gross domestic product (GDP)	1434.6	-1.9	8.6	6.4	3.0	3.4
Private consumption	751.1	-7.9	11.1	7.7	3.5	4.1
Government consumption	316.5	2.8	4.2	0.6	1.9	1.2
Gross fixed capital formation	325.0	-3.9	11.7	9.3	4.8	4.6
Housing	94.0	-7.8	13.7	16.6	5.1	1.3
Final domestic demand	1392.7	-4.5	9.5	6.5	3.5	3.6
Stockbuilding[2]	9.7	1.2	0.5	1.0	0.2	0.0
Total domestic demand	1402.3	-3.3	9.9	7.4	3.6	3.5
Exports of goods and services	420.3	-2.7	14.6	8.0	1.0	3.2
Imports of goods and services	388.0	-8.1	20.6	11.7	1.2	3.4
Net exports[2]	32.3	1.4	-0.8	-0.7	0.0	0.1
Memorandum items						
Potential GDP	. .	3.7	3.7	3.8	3.9	4.0
Output gap (% of potential GDP)	. .	-4.1	0.4	2.8	1.9	1.4
Employment	. .	-1.4	1.1	5.8	1.5	1.6
Unemployment rate (% of labour force)	. .	4.3	4.9	3.8	4.3	4.3
GDP deflator	. .	1.0	2.2	4.6	3.2	1.8
Index of consumer prices	. .	-0.6	1.5	4.4	3.8	2.2
Index of core inflation[3]	. .	-0.1	1.2	4.0	3.8	2.2
Current account balance (% of GDP)	. .	5.4	4.3	3.7	4.2	4.0
General government fiscal balance (% of GDP)	. .	-10.8	-3.7	0.3	-0.9	-1.1
Underlying general government fiscal balance (% of potential GDP)	. .	-8.5	-3.9	-1.0	-1.8	-1.8
Underlying government primary fiscal balance (% of potential GDP)	. .	-6.8	-1.3	1.5	0.4	0.4
General government debt (% of GDP)	. .	71.7	68.9	61.0	58.5	56.8
General government net debt (% of GDP)	. .	67.6	65.1	58.2	55.7	54.0
Three-month money market rate, average	. .	0.1	0.0	1.0	4.2	4.5
Ten-year government bond yield, average	. .	0.8	1.1	2.6	4.2	4.3

1. OECD projections.
2. Contribution to changes in real GDP.
3. Index of consumer prices excluding food and energy.
Source: OECD Economic Outlook Statistics and Projections database. OECD Annual National Accounts database.

Risks are skewed to the downside. A prolonged conflict in Ukraine could adversely affect the economy via lower demand from trading partners and a re-intensification of pressures in global energy markets leading to higher inflation. Higher global and domestic interest rates could lead to increased volatility in financial markets. An increase in uncertainty or security incidents could weigh on business sentiment and investment. The effects of more shocks are discussed briefly in Table 1.2.

Table 1.2. Events that could lead to major changes in the outlook

Shock	Possible impact
Global energy, food or raw material shortages.	A very cold winter and higher competition for LNG as China recovers from the Zero-Covid policy slowdown could lead to energy shortages in Europe. An intensification of global energy, food and raw material supply disruptions would lead to a further acceleration of inflation and a contraction of global trade, leading to stagflation.
Major house price correction	A large fall in house prices would adversely affect residential investment and consumption through wealth effects with possible spillovers to the labour market. Vulnerabilities in the banking sector due to its strong exposure to the real estate market could be exposed.
Outbreak of a new vaccine-resistant COVID variant	Further waves of infections could potentially lead to new containment measures and lower domestic spending.
Heightened geopolitical tensions	Geopolitical instability in the region would increase uncertainty and weaken both domestic and external demand, with negative budgetary repercussions.

Monetary policy has been tightened

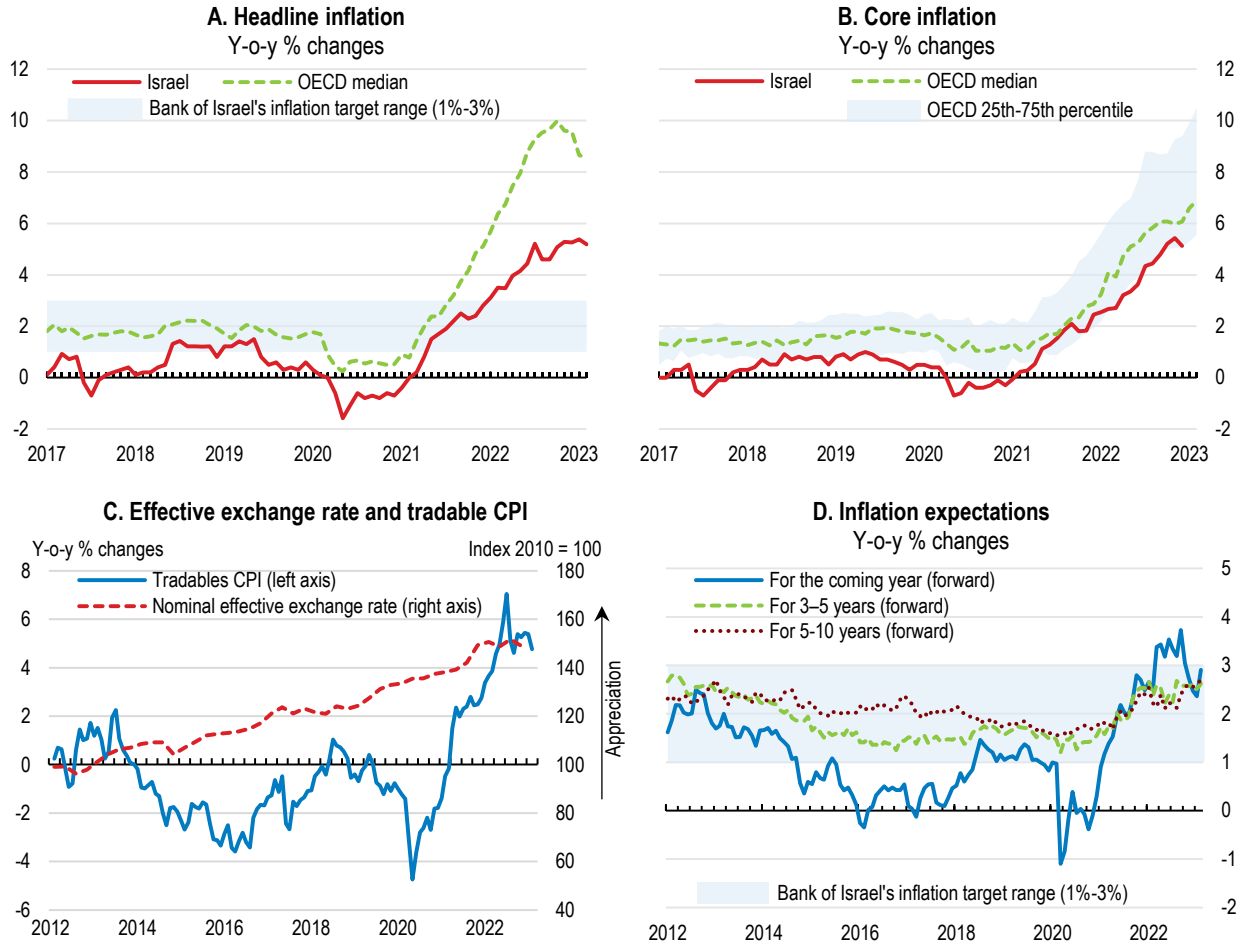
Inflation has increased above the central bank's 1-3% target range but remains lower than in most OECD countries (Figure 1.6). In February 2023, headline consumer price inflation stood at 5.2% and core inflation (excluding energy and food) at 5.0%. The increase was driven at first mainly by global factors such as supply bottlenecks and surging energy prices. However, inflation has become more broad-based as the economy recovered rapidly from the pandemic and the labour market tightened. The trend currency appreciation has mitigated inflationary pressures in 2021, but the exchange rate has become more volatile in 2022 and early 2023. Short-term inflation expectations are around the upper bound of the inflation target. Medium- to long-term inflation expectations edged up to around 2.5%, above the mid-point of the target range.

Tight monetary policy conditions should be maintained to bring inflation back into the target range. With inflation and inflation expectations rising significantly in 2021, real short-term interest rates became deeply negative. In response, the Bank of Israel first ended all quantitative easing measures by the end of 2021. Quantitative measures included the purchase of government and corporate bonds and the extension of long-term loans to SMEs via the banking sector. These measures have expanded the central bank's balance sheet by around 8% of GDP. In addition, the central bank ceased to intervene in the foreign exchange market and raised the policy rate eight times between April 2022 and February 2023, from 0.1% to 4.25%. With inflation above target and robust domestic demand, maintaining a tight monetary policy stance is warranted. The central bank has signalled that the pace of further interest hikes will be determined based on inflation and activity developments. If underlying inflationary pressures become more pronounced, the central bank could also actively reduce its balance sheet in combination with further policy rate increases.

The case for foreign exchange interventions to mitigate appreciation pressures has diminished. The central bank has at times operated in the foreign exchange market mainly to counter appreciation pressures, when these were judged to be excessive. Foreign currency purchases were significantly stepped up in 2020 and 2021 (in total around USD 56 billion). The interventions aimed to mitigate deflationary pressures from the sharp currency appreciation, at a time when inflation was below target, and to smooth the adjustment in the tradeable sector. Foreign exchange interventions can be an appropriate monetary policy tool when the policy rate is at the effective lower bound and deflationary pressures from currency appreciation threaten to de-anchor inflation expectations. With the policy rate no longer at the lower bound, inflation above target, a significant current account surplus and ample foreign currency reserves (37.5% of GDP), the case for foreign exchange intervention is limited and market forces should be allowed to determine the shekel exchange rate as long as the market functions properly. Indeed, the central bank stopped foreign exchange purchases before the policy rate lift-off, and has not purchased foreign currency since January 2022. In addition, the sovereign wealth fund has become operational in 2022, and will invest abroad the proceeds from a special levy on the profits of the gas and minerals industries. This should reduce trend appreciation

pressures, albeit to a very limited extent given the expected small inflows into the fund in the next few years.

Figure 1.6. Inflation has increased above the target



Note: In Panel C, higher (lower) values of the nominal effective exchange rate indicate domestic currency appreciation (depreciation).
Source: OECD Price Statistics database; Bank of Israel; OECD Economic Outlook: Statistics and Projections database.

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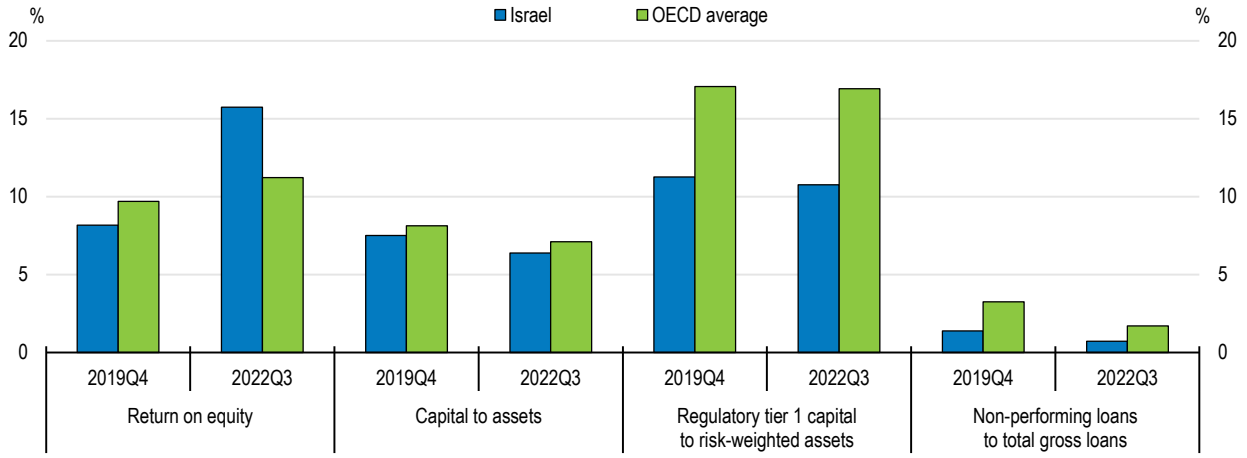
Financial market risks should be monitored

The financial authorities have reversed most of the pandemic easing measures as credit growth resumed at a strong pace in 2021. Reductions in loan-to-value ratios and bank capital requirements expired at the end of 2021. The loan service payment deferral programme ended in March 2021, with deferred loans accounting for only around 1% of total loans at the end of 2021. Credit growth, especially mortgages, started to moderate somewhat in the second half of 2022 due to tighter monetary and financial conditions. Private sector debt has increased in the past decade, driven in particular by household mortgages and credit to the construction and real estate sectors (see below). Nevertheless, with non-financial business sector debt at around 69% of GDP and household debt at around 43% of GDP in June 2022, private sector debt is still relatively low in international comparison.

The banking sector appears sound. Profitability has increased and non-performing loan ratios remain low (Figure 1.7). Capital ratios are slightly below their pre-crisis levels but continue to comfortably surpass regulatory requirements. Stress tests suggest that even under an extreme scenario, including a sharp

slowdown in economic activity, asset market declines and increases in interest rates and inflation, the capital ratios of all banks would remain above regulatory minima (BOI, 2022[2]).

Figure 1.7. The banking system appears sound



Note: 2022Q3 data for the OECD average is calculated on the basis of latest available quarter for the OECD countries, ranging from 2021Q2 to 2022Q3.
Source: IMF Financial Soundness Indicators database.

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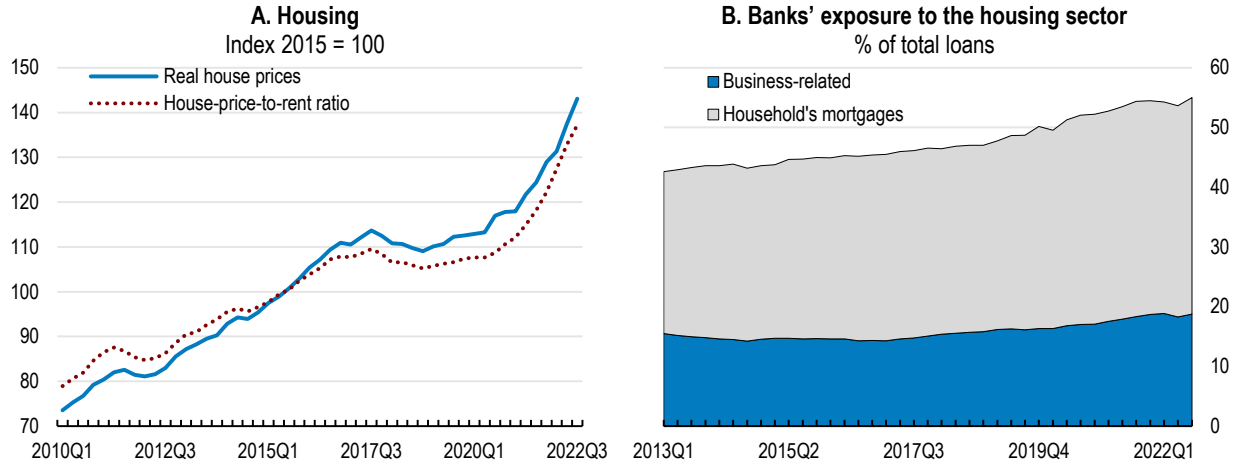
Risks from the housing market should continue to be closely monitored. House price growth resumed strongly from the second half of 2020, outpacing growth of rents significantly (Figure 1.8). Banks are heavily exposed to the real estate market, with more than half of total loans directed to this sector (Figure 1.8). A relatively conservative macroprudential approach, including limits to mortgage loan-to-value ratios (75%), to payment-to-income ratios (50%), and to the banks' exposure to the construction and real estate sectors, together with higher risk weights for high-risk loans and additional capital requirements for housing loans, reduces risks to financial stability from the real estate market. However, the share of higher-risk mortgages has edged up, with loans with a debt service-to-income ratio of above 30% accounting for around 45% of new loans in mid-2022. In addition, about three-fourth of the value of all mortgages will be affected by higher interest rates and/or inflation due to variable interest rates and/or inflation indexation. The authorities should therefore remain vigilant and adjust macroprudential measures if needed.

Financial market supervision is conducted by the Bank of Israel, the Capital Markets, Insurance and Savings Authority and the Securities Authority. In late 2018, these three institutions together with the Ministry of Finance established a Financial Stability Committee to enhance supervisory co-ordination. The Israeli banking sector has long been dominated by five banks, with the largest two holding more than 50% of all assets. Regulatory measures to reduce switching costs and facilitate entry of new financial institutions, including fintech companies have had some success in reducing market concentration. For example, a new online bank started operations in 2021 and the share of non-banks in consumer credits has increased from 12% in 2013 to 29% in 2021. However, competition in other credit segments is still low, with credit to small businesses almost exclusively provided by banks (BOI and MOF, 2021[3]). Several recent reforms and developments have the potential to facilitate new entries, including of fintechs, and foster greater competition. In 2022, a new law came into effect as part of the open banking reform that requires banks to share customer information (e.g. current account and credit card charges) with competitors, subject to the customer's consent. In addition, the central bank plans to expand the credit data register to include corporate credit data, and measures have already been taken to enhance transparency in the mortgage market. Following a government decision, a committee to review the financial supervisory structure and foster competition and innovation was established but then dissolved without agreed conclusions. Going forward, it will be important to find an adequate balance between facilitating

financial innovation and competition, for example through regulatory sandboxes for fintechs, while leaving no gaps in financial supervision and ensuring the continued safety of the financial system.

Figure 1.8. The real estate market poses risks



Source: OECD Price Statistics database; Bank of Israel, Information on the Banking Corporations – Credit, Table IV-4.1.

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Addressing short and long-term fiscal policy challenges

The government budget balance has improved considerably in 2021 and 2022 thanks to the phasing out of pandemic support and strong revenue growth (Table 1.1). Public debt is estimated to have fallen to around 61% of GDP at the end of 2022, slightly above pre-pandemic levels. Pandemic-related direct fiscal support was reduced from around 5.7% of GDP in 2020 to 3.7% in 2021, and less than 1% of GDP in 2022. Most household and firm support measures were phased out in mid-2021, while remaining support is mainly channelled to health. At the same time tax revenues grew strongly (by over 2 percentage points of GDP from 2020 to 2021) due to the strong economic rebound and some exceptional factors. Around half of the revenue growth was due to exceptional factors related to high financial and real estate valuations, strong import growth as well as increased profits in the high-tech sector (BOI, 2022[4]). Revenue growth remained strong in most of 2022 but started to slow towards the end of the year. Going forward, revenue growth is likely to further slow as the recovery moderates and some transitory factors, related to high real estate valuations and surging corporate profits, dissipate.

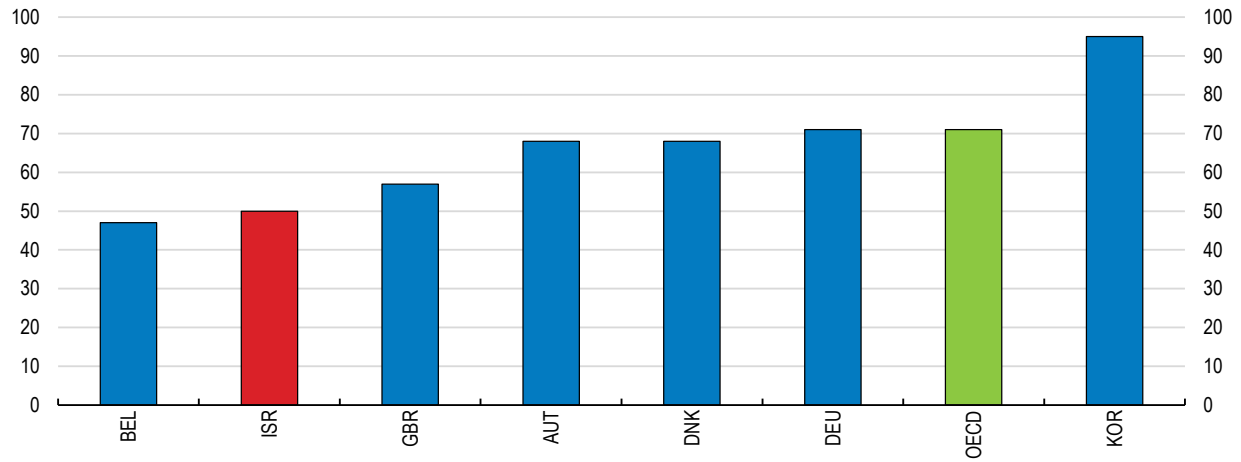
The fiscal policy stance should be neutral to not add to inflationary pressures while maintaining flexibility in light of the uncertainty surrounding the outlook. The authorities took a number of temporary measures in 2022 to mitigate the increase in the cost of living. This included expanding the earned income tax credit and child tax allowances, reducing the excise taxes on coal and transport fuels and reducing some custom tariffs and non-tariff import barriers (see below) on a number of goods, including foods. The estimated fiscal cost of these measures is around 0.7% of GDP in 2022. Additional support to the most vulnerable households may be needed if inflation proves persistent, but should be well targeted and temporary so as not to add to inflationary pressures. The expansion of child tax allowances and the reduction of the coal excise tax have been extended until end-2023, and the reduction of the excise taxes on gasoline until end-2024. The coal and gasoline price support measures are not well targeted and should be temporary as planned. Moreover, energy price support needs to be carefully designed to ensure it does not weaken incentives to reduce energy consumption. Reforms to reduce tariff and non-tariff import barriers are welcome and should continue as they can reduce the cost of living as well as spur competition and productivity.

The 2022 budget and accompanying reform programme included increased expenditures to boost productivity and narrow socioeconomic gaps. Compared to the pre-pandemic 2019 budget, the 2022

budget targeted a decline in expenditure on defence as a share of GDP, and a marked increase for infrastructure investment, although implementation has fallen behind the plan. The accompanying reform programme included *inter alia* further medium- to long-term measures to boost infrastructure investment (around NIS 150 billion, 9% of GDP) and investment in Israeli-Arab communities (NIS 30 billion, 1.8% of GDP, over 2022-26). Investment in these areas is welcome, given Israel's large infrastructure gap (Figure 1.9) and wide socioeconomic divides. Additional investment is also needed to boost human capital as argued in *Chapter 2* and previous *Surveys*. Investment in these areas should be based on sound cost-benefit analysis. With extraordinary tax revenues waning, stabilising public debt while making these investments requires additional efforts to enhance spending efficiency, and to increase tax revenues. The new government's economic reform plan includes a national infrastructure law with the aim to facilitate the implementation of infrastructure projects by streamlining bureaucratic and regulatory processes. In addition, the reform plan foresees further measures to boost competition in a number of sectors, including the food sector, by reducing regulatory burdens and removing import barriers.

Figure 1.9. Israel's core infrastructure stock lags significantly behind that of other countries'

Total core infrastructure stock, % of GDP, 2015



Note: The core infrastructure stock includes road, rail, waterway, maritime port and airport infrastructure.
Source: Office of the Accountant General; Ministry of Finance; ITF; GWI; IHS Global Insight; McKinsey Global Institute analysis; Israel Rail; Israel Airport Authority.

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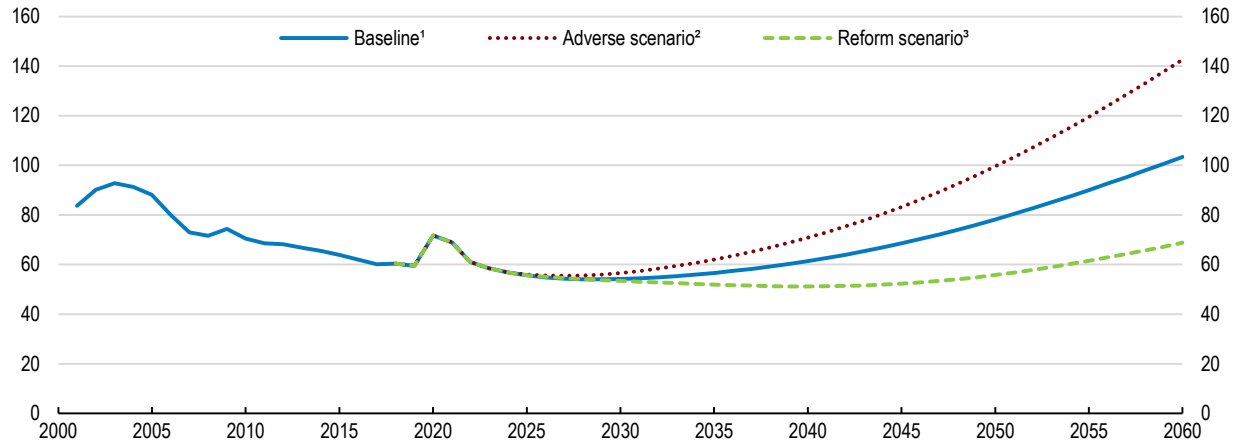
Reforms to boost labour force participation and productivity can help ensure long-run debt sustainability. In a baseline scenario, that assumes some continuation of pre-crisis trends of labour market integration, especially of Haredim and Arab-Israelis, debt will continue to fall to around 55% of GDP by 2030. Thereafter, gradually increasing ageing-related costs (pension, health) would lead to rising debt, unless offset through savings in other spending areas or higher revenues (Figure 1.10). A halt in the progress of labour market integration of Haredim and Arab-Israelis, whose combined share in the population increases to 50% by 2060, would have strong adverse effects on growth, tax revenues and raise social spending, and debt would increase earlier and much more strongly (Figure 1.10, Adverse scenario). In contrast, implementing a reform programme as suggested in this Survey (Box 1.1) would boost growth, speed up labour market integration and help stabilise debt below 60% of GDP until 2055 (Figure 1.10, Reform scenario).

Figure 1.10. Illustrative debt scenarios

General government debt, as a percentage of GDP



Note: The baseline scenario is based on the OECD Economic Outlook Statistics and Projections database until 2024 and the OECD Long-Term Economic Model thereafter. Increases in ageing related costs are incorporated.
In the "Adverse scenario" scenario, the labour force participation rates of Haredi, Arab-Israeli and non-Haredi women remain at their current level. Based on Argov and Tsur (2019) and MoF (2019), this scenario implies that the employment rate will be around 4 percentage points lower compared to the baseline in 2060, potential growth 0.2 percentage points per year lower and the primary deficit on average 0.9 percentage points higher. The "Reform scenario" is based on the OECD Long-Term growth Model and reform scenario outlined in Box 1.1.
Source: OECD Long-term Economic Model.

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Fiscal policy has been prudent overall over the last two decades, but the fiscal framework would benefit from a regular review of the fiscal rules to enhance their credibility as fiscal anchors. The fiscal framework includes multiannual expenditure ceilings and deficit targets, and since 2017 a rule that restricts any new permanent fiscal commitments that would breach the expenditure and deficit rules without an appropriate funding source ("numerator rule"). The rules have helped contain spending, reduce debt and enhance fiscal planning. However, experience with the rules has also highlighted some shortcomings. The expenditure rule has in general implied a medium-term reduction in the public expenditure-to-GDP ratio. This has proven useful to enforce fiscal prudence in the 2000s when the expenditure and public debt-to-GDP ratios were significantly above the OECD average. The decline in public expenditure since 2008 was largely driven by lower spending on defence and interest payments, while other expenditures including public investment and social services remained broadly stable as a share of GDP following their reduction between 2003 and 2008. However, compliance with the rule has been more difficult in the last decade as primary civilian spending is low (see below) and infrastructure and human capital investment needs are large. The expenditure ceilings (and deficit targets) have often been revised up by changing the parameters of the rule *ad hoc* when budgets are prepared (Brender, 2021[5]) (BOI, 2022[4]). Moreover, the upward revisions of the ceiling tend to favour current over investment expenditures, as investment pipelines take time to prepare and are based on (more restrictive) medium-term fiscal plans (BOI, 2022[4]).

In addition, the deficit target has not prevented pro-cyclical fiscal policy, in particular during cyclical upswings (Brender, 2021[5]) (Rawdanowicz et al., 2021[6]). As deficit targets are not adjusted for the economic cycle, they have not limited the government's ability to pro-cyclically cut taxes in upswings. In general, more buffers could be built during fiscal upswings. A regular review of the fiscal rules should take into account the trade-offs between simplicity, credibility and flexibility of the rules. It would also be an opportunity to assess prudent public debt levels, accounting for country-specific factors such as geopolitical risks. A regular review of the expenditure rule should be informed by a strategic long-term public investment plan, which is currently lacking, that takes into account investment needs for example for infrastructure and climate change adaptation and mitigation.

Looking forward, establishing an independent fiscal council, as recommended in the previous *Survey,* can strengthen the fiscal framework. Research shows that fiscal councils have been associated with increased fiscal rule compliance, more accurate forecasts, and less pro-cyclical fiscal policy (Rawdanowicz et al., 2021[6]).Three out of four OECD countries now have fiscal councils. Their mandates vary, but most commonly include monitoring compliance with fiscal rules, assessing long-term fiscal sustainability, analysing budgets and medium-term fiscal plans, endorsing or producing economic and fiscal forecasts, and estimating costings of policies. During the pandemic some councils have also assessed the conditions for triggering the escape clause. In Israel, the Bank of Israel provides independent macro-fiscal projections, budget analysis and fiscal advice to the government, and the State Comptroller conducts ex-post assessments of fiscal policies. Fiscal transparency and oversight could be strengthened for example by producing systematic long-term (more than 20 years) fiscal sustainability analysis, given the increasing importance of ageing-related pressures. Moreover, if the review of the fiscal rules were to result in the adoption of more complex rules, e.g. cyclically-adjusted or structural fiscal targets, formulating an agreed methodology and monitoring ex-ante and ex-post compliance would benefit from independent advice. In principle, the mandate of the central bank could be expanded in these directions. However, with an expanded fiscal advisory role, the central bank may face capacity constraints and possible conflicts of interest. Hence an independent fiscal council would be preferable.

The fiscal council should be aligned with international best practices such as the *OECD Principles for Independent Fiscal Institutions* (IFIs) (OECD, 2014[7]). Establishing a new independent institution is challenging. In this respect the *OECD Principles* for example recommend that the IFIs leadership's term should optimally be independent of the electoral cycle, for example by defining the term span beyond the electoral cycle; IFIs should be precluded from any normative policy-making responsibilities; and the leadership should be elected strictly on the basis of merit and technical competence. If local recruitment proves difficult, some of the fiscal experts could potentially come from outside of Israel. IFIs in several OECD countries have links to the central bank to offer greater protection from potential political interference, while operating under strict independence and autonomy from the central bank. For example, in Austria, Estonia and the Slovak Republic the IFIs are funded by the central bank. In Austria and Estonia the central bank also provides the secretariat of the IFI. Mandates of IFIs evolve in OECD countries. In Israel the establishment of a fiscal council could be combined with an evaluation of its mandate after several years.

Tax reform to enhance equity and efficiency

Israel's tax mix is reasonably growth- and employment friendly, as discussed in detail in the previous *Survey*. The tax burden on labour is relatively low in international comparison especially for low- and middle-income households. Taxes on consumption (mainly through VAT), which are generally less distortive, are used more heavily than in other OECD countries as are property taxes (Figure 1.11). However, the property tax in Israel suffers from several deficiencies which create distortions. In addition, there is scope to remove inefficient tax exemptions and to broaden tax bases. This could also help generate some additional tax revenues to finance investment needs. The overall tax burden, at 30.2% of GDP in 2019, is below the OECD average (33.4%).

In-work benefits should be permanently increased to strengthen work incentives and reduce the share of working poor. The personal income tax rate schedule is progressive (OECD, 2020[1]). In addition, a basic tax credit as well as a number of specific (non-refundable) tax credits, for example for families with children, single parents and working women, further contribute to the progressivity of the income tax system. Employment of workers with traditionally low labour market attachment has increased, but the jobs are often low-paid, especially among the Israeli-Arabs and Haredim. Israel's Earned Income Tax Credit (EITC) is an effective redistribution measure with significantly positive employment effects for low-skilled workers (Brender and Strawczynski, 2020[8]). As discussed in detail in *Chapter 2*, the EITC should be adjusted to

restore gender balance and strengthen incentives for second earners. In addition, further efforts should be made to reduce the delay in payment and automatically pay-out the EITC to eligible persons (Chapter 2).

Box 1.1. Quantifying the impact of selected policy recommendations

Table 1.3 presents estimates of the fiscal impact of selected recommendations. The results are indicative and do not allow for behavioural responses.

Table 1.3. Illustrative fiscal impact of recommended reform package

Fiscal saving (+) and costs (-) after 10 years

	% of GDP
Improving quality of education and expanding pre-school education in underserved areas	-0.6%
Strengthening active labour market policies and in-work benefits	-0.4%
Enhancing infrastructure	-0.6%
Total costs	**-1.6%**
Increasing statutory retirement age of women to that of men	+0.1%
Reducing inefficient tax expenditures and streamlining VAT exemptions	+0.8%
Environmental taxation (phase-out fossil fuel subsidies, broader carbon taxation)	+0.5%
Total savings and extra revenues	**+1.4%**
Revenue gain from the recommended reform package via higher employment[1)]	+0.75%

[1)] The employment rate increases by around 1.5 percentage points by 2032 relative to baseline.
Source: OECD; Ministry of Finance, (IMF, 2022[9]).

Table 1.4 quantifies the GDP impact of the main recommendations based on the OECD Economics Department long-term model.

Table 1.4. Illustrative impact of reform package on GDP per capita

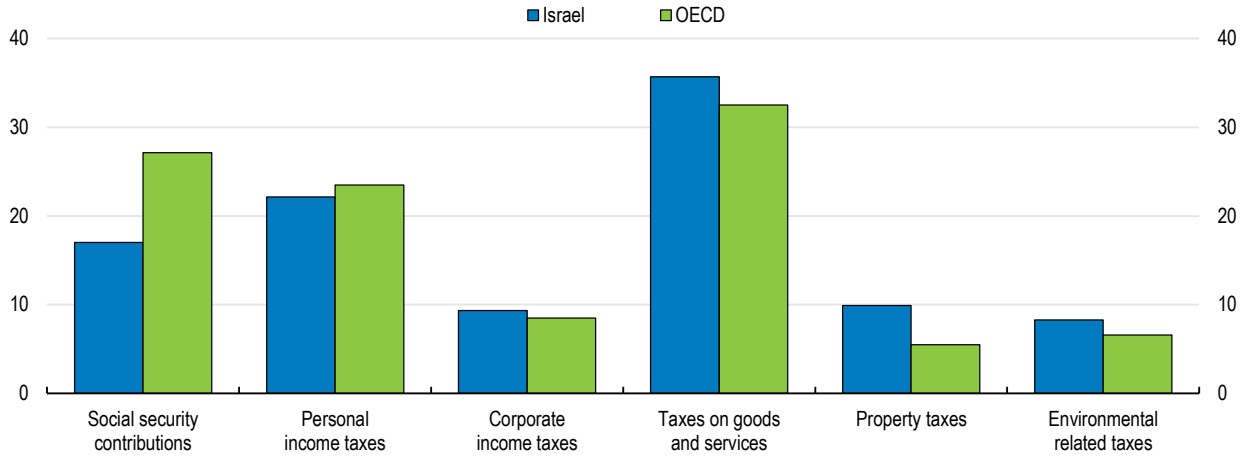
Relative to baseline

Reform	10 year effect	Effect by 2060
Labour and educational reforms: i) expanding pre-school funding per child; ii) improving quality of lagging school streams; iii) expanding active labour market policies; iv) increasing retirement age of women to align it with that of men; v) reducing inequality	2.2%	12.6%
Public infrastructure investment	1.1%	3.9%
Competition reforms i) reducing tariffs, ii) product market reforms	2.1%	8.9%
Total impact	**5.4%**	**27.5%**

Note: The total impact of reforms is not equal to the sum of the separate reforms because of interactions between reforms.
Source: OECD Economics Department Long-Term Model.

Figure 1.11. The tax mix relies more heavily on consumption and property

Share in total tax revenues, % of total taxation, 2020



Note: Environmental related taxes data for Israel refers to 2018. The OECD aggregate is an unweighted average of the countries in the group.
Source: OECD Global Revenue Statistics database; OECD Environmental policy database; and OECD Taxing wages database.

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Reducing inefficient tax expenditures can lower distortions. Differences in tax rates across saving vehicles are large and distort saving decisions. For example, tax benefits for private pension savings, medium-term savings accounts and residence-based income tax credits are inefficient and should be reduced (OECD, 2020[1]). Reducing these benefits should take into account the overall progressivity of the income tax schedule and effects on work decisions of higher-income earners, who are the main beneficiaries of these tax exemptions. The government should also strive to eliminate VAT exemptions, which are inefficient measures to address equity issues, create distortions and provide opportunities for tax evasion by re-classifying goods to benefit from exemptions. This includes the VAT exemption threshold on online purchases, and exemptions on tourism services (including in Eilat) and on fruits and vegetables. To offset potentially regressive effects, existing social transfers could be increased.

The taxation of housing should be reformed to remove distortions and foster fairness. The recurrent immovable property tax (*Arnona*) is based on the size of the property (together with other parameters such as location and type of housing). Most other OECD countries base the recurrent immovable property tax on the value of the property, although values are often not regularly updated to current market values (OECD, 2022[10]) (Thomas, 2021[11]). Digitalisation is reducing the costs of regular appraisals. Computer-assisted mass appraisals (CAMA), which estimate values for a group of properties using mathematical modelling, or using data from digital platforms advertising properties for sale may reduce the costs associated with frequent property revaluations (OECD, 2022[10]). As these approaches require technical capacities, they may be best undertaken by higher levels of government. Moreover, rates in Israel are typically significantly higher for commercial than residential property, which creates incentives for municipalities to favour business over residential property developments, contributing to the housing supply shortage. As recommended in the previous *Survey*, the government should move to a value-based system, ensuring regularly updated property values, and reduce the large disparity between residential and non-residential Arnona tax rates, for example by lowering the non-residential property tax rates and raising residential rates. Such a reform should be designed following a review of potential distributional implications across households and municipalities.

In addition, the authorities should consider reforming the taxation of rental income. Currently there are three methods for taxing rental income, which raises complexity and provides opportunities for tax arbitrage and abuse (Thomas, 2021[11]). Moving to a single system of taxation, as in most OECD countries, whereby net rental income (gross rental income minus allowable deductions) is taxed at marginal passive income

tax rates, and requiring all income and expenses to be declared, can raise compliance, fairness and tax revenues. In return, the purchase taxes on residential property should be phased out for both single and multiple homes. Transaction taxes tend to hamper residential mobility, although this effect is mitigated in Israel as transaction taxes on first homes are only levied above a relatively high threshold of the property value. For example, in 2017 about 65% of first-time home buyers were tax exempt.

The government should thoroughly evaluate the system of corporate income tax breaks for export-oriented and high-tech firms, as recommended in the previous *Survey*. Eligible firms benefit from sharply reduced corporate income tax rates (effectively in the range of 5-16%, compared to a statutory rate of 23%). The schemes may have helped attract FDI. However, the fiscal costs are significant (0.4% of GDP per year) and comprehensive evaluations of its benefits are lacking. In addition, the schemes may distort the optimal allocation of factors of production across sectors and make it more difficult for domestic-oriented sectors to attract investment and skills (OECD, 2020[1]) (BOI, 2019[12]). A review should evaluate the social benefits and costs comprehensively. For example, on the benefit side, positive effects on investment should be corrected for investment that would have occurred without the incentive. Positive productivity effects on other firms through knowledge or technology spillovers should also be taken into account. On the social cost side, the evaluation should include net tax revenue losses, administrative and compliance burdens, and costs related to distortions in resource allocations. A review is also warranted in light of future changes in the international tax environment, such as the global minimum corporate income tax. Broadening the tax base could create room for further cuts in the statutory corporate income tax rate or a lighter business property tax, which would benefit the economy more broadly.

Environmentally-related taxes need to be better aligned with externalities. Environmentally-related tax revenues are relatively high compared to other OECD countries (Figure 1.11), mainly due to high excise taxes on gasoline and diesel and a high vehicle purchase tax. Indeed, the effective carbon tax rate in the transport sector is higher than the unweighted OECD average (EUR 316 vs 174 per tonne of CO_2 in 2021). However, taxes on non-transport carbon-based fuels are very low and not aligned with environmental costs. For instance, the effective carbon tax in the electricity sector is around EUR 4 per tonne of CO_2 (compared to an unweighted OECD average of EUR 39 per tonne of CO_2 in 2021) and around EUR 7 per tonne of CO_2 in industry (compared to an unweighted OECD average of EUR 36 per tonne of CO_2 in 2021), far below a midpoint estimate for carbon costs in 2020 of EUR 60 (see below). A government decision in 2021 aimed to increase the excise fuel tax outside of the transport sector, but the plan has not yet been approved by parliament. The planned introduction of congestion charges in the Tel-Aviv area as well as the phasing out of fossil fuel subsidies for diesel fuel in certain uses is welcome. Part of the extra revenues from higher environmental taxation should be used to avoid real income losses, in particular of low-income households, improve public transport and enhance energy efficiency measures. Although explicit revenue earmarking is generally to be discouraged as it creates rigidities in spending priorities, combining environmental taxation with redistribution towards vulnerable households and policies to provide green alternatives can help increase trust and acceptability.

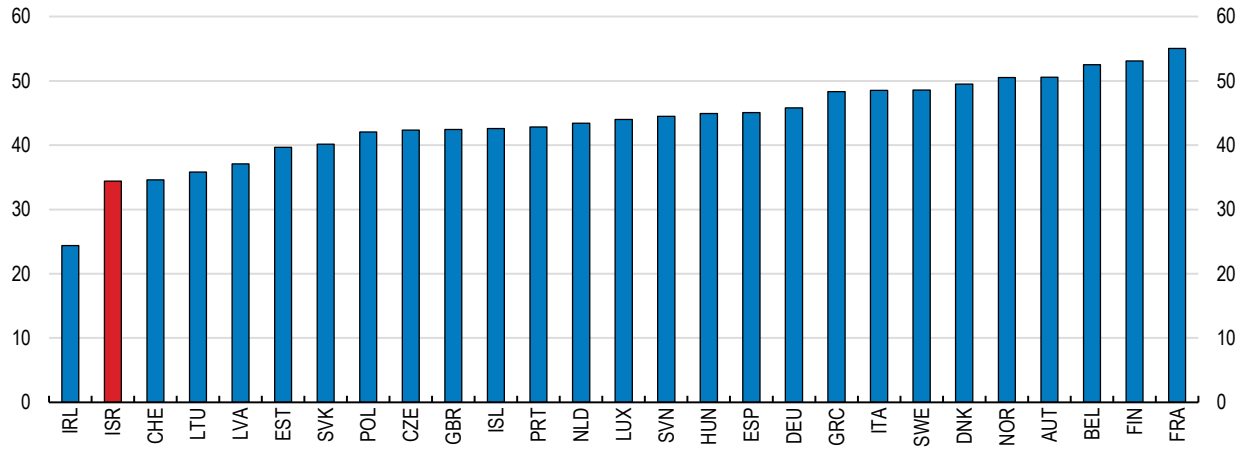
Increasing spending efficiency

Primary civil spending is among the lowest in the OECD (Figure 1.12). Spending on defence and interest payments is internationally high but has declined in recent years. Spending reviews can help identify areas of potential efficiency gains. Israel conducts annual spending reviews. However, the scope of the spending reviews has been narrow (less than 5% of total government expenditure), focused on very specific programmes, and the results are generally not integrated into the budget process or medium-term fiscal framework. Broadening the scope of the reviews would help identify interactions between several expenditure programmes within a given policy area (e.g. welfare, defence). More comprehensive reviews can be more complex to carry out, possibly requiring more human resources, but the potential to identify efficiency gains is also larger. Fully harnessing the potential of digital technologies for government services can also bring efficiency gains.

Raising women's retirement age will yield fiscal savings. At the beginning of 2022, women's statutory retirement age started to gradually increase from 62 to 65 years. Annual savings are estimated to be modest, at around NIS 1.5 billion (0.1% of GDP) in the medium term (BOI, 2021[13]), given that the public system only finances a basic pension. In addition, the reform is welcome as it also strengthens incentives to stay in the labour force and boosts women's pension income. The authorities should strive to fully close the retirement age gender gap by raising the retirement age of women further to that of men (67 years) in the medium term. Almost all OECD countries have eliminated or are in the process of eliminating the retirement age gender gap (OECD, 2021[14]). Once the retirement age of men and women are aligned, the government should consider linking the future retirement age to gains in life expectancy.

Figure 1.12. Primary civilian expenditure is low

Primary civilian expenditure, % of GDP, average 2019-2021



Note: Average of 2019-2020 for Austria, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Island, Lithuania, Luxembourg, Latvia, Poland, the Slovak Republic, Slovenia, Switzerland and the United Kingdom.
Source: OECD National Accounts Statistics database; and OECD calculations.

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The new mechanism to guarantee yields of pension funds is likely to reduce government interest payments but creates contingent liabilities. In the past, the government issued earmarked bonds to pension funds with a fixed real yield of 4.86%. From 2022, these earmarked bonds will no longer be issued. Instead, the government will guarantee a real average annual yield of 5.15%, for the amount the pension funds traditionally invested in earmarked bonds (30% of portfolio). As long as yields in the capital market exceed the interest rate on government debt, which has historically been the case, this new mechanism will result in fiscal savings. However, in times of exceptional capital market downturns, the new mechanism may trigger substantial payments of the government to pension funds (BOI, 2021[13]). These new contingent liabilities should be made transparent and appropriate reserves established as planned.

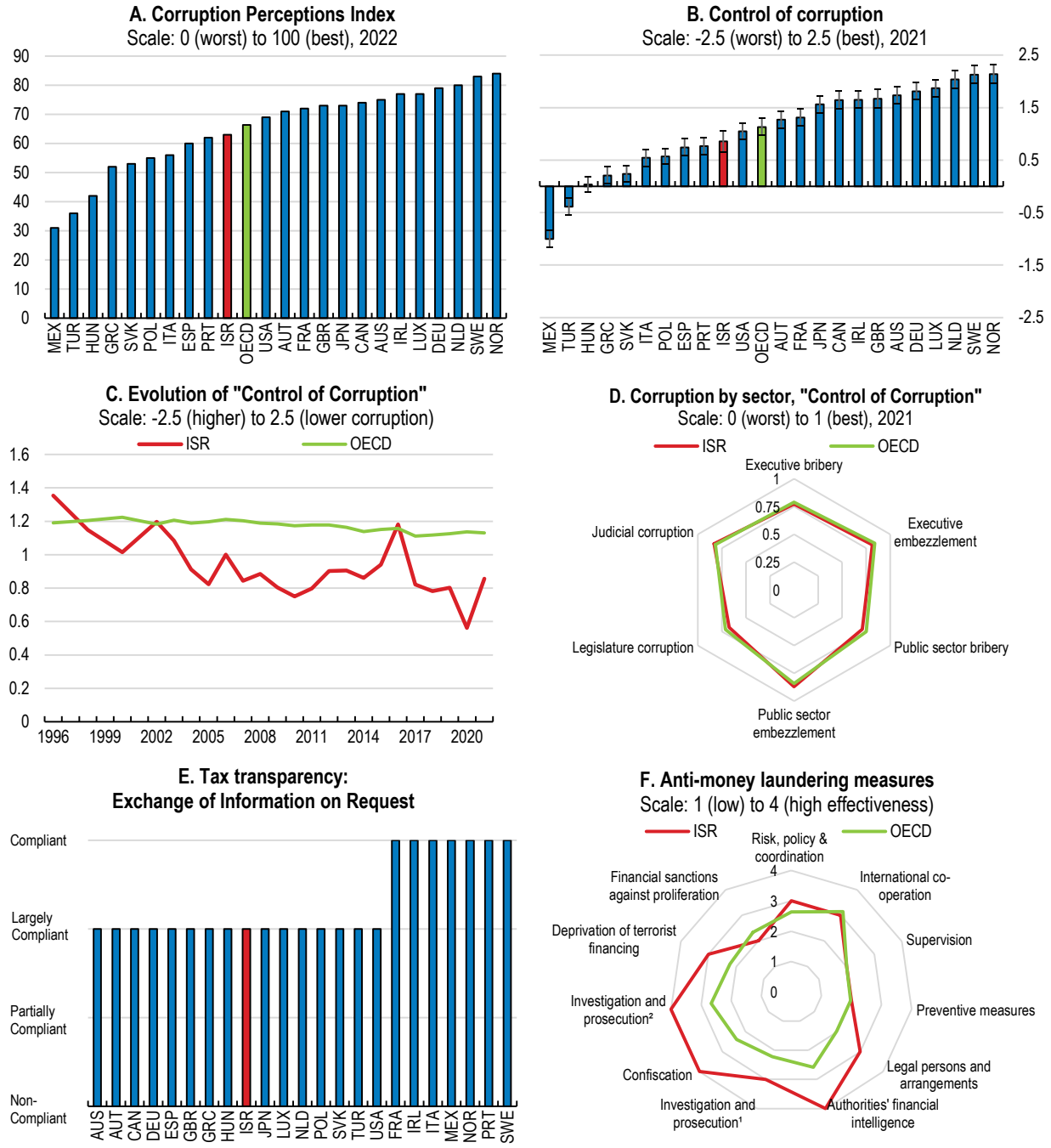
Government transparency and low levels of corruption are key to boosting public-sector efficiency. Corruption can divert public resources from productive spending and is associated with lower spending on social services, including health and education (OECD, 2015[15]). In Israel, perceived levels of corruption are higher than the average for OECD countries (Figure 1.13). Moreover, judicial independence and judicial checks and balances are vital to a strong anti-corruption and public integrity system, trust in the government and public institutions and a business environment that attracts investment and fosters economic performance (OECD, 2022[16]) (Palumbo et al., 2013[17]), (European Commission, 2022[18]), (World Bank, 2017[19]), (IMF, 2017[20]).

Measures to mitigate risks of undue influence in policymaking can be strengthened to safeguard trust in public institutions and in a fair business environment. Israel has dedicated considerable efforts to improving accountability in public policy making in the areas of lobbying, conflict of interest, and political financing.

However, access to public information should be enhanced, for instance by not restricting it to citizenship. Israel could also consider compliance with international standards such as the Tromso Convention, which establishes a set of minimum standards for the prompt and fair processing of requests for access to official documents. In addition, Israel should ensure that all ministers, members of parliament and highest bodies of the judiciary submit full declarations of possible conflicts of interest. Finally, the State Comptroller could improve the collection of data on the financing of political parties and election campaigns.

Further progress can also be made to strengthen the foreign bribery framework. Israel has fully implemented many recommendations of the OECD Working Group on Bribery related to the detection, investigation and prosecution of foreign bribery and to strengthen the role of its tax and anti-money laundering frameworks (OECD, 2017[21]). However, Israel has not yet implemented recommendations to amend its Penal Law in relation to crimes committed abroad. In particular, the law should be amended to make criminal jurisdiction and sanctions of the foreign bribery offences independent of the foreign country's treatment of the offence (OECD, 2017[21]).

Figure 1.13. Perceived corruption is above the OECD average



Note: Panel B shows the point estimate and the margin of error. Panel D shows sector-based subcomponents of the "Control of Corruption" indicator by the Varieties of Democracy Project. Panel E 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 and otherwise the first round results. Panel F 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: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Project, V-Dem Dataset v12; Panel E: OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes; Panel F: OECD, Financial Action Task Force (FATF).

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Table 1.5. Past OECD recommendations on fiscal and tax policies and actions taken

Recommendations in past surveys	Actions taken since 2020
Establish an independent fiscal council.	No action taken
Make the temporary changes to the earned income tax credit permanent. Evaluate and consider expanding the programme further.	The 2019 changes of the EITC were phased out. As part of the cost of living support measures the EITC payout was temporarily increased in 2022.
Consider reducing tax breaks on savings in "advanced training funds", taking into account effects on income distribution and work incentives. In the medium term, streamline VAT exemptions and offset any regressive effects with an increase in existing welfare programmes.	No action taken
Review the preferential tax treatment under the Law for the Encouragement of Capital Investment with a view to better targeting the scheme.	No action taken
Reduce the difference between non-residential and residential property tax rates. Replace the area-based property tax with a transparent and uniform system based on property values.	No action taken

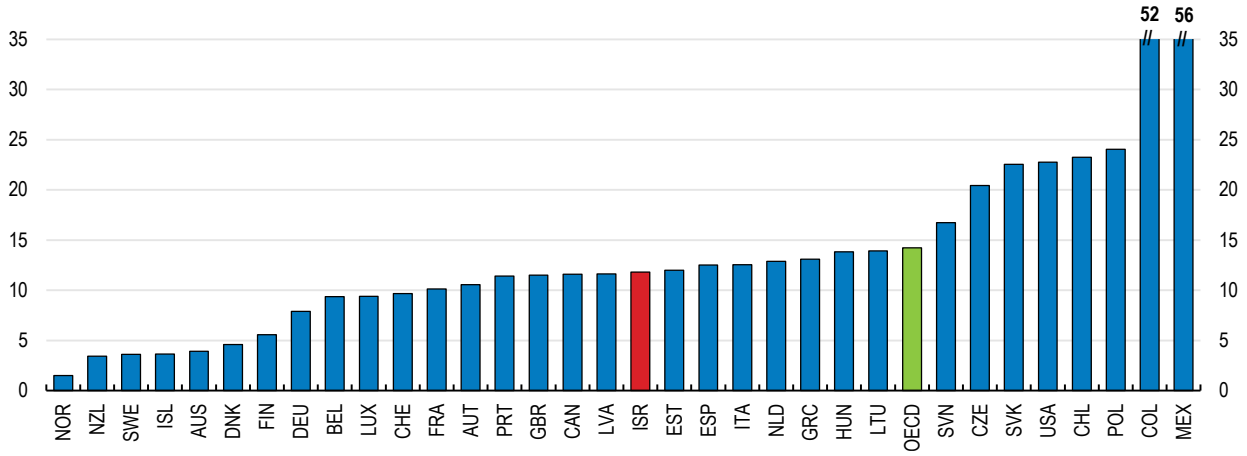
Preparing the health care sector for future challenges

The COVID-19 pandemic demonstrated the strength of the health care sector but also exposed some challenges

The health impact of the crisis, as measured by excess mortality, was around the average across the OECD countries (Figure 1.14). Israel's younger population, with only around 12% of the population aged 65 years and above compared to around 18% in the OECD, universal health insurance coverage and high-quality health care were factors limiting the health impact (Box 1.2). Moreover, the authorities allocated substantial additional resources to the health response, around NIS 30 billion (1.9% of GDP) from March 2020 to March 2022. Most importantly, Israel rolled out one of the fastest vaccination campaigns in the world (Figure 1.1, Box 1.3) and was one of the first countries to introduce a health pass ("Green Badge") in early 2021, which allowed vaccinated, recovered or negatively tested people to access hospitality, cultural and leisure activities (BOI, 2022[4]). The vaccination campaign and the introduction of the health pass allowed the authorities to avoid general lockdowns during subsequent waves of the pandemic, limiting the economic damage. While a lower share of the total population is vaccinated than in many OECD countries (Figure 1.15), this is largely due to Israel's significantly larger share of young people. Among the people aged 20 and above the vaccination rate (2 doses) reaches 85%.

Figure 1.14. The mortality impact of the pandemic has been similar to that in many OECD countries

Excess mortality 2020-2021, %



Note: Excess mortality is calculated by dividing the actual number of deaths by the average number of deaths over 2015-19.
Source: OECD Health Statistics database.

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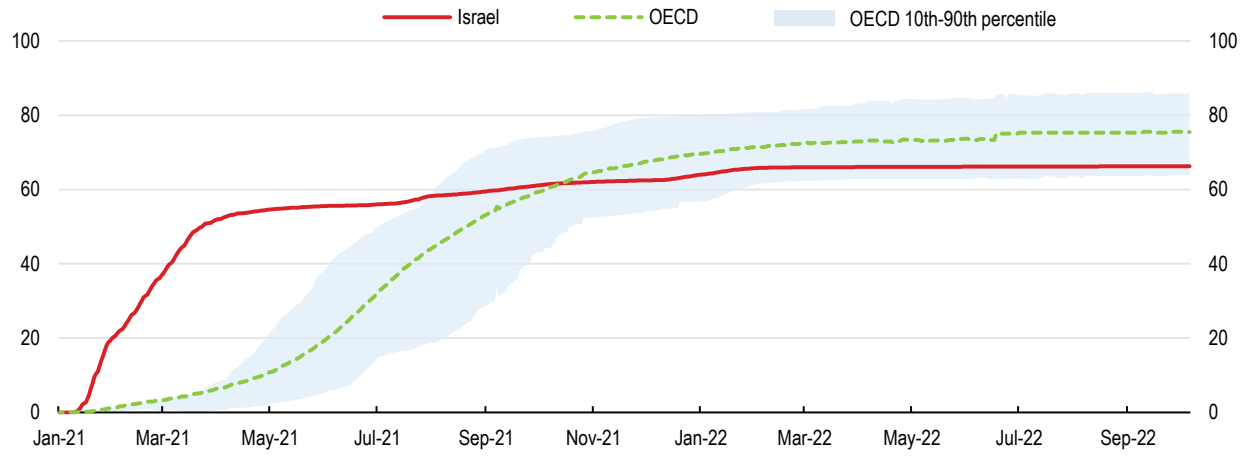
Figure 1.15. The vaccination campaign was very fast

People fully vaccinated against COVID-19, share of total population, %



Note: Unweighted average for OECD aggregate.
Source: OurWorldinData; OECD Demography and Population database; OECD calculations.

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The advanced state of telemedicine in Israel helped maintain medical services during the pandemic. The existing telemedicine infrastructure was able to absorb the decline in in-person visits (OECD, 2021[22]). A national digital health programme launched by the government in 2015 included various initiatives related to remote patient monitoring and remote service delivery. The four statutory health insurance funds offer tele-consultation services with many providers (OECD, 2019[23]). During the pandemic, tele-consultations accounted for one third of all doctor consultations in primary care. However, a lack of awareness of the services was one of the main reasons for the lower use of telemedicine among the Arab-Israeli population (Penn, Goldwag and Laron, 2021[24]).

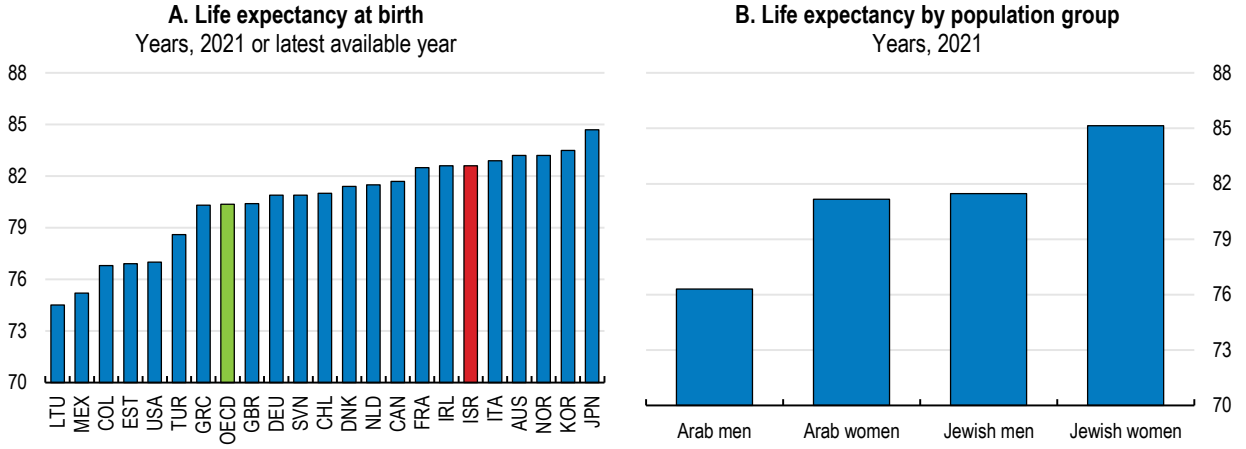
However, the health impact of the pandemic differed notably across population groups, mirroring pre-existing socio-economic divides in health status. Data until September 2021 show that infection rates were 2.5 times higher in Haredi localities compared to non-Haredi localities, reflecting more crowded living conditions but also higher rates of non-compliance with COVID-19 restrictions. Severe cases of infections leading to hospitalisations were particularly prevalent in Arab localities (Weinreb, 2021[25]). Despite success with targeted campaigns to enhance trust and tackle misinformation (see Box 1.3), vaccination rates remained lower among poorer population groups, especially Israeli-Arabs and Haredim (Davidovitch, Levi and Arazi, 2021[26]). This was due to higher vaccine hesitancy among these groups and some difficulties in accessing vaccination sites especially in smaller and Bedouin villages (Rosen et al., 2021[27]). However, the worse COVID-outcomes among Israeli-Arabs also mirror generally weaker health outcomes, partly reflecting behavioural and cultural factors (Weinreb, 2021[25]). Israeli-Arab men smoke far more than the rest of the population and the lung cancer incidence is 50% higher among Arab Israeli men than Jewish men. In addition, obesity, diabetes and heart diseases are much more prevalent in the Arab than in the Jewish population (Weinreb and Seela, 2021[28]). Overall, the life expectancy of Israeli-Arab men declined by more than a year during the pandemic and is about five years lower than that of Jewish men (Figure 1.16). General mortality rates are significantly higher in Arab localities (Davidovitch, Levi and Arazi, 2021[26]). The pandemic has thus been a stark reminder of the importance of health promotion, education and prevention programmes to narrow socio-economic divides in health outcomes. In 2021 Israel introduced a tax on sugar-sweetened beverages, similar to several other OECD countries in the last decade. Such a tax can be a useful tool to lower the consumption of these beverages (OECD, 2019[29]), and thus lower the risk of diabetes and other chronic diseases related to overweight.

Box 1.2. Overview of the Israeli health care sector

The Ministry of Health is responsible for the governance of the health system overseeing the performance of hospitals, health insurance funds, and health care professionals. The Ministry is responsible for providing a broad range of public health services. Health care is regulated by the national health insurance (NHI) law, which ensures universal access to health services for all residents. Each resident is free to choose from among four competing non-profit health insurance funds. The health funds are financed by the government within the framework of the NHI. They are obligated to provide their members with a broad government-determined benefits package, which includes hospital care, community-based care, and various preventive services. Some of these services are provided directly by the health funds, while others are purchased by the health funds from other providers.

Source: (Rosen et al., 2021[27])

Figure 1.16. Overall health outcomes are strong but substantially weaker for Israeli-Arabs



Source: OECD Health Statistics database; Israel Central Bureau of Statistics.

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The crisis exposed some capacity constraints in the health care sector. Health care capacity was relatively low in international comparison before the crisis. The number of acute care beds was relatively low, and very high occupancy rates have been a long-standing concern (Figure 1.17, (OECD, 2013[30])). In addition, 29% of survey respondents indicated in 2018 forgoing some medical care because of long waiting times (Brammli-Greenberg, Yaari and Avni, 2020[31]). Moreover, there is wide regional variation, with the number of beds particularly low in northern and southern districts. General intensive care beds constitute only 3% of all acute care hospital beds compared to about 5% in Europe and about 10% in the United States (State Comptroller, 2021[32]). Similarly, the number of doctors and nurses per population is below the OECD average (Figure 1.17). Israel's relatively young population and emphasis on primary care provision (which is less staff-intensive than hospital care) suggest that optimal hospital bed and staffing levels may lie below those in other OECD countries. However, according to a special report by the State Comptroller (State Comptroller, 2021[32]), the hospital system suffered from a shortage in manpower and intensive and acute care beds during the COVID-19 pandemic. The private health care sector partly compensated for reduced elective surgeries in the public sector. In addition, the government supported the recruitment of 600 physicians, 2000 nurses and 700 auxiliary positions during the crisis, which were eventually made permanent. This is welcome but sustainably strengthening the resilience of the health care sector will require addressing structural challenges as discussed in the next sections.

Box 1.3. Drivers of Israel's fast vaccination campaign

Israel started its vaccination campaign in December 2020. By April 2021 already about 70% of the adult population was fully vaccinated (two doses), several months before other countries achieved such a rate (BOI, 2022[4]). Israel was also one of the first country to offer its citizens a third vaccination from July 2021, and a fourth vaccination to senior citizens and high-risk groups in December 2021. Several factors contributed to the remarkable speed of the vaccination campaign (Waitzberg and Davidovitch, 2021[33]):

Early and sufficient procurement of vaccines: The government procured vaccines early from Pfizer/BioNTech in exchange for data to research the vaccine efficacy. Israel provided Pfizer/BioNTech weekly updates on the progress of its immunisation programme, sharing anonymised aggregate epidemiological data such as the number of confirmed COVID-19 cases, hospitalisations, ventilated patients, and deaths, as well as age and other demographic data (OECD, 2021[34]).

Highly digitised and health fund-based health care system: Nearly the entire Israeli population is included in one of the four electronic medical records (EHR) systems developed by the health funds (OECD, 2019[23]). The EHRs capture detailed patient-level information, including demographics, diagnostic and testing information, and drug utilisation data and support the sharing of information among physicians, laboratories, diagnostic centres, hospitals and patients (OECD, 2020[35]). This well-developed IT infrastructure allowed to provide research data quickly. The up-to-date and easily accessible health data by the health funds helped stratify vaccination efforts based on age and other risk factors and to actively contact clients and make vaccination appointments.

High-quality primary care network: Vaccinations were mainly rolled out via the primary care network including in remote areas. Nurses were authorized to vaccinate without physicians being present. As most outpatient nurses are employed by health funds, they could be rapidly deployed to the vaccination campaign.

Measures to enhance compliance: The Ministry of Health and the Israeli Medical Association launched awareness campaigns. The health funds together with civic society groups informally advertised daily the vaccination sites with remaining doses available for non-priority (young) people. Tailored out-reach for cultural minorities (Haredim and Israeli-Arabs), involving trusted community leaders, helped to enhance trust and tackle false information (OECD, 2021[36]).

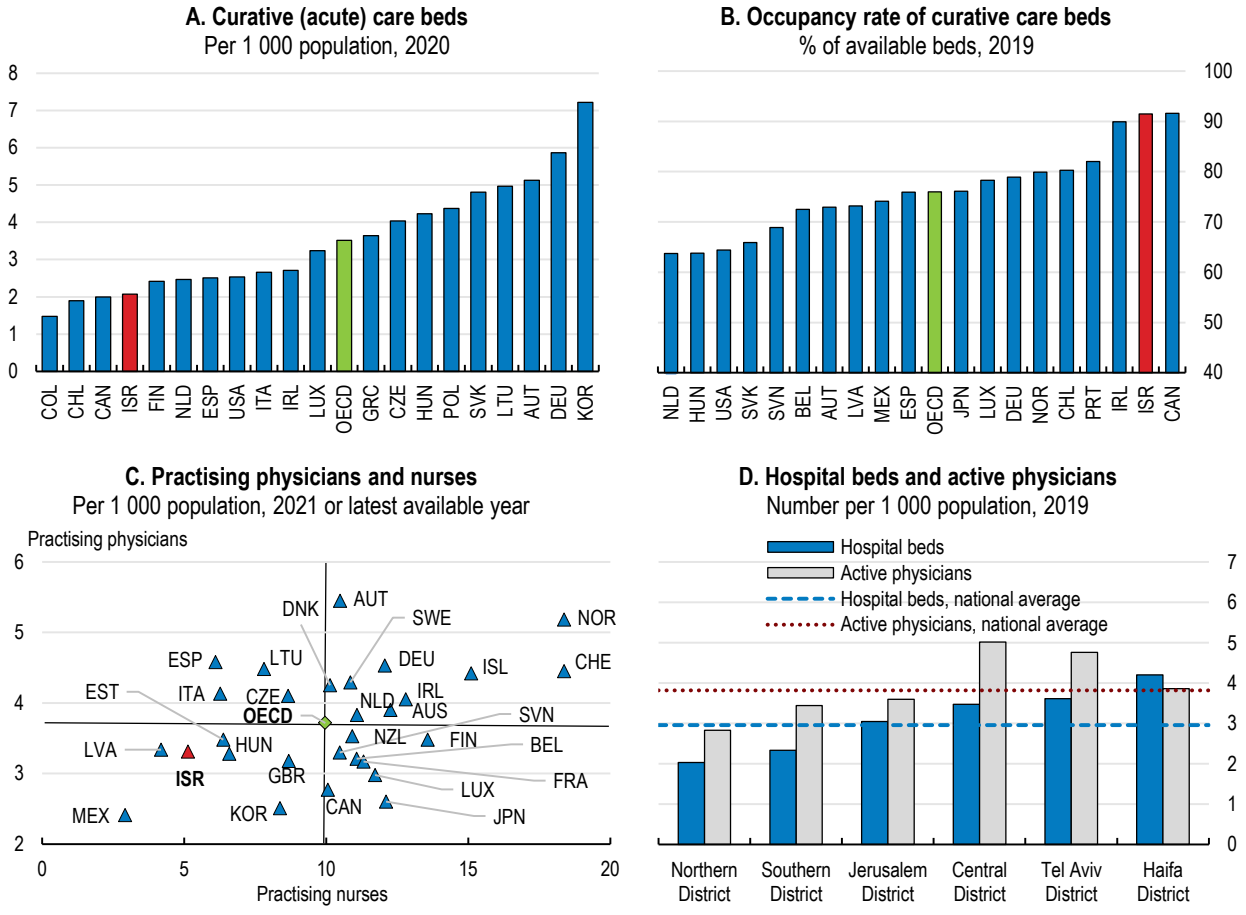
Financial and non-financial incentives: The government financed the vaccination campaign and provided premia to health funds if they reached particular vaccination target rates among their client base. In addition, the health pass ("Green Badge") policy, the imposition of costs of testing on those who chose not to get vaccinated and shorter isolation periods for vaccinated persons served to encourage vaccinations (BOI, 2022[4]).

Ensuring adequate numbers of health care workers

An ageing workforce and insufficient domestic training will aggravate labour shortages in the health care sector in the future. A large proportion of doctors are likely to retire in the coming years (Figure 1.18). In addition, the number of domestic medical graduates is very low despite a doubling of graduates in the last decade (Figure 1.18, Figure 1.19). As a result, Israel's health care sector relies to a large extent on foreign-trained physicians. Nearly 60% of doctors in Israel in 2020 obtained their first medical degree outside the country, the highest rate in the OECD (OECD, 2021[22]). While this largely reflects strong immigration inflows in the 1990s, nearly half of all doctors who have obtained their first medical degree abroad were born in Israel. The large number of Israeli students studying abroad may reduce education costs for the country, but it raises at least two concerns: i) it complicates long-term planning of how many doctors will

enter the medical profession; ii) it exposes the health sector to heterogeneity in the quality of medical education abroad.

Figure 1.17. Health care resources are lower than in most OECD countries



Note: In Panel A, 2019 for USA. In Panel C, data for FRA refer to Professionally active nurses; 2020 data for ISR.
Source: OECD Health Statistics database; OECD Regional Statistics database.

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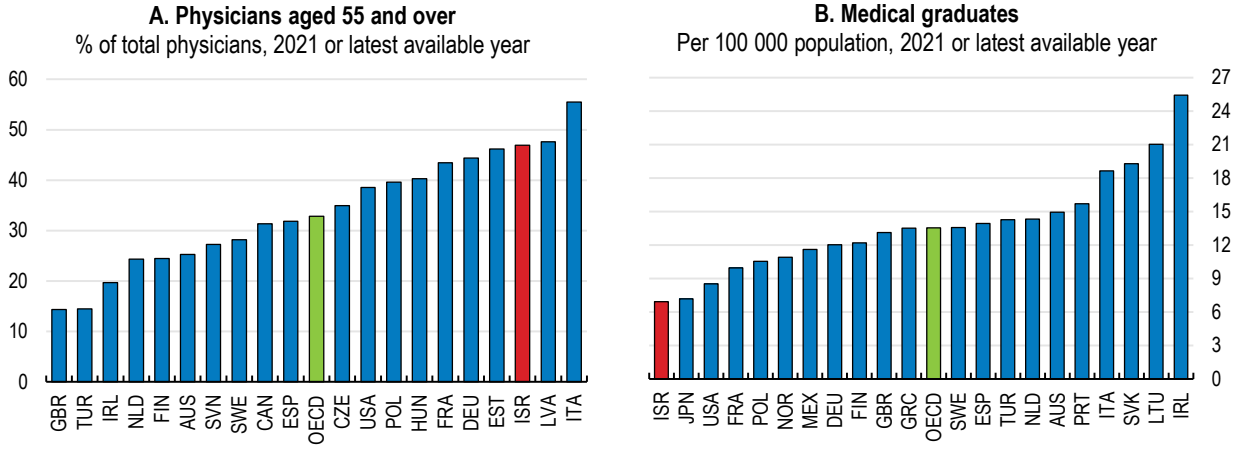
Figure 1.18. Many physicians head for retirement and too few new physicians are trained



Note: In Panel B, 2020 data for Israel.
Source: OECD Health Statistics database.

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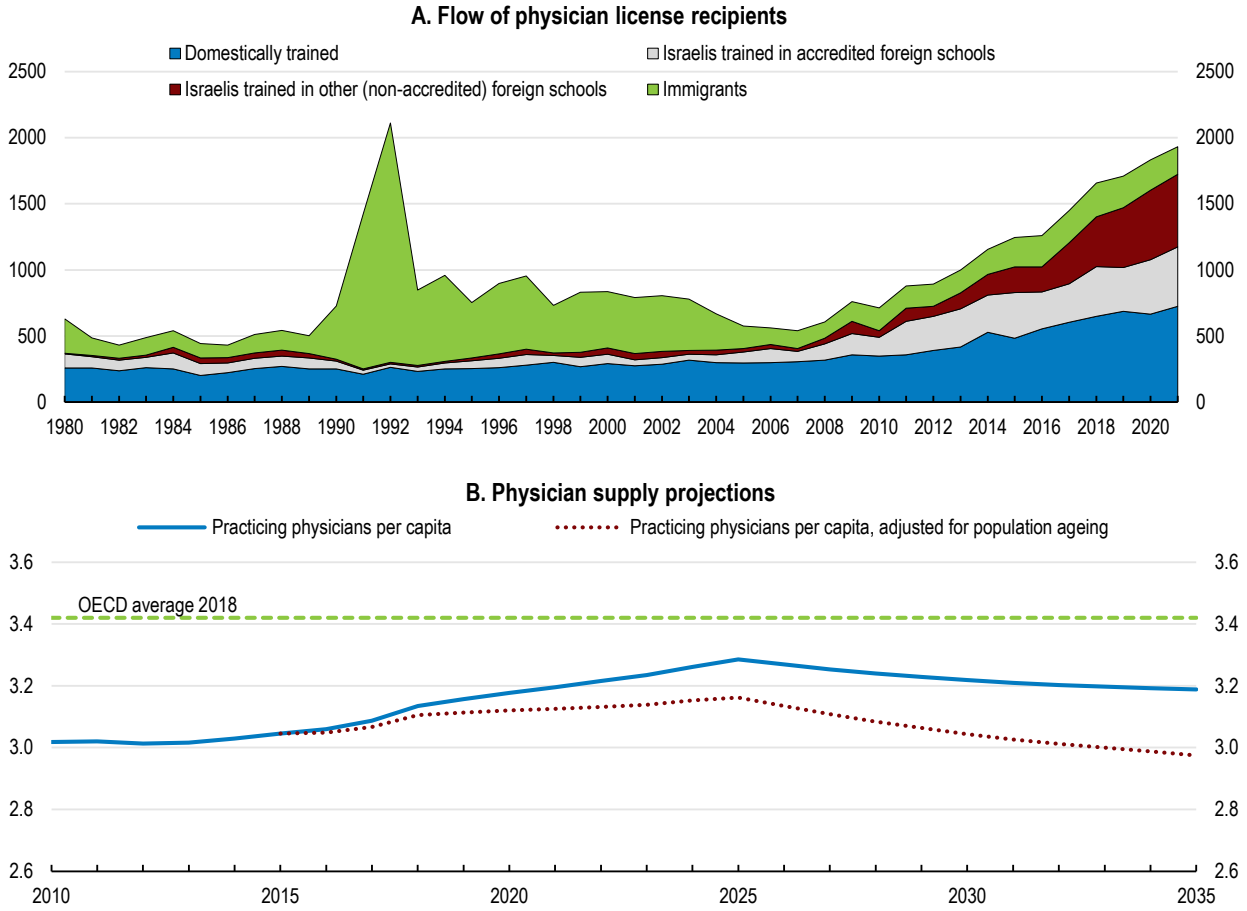
A recent reform to ensure the quality of the medical education received abroad, will aggravate shortages of physicians especially in the northern and southern districts (periphery henceforth). In 2018, the Ministry of Health tightened the criteria for obtaining a medical license and shortened the list of foreign medical faculties that are recognized in Israel ("Yatziv reform"). As a result, most medical schools in countries including Moldova, Armenia, Georgia and Romania were disqualified. These schools had accounted for about one-third of all new doctors in 2021 (Figure 1.19). From 2026, students from these schools will not be able to participate in licencing exams. The reform will therefore accelerate the future decline of the number of doctors per capita (Figure 1.19). In addition, it will hit particularly hard hospitals in the periphery. About 60% of newly-trained doctors in the northern and southern district are from foreign schools that will be disqualified, aggravating the physician shortage in these districts (Figure 1.17).

Several complementary strategies are needed to increase the supply of doctors in the future. First and foremost, the number of Israeli students admitted in medical schools in Israel needs to increase further as quickly as possible. This can be achieved by increasing the student intakes in existing medical schools. Moreover, foreign medical students who do not commit to practice in Israel after their studies should be charged tuition fees that reflect the costs of their education. Second, given the capacity constraints in Israeli medical schools, financial support (in the form of loans and grants) can be provided to Israeli students to obtain their first medical degree in accredited schools abroad as the government plans (Ofakim programme) and as is done in Norway for example. Third, to increase the number of internship and residency training posts of both domestically-trained and foreign-trained students to complete their training in Israel, the range of settings where postgraduate training can occur (e.g. in primary care settings and to a lesser extent private facilities) should be expanded.

Incentives for newly-trained doctors can be strengthened to reduce the shortage of physicians in the periphery. A grant programme to incentivise doctors to settle in these districts was cancelled as evaluations showed that the programme subsidised many people who would have moved to the periphery in any case. More recently, the authorities initiated a programme (Ilanot programme) to subsidise tuition at medical schools in the periphery for qualified students from the periphery, based on OECD research (Ono, Schoenstein and Buchan, 2014[37]) that these students are most likely to stay in the periphery after their studies. In addition, any new financial support programme for students going to study in accredited schools abroad could make it more advantageous for students to pursue their postgraduate training and work in the periphery, for example by transforming part of their loan into a non-reimbursable bursary. Alternatively, work requirements for subsidised foreign trained students could be differentiated according to the place of work. For example, the Becas Chile programme, which provides scholarships for Chileans to obtain PhDs abroad, cuts the required number of years that scholars need to return to Chile in half for those who live and work in the periphery.

Israel should consider reforming the governance of health workforce planning. The Ministry of Health (Administration for Strategic and Economic Planning) in cooperation with the Central Bureau of Statistics have recently improved their capabilities to project the future supply and demand of physicians. In contrast to many other OECD countries, in Israel medical licences are given for life without the need for renewal. This complicates the planning process as no data is available on whether licensed doctors are still active. Therefore, more significant steps to improve the planning capacity are needed. For example, an independent body like the Advisory Council on Medical Manpower Planning (ACMMP) in the Netherlands could be established to gather all the main stakeholders. The ACMMP is composed of three groups of stakeholders (medical associations, training institutions and health insurance companies) with each group having equal weight in the overall management and decision-making processes. Such an institution could be tasked with providing regular and independent assessments about workforce projections and advising on student intake to fill the projected needs, reflecting the views of the main stakeholders.

Figure 1.19. The supply of physicians has increased but is insufficient to keep up with population growth and ageing



Note: From 2026 graduates from non-accredited foreign medical schools will not be able to participate in domestic licencing exams.
Source: Ministry of Health, Administration for Strategic and Economic Planning.

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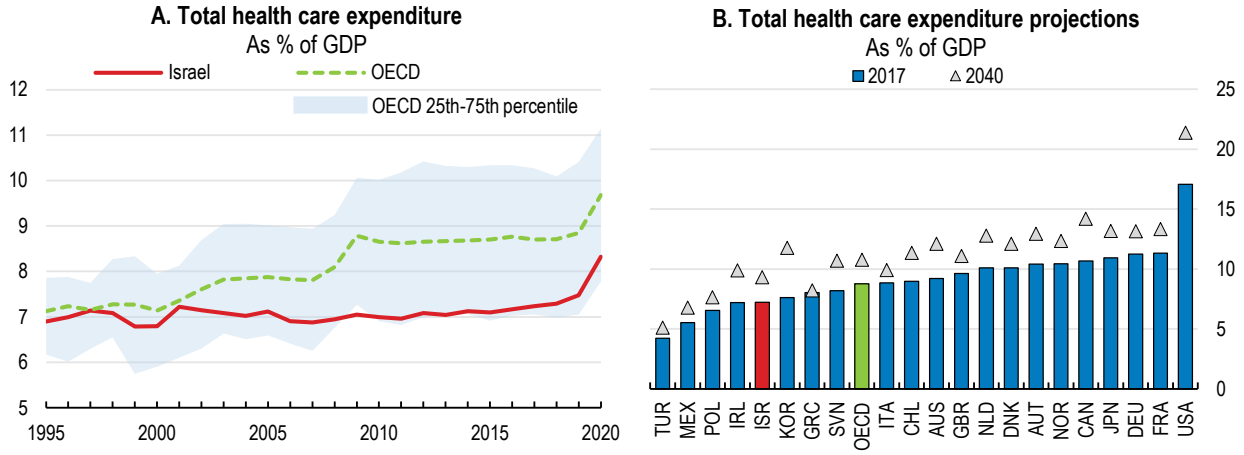
In the short term, the potential to shift tasks between professions, for instance from doctors to nurses, should be further exploited. In recent years, there has been significant progress in this direction with the development of the role of advanced practice nurse - a nurse with special training who is permitted, under certain restrictions, to diagnose illnesses, write prescriptions, and carry out certain medical procedures. In addition physician assistants, who are certified to practice medicine under the supervision of a physician, are becoming increasingly common in Israel, primarily in emergency medicine. The further development of these new positions has the potential to alleviate shortages in the healthcare workforce, particularly in the periphery (Davidovitch, Levi and Arazi, 2021[26]).

Ensuring equal access and efficiency in the health care sector

Israel achieves its overall good health outcomes with relatively limited financial resources. Total health care spending in percent of GDP is lower than on average in the OECD and remained relative stable in the past two decades in contrast to the strong increase in most other OECD countries (Figure 1.20). Even adjusting for Israel's younger population, recent OECD research suggests that per capita health spending is still about 15-20% below the OECD average (OECD, 2021[38]). The low spending is partly explained by the focus on the efficient delivery of primary care, including through larger health clinics and the organisation of doctors working in the community into teams, which allows them to deliver follow-up support, preventive activities and regular monitoring (OECD, 2016[39]). Health spending is projected to

increase according to OECD estimates due to population ageing, cost pressures from new technologies, income effects and assumed lower productivity of the health care sector compared to the rest of the economy (Baumol effect). Nevertheless, spending is projected to remain below the OECD average in 2040 (Figure 1.20).

Figure 1.20. Total health expenditure is low



Source: OECD Health Statistics database; OECD (2021), OECD Reviews of Health Systems: Brazil 2021, OECD Reviews of Health Systems, OECD Publishing, Paris, https://doi.org/10.1787/146d0dea-en; OECD calculations.

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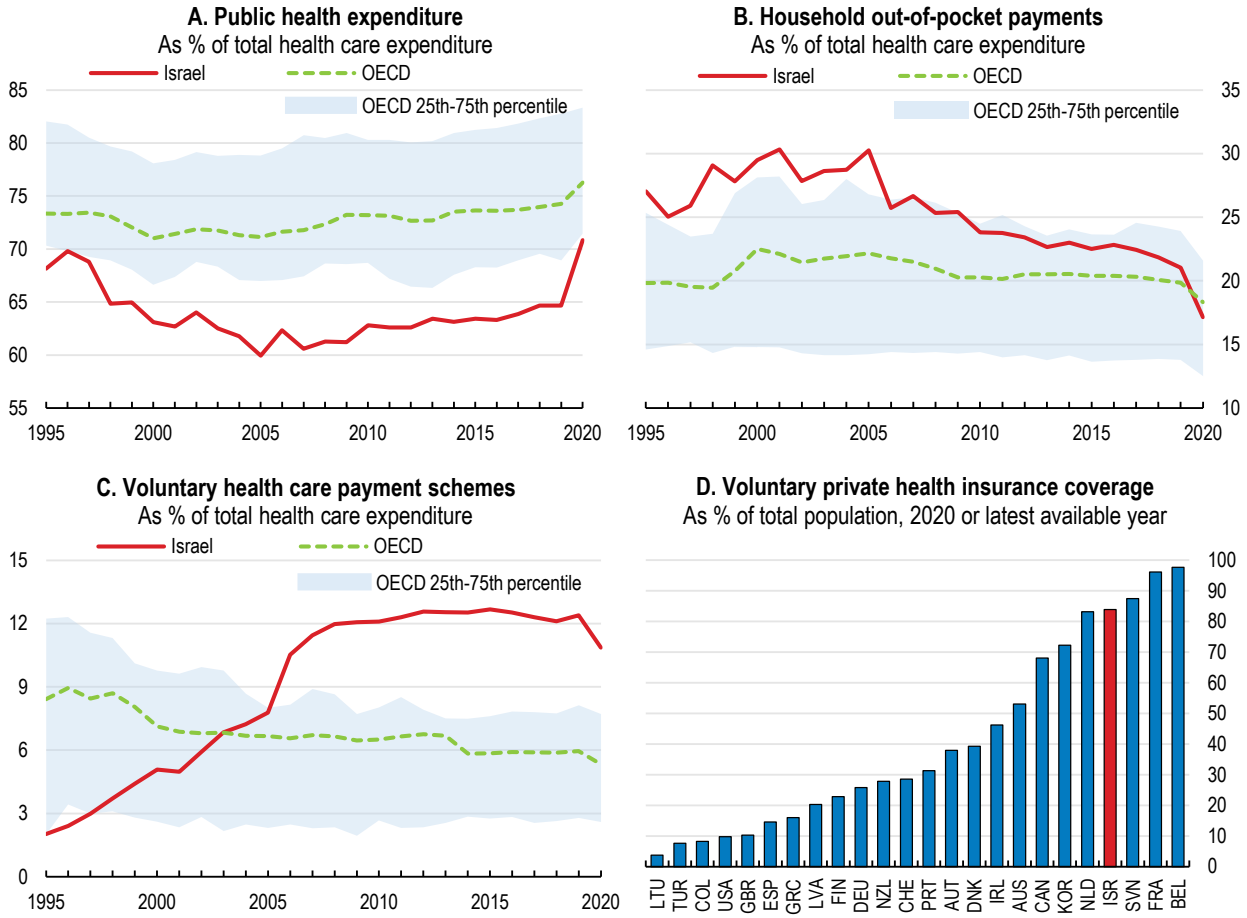
The low share of public spending in total health care spending raises equity concerns. The share of public expenditure which finances the universal health care basket has fallen sharply from 1995 to 2005 after a major reform of the health care sector. The share has since then slightly increased again, but remains well below the OECD average (Figure 1.21). Households' out-of-pocket expenditures have fallen since the mid-1990s and are now close to the OECD average. Co-payments are generally low and exemptions and discounts, including for chronically ill patients and elderly, exist. In contrast, the voluntary health insurance (VHI) market has expanded strongly. VHI is provided by both the health funds and private insurance companies and covers services not (e.g. adult dental care) or partially (e.g. physiotherapy) included in the universal health care basket. VHI also offers enhanced choice of providers or faster access to care in the private health care sector. Over 80% of the population is covered by VHIs. Nevertheless, VHI coverage is lower among low-income groups (Chernichovsky, 2019[40]). Moreover, survey evidence suggests that 10% of people forwent medical treatment due to costs in 2018, reaching 20% in the lowest income quintile (Brammli-Greenberg, Yaari and Avni, 2020[31]).

The universal health-care basket (NHI) should remain at the core of the system, requiring adequate public funding. Funding for the NHI basket needs to strike a balance between maintaining a sufficiently broad and updated basket to ensure affordable and equal access to high-quality health care while keeping costs of the health care sector in check. Frequent deficits of the health funds and hospitals in the past suggest that the budget envelope of the NHI has not always been sufficient to cover costs, although it also reflects a desire to stimulate efficiency gains. It is therefore welcome that the demographic component in the NHI funding formula has been recently adjusted to better account for population ageing. The approach to update the treatments and technologies included in the NHI basket is formal and transparent, based on recommendations of a committee comprising all relevant stakeholders. Yet, stronger weight could be given to the addition of preventive technologies compared to therapeutic technologies (Angel, Niv-Yagoda and Gamzu, 2021[41]).

Figure 1.21. Public health expenditure is low and voluntary private insurance widespread



Note: Panel D, primary private health insurance coverage is excluded for Germany, Spain and the United States.
Source: OECD Health Statistics database; and OECD calculations.

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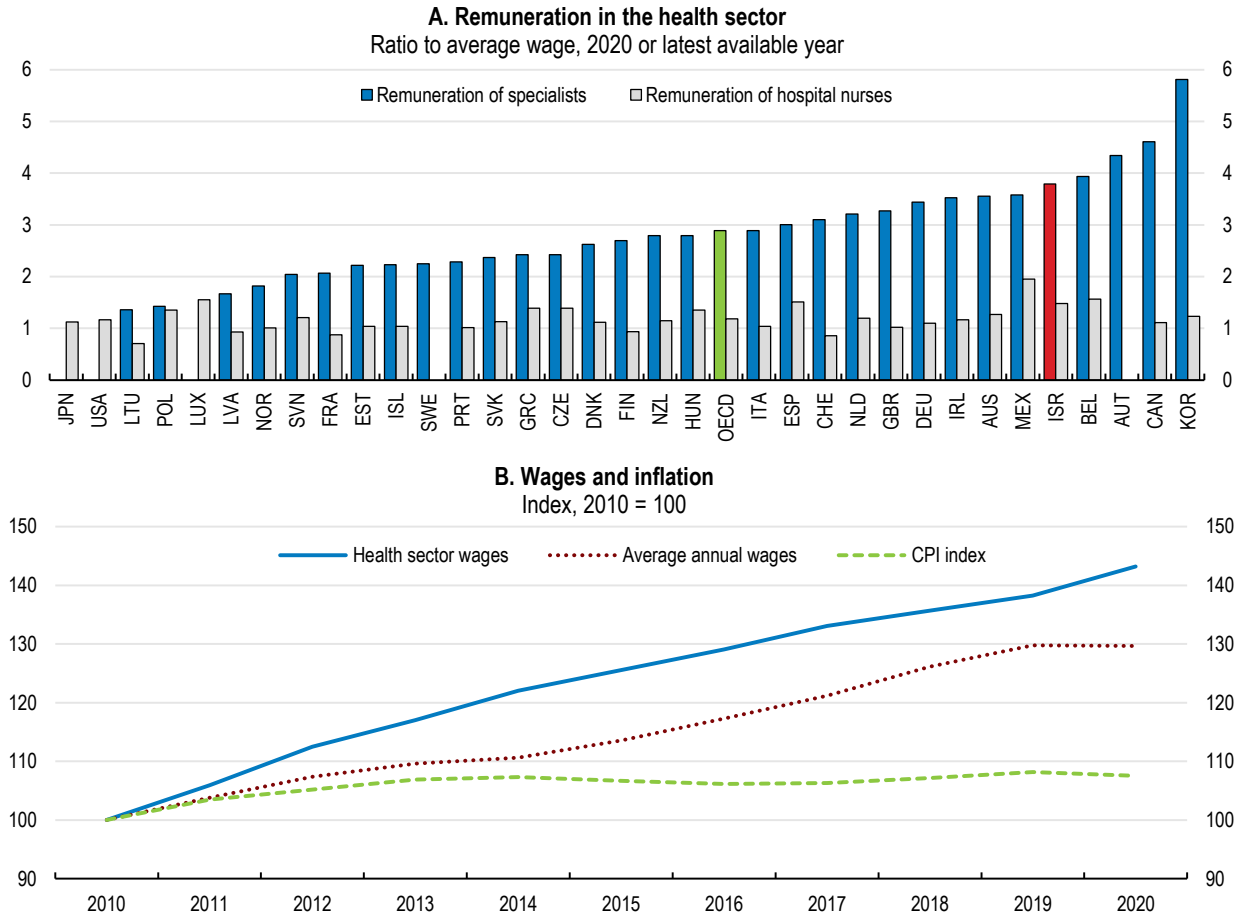
Containing wage pressures in the health care sector would create room for an expansion of the volume of care. Reflecting price developments in the NHI funding formula has often been contentious. Prices of health care goods and services are about a third higher than on average in the OECD (OECD, 2021[22]), driven by strong wage increases of health care workers and internationally high wages especially for specialist physicians and nurses (Figure 1.22). This reflects labour shortages and fierce competition for health care workers between the four health funds, and between the public and private healthcare sectors (Angel, Niv-Yagoda and Gamzu, 2021[41]). Containing wage pressures will therefore first and foremost require boosting the supply of health care workers as discussed above. In addition, a wide variety of contract types between physicians and the health funds exists, hampering oversight of wage developments. Encouraging voluntary standardisation of physicians' contracts with health funds, according to specialty and geographic region, could improve transparency and help to reduce wage pressures (Angel, Niv-Yagoda and Gamzu, 2021[41]).

Figure 1.22. Health sector wages are high and increasing fast



Note: In Panel A, data refer to the average of remunerations for salaried and self-employed, when available.
Source: OECD Health Statistics database; OECD Earning Statistics database; Ministry of Finance; and OECD calculations.

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Improving reimbursement systems in the health care sector

The payment mechanism of the health funds should be regularly updated and further refined to limit harmful forms of competition. The universal health insurance (NHI) budget is allocated to the four health funds mainly based on prospective payments according to a capitation formula. The capitation formula was last updated in 2010 and takes only into account age, gender, residence (periphery vs. centre) and a few chronic conditions of the client base. The health funds are by law required to accept every client. However, if payments to the health funds do not adequately reflect projected costs, the funds have an incentive for back-door cream skimming activities and service distortion. For instance, there is some evidence that health funds engage in greater marketing efforts to attract more profitable young clients and offer less services in regions with worse health outcomes (Brammli-Greenberg, Glazer and Shmueli, 2018[42]). To reduce these incentives the capitation formula could be refined to include socio-economic variables and variables reflecting high-cost genetic conditions. Alternatively, compensations for patients with exceptionally high expenditures could be guaranteed retrospectively to enhance risk-sharing between the government and the funds (Brammli-Greenberg, Glazer and Waitzberg, 2019[43]). However, such risk-sharing should be moderate so as not to increase moral hazard. Greater use could also be made of retrospective pay-for-performance payments for prevention efforts, e.g. for reducing diabetes or high blood pressure.

Further improvements can be made to the reimbursement system of hospitals to strengthen price signals. Hospitals are mainly reimbursed based on a mixture of per diem mechanisms and diagnosis-related group (DRG) funding (more precisely Israel uses procedure-related groups (PRG)). The importance of DRG payments has increased over time, accounting for about a third of hospital revenues in 2019. However, a number of factors question the cost-reflectiveness of DRGs, limiting their effectiveness as steering tools for the provision of hospital care and contributing to over-provision or under-provision of certain procedures (Waitzberg et al., 2020[44]). First, DRGs are not frequently updated, and they do not reflect the complexity of cases and hence do not properly reflect the actual costs of each service. Second, health funds can negotiate discounts to DRGs with hospitals and are entitled to automatic discounts if caps to hospital reimbursements are reached. Third, hospitals in deficit have frequently received retrospective subsidies. A recent reform aims to eliminate the practice of retroactively subsidising hospitals in deficit and instead to allocate a monthly fixed budget to hospitals based on transparent criteria (e.g. size, location).

Reforming the governance of government-owned hospitals could help strengthen incentives to provide care efficiently. The Ministry of Health owns and manages 11 out of the 27 general hospitals, accounting for about half of the acute-care hospital beds. Government ownership of hospitals has potential benefits such as greater commitment of these hospitals to national objectives. However, there have been long-standing concerns that the governance structure leads to an inherent potential conflict of interest, as the Ministry of Health is both the main regulator of the health care system as well as a major provider. For example, there may be a reluctance to update DRGs for procedures that are profitable for government-owned hospitals, and government hospitals have benefitted more strongly from retrospective subsidies to cover their losses. Several committees over the years have recommended to shift the management of the government-owned hospitals to a separate entity (State Comptroller, 2020[45]). However, progress has proven difficult. In 2016, the management of the hospitals was shifted to a separate entity within the Ministry of Health in an effort to create a better separation between the regulatory and management functions within the Ministry. However, so far this has not alleviated the concerns (State Comptroller, 2020[45]).

Improvements in the reimbursement system of the health care system crucially depend on further efforts to collect, process and disseminate cost and quality data. For example, a database to evaluate the different patient-level parameters influencing healthcare spending could be developed to continuously improve the capitation formula (Angel, Niv-Yagoda and Gamzu, 2021[41]). Insufficient hospital cost data has also been an important barrier to further refine, update and reflect the complexity of cases in the DRG systems. The gradual implementation of a new automated costing system (Tesher) across hospitals is a step in the right direction. Gaps in quality of care data also hamper the evaluation of payment system reforms. For example, a reliable and relevant database on waiting times in the health system does not exist (Barnea, Niv-Yagoda and Weiss, 2021[46]). In the Netherlands among other OECD countries, the government introduced the mandatory publication of hospital waiting times. Steps in this direction are planned and median waiting times for five speciality care services in primary care are published.

Mitigating tensions between the public and private health care sectors

Interactions between the public and private health care system have created tensions and inefficiencies. Prices for privately-provided health care services are generally higher and costs are lower, as private providers can cream-skim profitable procedures on low-complexity patients and receive indirect subsidies from the public sector (e.g. training of medical personnel, emergency facilities). This competitive advantage of the private sector leads to a migration of scarce human resources to the private system, partly in the form of doctors with dual practice allocating more time to their private practice. This has created a vicious cycle of wage pressures, underutilized infrastructure (e.g. operating rooms) and longer waiting times in the public system (Chernichovsky, 2019[40]), leading in turn to stronger demand for services in the private sector financed by voluntary health insurance. The authorities have taken some steps to mitigate this problem, including by restricting the possibility for doctors to refer patients from the public sector to their

own private practices. In addition, physicians who have benefitted from subsidised medical training could be required to spend a certain amount of time in the public sector.

There is scope to further enhance regulation of the commercial health insurance market. To level the playing field between the public and the private sector, regulation could set maximum prices in the private sector for medical services also provided by the public sector. In addition, the authorities could consider charging a fee on the private health care sector that reimburses the public sector for certain functions it performs for the private sector (e.g. emergency facilities, training).

Efforts to increase transparency and financial literacy in the insurance market should continue. Around 80% of households have the health funds' VHI and 44% have commercial insurance. Many households have both types of insurance, leading to overlapping and redundant insurance coverage and inefficiencies (State Comptroller, 2020[47]). This is also suggested by the fact that commercial insurance providers have significantly lower loss ratios compared to the health funds' VHI and insurances in other sectors, with the exception of group health insurances. This underscores the importance of continuing the authorities' efforts to promote product standardisation and to increase product transparency, for example by mandating better and easier accessible information, and to raise financial awareness in the general population. A recent reform of the commercial health insurance that inter alia prohibits overlapping commercial insurance coverage in some cases and the recent development of digital tools for the insured to assess the extent of their coverage and detect double coverage are therefore welcome. In addition, a clear separation between the health funds VHI and commercial VHI policies should be further encouraged, so that these insurance policies offer complementary rather than duplicate coverage.

Accelerating the digital transformation to boost productivity

Speeding-up the digital transformation has the potential to boost productivity growth and reduce Israel's productivity divide. OECD research has shown that the adoption and diffusion of digital technologies constitutes a key productivity lever (Gal et al., 2019[48]) (Sorbe et al., 2019[49]). In Israel, as in other OECD countries, the pandemic strongly accelerated the use of online technologies and services, such as telework, remote education and healthcare, and the use of e-government services (BOI, 2022[4]). While digitalisation can boost productivity, it also poses significant risks that existing socioeconomic gaps are aggravated if the uptake of digital technologies is uneven across firms and households.

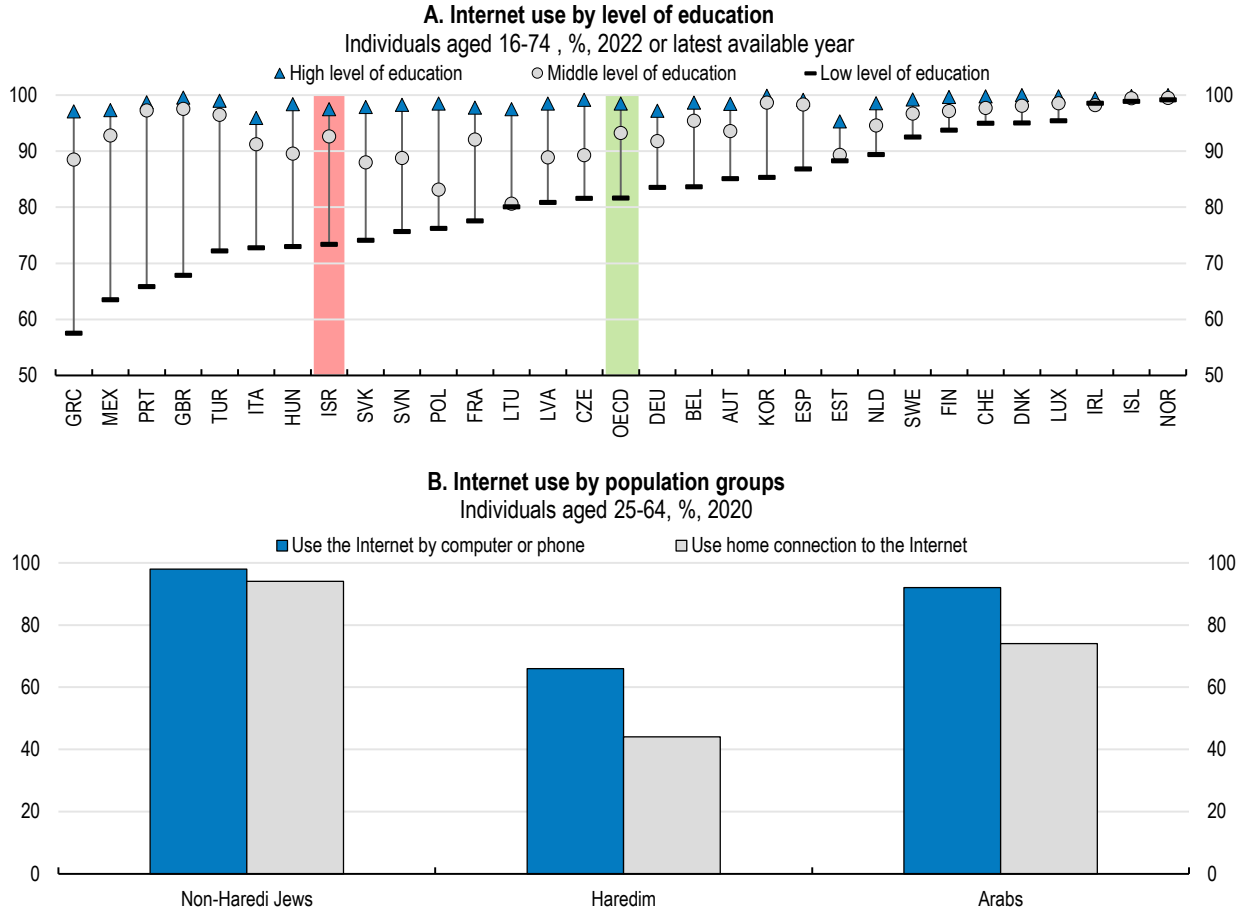
The digital divide in Israel is large. The gap between internet use of people with low and high education is particularly high (Figure 1.23). This largely reflects differences in the use of the internet across population groups, with Israeli-Arabs and Haredim using home internet connections much less frequently (Figure 1.23). Haredi households often do not have internet access at home or smartphones for religious reasons. Similarly, the share of students having good access to remote learning (with a quiet place and a computer connected to the internet) is much lower among the Israeli-Arabs and Haredim (Bahar, 2020[50]). Analysis of teleworking patterns during the pandemic also revealed lower uptake among Israeli-Arabs and in peripheral districts even after controlling for factors such as industry of employment and education (BOI, 2022[4]). Removing barriers to telework for residence in peripheral districts, such as gaps in digital infrastructure and skills, has the potential to open up new job opportunities in the centre of the country, for example in the high-tech sector (*Chapter 2*).

Firms lag in the adoption of many digital tools and technologies. ICT investment is slightly higher than on average in the OECD but lags significantly behind top performing countries like Switzerland and Sweden (OECD, 2022[51]). ICT investment is also very concentrated, with ICT services sectors accounting for around a third of total ICT investment. More importantly, firms lag in the adoption of advanced digital tools and technologies compared to top performing countries (Figure 1.24). The gap is particularly pronounced outside of the high-tech sector, such as in traditional manufacturing industries and wholesale and retail trade, and food and accommodation services, as well as in smaller firms (Figure 1.24, (Be'ery and Esperanza, 2021[52])). The gap in digital technology adoption therefore mirrors the broader productivity

divide in the economy. A recent national committee (Committee for Economic Advancement of the Commerce and Service Sectors, 2021) highlighted the importance of investing in technology adoption to boost productivity in traditional services sectors in Israel, together with fostering competition and skills.

Policymakers have different tools to boost digital adoption. This includes better availability of high-speed broadband, enhanced access to government services, boosting digital skills, complementary investments in intangible assets (e.g. R&D, organisation, management), and lowering regulatory barriers to competition to foster business dynamism (Pisu et al., 2021[53]). Recent research also highlights a lack of skills, access to funding and complementary investments as the main barriers to digital adoption by firms in Israel (Golstein-Galperin et al., 2022[54]). Analyses on the digital transformation hinges on the availability of timely and reliable data. Data collection on the adoption of digital tools by firms, conducted by the statistical office for the first and only time so far in 2020, should henceforth be carried out systematically.

Figure 1.23. The digital divide is large



Note: In Panel A, 2021 data for Israel.
Source: OECD ICT Access and Usage by Households and Individuals database; and Israel Central Bureau of Statistics.

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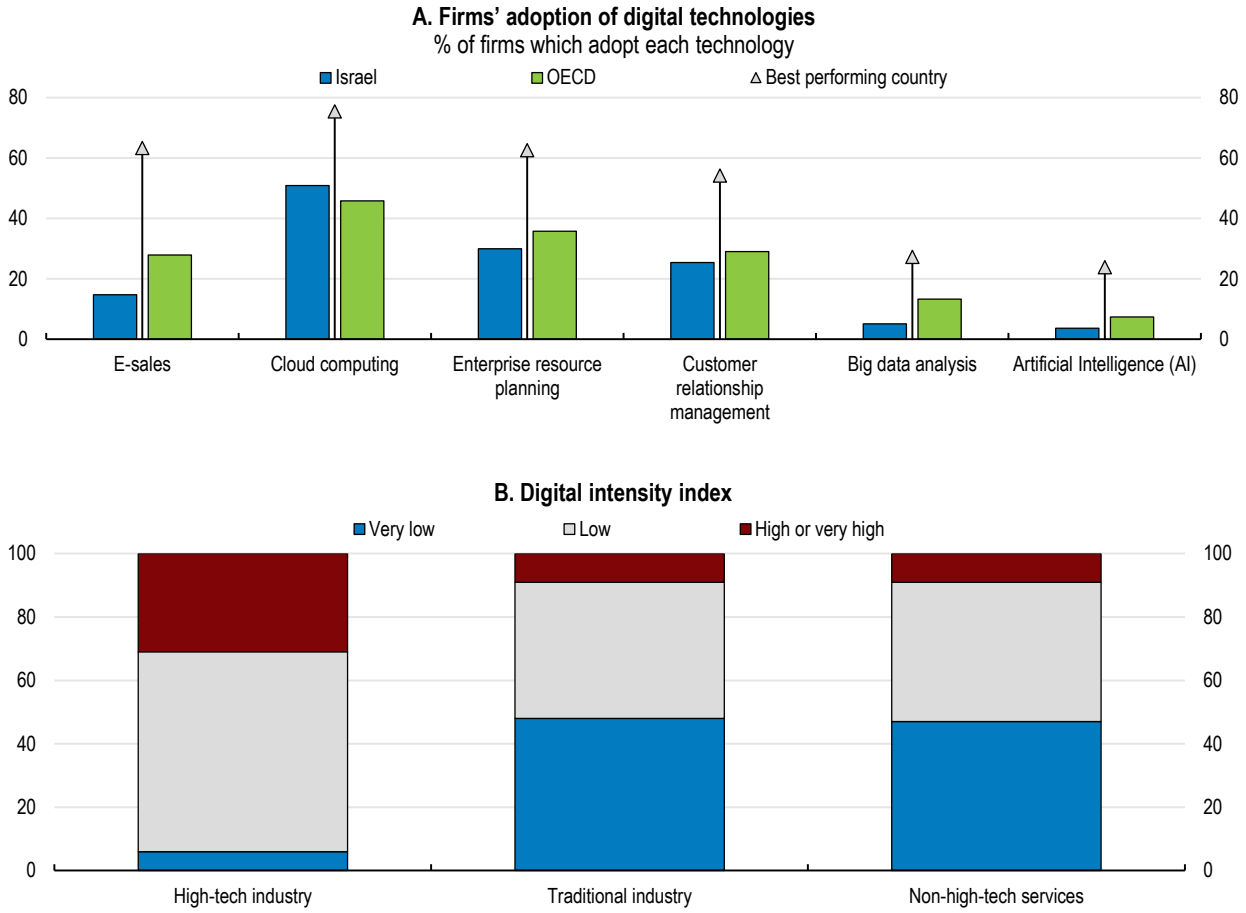
Figure 1.24. Firms in traditional sectors lag in the adoption of digital technologies



Note: In Panel A, the OECD aggregate is an unweighted average across all OECD countries for which data are available, taking the latest available year (ranging from 2014 to 2021, depending on the country and on the technology). For Israel, data refer to 2020. Panel B, Digital Intensity Index (DII) is a composite indicator based on an enterprise's use of 12 selected digital technologies. The DII distinguishes four levels of digital intensity for each enterprise: 0 to 3 points entails a very low level of digital intensity, 4 to 6 – low, 7 to 9 – high and 10 to 12 points – very high.

Source: OECD ICT Access and Usage by Businesses database; G. Be'ery and I. Esperanza (2021), "The digital gap of the business sector in Israel", Ministry of Economics and Industry.

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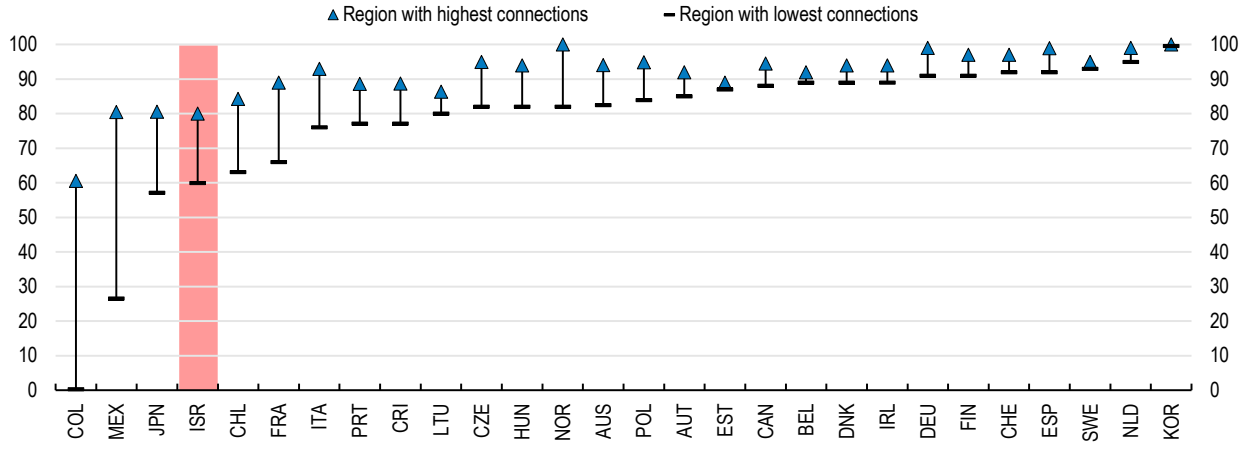
Improving communication infrastructure and digital government services for all

Access to reliable and fast fixed and mobile broadband connections constitutes the backbone of a digital economy. Recent OECD research suggest that increasing access to high-speed broadband can yield large productivity gains (Sorbe et al., 2019[49]). While mobile broadband penetration is high in Israel, the share of households with a fixed broadband connection is lower than in other OECD countries and the difference between regions is large (Figure 1.25, (OECD, 2022[55])). Connections are particularly low in Jerusalem, which likely reflects the larger share of Haredi households in Jerusalem. However, connections are also low in the northern and southern districts, where many Israeli-Arabs live.

Figure 1.25. Broadband connections vary widely across regions

% of households with Internet broadband connections, 2020 or latest available year



Note: Data refer to the OECD large regions definition (territorial level 2 or TL2). 2018 data for Israel.
Source: OECD Regional Statistics database.

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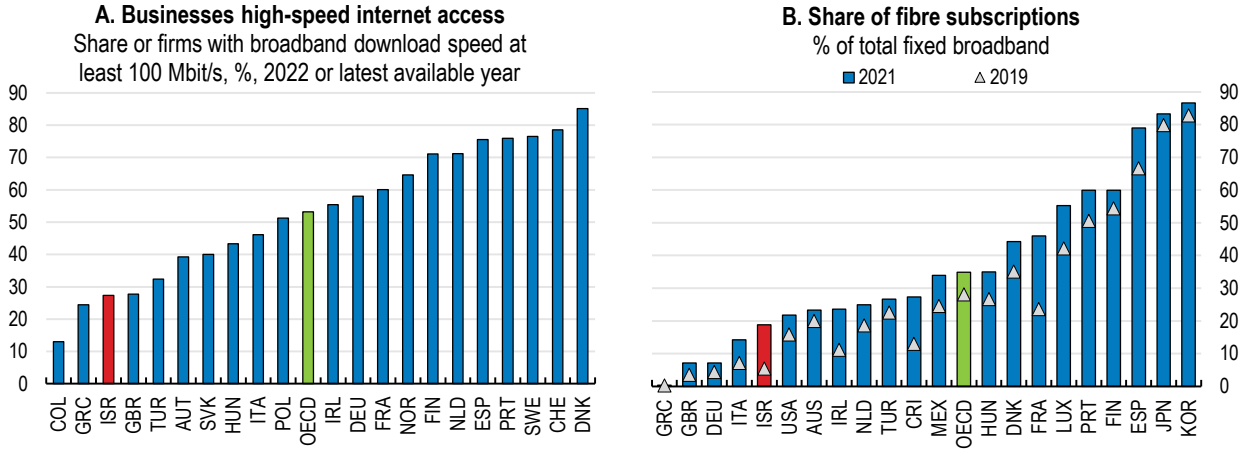
Broadband connections are relatively slow for many households and businesses but the deployment of fibre is progressing and 5G deployment is underway. The share of firms with access to high-speed internet access (speeds greater than 100 Mbit/s) is low (Figure 1.26). This partly reflects a low share of fibre subscriptions in total broadband subscriptions. After a slow start, the deployment of ultra-fast broadband networks is now progressing quickly (Figure 1.26). According to the authorities, the share of fibre subscriptions further increased to 40% in 2022. The government adopted the "Fibre Roadmap" in 2020, and recently updated its aim to reach universal fibre coverage by 2026. Fibre networks can facilitate the deployment of 5G mobile networks, which offload mobile traffic into fixed networks. The deployment of 5G networks is underway, with three companies winning auctions in 2020. The government is planning supplementary spectrum auctions to increase bandwidth.

Figure 1.26. High-speed broadband connections lag behind peers



Note: In Panel A, 2020 data for Israel. In Panel B, fibre subscriptions data includes FTTH, FTTP and FTTB and excludes FTTC and FTTN.
Source: OECD ICT Access and Usage by Businesses database; and OECD Broadband Portal.

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The authorities should closely monitor the deployment of ultra-fast broadband connections in underserved areas. The authorities estimate that connections to about 15% of households are not commercially viable, especially in Haredi, Arab and rural localities. To reach those households the government has established

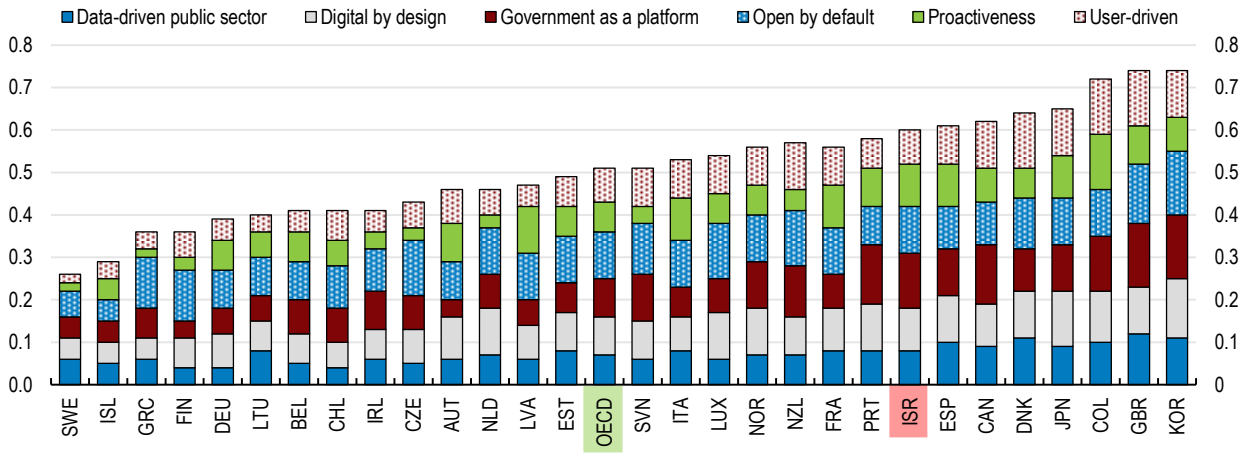
a fund into which telecom operators have to pay a 0.5% annual tax on their revenues. Through a tender process, operators can receive subsidies financed by this fund to deploy fibre networks in underserved areas. The first tender in early 2022 saw 10 companies win licences to deploy networks to about 10% of households, leaving around 5% of households unserved. If future tenders prove less successful, the subsidies received by the operators may need to be adjusted to reflect actual deployment costs.

Fostering competition in broadband deployment can also help reach underserved regions. Telecom markets are considered highly competitive in Israel and prices for mobile and fixed connections are low. However, OECD indicators suggest room to improve regulations to foster competition (see below). For instance, barriers to foreign entry into the telecom market remain high and certain domestic regulations, such as the prohibition of secondary spectrum trading, restrict competition.

Enhancing the provision and use of e-government services can improve government efficiency, increase transparency and foster the adoption of digital technologies by firms (Sorbe et al., 2019[49]). Israel scores well in the OECD Digital Government Index (Figure 1.27), which aims to assess the implementation of the OECD Recommendations on Digital Government Strategies. However, the index also points to some room for improvement to make the development of services more user-driven, through improving stakeholder engagement and better gathering and using data on user satisfaction with services. Israel has improved in the OECD OURdata Index 2019, which benchmarks the design and implementation of open data policies at the central level. However, it continues to lag in promoting the re-use of government data inside and outside of the government as well as in measuring the impact of open data policies.

Figure 1.27. The digitalisation of the government is advanced

OECD Digital Government Index, composite results, range from 0 to 1 (best practices), 2019



Note: The OECD Digital Government Index ranges from 0 to 1 (best practices).
Source: OECD Digital Government Index 2019.

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The pandemic has led to a surge in the use of digital government services. While the share of individuals using the internet to interact with public authorities was relatively low before the pandemic (OECD, 2022[55]), the use increased substantially during the crisis. The government website (gov.il) served as a central channel for government provision of information and services to the public on various COVID-19 related issues, including unemployment benefits, grants to the self-employed and to employers, and state-guaranteed loans. The number of people registered in the national identification system, which enables the use of government services with a high security level, increased from around 500 thousand in 2019 to over 2 million at the end of 2021 (BOI, 2022[4]). Efforts are ongoing to implement the "Once-Only-Principle", according to which users, who have provided data to one government agency, should not have to provide the same data again for another agency. For these efforts to be successful, barriers for data sharing between public administrations need to be further reduced, for example through standardisation to

increase interoperability between databases. As discussed elsewhere in the *Survey*, there is also significant potential to improve the efficiency of government services in the areas of labour market policies and health care by fostering data collection and dissemination.

Changes to the public pay system can help attract digital skills to the public sector. The public pay system is rigid in Israel and mainly rewards education and seniority instead of competences (OECD, 2021[56]). In addition, pay rises in one job classification often trigger pay rises in other job classifications. A more flexible approach to public wages would allow raising wages for occupations with recruitment problems such as IT specialists. In the United Kingdom, for instance, government departments can set higher wages for occupations with recruitment and retention problems while overall wage negotiations remain subject to departmental spending limits set out by the Treasury.

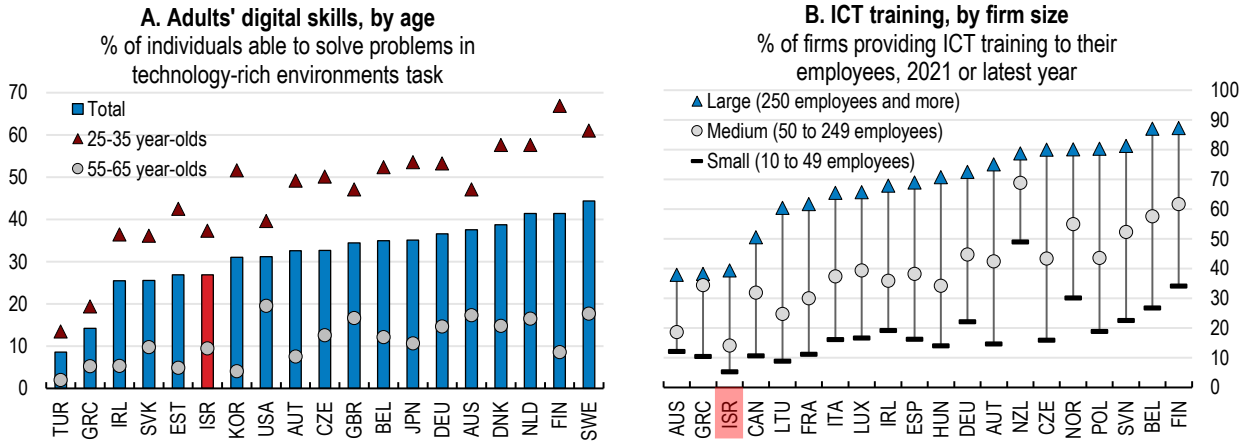
Fostering digital skills, competition, and intangible investment

The effective use of digital technologies relies on a comprehensive set of skills (Pisu et al., 2021[53]). Digital skills are also crucial to benefit from the opportunities of teleworking and to find and apply for jobs, as many positions are now primarily advertised online. As discussed in detail in previous *Surveys* (OECD, 2020[1]) (OECD, 2018[57]), there is a wide variation in skills, as some Israelis have outstanding skills, while a large number are comparatively low-skilled. In addition, problem-solving skills in technology-rich environments fall short of most OECD countries according to the Survey of Adult Skills (PIAAC) data (Figure 1.28). The gap is particularly pronounced for the younger generation, with only about 35% of the 25-35 year olds scoring high in these skills compared with an OECD average of almost 45%.

Building strong lifelong learning systems, including both high-quality initial education and adult learning, is critical to providing firms and workers with the right skills in a digitalised world. As discussed in detail in *Chapter 2* and previous *Surveys,* enhancing skills in Israel requires first and foremost more investment in pre-school education, improving digital education in middle schools, building bridges between the various parts of the fragmented school system, improving teacher quality, strengthening work-based vocational education, and improving the responsiveness of the educational system to labour market needs.

Enrolment in ICT training should be encouraged. The share of firms providing ICT training is one of the lowest in the OECD (Figure 1.28). Many OECD countries encourage work-based training via subsidies or tax breaks for employers to provide training. In addition, as discussed in *Chapter 2,* incentives for individuals to take up training, especially targeted at those least likely to receive firm-based training, should be strengthened. For instance, personal account schemes allowing individuals to save up time for training purposes can help overcome time constraints, which are one of the barriers to employees wishing to engage in training. For example, France has been using such accounts, enabling employees to use training hours to acquire recognised qualifications or basic skills. It is important that the system be accompanied by strong guidance to steer training into relevant labour market fields and a robust quality assurance of training providers, and that the programmes should be regularly evaluated.

Figure 1.28. Average digital skills are weak and ICT training low



Note: In Panel A, the problem solving in technology-rich environments assessment measures adults' abilities to solve the types of problems they commonly face as ICT users in modern societies. Data are based on OECD Survey of Adult skills (2012 and 2015).
Source: OECD (2019), How's Life in the Digital Age?: Opportunities and Risks of the Digital Transformation for People's Well-being, OECD Publishing, Paris, https://doi.org/10.1787/9789264311800-en; OECD ICT Access and Usage by Businesses database.

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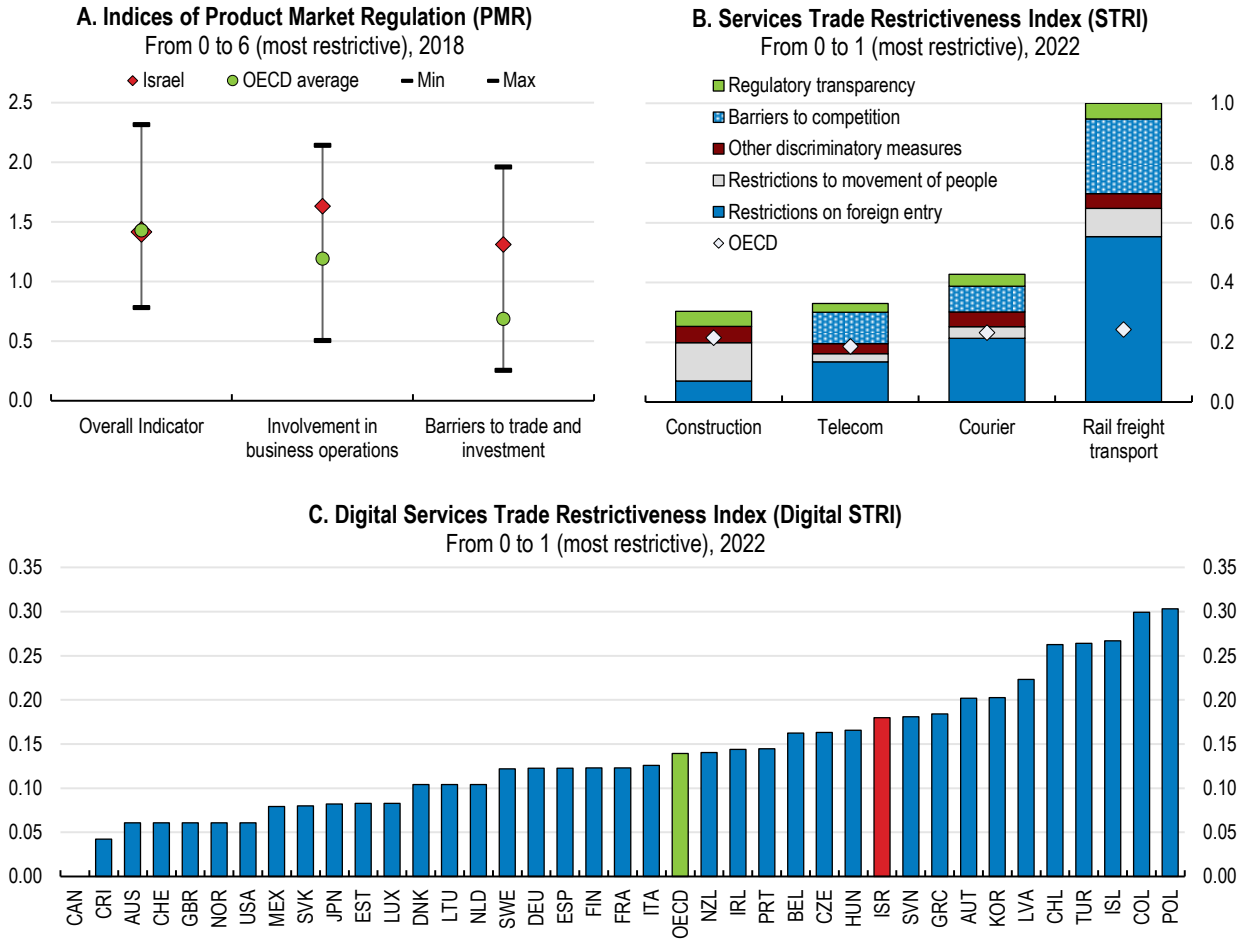
Lowering barriers that protect markets and promoting best-practice regulation are essential to spur the adoption of digital technologies, as competition encourages firms to invest and innovate (Sorbe et al., 2019[49]). Regulations in a number of areas are more restrictive than in other OECD countries (Figure 1.29). According to the OECD Product Market Regulation indicators, barriers to trade and investment and the government's involvement in business operations, mainly due to still widespread price regulations and deficiencies in public procurement, remain high. For example, preferences are granted to local suppliers in procurement markets, particularly through the use of offsets. The authorities should also allot a period of time to submit a bid that is proportionate to the size and complexity of the tender. This is particularly important in technically complex projects where it may take time to develop more accurate cost estimates. More competition in public tenders would promote efficiency and lower prices. There is also at least one major state-owned enterprise in broadcasting, courier services, rail freight transport, and logistics cargo handling. Israel is also more closed to digital trade mainly due to barriers to interconnections among network operators as well as some restrictions on cross-border data flows (Figure 1.29, (OECD, 2021[58])).

Several major reforms have been enacted recently, in line with previous OECD recommendations, which have the potential to significantly improve the regulatory environment and boost foreign competition. A new regulatory oversight body is set to be established to strengthen *ex-ante* and *ex-post* regulatory impact assessments (RIA). All regulators are obliged to consult with the new body about their RIAs. In addition, the government approved a reform to streamline environmental permits into one licence, but the reform has yet to be approved by Parliament. "Silence-is-consent" rules are increasingly applied for business licencing. Most importantly, non-tariff import barriers will be significantly reduced. For a substantial number of goods – including consumer products and foods – domestic regulatory approval will be granted automatically if these products conform to international (US and EU) approved standards. As a result, many products will only require a self-declaration instead of costly and time-consuming lab verification and/or testing processes. Finally, the authorities have continued to reduce tariffs on most food and non-food products. However, tariffs and regulations remain distorting in the agricultural sector. Israel maintains high tariffs for goods such as poultry meat, sheep meat, and certain fruits and vegetables. These should be gradually removed and replaced temporarily by direct payments to farmers, if necessary. The tariff system for agriculture should also be simplified, avoiding non-ad-valorem tariffs (OECD, 2022[59]).

Figure 1.29. Product market regulations can be improved in several areas



Note: In Panel A, the Product Market Regulation (PMR) indicator is a composite index that encompasses a set of indicators that measure the degree to which policies promote or inhibit competition in areas of the product market where competition is viable. Scores range from 0 to 6 and increase with restrictiveness (data refer to 2018).
In Panel B and Panel C, STRI indices take the value from 0 to 1. Complete openness to trade and investment gives a score of zero, while being completely closed to foreign services providers yields a score of one.
Source: OECD Product Market Regulation database; OECD Services Trade Restrictions database.

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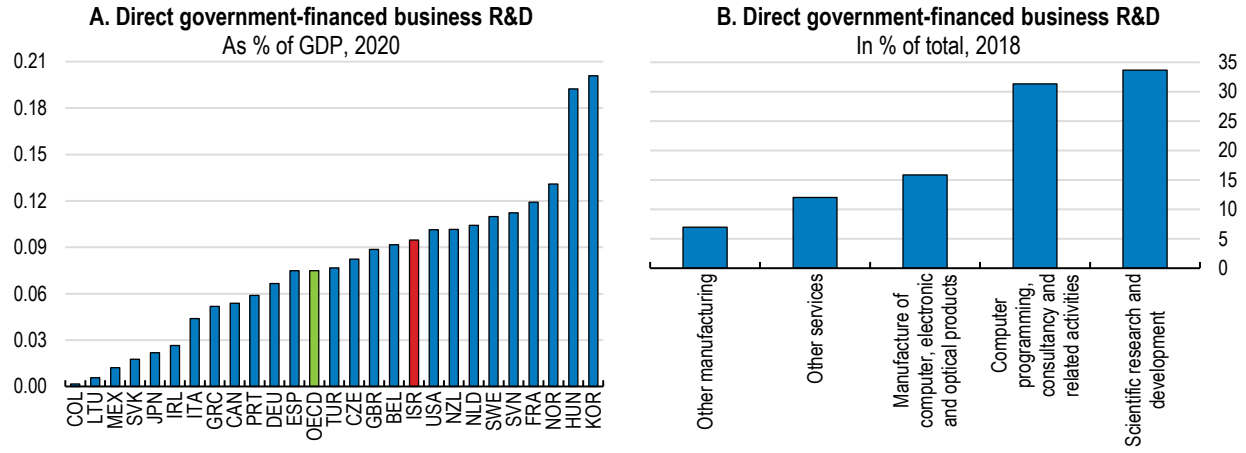
The cost of regulations should be better measured. A recent committee (Committee for Economic Advancement of the Commerce and Service Sectors, 2021) recommended to measure the costs of regulations based on the Standard Cost Model (SCM) as is the practice in many OECD countries. This would help monitor performance in reducing administrative burdens and identify the most costly regulations. For instance, in Slovakia the government recently approved legislation for a “one-in, two out” principle, according to which the costs for businesses and citizens of any new regulation have to be quantified and regulations phased out that save businesses and citizens twice the amount.

Financial market imperfections can hinder investment in intangible assets (R&D, databases, software) especially for small and young firms, since intangible capital is more difficult to collateralise than physical capital. The development of venture capital markets and government support to R&D can help overcome these market failures and spur firms’ investment in intangible capital as well as boost digital adoption (Berlingieri et al., 2020[60]). Israel has one of the largest venture capital markets (relative to its size) in the world. In addition, the authorities actively promote R&D and innovation through favourable tax treatment of expenses and income from intellectual property, as well as direct support measures (e.g. R&D grants

and procurement). While data on the value of income- and expenditure-based R&D tax incentives are lacking, direct government support is high, amounting to around 0.1% of GDP (Figure 1.30).

There is room to rebalance support for innovation. Direct government R&D support mainly benefits a few sectors, with high-tech sectors accounting for 80% of total government-funded business R&D (Figure 1.28). The government should continue expanding targeted grant programmes that support innovation and technology adoption in lagging sectors. As discussed in detail in the previous *Survey*, the government should also evaluate the current system of preferential tax rates for intellectual property (IP)-based income and consider replacing it with a broader system of tax credits for R&D expenditure. The benefits of IP boxes and similar income-based provisions are likely to accrue mainly to large MNEs, as they hold most intellectual property (Appelt et al., 2016[61]). Expenditure-based measures do not depend on the success of the investment and directly support the financing of R&D. Thus, they could help overcome difficulties in obtaining external funds, which is particularly important for small and young firms. To avoid overly favouring incumbents, tax benefits should include carry-forward provisions or cash refunds. Tax incentives could also go beyond R&D and target innovation activity more broadly, including, for example, training, ICT investment or IP acquisitions as eligible expenditure. For example, the French innovation tax credit includes patent fees as eligible expenditure for SMEs, which may help small firms adopt new technologies.

Figure 1.30. Direct government R&D support is significant but concentrated in a few sectors



Source: OECD R&D Expenditure database.

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Targeted support for technology adoption, which is largely focused on the manufacturing sector, should be expanded and broadened. Apart from R&D support, the authorities have more recently established several grant programmes for firms in traditional manufacturing industries (such as plastic, metals, textiles and food). In particular, the "Increasing Productivity in Industry" and the "Implementing Advanced Manufacturing Technologies" programmes, established in 2017 and 2018, respectively, support productivity-enhancing investment and the adoption of advanced manufacturing/industry 4.0 production technologies. Several programmes also target digital technology adoption in SMEs, such as subsidised training and consulting, and grants to promote e-commerce. Moreover, existing grants for digital technology adoption of SMEs in the manufacturing sector have been broadened to include traditional services sectors. However, these programmes are of small scale. Israel may consider the examples of other OECD countries to widen the range of policies to help SMEs digitalise (Box 1.4).

Box 1.4. OECD countries use a wide range of policies to help SMEs digitalise

OECD countries offer a wide spectrum of policies to help SMEs digitalise, ranging from grants that subsidise investments in digital technologies to training to help firms implement investments at their own cost.

Australia's Small Business Digital Champions project supports small businesses. The project has a total budget of AUD 8.9 million, and provides up to AUD 18 500 (about EUR 13 000) in assistance, with additional support from partner firms. Of these small businesses, 15 were chosen as Digital Champions and received mentoring from high-profile business people to guide them through the digital transformation. This process is then documented and showcased online. The programme is complemented by the "Digital Solutions" programme of the Small Business Advisory Service, which focuses on firms in regional locations. SMEs pay a (subsidised) fee for advice on implementing digital technologies, such as websites, e-commerce, social media and small business software. The programme also offers advice on online security and data privacy.

In Denmark, the Danish Business Authority distributes grants (valued at approximately EUR 1 300) to 2 000 SMEs under the SMV:Digital programme. The grants are used for private consultancy to help the SMEs identify digital opportunities with a special focus on e-commerce, prepare business cases for digital transformation and implement digital solutions.

Portugal also has a grant scheme to assist SMEs with the use of digital technologies in fields such as e-commerce, online marketing, website development and big data. The grant covers 75% of eligible expenses up to EUR 7 500 for projects that take up to one year to implement.

Austria does not offer grants, but helps SMEs digitalise through the KMU Digital programme. The programme includes: 1) an online tool to allow firms to assess their level of digital maturity; 2) an individual consultation to examine what can be improved and how; 3) a consultation focused on the specific needs of the firm (in areas such as e-commerce, IT security, data protection and digitalisation of internal processes); and 4) digital skills training courses for entrepreneurs and employees.

Finally, Chile's innovation agency recently launched the Digitalise Your SME (Digitaliza tu Pyme) programme which provides e-commerce courses (78 hours of classroom experience), in which small business owners can learn about digital marketing, the use of social networks and electronic commerce. By the end of the programme, participants learn processes associated with e-commerce such as the use of online platforms.

Source: OECD, Digital Economy Policy Platform (DEPP), edition 12/12/2021, https://depp.oecd.org/

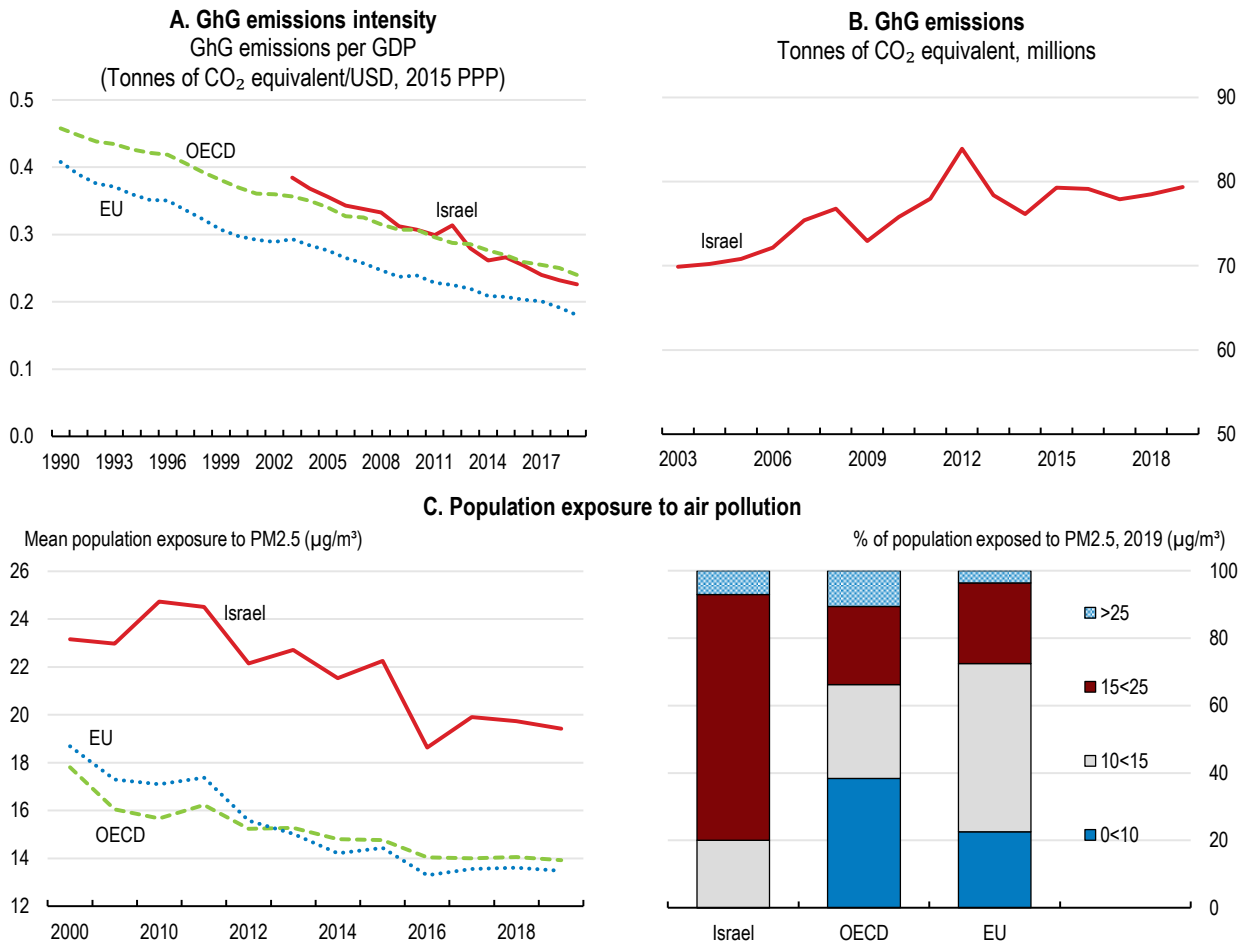
Table 1.6 Past OECD recommendations on product markets and innovation policy and actions taken

Recommendations in past surveys	Actions taken since 2020
Further cut tariffs and non-tariff barriers, and streamline trade regulations	Tariffs on a number of food and non-food products have been further reduced. Domestic regulatory standards will be abolished for several consumer and foods products that conform to international (US and EU) approved standards.
Consider replacing the current system of preferential tax rates for IP-based income with a broader system of tax credits for R&D expenditure with cash refunds or carry-forward provisions.	No action taken.

Transitioning to carbon neutrality

The emission intensity of the economy has declined but air pollution remains a concern. Greenhouse gas (GhG) emissions have decoupled from GDP (Figure 1.31, Panel A) and have fallen by around 10% in per capita terms in the past decade (Figure 1.32, Panel A). The discovery of significant offshore gas fields has led to an ongoing transition out of coal and towards natural gas in electricity generation and improved energy security. Thanks to this transition, total GhG-emissions have stabilised in recent years despite strong economic and population growth (Figure 1.31, Panel B). However, emissions from transport, industrial processes and waste have continued to increase strongly. In addition, most Israelis are still exposed to heavy small-particle pollution, well above the WHO-recommended limit of 10 micrograms per m^3 (Figure 1.31). In 2020, transport was responsible for 34% of PM_{10} emissions, while industry and waste burning accounted for 20% each.

Figure 1.31. Greenhouse gas emission intensity has fallen but air pollution remains a concern



Source: OECD Environment database; OECD Green Growth database; International Energy Agency (IEA) database.

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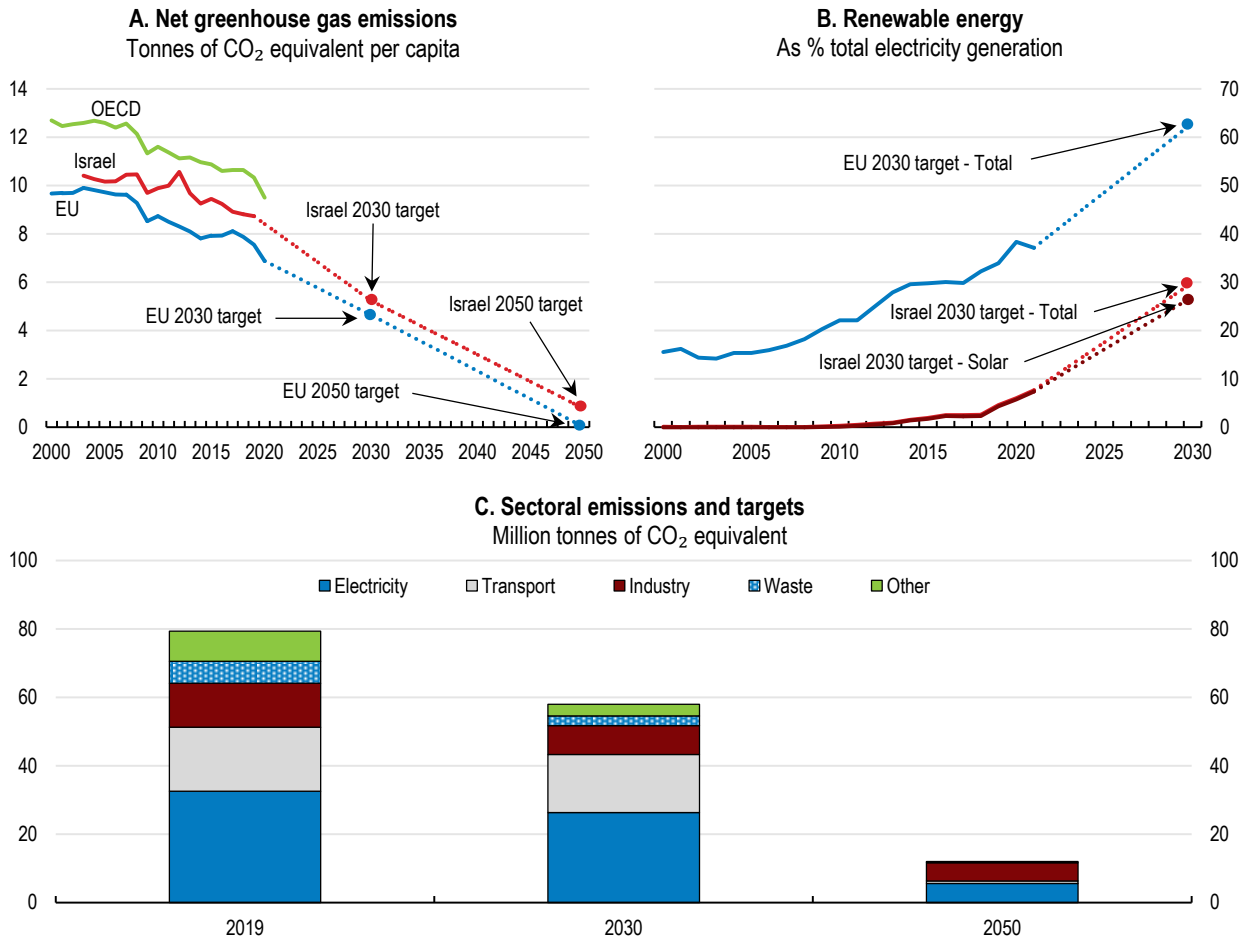
The authorities have set more ambitious climate goals. In 2021, the government approved goals that seek to reduce net emissions by 27% by 2030 and 85% by 2050 from their 2015 level. Israel also declared its overall ambition of carbon neutrality by 2050. The previous targets, set in 2015, were defined in per capita terms and would have implied a further increase in total emissions. Achieving the more ambitious objectives requires to step up the pace of emission reductions compared to the past (Figure 1.32). Sectoral targets focus on further reductions in the electricity sector, and to a lesser extent in industry and waste, to reach the 2030 objective. To achieve this, the authorities are committed to end all coal-based electricity

generation by 2026 and set the renewable energy target (predominantly solar) to 30% of total electricity generation, from currently only around 10%. A National Action Plan on Climate Change for 2022–26 defines more than a hundred measures to reduce emissions from electricity, transportation, industry, buildings and waste. However, the contribution of the measures to the reduction targets have not yet been quantified. The bill has not yet been approved by parliament, which would strengthen government accountability.

Figure 1.32. Reaching environmental targets requires accelerated policy action



Note: In Panel A, greenhouse gas emissions include those from the land use/land use change and forestry sector (LULUCF). In Panel C, emissions from LULUCF are excluded. In Panel B, EU 2030 target is derived from current national strategies that were published between 2020 and 2022.

Source: OECD Environment database; OECD Population database; International Energy Agency (IEA) database; Israel's nationally determined contribution (NDC) 2021; Ember and CREA (2022); OECD calculations.

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The pricing of emissions needs to be better aligned with environmental costs and targets, and the coverage broadened. Israel does not have an explicit carbon tax but levies excise taxes on fuels at different rates depending on the type of fuel and its use. For instance, the effective carbon tax on gasoline is over EUR 300 per tonne of CO_2, while it is under EUR 2 per tonne of CO_2 for most uses of natural gas. Overall, only about 20% of carbon emissions from energy use are taxed at EUR 60 or above (Figure 1.33), which is a midpoint estimate for carbon costs in 2020, and a low-end estimate for 2030 (OECD, 2021[62]). Emissions priced at this level originated exclusively from the road transport sector. In contrast, only 1% of Israel's electricity-related carbon emissions are priced above EUR 5, one of the lowest shares across OECD countries (OECD, 2020[63]). The large differences in tax rates across sectors and activities mean that

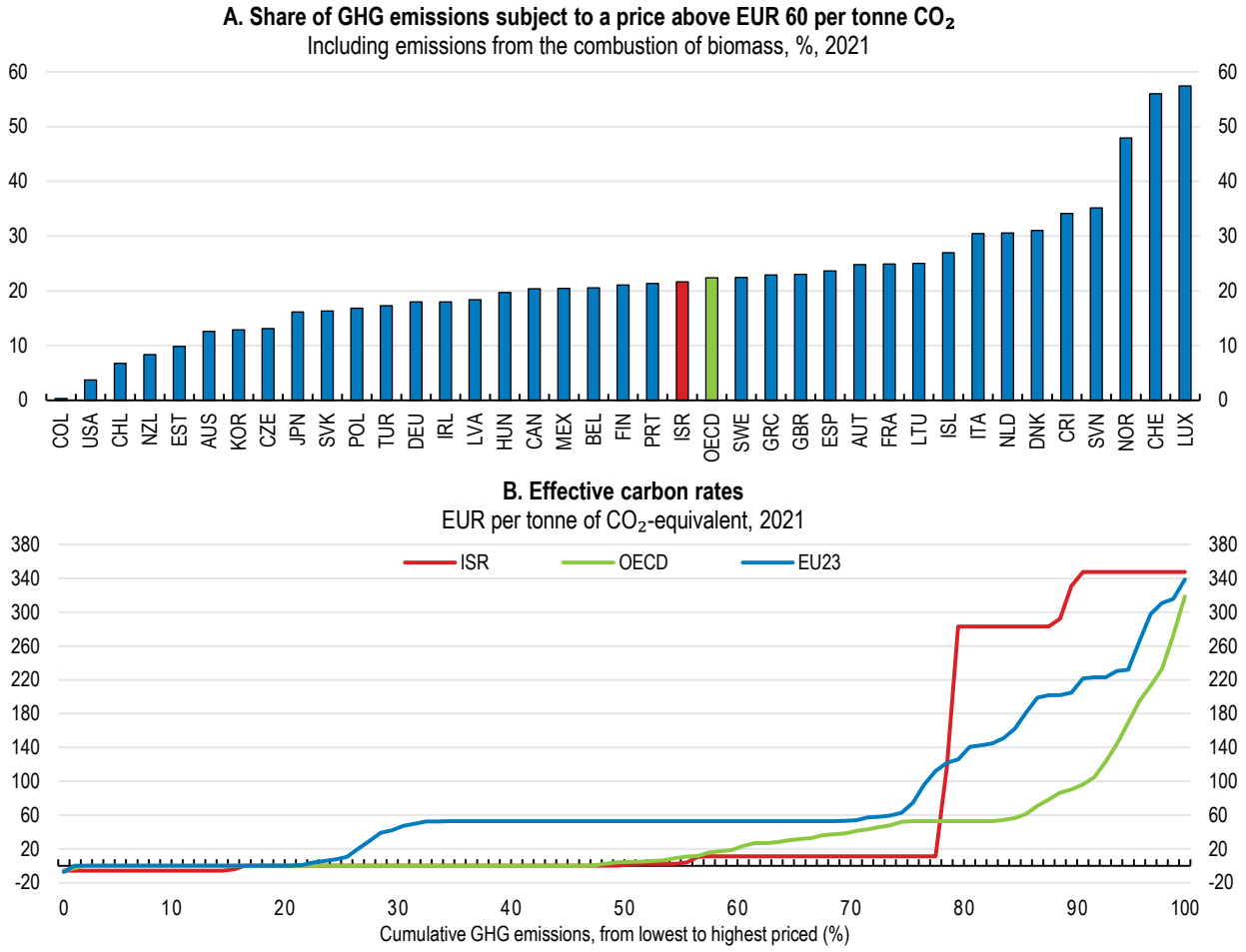
marginal abatement costs are not equalised, increasing the cost of emission reductions. Furthermore, other air pollutants are not taxed.

A government decision in 2021 aimed to gradually increase fuel excise taxes but the plan has not yet been approved by parliament. The plan envisaged to raise all fuel excise taxes during 2023-28, except on gasoline and diesel for transportation, as these are already high internationally and in line with estimates of external costs in other countries for road use including GHG emissions, congestion, noise, accidents and local air (OECD, 2020[63]). The planned increases for coal and heavy fuel are relatively large, while the increases on natural gas are more modest. For instance, the excise tax on natural gas would only imply an effective carbon price of less than EUR 20 in 2028, significantly below the carbon costs and costs of other pollutants. In addition, these tax increases are unlikely to be high enough to reduce emissions to reach the government's targets (IMF, 2022[9]). In the medium term, the authorities should strive to introduce measures to address carbon emissions unrelated to fuel combustion such as from industrial processes and waste, which have increased and account for around 20% of total GHG emissions. This could be via the expansion of the carbon pricing framework to these sectors or (second best) regulatory measures.

Decarbonising the electricity sector will require boosting renewable energy. The electricity sector is the largest GHG emitter, accounting for about 40% of total emissions. Israel has not invested in nuclear energy generation and there are currently no plans to do so. The planed phasing out of coal in electricity generation by 2026 will reduce GHG emissions as well as other air pollutants (e.g. SO_x and PM) with public health benefits. However, relying predominantly on natural gas will jeopardise the needed deep decarbonisation in the absence of widespread deployment of carbon capture and storage technologies. Higher fuel excise taxes on natural gas would make renewable energy production more competitive. Gas-fired power plants would have value as a backup to produce dispatchable electricity to offset the intermittency of renewables. Israel could also export more natural gas to countries where it could help reduce coal use. Gas exports to Jordan and Egypt commenced in 2020. An agreement to export to the European Union via LNG terminals in Egypt has recently been signed.

The expansion of renewable energy faces a number of barriers ((OECD, 2020[1]), (OECD, 2020[63])). Israel has excellent solar resources but limited resources for other renewables. Utility-scale solar PV is already cheaper than natural gas, but its further deployment will require substantial investment to expand and upgrade grid and storage capacity, more public land available for tenders and streamlined permit procedures, for example by introducing legal time limits for permits. Distributed solar PV (e.g. on rooftops) overcomes land availability issues and the bottleneck of the transmission network, but still requires policy support as long as fossil fuel taxes are not aligned with external costs. Israel has developed innovative dual land use solutions such as covering water reservoirs and agricultural land with solar panels. The Ministry of Environmental Protection estimates that distributed solar installations could generate 40% of total electricity generation by 2030. Israel provides a range of policy support measures including tax exemptions, competitive tenders with long-term electricity purchase agreements for commercial installations and feed-in tariffs for residential installations. The Action Plan envisages mandatory rooftop solar PV installations on new buildings and support for technological innovations (e.g. storage, hydrogen, carbon capture). Further developing a competitive electricity wholesale market with high-resolution electricity pricing across time and space can help the power system adapt to intermittent renewables supply for example by strengthening incentives to invest in storage or smart appliances. Import of renewable energy from neighbouring countries could complement domestic generation. The recent declaration of intent with Jordan and the United Arab Emirates, under which Israel would provide Jordan with desalinated water in exchange for solar electricity, is a step in this direction.

Figure 1.33. Carbon taxation should be broadened



Note: In Panel A, the OECD aggregate is an unweighted average. Panel B shows the net effective carbon rates (i.e. net of fossil fuel subsidies) applied to different levels of CO_2 emissions from energy use. EU23 includes OECD EU countries plus Cyprus.
Source: OECD Tax and Climate database; and OECD (2022), Pricing Greenhouse Gas Emissions: Turning Climate Targets into Climate Action, OECD Series on Carbon Pricing and Energy Taxation, OECD Publishing, Paris, https://doi.org/10.1787/e9778969-en.

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Major public transport projects are underway with the potential to reduce emissions from the transport sector in the long term. The transport sector is the second largest emitter of GHG, with emissions increasing due to population growth and the expansion of car ownership. Inadequate public transport infrastructure has been a long-standing concern. Several infrastructure projects have advanced in recent years including a train between Jerusalem and Tel Aviv and a light rail in Tel Aviv. A metro in the Tel Aviv Metropolitan area is planned to start operations in 2032. In order not to delay the construction of the metro, stable funding needs to be secured as the financing currently relies on new revenue sources, which will largely only materialise once the metro is in operation (BOI, 2021[13]). In addition, as recommended in the previous *Survey,* establishing metropolitan transport authorities can help improve coordination between the central and local government, and promote integrated transport and pricing solutions. In the shorter term, expanding and improving the quality of bus services as planned, can provide alternatives to car use. Further opening the bus market to competition in areas that are still controlled by the two dominant providers can reduce prices and improve quality (OECD, 2020[1]).

The taxation of private vehicle use can be further improved. The authorities plan to introduce congestion charges in the Tel Aviv metropolitan area in 2025. This is in line with previous OECD recommendations, although a kilometre-based charge proportional to the distance driven instead of the planned charges for

entering three concentric rings would have had the advantage of leaving no trip unpriced (OECD, 2019[64]). Congestion charges should be accompanied by significant improvements in the quality of public transport services, higher municipal parking fees and the removal of income tax benefits for fringe benefits of car use (e.g. free parking provided by employers). Moreover, the government plans to phase out the reduced purchase tax rates for hybrid cars and tax them according to the standard methodology, *i.e*. a purchase tax rate of 83% minus a rebate that takes into account the environmental performance of the vehicle. The purchase tax on electric vehicles will increase from 10% to 35% by 2024. To increase the share of the electric vehicles in the car fleet, public and private investment into charging stations needs to be accelerated. With the shift to electric cars and the associated loss in revenues from fuel excise taxes, better reflecting external costs from car use, such as congestion, accidents, noise and infrastructure costs, becomes more pressing and could be addressed with distance-based charges (OECD/ITF, 2019[65]). Tax rebates for diesel used in buses, taxis, and trucks - costing about NIS 2 billion (0.1% of GDP) per year – have been reduced since 2018. This is welcome and the rebates should be fully phased out as planned.

Higher environmental taxes would have distributional consequences which should be addressed. Lower income households spend a larger share of total expenditure on energy in Israel (Stekel and Missbach, 2021[66]). Many OECD countries therefore recycle revenues of environmental taxes to address distributional concerns (D'Arcangelo et al., 2022[67]). Lump-sum transfers (as in Switzerland) are efficient and simple to administer but not well targeted and hence expensive. Targeted transfers to low-income households (as in British Columbia) are therefore preferable. Several countries have also used revenues to lower other taxes such as personal income taxes (e.g. Austria, British Columbia). In addition, revenues can be used to cushion the effects of higher energy costs by investing in energy efficiency measures, such as subsidies for retrofits (e.g. Switzerland) and green social housing (e.g. United States and Ireland), or public transport.

Energy-intensive firms (e.g. cement producers) can also be disproportionally affected, raising concerns of international competitiveness and carbon leakage. However, existing empirical evidence suggests limited effects of environmental fiscal reform on industry-level employment and competitiveness (OECD/IEA, 2021[68]). The issue of carbon leakage is best solved by global cooperation to ensure that the most emission-intensive and globally-traded sectors face a meaningful carbon price or equivalent regulations in major producer countries. In the absence of such global cooperation, domestic mechanisms can help level the playing field, but such mechanisms face challenges and trade-offs related to their practical implementation and effectiveness, costs, and WTO compliance. Any domestic compensations or rebates should maintain incentives to advance abatement efforts. In Switzerland, for example, firms exempted from the CO_2 levy on process fuels have to meet emission reduction goals. Firms exceeding the goal can receive abatement subsidies (Hintermann and Žarković, 2020[69]).

Table 1.7 Past OECD recommendations on environmental policies and actions taken

Recommendations in past surveys	Actions taken since 2020
Either introduce an economy-wide carbon tax or gradually increase the existing excise tax on primary fuels to levels that reflect estimated emissions externalities.	A government decision envisages a gradual increase in fuel excise taxes except on diesel and gasoline between 2023 and 2028.The detailed tax schedule has not yet been approved.
Introduce congestion charges, accompanied by significant improvements in the quality of public transport services and higher parking fees.	Congestion charges will be introduced in the Tel Aviv metropolitan area from 2025.
Use tenders integrating private and public land-use rights to attract investment into large-scale solar electricity generation and transmission networks, and make more public land available for tenders.	No action taken
Establish metropolitan transport authorities in the Tel Aviv area and other areas to promote integrated transport networks and pricing systems, and ensure stable financial support for public transport.	A government decision to establish metropolitan transport authorities is awaiting legislation. A new pricing system was launched in 2022, which includes significant discounts for monthly and yearly subscriptions, encouraging use of public transportation.

Table 1.8. Recommendations on macroeconomic and structural policies

MAIN FINDINGS	RECOMMENDATIONS (key in bold)
Ensuring macroeconomic stability	
The recovery is well advanced, but inflation has increased above the 1-3% central bank target. The budget has improved considerably in 2021-22. Risks to growth are elevated.	**Maintain a tight monetary policy stance to bring inflation back to the target range.** **Maintain a neutral fiscal policy stance and ensure that fiscal support to vulnerable households and firms affected by higher costs is targeted and temporary**
Exceptional revenues and the phasing out of pandemic support reduced debt, but spending needs remain large in several areas.	**Formulate a medium-term fiscal strategy to ensure fiscal sustainability while encouraging adequate spending on infrastructure, education and labour market programmes.**
Deficit and expenditure targets have frequently been revised, compromising their role as fiscal anchors, and fiscal policy has been pro-cyclical.	Regularly review the fiscal rules with a view to strengthen their effectiveness as credible fiscal anchors and reduce pro-cyclicality.
There is scope to reduce inefficient tax expenditures, which complicate the tax system and introduce distortions.	Reduce tax breaks on medium- to long-term saving vehicles and streamline VAT exemptions.
The municipal property tax system is opaque and provides incentives to favour commercial over residential real estate, contributing to housing shortages. Taxation of rental housing is complex and prone to tax evasion.	**Reduce the difference between non-residential and residential property tax rates**. Replace the area-based property tax with a system based on regularly updated property market values. Require all property rental income to be declared and taxed, and consider moving to a single system of rental taxation based on net rental income taxed at marginal passive income tax rates.
The business tax system provides large benefits to exporting and high-tech firms, which create distortions.	Review the preferential corporate income tax treatment of exporting and high-tech firms with a view to better target the scheme.
Women's statutory retirement age will rise from 62 to 65 years in the coming decade but will remain below that of men (67).	**Gradually increase the retirement age of women to that of men. Thereafter link the future statutory retirement age to changes in life expectancy.**
Perceived levels of corruption are higher than on average in the OECD.	**Continue efforts to fight corruption.** Make criminal jurisdiction and sanctions of the foreign bribery offences independent of the foreign country's treatment of the offence.
Sustaining good health outcomes in the future	
The supply of physicians is insufficient to keep up with population growth and ageing, especially in the northern and southern districts. Physician shortages create cost pressures in the health care sector.	**Increase the student intake in medical schools.** Provide subsidies for selected students to obtain their first medical degree in accredited schools abroad in exchange for a commitment to practice in Israel for a minimum amount of time. **Strengthen incentives for newly-trained doctors to work in the periphery.** Establish a multi-stakeholder body to provide assessments about future supply and demand of doctors and recommendations about student intakes.
Reimbursement systems in the health care sector are not sufficiently cost-reflective, creating distortions, incentives for harmful competition and contributing to the waiting problem in the public health care sector.	Refine the capitation formula determining transfers to the health funds by adding socio-economic variables and variables reflecting genetic conditions. **Regularly update diagnosis-related groups to ensure cost-reflectiveness and adjust them according to the complexity of cases.** Further develop the collection, processing and dissemination of quality and cost information in the hospital sector. Consider establishing a separate authority to manage government-owned hospitals.
Interactions between the public and private health care system have created inefficiencies.	**Regulate prices in private health care and establish a compensation mechanism for services provided by the public sector to the private health care sector.**

Reducing the digital divide to foster productivity growth	
Broadband connections vary widely across regions.	**Closely monitor the deployment of fibre broadband connections in underserved areas and align subsidies with actual deployment costs if needed.**
The economy is less open to foreign trade than most other small OECD countries	Further cut tariffs and non-tariff barriers, and streamline trade regulations**.**
IT skill shortages in the public sector create a barrier to the expansion of digital government services.	Introduce more flexibility to the public wage system by allowing higher wages for occupations with recruitment problems such as IT specialists.
R&D expenditure is concentrated in information industries. Benefits of IP boxes and similar income-based provisions are likely to accrue mainly to large MNEs, as they hold most intellectual property.	Consider replacing the current system of preferential tax rates for IP-based income with a broader system of tax credits for R&D expenditure with cash refunds or carry-forward provisions
The statistical office collected data on the digital adoption of firms the for the first and only time in 2020.	Systematically collect and disseminate data on the adoption of digital tools by firms.
Targeted firm support for technology adoption is of small scale and largely focused on the manufacturing sector.	**Evaluate existing grants for technology adoption and digital training and expand effective programmes targeted towards SMEs in traditional sectors.**
Accelerating the green transition	
Only about a 20% of carbon emissions from energy use are taxed at EUR 60 or above, exclusively in the transport sector. Fuel excise taxes only cover about 80% of carbon emissions.	**In the medium-term, gradually increase excise taxes on non-transport fuels to levels that reflect environmental costs** and **introduce consistent carbon pricing across all sectors.** **Partially use environmental tax revenues to mitigate distributional impacts, enhance energy efficiency and improve public transportation**.
Despite vast solar potential, the share of renewable energy in electricity generation is one of the lowest in the OECD.	**Streamline permit procedures and increase public land available for utility-scale solar installations while further strengthening incentives for distributed solar installations.** Accelerate investment in the distribution network and storage capacity.
Electricity markets need to adapt to intermittent renewables supply.	Further develop the wholesale electricity market as planned, with high-resolution pricing across time and space, and competitive determination of market prices.
Public transportation is inadequate, and coordination between central government and local authorities in infrastructure projects is one of the least effective in the OECD.	Establish the metropolitan transport authority in the Tel Aviv area and in other areas to promote integrated transport networks and pricing systems. Ensure stable financial support for public transport.

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2 Addressing labour market challenges for sustainable and inclusive growth

Michael Koelle

High employment growth has sustained Israel's high GDP growth in recent decades, but demographic change and labour market duality put future growth at risk. Policy action is required to stimulate employment and raise labour productivity, especially among population groups with weaker labour market outcomes. A particular concern is closing employment gaps of Haredim and Arab-Israelis and ensuring gender equality in the workplace, which would simultaneously improve opportunities for all Israelis and the aggregate labour productivity of the economy. This will require setting appropriate work incentives and providing better support for working parents; improving skills at all stages of the learning cycle; as well as increasing mobility and improving reallocation towards high productivity jobs and firms, in particular in the high-tech sector.

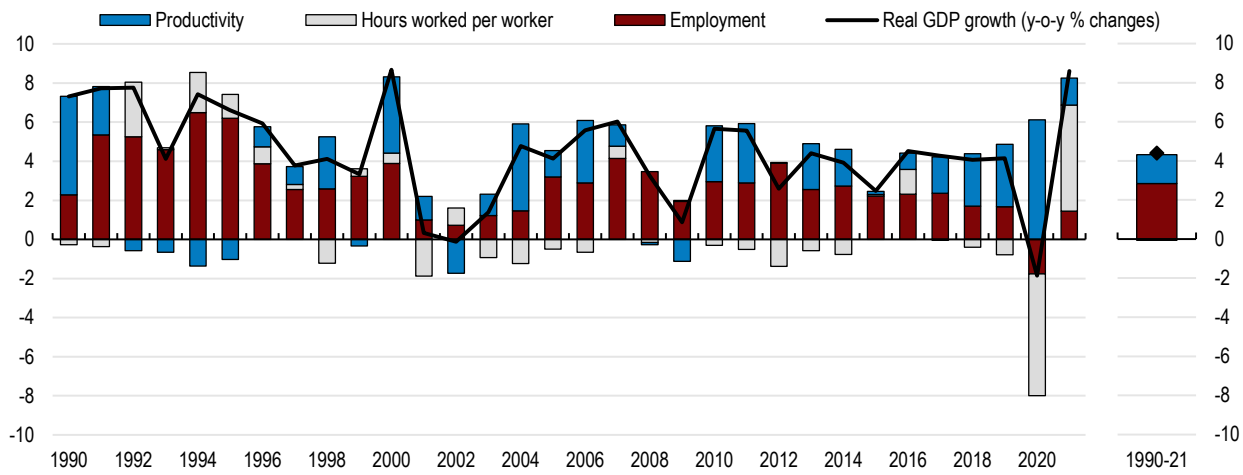
Demographic change and labour market duality put future growth at risk

Demographic developments challenge future growth

Israel's high GDP growth in the last three decades was largely driven by growth in employment (Figure 2.1). Employment has contributed about ⅔ to growth, reflecting the absorption of immigrants from the former Soviet Union in the 1990s and strong population growth. In addition, broad population segments were integrated into the labour market. The employment rate has increased by about 10 percentage points in the last two decades and is around the OECD average. However, overall employment growth has been on a slow but constant downward trend for three decades, and has started to decline more strongly in the last few years leading up to the COVID-19 pandemic. Labour productivity growth has not been enough to compensate for the slowdown in employment growth, reflecting the persistent productivity gap of Israel compared to other OECD countries (see *Chapter 1*).

Figure 2.1. Employment growth has been driving Israel's growth since the 1990s

Contributions to GDP growth, percentage points



Note: Productivity is calculated as GDP per hour worked.
Source: OECD Productivity database; OECD National Accounts database; and OECD calculations.

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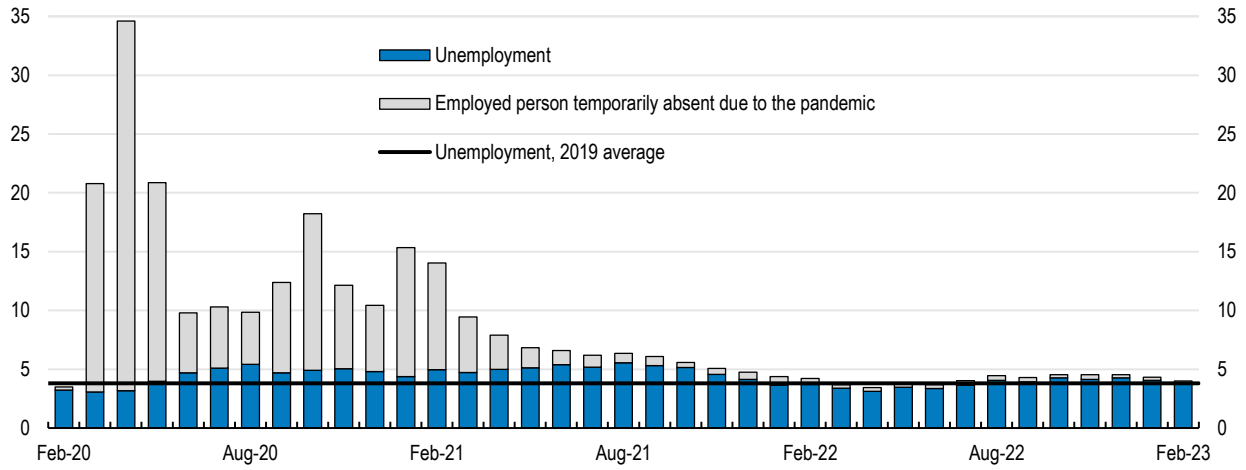
The labour market has recovered from the pandemic, helped by strong policy support. The unemployment rate has fallen to its pre-pandemic level and the share of people who were temporarily absent from work due to Covid-19, which reached heights of 30% during the first wave of the pandemic, fell close to zero in early 2022 (Figure 2.2). The employment rate also recovered to its pre-pandemic level, suggesting that, unlike in some other OECD countries, the pandemic seems to have had no lasting effects on labour force participation. The swift labour market recovery was helped by decisive policy support, notably the furlough scheme that allowed workers put on temporary lay-off to receive income support without being outright dismissed. Fiscal support to firms and the strength of the high-tech sector throughout the pandemic also contributed to the labour market recovery.

Demographic change puts past achievements at risk. The share of population groups with weaker labour market outcomes is projected to increase dramatically in the coming decades, with the combined share of Arab-Israelis and Haredim rising to 50% of the working-age population by 2060, from 30% today. Ministry of Finance (2019[1]) simulations suggest that under current trends, this would bring down potential GDP growth to around 2.5% per year, from around 4% in the last two decades (Figure 2.3). It would also pose substantial risks to debt sustainability due to lower tax bases and less growth (see *Chapter 1*). The growth slowdown will be driven both by a stagnating quantity of employment (around the current rate) and by a deteriorating quality of employment in the growing population segments. By contrast, if all the gaps in

employment and labour productivity were closed by 2065, long-run growth could be maintained at around 3.5% per year, not far from current levels. The key to unlocking the potential for continued high growth rates of the Israeli economy therefore lies in addressing structural challenges in the labour market, including disparities in employment, wages and labour productivity.

Figure 2.2. The labour market recovered quickly from the pandemic

As percent of the labour force



Note: The "Employed person temporarily absent due to the pandemic" category includes employees on unpaid leave, employees who were absent during the week due to reduced workload, work stoppage or other reasons related to the pandemic and excludes quarantined persons.
Source: Israel Central Bureau of Statistics; and OECD calculations.

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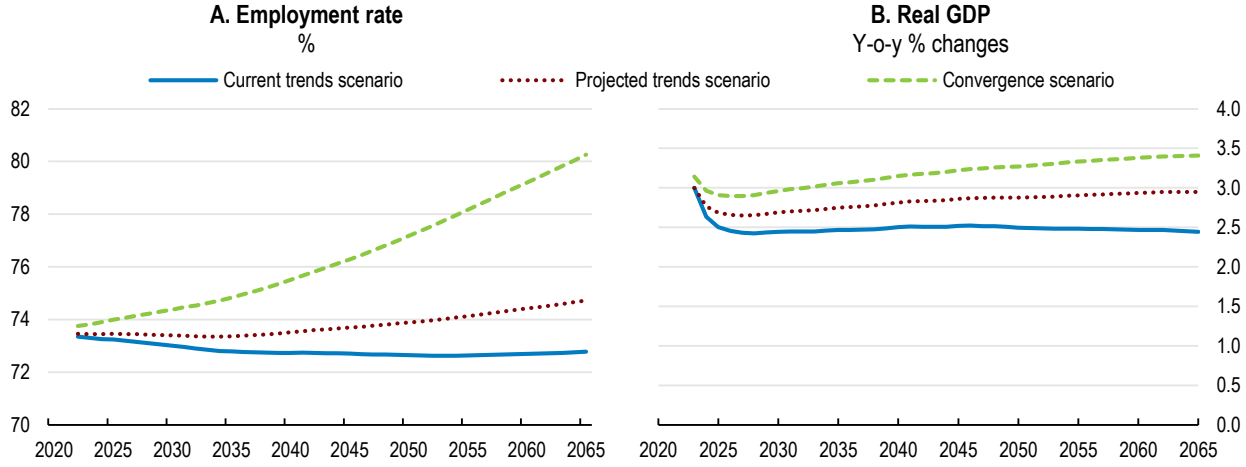
Figure 2.3. Demographic change puts pressure on future employment and growth



Note: Simulated employment rates and real GDP growth under current population projections and different scenarios with assumptions about future employment rate and wage developments in each of the following demographic groups: Arab-Israeli men, Arab-Israeli women, Haredi men, Haredi women, non-Haredi Jewish men, non-Haredi Jewish women. The current trends scenario assumes trends of the last decade; the projected trends scenario uses projections from Ministry of Finance long-term growth model; and the convergence scenario assumes full convergence of employment rates and wages in each group to the level of non-Haredi Jewish men by 2065.
Source: Ministry of Finance of Israel (2019), "On the economic consequences of the integration of ultra-Orthodox and Arabs in the labour market in the coming decades".

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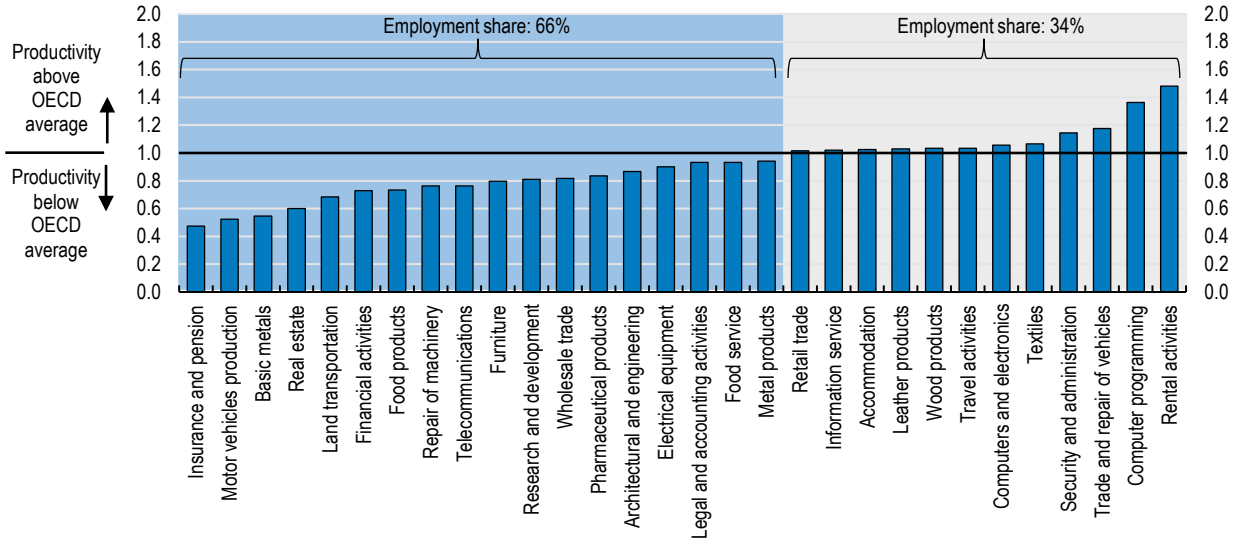
Labour market disparities are large

Israel's labour market is shaped by its dual economy. Highly competitive industries, in particular the vibrant high-tech sector, coexist with low-productivity, low-wage sectors that employ the majority of Israelis (Figure 2.4). The high-tech sector accounts for about 12% of all employment, 15% of GDP, half of exports and a quarter of personal income tax receipts (Israel Innovation Authority, 2021[2]). The high-tech sector has weathered the pandemic well thanks to increased global demand for digital services, its ability to move to remote working more easily than other sectors, and government efforts to facilitate its activity during the lockdowns. Russia's invasion of Ukraine may provide another demand push for the digital security services and defence equipment that the sector is particularly renowned for. Securing sufficient talent to meet demand is the main bottleneck to continued expansion of the sector, and persistent labour shortages have contributed to large and rising wage premia.

Figure 2.4. Employment is still concentrated in low-productivity sectors

Israel/OECD relative productivity ratio



Note: Productivity is measured as value added per employee. Relative productivity for each sector is defined as the productivity of the sector in Israel divided by the average productivity of the same sector in OECD countries. Data is for 2017 and is limited to manufacturing and market services (respectively, categories C and G-N according to the ISIC Rev.4 classification).
Source: Bank of Israel; Israel Central Bureau of Statistics; and OECD calculations.

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Income inequality in Israel is higher than in most other OECD countries (Figure 2.5). This is a result of business sector duality, a low degree of redistribution through the tax and transfer system, and inequalities in labour market outcomes across different population groups, defined by gender and ethno-religious status (Figure 2.6). Large gaps exist in all dimensions of labour market participation: employment rates, hours, and hourly wages. However, as Panel D of Figure 2.6 shows, each population group faces particular dimensions where they are especially underrepresented in the labour market. Policies to improve labour market integration therefore need to target the specific constraints and barriers that each group faces. Moreover, there is substantial heterogeneity even within population groups, for example in skill levels and trends in education, that will partly require solutions to be further differentiated.

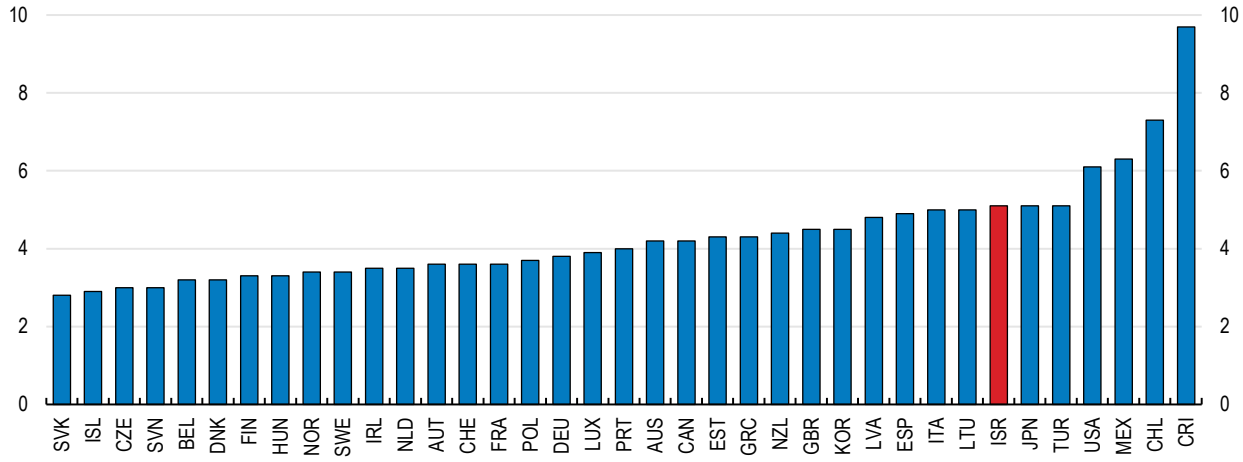
The weak labour market outcomes of the Haredim, especially men, largely reflect a different valuation of work and secular education relative to spiritual activities (OECD, 2020[3]; OECD, 2018[4]) as well as community-specific incentives set by public policy that discourage labour force participation. Haredi men are expected by their community to devote their time fully to religious studies. Especially Haredi boys are exposed to little teaching of the national core curriculum, which limits their further educational and career

opportunities. Haredi men in religious seminaries ('*yeshivas*') can receive government stipends and are exempt from otherwise compulsory military service. Many of the Haredi men who work do so in part-time jobs within the community, for example as *yeshiva* teachers or scribes. The labour market situation of Israeli Haredim contrasts with that in other countries such as the United Kingdom or the United States, where labour market participation and incomes are much closer to the general Jewish population (Pew Research Center, 2013[5]). Haredi women dramatically increased their labour force participation from 50% to 80% in less than two decades, following cuts to non-work household benefits in the early 2000s. As a result, many Haredi women have become the main earners in their households, and earn slightly higher hourly wages than men. This occurred despite little decrease in fertility, and is partly facilitated by the flexible timing of their husbands' study. However, wage levels of Haredi women still lag behind non-Haredi Jewish women, and part-time work is more common than in other population groups.

The main challenges for this population group are twofold. First, bringing more Haredi men into the workforce is a crucial policy challenge in Israel in light of the demographic trends, which indicate an increase in the share of Haredim in the working-age population from 10% today to 30% by 2060. This objective requires removing barriers and policy disincentives to labour force participation as well as equipping Haredi men with better market-relevant skills by improving their participation in core studies. Second, policies should aim at increasing employment quality for all Haredim, particularly for women, improving their job opportunities in the labour market and productivity in the workforce, through life-long learning and work placement programmes targeted at the community.

Figure 2.5. Income inequality is high

Disposable household income interdecile ratio (P90/P10), working age population, 2019 or latest available year



Note: The P90/P10 ratio is the ratio of the upper bound value of the ninth decile (i.e. the 10% of people with highest income) to that of the upper bound value of the first decile.
Source: OECD Income Distribution database.

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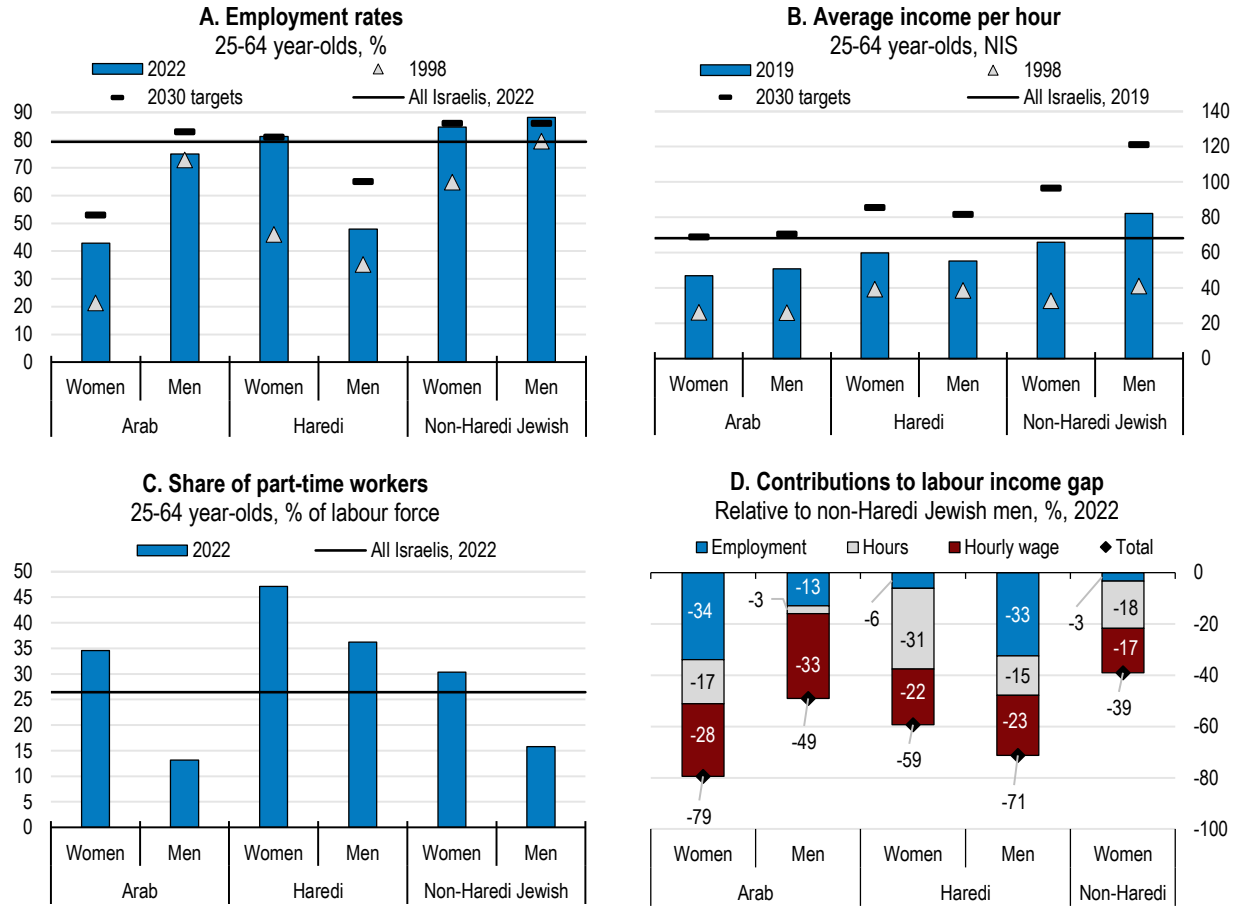
Arab-Israelis face gaps in almost every dimension of the labour market, which need to be addressed by a combination of policies in many different areas. The wage gap between Arabs and Jews has been widening since the early 2000s, and on average, the hourly wage of Arab-Israelis is about half the hourly wage of non-Haredi Jewish men. Average hourly pay is equally low for both Arab men and women. The low gender wage gap among Arab-Israelis can partly be explained by the large share of minimum wage earners, among both men and women (Larom and Lifshitz, 2018[6]). The rapid improvement in Arab-Israeli women's education in recent years has been associated with rising employment (and falling fertility rates), but employment rates and hours worked still remain the lowest among all groups. Employment rates of Arab-Israeli men fell before the pandemic by about 5 percentage points, largely due to reductions in employment in the construction sector (MoF, 2021[7]). As discussed in detail below, the large labour market gaps of

Arab-Israelis reflect significant differences in educational outcomes; an underrepresentation in high-paying occupations and sectors; a lack of Hebrew fluency and English language skills among many Arab speakers; geographical disparities given the residential segmentation of Israeli municipalities; and partly also possible discrimination. Significant improvements of the labour market situation of Arab-Israeli requires policy interventions and structural reform in each of these areas.

Figure 2.6. Large labour market gaps exist in employment, hours and wages



Note: In Panel A, the official 2030 government targets presented refer to the age groups 25-66.
In Panel B, the 2030 government targets should be considered as illustrative. In this respect, the official 2030 government targets refer to the age group 25-39 and are expressed as average rate of annual increase in the nominal monthly wage. These have been applied to the 2019 average income per hour for Arab Men and Haredi Women, aged 25-64. For Non-Haredi Jewish men and women, targets have been estimated by the OECD (as an average of the historical growth rates in hourly income over the last decade) and applied to the 2019 average income per hour of the respective categories. The latter two were also applied to the Haredi men and Arab women categories, as the government indicated that wage growth for these two categories should have similar rates of increase as the Non-Haredi Jewish men and women, respectively.
In Panel D, data for hourly wage refer to 2019. Contributions are illustrative and only concern direct contribution of each dimension, without considering interaction effects between dimensions. The size of each contribution is proportional to the gap in this dimension relative to all other dimensions for the same demographic group.
Source: Israel Central Bureau of Statistics; and OECD calculations.

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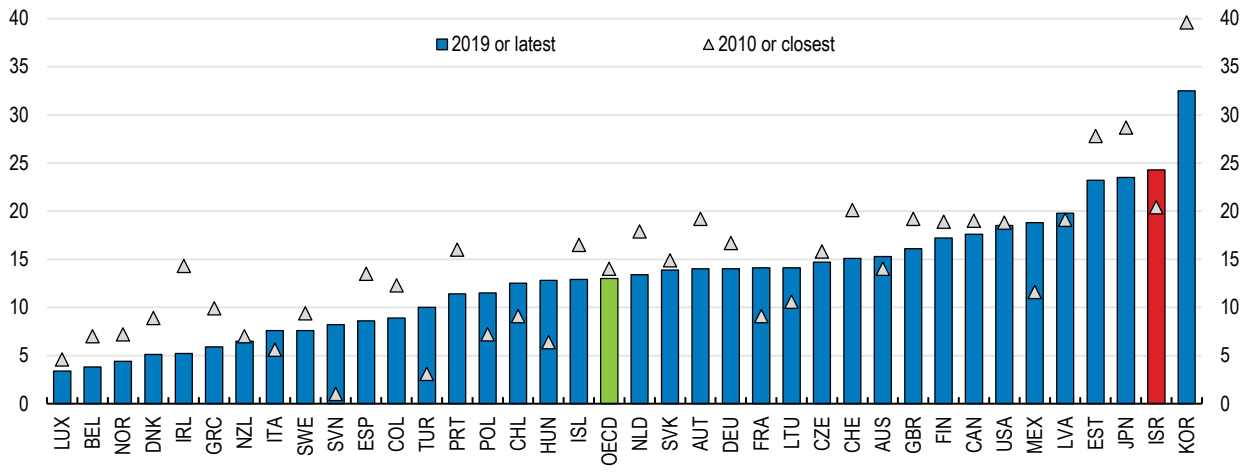
The five-year plan for economic development of the Arab-Israeli community provides a comprehensive framework to coordinate a range of policy actions in this respect (Box 2.1). Importantly, it provides a package to simultaneously address multiple barriers to integration that interact with each other, such as deficits in education, housing, transport and employment. As experience from other OECD countries shows, a key success factor in raising the living standards of minority groups is the degree to which special programmes are integrated into mainstream policy (OECD, 2019[8]). For example, the Living Standards

Framework of the government of New Zealand provides a comprehensive assessment tool of living standards and integration into society of each major population group, including Māori and Pacifika minorities. This facilitates continuous assessments of gaps and a tailored and targeted provision of investments and social services. The five-year development plan should therefore not be seen as a stand-alone policy, but rather in conjunction with the general policies in each of the areas concerned (e.g. education, job mobility). The Plan complements these individual policy areas with a holistic vision to achieve the overarching goal of better economic integration of Arab-Israelis.

Israel has one of the highest gender pay gaps in the OECD (Figure 2.7). The median wage for women in full-time work is about 23% less than for men. In contrast to most other OECD countries, the gender pay gap has not fallen in the last decade. Gaps in hourly wages and hours worked explain most of gender inequality within the majority population group of non-Haredi Jews (Figure 2.6, Panel B). At the same time, this group has a very high female labour force participation rate. As a result, the gender income gap in Israel (which, in addition to pay, accounts for differences in participation) is similar to that observed in other OECD countries (Ciminelli, Schwellnus and Stadler, 2021[9]). By contrast, gaps in part-time status and employment are the main drivers of gender inequality among Arab-Israelis and Haredim. The increase in female labour force participation rate among Jewish women was a main driving force in the rise of the overall labour force participation rate (MoF, 2016[10]). The largest factor behind the wage gap that remains after controlling for working time differences is the occupation and industry where women work in (Fuchs, 2016[11]). This suggests that policies which improve the representation of women in high-paying jobs and firms can go a long way in narrowing the gender wage gap, especially for Jewish women. By contrast, increasing the employment rate is still an important priority for Arab women.

Figure 2.7. The gender pay gap is one of the highest in the OECD

Median wages, full time employees, %



Note: The gender pay gap is defined as the difference between median wages of men and women relative to the median wages of men. Data refer to full-time employees (aged 15 years and over), defined as those individuals with usual weekly working hours equal to or greater than 30 hours per week.
Source: OECD Gender Wage Gap database.

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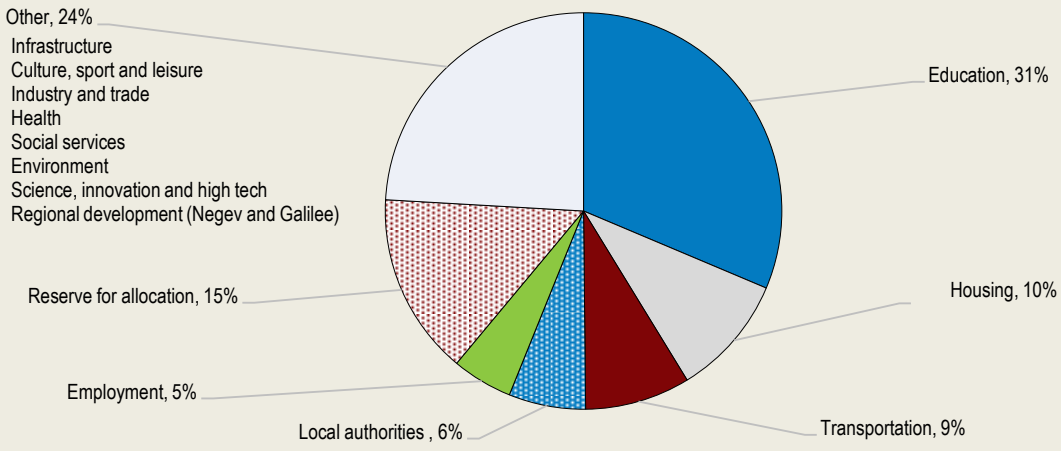
Box 2.1. The economic plan to reduce social gaps in the Arab society by 2026

The five-year economic plan (established in Government Resolution 550) takes a systemic and holistic approach to reduce the multiple gaps between Arab-Israelis and the general population that are documented in this chapter, with investments into education, infrastructure, digitalisation and other areas. The plan simultaneously addresses multiple deprivations and barriers to economic integration of Arab-Israelis.

This follows on a similar 5-year plan created in 2015 (Government Resolution 922), and builds on the lessons learned from it. Implementation of the previous plan was weak, and only about half of the allocated budget was spent. Factors which hindered the execution were the lack of specific targets and limited coordination between the authority in charge of the plan and the relevant ministries. The authority further suffered from limited management capacity, including for monitoring the plan's implementation (Bank of Israel, 2022[12]; The Knesset, 2021[13]). In contrast, the new plan has specific targets and mechanisms to monitor implementation against targets.

The budget of the plan is approximately 30 billion NIS (2% of GDP), of which 15.4 billion NIS are new financial commitments. In contrast to the previous plan, which mainly focussed on infrastructure development, the new programme places a greater emphasis on social aspects and on human capital (Figure 2.8).

Figure 2.8. Distribution of budget allocation of the Economic Plan for the Arab Society



Source: Bank of Israel.

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The plan includes the following priority areas:

- Education: close gaps in education by improving the quality of teaching in Arab schools by strengthening local school management and invest into school infrastructure. Targets exist for boosting Hebrew language literacy, improving Arab students' performance in the 2025 PISA, and dropout reduction.
- Housing: construct 9,000 new publicly owned housing units by 2026, plan 85,000 new privately and publicly owned housing units, renew electricity, lighting, and sewage infrastructure in old Arab towns.
- Transportation: upgrade infrastructure and public transport in Arab towns, and improve road safety.

- Employment: increase employment rate and human capital quality with an emphasis on the 18-35 age group by establishing local employment centres, increasing access to VET and technical colleges, and providing incentives to employers to integrate Arab employees. The high-tech sector special programme subsidises STEM students and interns in high-tech firms, and the "gap year" programme enhances skills of young adults.
- Digitalisation: increase digital literacy; translate digital governmental services into Arabic; connect 80% of households in Arab localities to high-speed broadband.
- Local authorities: reduce the gap in per capita expenditure, increase Arab municipalities' own revenues, improve management capabilities and promote regional cooperation.

The adoption of ambitious new employment targets for 2030 sends a strong signal that the authorities prioritise reforms to meet all these challenges. The targets are based on recommendations by an independent committee including the government and social partners, and led by academic experts. The targets foresee maintaining the employment rate for non-Haredi Jews at their current levels, which are high by international comparison. At the same time, the targets call for an ambitious increase in employment rates for the groups with currently low labour force participation, notably Arab-Israeli women and Haredi men, as well as workers with disabilities across all population groups. Overall, if all of the targets were achieved, this would bring the employment rate in 2030 to just above 80%, which would be in the highest quintile of the OECD (The Employment 2030 Committee, 2020[14]).

The inclusion of wage targets in addition to employment puts a welcome emphasis on the quality and productivity of jobs and not only their quantity. Only closing employment gaps will not be sufficient to maintain or further expand the productive potential of the Israeli workforce. Improving worker productivity and promoting access to high-paying jobs would lead to better wages for underrepresented groups, strengthening incentives for market participation and for acquiring higher education in well-remunerated fields, including through the encouragement provided by role models from their own community. Since the high incidence of part-time work among certain groups such as Haredim affects negatively the productivity per worker, the government should carefully monitor this dimension of labour market gaps in addition to the hourly wage.

The government needs to ensure effective actions are taken to meet the targets: raising labour market participation by setting appropriate work incentives and improving support for working parents; increasing the job productivity of underrepresented groups through better skills; and improving mobility for all population groups into well-performing firms and jobs, including the shortage-facing high-tech sector.

Raising labour market participation

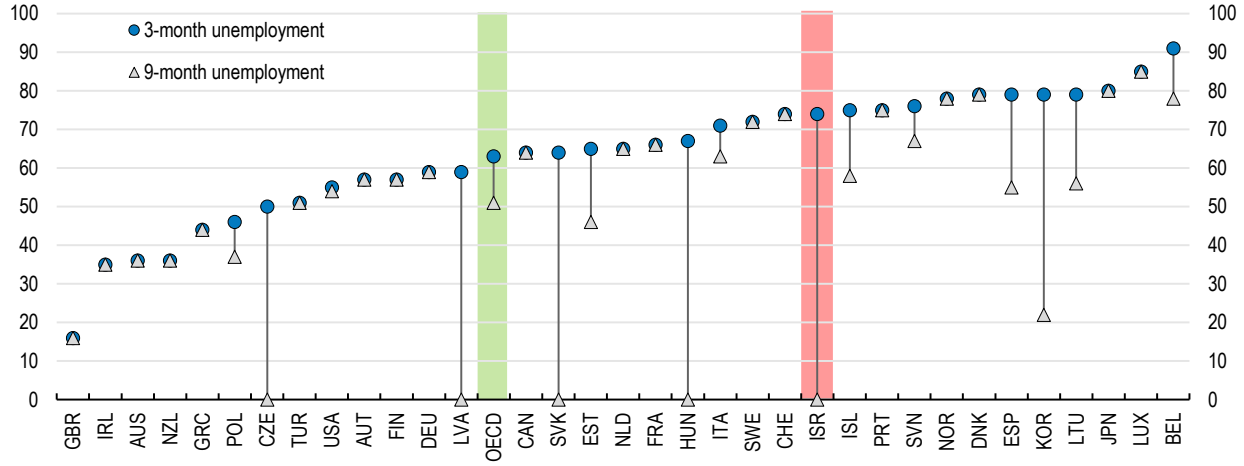
Providing work incentives through the tax and benefits system

The Israeli tax and benefit system sets strong work incentives. Israel taxes personal income on an individual basis, with a fairly progressive tax rate schedule. The personal income tax has a basic tax allowance set at around the full-time minimum wage. Tax liabilities are further reduced through tax credits that are targeted at families with young children and single parents. As a result, most workers with earnings below the median wage have in practice no income tax liabilities. Personal and child tax credits are more generous for women, incentivising female labour force participation. The Earned Income Tax Credit (EITC), discussed below, further adds to the progressivity of the tax schedule. Unemployment insurance offers replacement rates in line with other OECD countries for those who lose their jobs, but benefit duration is relatively short, ranging from 50 to 175 days, depending on employment history and household composition (Figure 2.9). Social assistance and housing benefits can be received for longer, especially by unemployed persons with children, but the resulting net replacement rates are still lower than in most other OECD countries. This specific design contributes to Israel's low overall unemployment rate – 3.8% before

the pandemic, compared to an OECD average 5.4% – and one of the lowest shares of long-term unemployed among OECD countries (Figure 2.10).

Figure 2.9. The unemployment insurance system provides strong work incentives

Net replacement rate in unemployment, %, 2022 or latest available year



Note: Net replacement rates in unemployment measure the proportion of income that is maintained after T months of unemployment. Data refer to a single person without children, with previous in-work earning at 67% of the average wage, excluding social assistance and housing benefits. 2021 data for Israel.

Source: OECD tax benefit models and policy, http://oe.cd/TaxBEN.

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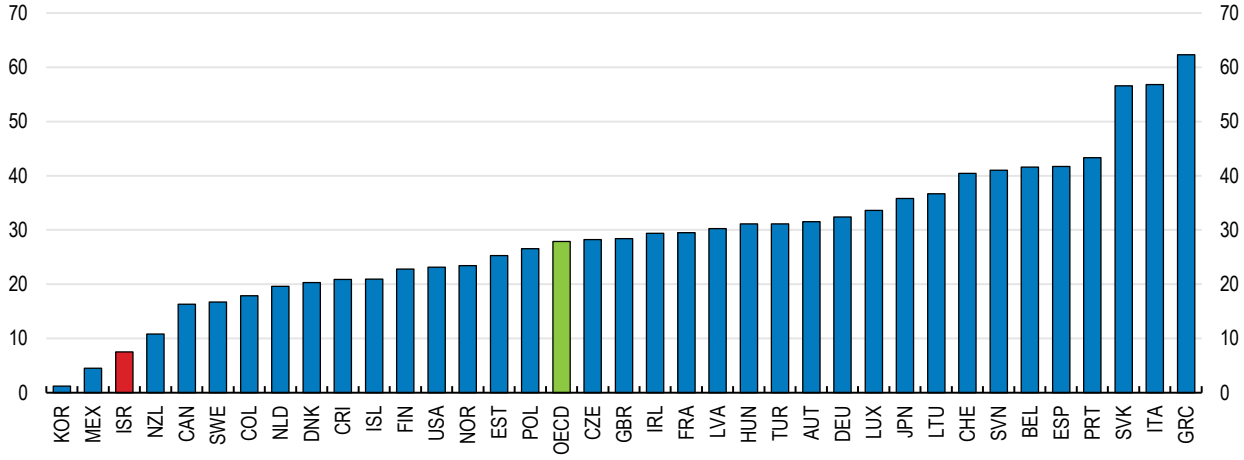
Figure 2.10. The incidence of long-term unemployment is low

Unemployed for more than 1 year, as % of total unemployment, 2021



Source: OECD Labour Statistics database.

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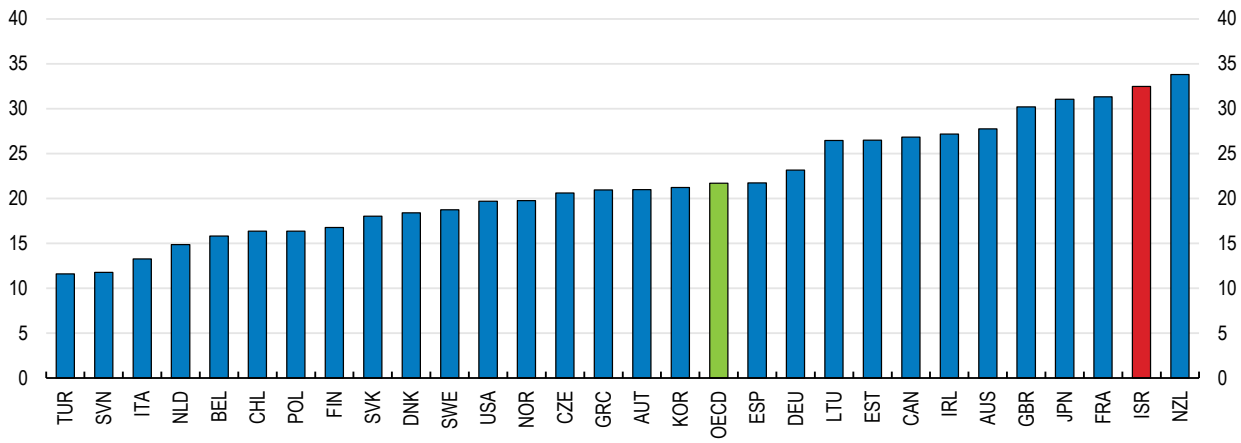
However, the rapid withdrawal of unemployment benefits potentially contributes to skills mismatch; among other factors such as limited Hebrew proficiency among immigrants and Arab-Israelis (Bleikh, 2020[15]). The share of over-qualified workers is one of the highest in the OECD (Figure 2.11). The short duration of unemployment benefits gives strong incentives for workers who become unemployed to find a new job quickly. Since finding a good match for their skills and experience takes time, many jobseekers will therefore settle for a position that does not fully utilise their potential, resulting in mismatch. Mismatched workers are paid less than suitably matched workers with similar qualifications, and this wage penalty is particularly high in Israel (OECD, 2016[16]). Evidence from other OECD countries suggest that mismatch especially affects labour market outcomes of disadvantaged workers, who are less likely to be able to

support their job search from own funds or other sources (Farooq, Kugler and Muratori, 2020[17]). In this respect, the Israel Employment Services has many recurring clients that cycle between short-term jobs and unemployment. With a benefits system oriented towards strong work incentives, active labour market policies have an important role to play in improving job quality and the integration of underrepresented groups into the labour market, as recognised in the OECD *Jobs Strategy* (OECD, 2018[18]). The government should review the design of unemployment insurance with a view to strike the right balance between work incentives and supporting good job matches and employment quality.

Figure 2.11. Skills mismatch is high

Share of over-qualified workers, %



Note: Based on Survey of Adult Skills (PIAAC) data (2012, 2015). Data for BEL refers to Flanders, while data for GBR refers to England.
A worker is classified as over-qualified when the difference between his or her qualification level and the qualification level required in his or her job is positive. The Survey of Adult Skills asks workers to report the qualification they consider necessary for their job today.
Source: OECD (2016), "Skills Matter: Further Results from the Survey of Adult Skills", https://doi.org/10.1787/9789264258051-en.

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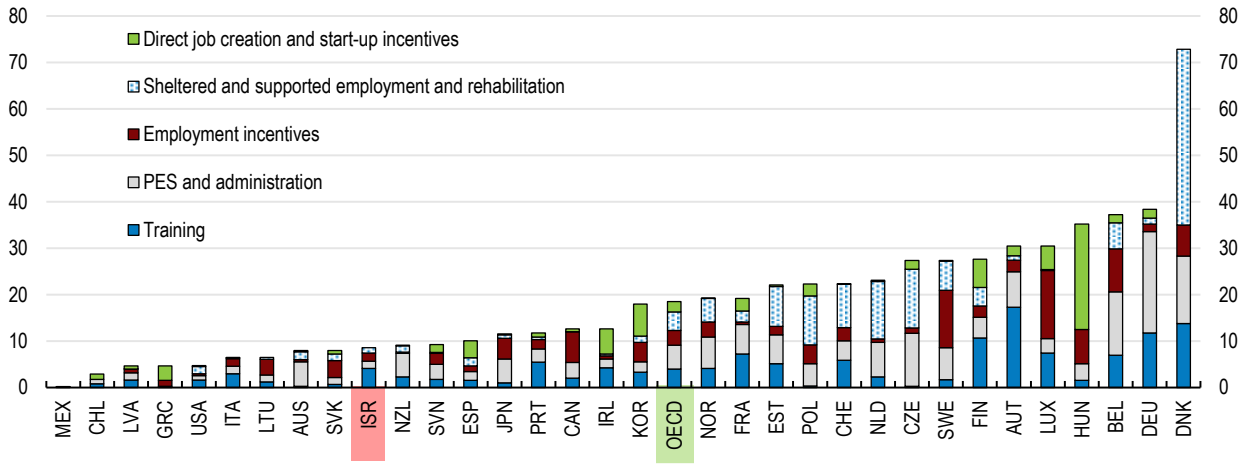
An important element to improving the quality of job placements consists of providing jobseekers with the right training and incentivising them to take it up. A welcome recent reform abolishes the financial penalty (reduction in unemployment benefits) for jobseekers in professional training programmes, which strongly reduced the incentives for re-skilling and upskilling. As discussed further below, incentives for undergoing re-training can further be strengthened, for example by introducing time accounts or individual learning accounts (OECD, 2017[19]). This is especially important given the concurrent reform in financing of VET providers which should increase the quality of training. Adult learning should continuously offer opportunities to the large share of workers lacking basic skills, including language skills in Hebrew and English. The COVID-19 crisis underlines the importance of training in general digital skills (OECD, 2021[20]), which are comparatively low among the Israeli workforce, as pointed out in previous *Surveys* (OECD, 2018[4]; OECD, 2020[3]). Finally, the implementation of adult training is fragmented across the Ministry of Economy, the Israel Employment Service, the Authority for the Economic Development of the Arab Sector within the Ministry of Social Equality, and local training institutes. This calls for improved coordination and mutual recognition of training, even as competition among training providers and variation in training programmes offered to workers should be encouraged.

There is room to expand other components of active labour market policies (ALMP) in order to help workers find high quality jobs (Figure 2.12). For example, well-targeted hiring subsidies for specific groups or jobs have been shown to be effective measures for boosting job growth of disadvantaged groups (Cahuc, Carcillo and Le Barbanchon, 2018[21]) and have been recently introduced or strengthened in a number of OECD countries, such as Australia, France, Italy, and the United Kingdom. In Canada, for example, temporary wage subsidies are available for certain new hires, especially minorities, young workers,

workers with disabilities, or in specific sectors such as STEM. In 2021, the Israeli government introduced a pilot hiring subsidies scheme for specific populations, including Arab-Israelis, Haredim, and workers with disabilities (Labour Division, 2021[22]). This programme should be closely monitored and its effects evaluated. The implementation and evaluation of job placement services could be even more enhanced by greater integration of the Israel Employment Service's administrative data on jobseekers with other labour market data, as part of a single labour market data hub (see below). Systematic impact evaluation of new and existing programmes would help identify the programmes that are most effective and that should be expanded.

Figure 2.12. ALMP spending is low

ALMP spending per unemployed, as % of GDP per capita, 2019



Note: ALMP refers to active labour market programmes. Data for AUS, NLZ and USA refer to the 2018/19 fiscal year.
Source: OECD Labour Market Programmes database.

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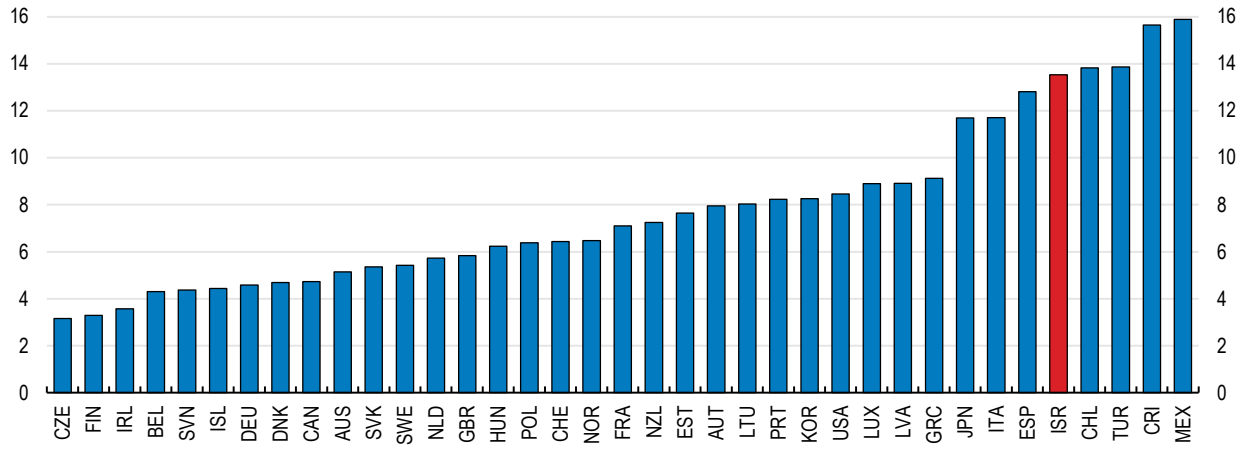
Being in work is not sufficient for staying out of poverty for a comparatively high share of workers (Figure 2.13), especially for those in single earner and large households. To support the incomes of low earners, Israel operates an Earned Income Tax Credit (EITC) scheme, first introduced in 2007. This targeted support system contributes to increasing employment and reducing poverty among vulnerable populations, with strong individual incentives for participation due to high ceilings on family income (Brender and Strawczynski, 2020[23]) at a low budgetary cost (IMF, 2018[24]). However, the current level of EITC is not sufficient to lift the typical Arab-Israeli or Haredim household above the poverty line (OECD, 2020[3]). In 2018, an EITC reform (the "Net Family Program") expanded the wage threshold after which the EITC bonus starts to taper off by 50% for fathers and 30% for families where both parents work. These changes restored gender balance and strengthened work incentives for second earners. However, this reform was temporary and only applied to a single tax year. Instead, other temporary EITC supplements were introduced in 2020 and 2022 to support households in light of COVID-19 and the high cost of living, but without the added work incentives of the 2018 reforms. The government should permanently re-introduce the changes of the 2018 reform, as recommended in the 2020 *Survey* (OECD, 2020[3]). Specifically, the second-earner bonus should be re-introduced, and the withdrawal threshold of fathers should be aligned with that of mothers. This would provide low-income households both with a stable in-work benefit and a longer-term work incentive, which would encourage investments into job search and skills.

In addition, the government should improve the EITC take-up rate of around 70%, which is mainly driven by very low take-up among Arab-Israelis (State Comptroller of Israel, 2020[25]). This is lower than e.g. EITC take-up in the United States, which is around 80% (Goldin et al., 2022[26]). In the first years after the introduction, the Israeli government sent out reminder letters to workers who were likely eligible for EITC

and the evidence suggests they resulted in an increased uptake (Strawczynski and Myronichev, 2014[27]). The government should simplify procedures for obtaining EITC, for example by moving towards auto-enrolling workers who are eligible based on their tax records. The Tax Authority, relying on salary information provided by employers, already processes taxes without the need for workers to file a tax return, and should therefore already have all necessary information for checking EITC eligibility and processing payments (Lior, 2022[28]). Reminder letters can be re-introduced as a temporary solution until the administrative systems for auto-enrolment have been completed. As part of the same reform, monthly or quarterly advance payments based on preliminary eligibility assessments should be made. Currently the EITC is paid on an annual basis several months after the end of the tax year, which reduces intended work incentives and effects on poverty reduction.

Figure 2.13. The share of working poor is high

Share of workers in poverty, %, 2020 or latest available year



Note: Workers with income below the poverty line after taxes and transfers, living in households with a working-age head and at least one worker. 2019 for Israel, 2021 for CRI and USA.
Source: OECD Income Distribution database.

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Negative work incentives limit the employment of Haredi men. First, full-time yeshiva students receive a monthly government stipend. Second, a day-care subsidy for low-income families requires mothers but not fathers to be employed, an exemption which largely benefits Haredi fathers in *yeshivas*. Third, Haredi men under the exemption age (currently 24 years) are in principle conscripted into the army, yet they can secure repeated deferrals as long as they are engaged in full-time religious study (but not in other education or employment). This creates incentives for remaining out of market-relevant education or employment for a long time (i.e. until the exemption age), which has long-term consequences through scaring effects from reduced human capital accumulation and missing labour market experience. In addition, the withdrawal of stipends and additional community financial support implies very high marginal tax rates for young Haredi men if they decide to become employed (Batz and Krill, 2019[29]).

Evaluations of temporary reforms in 2014 that lowered stipends, restricted the day care subsidy eligibility (Batz and Krill, 2019[29]) and lowered the military exemption age from 24 to 22 years (Zofnik and Zussman, 2021[30]) suggest that, while not quantitatively large, the labour supply effects of these reforms were positive and lasting. Moreover, the Israeli High Court previously found the student stipend and the military exemption rules to be discriminatory, since they do not apply to students in other educational institutions such as universities. Government stipends for full-time religious study should be reduced (and brought closer to living expenses support for other types of post-secondary education) and the military draft exemption age should be lowered in order to attract more Haredi men into labour market relevant education and employment at early ages. In addition, day care subsidies should require both parents to be employed.

Since the current eligibility criteria already condition the subsidy on the mother being employed, this should not have significant detrimental consequences on labour force participation of women; nevertheless the government should carefully monitor a reform for any such effects.

Israel introduced a successful furlough scheme during the COVID-19 crisis. The scheme provided income support to workers with jobs that were temporarily made unviable by pandemic restrictions, via the unemployment insurance (UI) system. As in the United States, for example, this allowed temporarily laid-off workers quick access to income support through an established administrative infrastructure, with the crucial difference that in Israel the contractual work relationship was not severed (OECD, 2020[31]). As a result, many workers quickly returned to work when pandemic restrictions eased (see Figure 2.2). At the same time, the scheme seems to not have prevented efficient reallocation, as there was no noticeable decrease in job mobility in the recovery from the pandemic compared to its level in 2019 (Israel Democracy Institute, 2021[32]; Betz and Geva, 2022[33]). The scheme was discontinued in June 2021.

The introduction of a permanent job retention scheme could provide the basis for providing and scaling up fast and predictable support to workers in future crises without the need for recurrent legislation. Such a scheme should be better targeted to the actual needs for temporary job retention support. Two policy options for better targeting are allowing for flexibility in choosing the hours not worked, and introducing employer co-financing. First, many job retention schemes offer the possibility of a partial adjustment of hours in addition to full furloughs (OECD, 2021[20]), such as the *Kurzarbeit* scheme in Germany and *chômage partiel* in France. This allows better targeting of support to the actual shortfall in hours, resulting in potential fiscal savings relative to subsidising only complete furloughs (Effenberger, Koelle and Barker, 2020[34]). Such partial hours adjustment could still take place in the existing institutional set-up, with payments channelled through UI, as the examples of partial lay-offs in Norway and Finland show. However, such a more granular scheme comes with greater demands on monitoring of the actual time worked, on which administrative information is currently limited. Second, requiring a small participation to the costs of job retention support better incentivises firms to select into the scheme in case of temporary but not permanent shocks, preventing workers from becoming trapped in non-viable jobs. Many countries have now introduced co-financing requirements to their schemes (OECD, 2022[35]). In Israel, co-financing could take the form of a mandatory employer-paid top-up to the relatively low statutory replacement rate (53% at the average wage) or payment of social security contributions over hours not worked, which was left unfunded during the COVID-19 furlough scheme.

Labour force participation of older workers will become increasingly important for overall employment due to population ageing. A welcome recent retirement reform will raise women's statutory retirement age to 65, closer to that of men (67). As recommend in *Chapter 1*, the retirement age gap between women and men should be fully closed, and the statutory retirement age thereafter linked to life expectancy. In addition, incentives for workers to continue participating in the labour market past the statutory retirement age could be strengthened, for example by lowering the 60% deduction rate of basic old-age pensions and by reviewing the design of the pension bonus awarded to workers who continue to work past statutory pension ages with a view to make it actuarily neutral. A recent reform which increases the threshold at which income earned by pensioners starts being deducted from their pension is a step in the right direction.

Improving women's participation in all segments of the economy

In general, the individual system of income taxation creates no negative distortions for second earners, and higher personal and child tax credits favour women. However, recent international evidence points to childbirth as one of the main triggers of gender differences in employment and wages (Ciminelli, Schwellnus and Stadler, 2021[9]; Kleven et al., 2019[36]; OECD, 2021[37]). In Israel, the estimated long-run child earnings penalty – the earnings loss for women after the birth of their first child, relative to men – among non-Haredi Jewish women is 28% (Yakin, 2021[38]). While this is somewhat lower than in other OECD countries, overall childbirth can be still considered a major contributor to the high gender wage gap, given that maternity is much more prevalent and fertility higher than in other OECD countries. The

government should therefore target policies specifically at closing the career penalty for mothers. Since the main constraints to full participation differ for women of different population groups, differentiated policies are needed: increasing childcare provision for the Arab population to ease Arab women's labour force participation, and enabling more equal allocation of household tasks in dual-earner Jewish families in order to incentivise a more gender-equal choice of working hours and pursuit of high-paying jobs.

Lack of available and affordable early childcare hinders the labour force participation of Arab-Israeli women. Pre-school attendance is almost universal for children of all communities from age three, the age at which it becomes free and mandatory. However, only one third of children under the age of three of Arab mothers without an academic education attend preschool; and two thirds of children of Arab mothers with an academic education (Vaknin and Shavit, 2022[39]). International evidence suggests that provision of early childhood education and care reduces gender disparities (Olivetti and Petrongolo, 2017[40]). Previous reductions of childcare costs in Israel have been found to increase employment of mothers of young children (Shachar, 2012[41]; Shachar, 2022[42]). Despite higher budgetary allocations for construction of day-care centres in Arab municipalities in recent years, implementation lagged behind due to difficulties with zoning and land availability in Arab municipalities (OECD, 2020[3]) and a lack of coordination between infrastructure construction and the furnishing and staffing of day-care centres (Madhala et al., 2021[43]). The government should ensure the timely and effective implementation of currently planned expansions of childcare in Arab municipalities.

The lack of synchronisation of school and work holidays creates barriers for female labour market outcomes. Unusually among OECD countries, Israel operates a six-day school week, whereas the working week has only five days. With longer school vacations to compensate for the longer school week, schools are closed on many days that are usual working days (Bank of Israel, 2019[44]). This increases the childcare burden for parents of school-age children, who need to find alternative childcare arrangements, or provide such childcare themselves. This has important gender implications in the labour market because the burden of childcare typically falls on women. In order to provide childcare on school closure days, women might move into part-time work, jobs with flexible hours, or less demanding roles where watching children alongside work hours is more feasible. The government has started to address this problem by introducing summer schools and holiday schools, but this reduces the "vacation day gap" only by a small amount (Bank of Israel, 2019[44]). The government should therefore align the school week with the work week by moving to a five-day school week while keeping the overall number of instruction days fixed. In addition, the government should offer vacation schools on the remaining non-school days to enable a better balance. For example, in France, which has the lowest number of instruction days of all OECD countries (OECD, 2021[45]), municipalities provide "leisure clubs" (*centres de loisirs*) on most non-school days. These clubs are run by non-teaching staff and provide extra-curricular activities at subsidised costs that are differentiated by household income.

Earmarking a part of parental leave to fathers can enable a better balancing of careers and families across men and women. The gender wage gap in today's advanced economies largely results from the underrepresentation of women in the highest-paying jobs (Goldin, 2014[46]). In Israel, for example, women are only one third as likely as men to be managers (Kasir and Yashiv, 2020[47]), and women are under-represented in high-paying sectors such as in high-tech. One reason for this "glass ceiling" is that women often select into occupations with lower and stable hours that match with day-care and school times, whereas more men choose to work in a higher-paid jobs that demand presence whenever required by business needs, resulting in long and unpredictable hours (Goldin, 2014[46]). The introduction of reserved parental leave for fathers helps some families to break this pattern of specialisation, as evidence from Nordic countries shows (Albrecht, Skogman Thoursie and Vorman, 2015[48]). Fathers who take paternity leave tend to take on more childcare responsibilities afterwards, reducing the gender gap in unpaid family labour; an effect demonstrated for example in the Canadian province of Québec (Patnaik, 2019[49]). A more equal gender distribution in parental leave as well as take-up of workplace flexibility by parents will make employers less reluctant to hire or promote women, thus reducing gender gaps in employment and wages.

Most OECD countries have now in place some form of reserved paternity leave (OECD, 2021[50]). Israel is an exception. Fathers can claim any unused part of the mothers' 15 weeks of paid maternity leave entitlement, but have no individual entitlement for themselves. The government should introduce paid parental leave reserved for fathers that add to current entitlements for mothers. To incentivize take-up, the authorities should follow best practices and ensure paternity leave is well-paid, linked to earnings (up to a ceiling), and allow for flexible scheduling between spouses according to individual personal and professional circumstances (OECD, 2016[51]; OECD, 2022[52]).

Ensuring gender equality in all segments of the economy is a cross-cutting theme and goes beyond issues related to maternity and paternity. Women are among the priority groups targeted by a comprehensive strategy to broaden the high-tech talent pool, given their current underrepresentation in the sector, as discussed below. An expansion of STEM places should also go hand in hand with actions to improve the representation of women in these subjects. Moreover, given that parents caring for young children typically have lower job mobility and tend to favour shorter commutes to workplaces closer to home and childcare centres (Caldwell and Danieli, 2022[53]), policy recommendations to increase job mobility – especially improving public transport – also have the potential to benefit women. Finally, as discussed above, the proposed changes in the Earned Income Tax Credit (EITC) would improve gender balance.

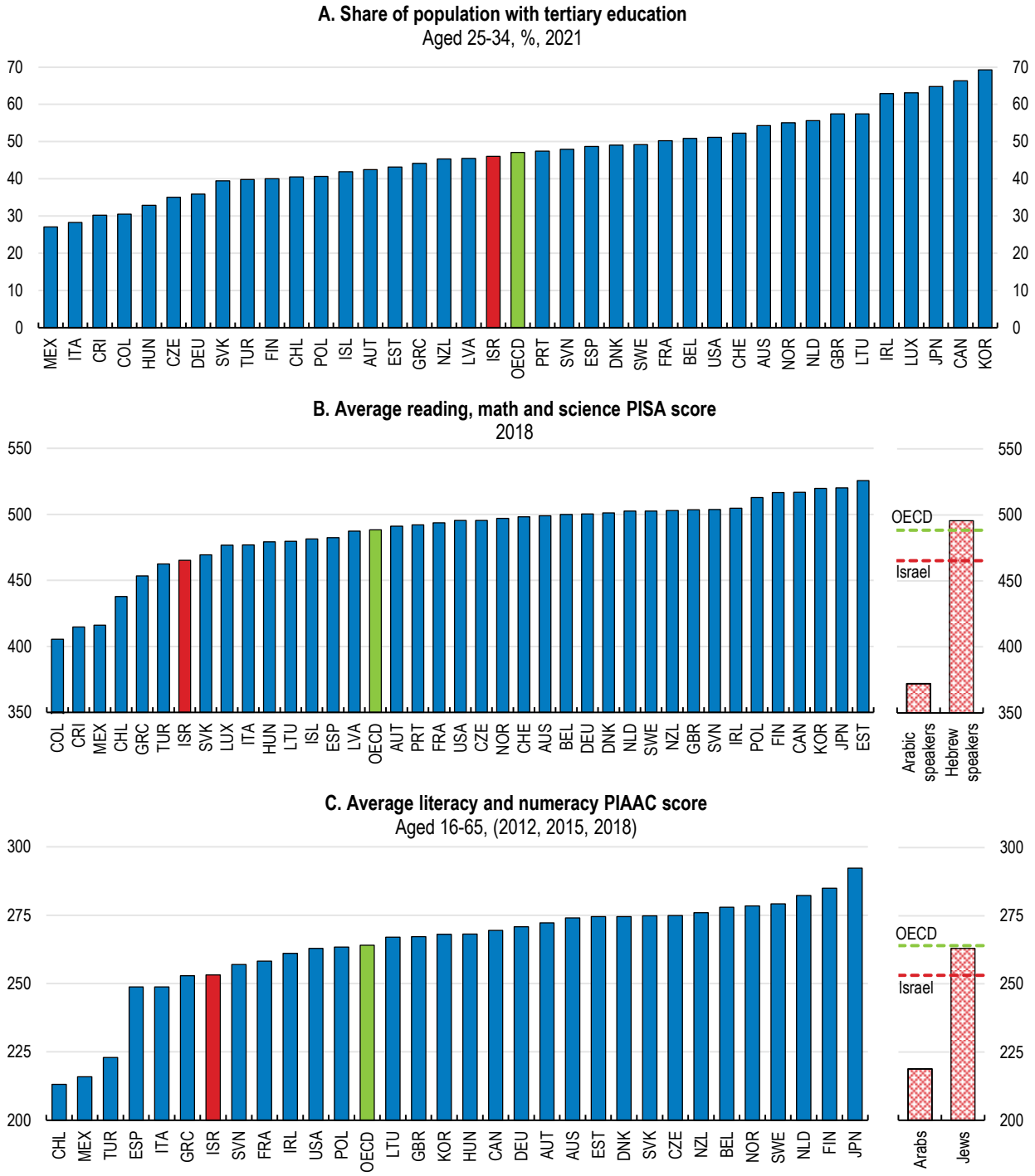
Improving skills for all

While the share of young Israelis with a tertiary education is about the OECD average, their level of skills lags behind other OECD countries (Figure 2.14). On average, on the PISA assessment, Israeli pupils perform significantly below most other OECD countries. After some progress between 2006 and 2015, PISA scores of Israeli pupils decreased again in 2018. Poor skills of school-age pupils carry over to low adult skills. Israel's performance in the OECD assessment of adult skills PIAAC mirrors the results that the country obtains in PISA. These low average skills are largely the result of particularly low skills in certain population groups, especially Arab-Israelis. Israel has the highest dispersion of proficiency scores among all OECD countries (OECD, 2020[3]; OECD, 2018[4]). Given that Israel is also among the countries where skills differences have the largest consequences for wage differences, this translates into large wage inequality (OECD, 2018[4]). Improving the equity of the education system and closing skills gaps at all stages of the learning cycle is therefore a key pre-requisite for narrowing later gaps in the labour market. More flexible, institutionalised pathways between secondary schooling, VET, and tertiary studies would widen opportunities for those who left earlier education stages with insufficient skills.

Levelling differences in the schooling system

The schooling system is segmented along ethno-religious lines. It is divided into four main streams: the Arab stream (where the language of instruction is Arabic), the Haredi stream (with gender-segregated schools, and in particular for boys a focus on religious study), and two state Hebrew streams (one secular, one religious) that teach the national core curriculum in their schools. For historical, cultural, and political reasons, the Haredi community holds large autonomy over the curriculum and instruction in their education system. Education is free and mandatory for all children aged 3 to 18. The state provides 90% of all school funding, with the remainder coming from local governments, non-profit educational organisations, and private households (OECD, 2018[4]). Tertiary education is also largely funded by the state, though private colleges and one private research university exist.

Figure 2.14. Israel performs average in advanced educational credentials, but lags in skills



Note: In Panel A, 2020 data for CHL. In Panel B, Hebrew speakers should be interpreted as "non-Haredi Jews".
Source: OECD Education Statistics database; OECD (2019), PISA 2018 Results (Volume I): What Students Know and Can Do, PISA, OECD Publishing, Paris, https://doi.org/10.1787/5f07c754-en; and OECD (2019), Skills Matter: Additional Results from the Survey of Adult Skills, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/1f029d8f-en.

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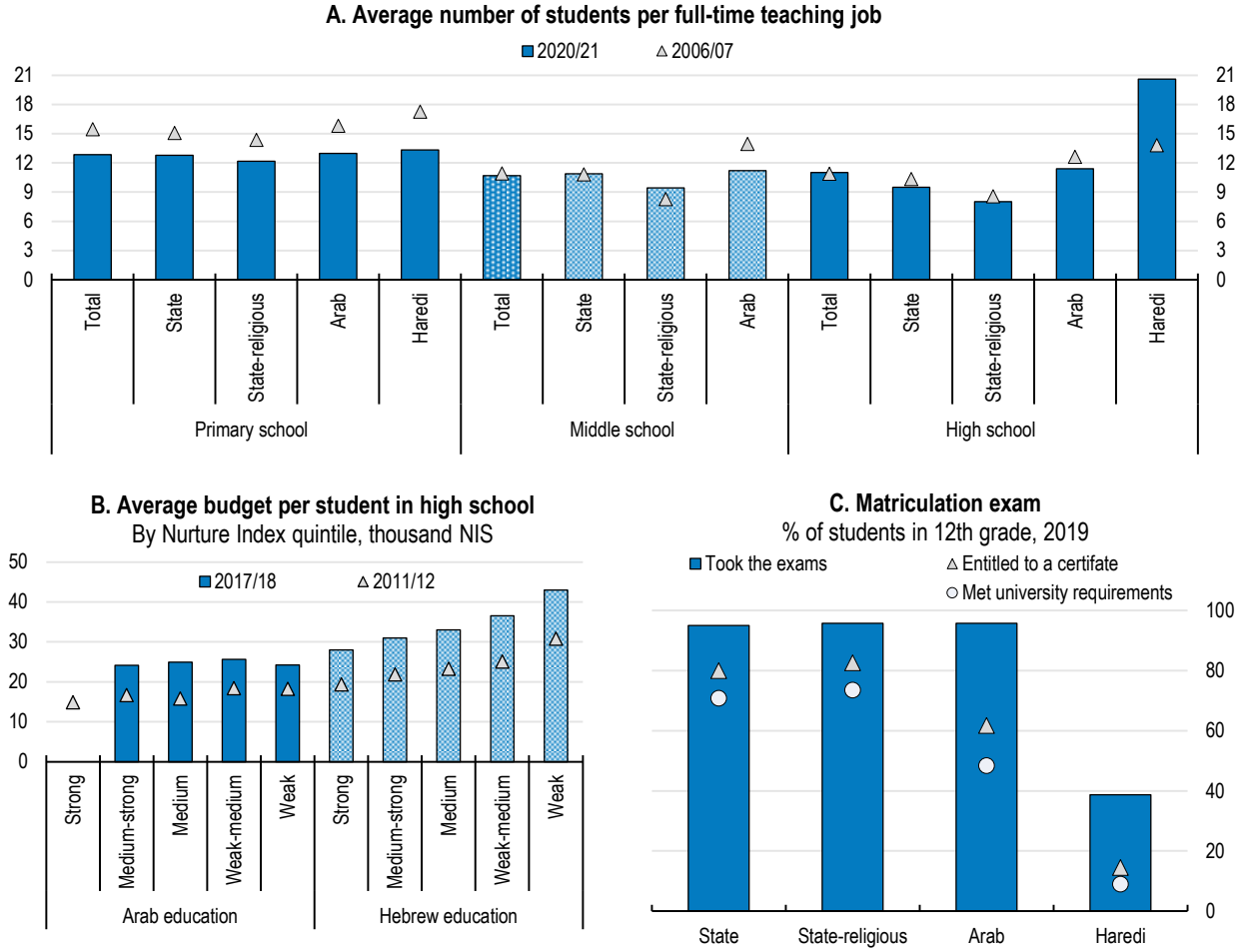
Resources in the education system are not systematically directed to where they are most needed. Despite some improvement in recent years, the Arab and Haredi education systems still count with less resources in terms of funding, teacher-pupil ratios, or teacher skill endowments than the two systems (state and state-

religious) educating non-Haredi Jews (Figure 2.15). In 2016, the government started an education reform aiming to allocate more funding to schools in disadvantaged communities (OECD, 2018[4]; Blass and Shavit, 2017[54]). However, this has mostly benefitted disadvantaged Hebrew schools, whereas Arab schools continue to be under-funded with the largest gap among the more disadvantaged schools. The government should direct additional funding towards Arab schools with weak learning outcomes – which are the most underfunded type of schools (Figure 2.15, Panel B) – equalising their funding to schools with similar profiles (index of socio-economic background) in the Hebrew sector.

Figure 2.15. Large inequalities exist in education provision across groups



Note: In Panel A, data for Haredi are not available for the middle school category. In Panel B, data for Arab are not available for the first quintile (i.e. "strong") for 2017/18. The Nurture index of the Ministry of Education measures the socio-economic background of a school's student population.

Source: Israel Central Bureau of Statistics; Nachum Blass (Taub Center for Social Policy Studies); and Israel Ministry of Education.

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Schooling resources go beyond funding per pupil or class sizes. Better incentives are needed to attract qualified teachers in the schools with the highest needs. Similarly, it is increasingly difficult to attract graduates with lucrative job opportunities in the private sector, such as those specialised in maths and sciences, into the teaching profession. This will require better baseline salaries, especially for early-career teachers (OECD, 2018[4]). A recent wage agreement, which boosts salaries of starting teachers by up to 30% in nominal terms, will improve the competitiveness of the teaching profession, especially in high cost-of-living areas. Incentives could further include special provisions for priority subjects or regions, which already exist for some municipalities. For example, in Estonia new teachers are offered an allowance for three years if they locate in rural areas and in Korea, teachers in high-needs schools have better working

conditions and receive credits for future promotions to administrative activities, as well as better choice over the next school in which to work (OECD, 2017[55]).

Strengthening schools also requires changes to the curriculum and the organisation of teaching. For the Arab stream, a long-standing issue is the lack of Hebrew language instruction. As discussed in past surveys (OECD, 2020[3]) (OECD, 2018[4]), described by Israeli researchers (de Malach, 2021[56]; Labour Division, 2019[57]), and voiced by professionals committed to diversity initiatives at universities and the high-tech industry, insufficient Hebrew proficiency limits the opportunities of many graduates of the Arab education system. The government should increase the provision of Hebrew language instruction in the Arab stream, and restructure the curriculum to put practical knowledge and application of the language at the centre. A useful tool to achieve this is to promote teacher exchanges between the Arab and Hebrew streams to facilitate teaching by native speakers, which could partly cover core subjects other than the languages itself. English language teaching should also be strengthened. In addition, outdated teaching standards in the Arab education system, with a very traditional pedagogy focussing largely on rote learning, provide insufficient preparation to pupils for the intellectual challenges of higher education and should be reviewed.

The main challenge of the Haredi education system is its lack of instruction in the core curriculum. Given the large degree of autonomy enjoyed by the stream, funding allocations with conditions attached is the main policy lever available to the government. In principle, funding for Haredi schools is already proportional to the share of core curriculum subjects taught (OECD, 2018[4]). However, limited oversight, lack of inspectors, and the absence of participation in standardised testing mean that there is very limited supervision. At the same time, there is considerable unmet demand among Haredi parents for core curriculum teaching in addition to religious subjects (Gal, 2015[58]). One step in the right direction was the establishment of a “state” Haredi stream – where schools teach the full core curriculum in addition to religious subjects and are under full supervision of the Ministry of Education while retaining cultural autonomy. However, since its first establishment in 2004, the model has not yet been formalised in legislation, creating legal uncertainty that prevents more schools from joining (Hazan-Perry and Katzir, 2018[59]). While enrolment in this stream has increased in recent years, pupils joined not only from Haredi schools but also from the state-religious stream, increasing the burden on the Ministry of Education’s budget without achieving the desired goals. The authorities should improve the general accountability of Haredi schools for the state funding they receive for teaching core subjects. This would include strengthening administrative capacities of the Haredi branch in the Ministry of Education and improving the effectiveness of inspections by investing into evaluation of learning gains in core subjects.

Broadening participation in tertiary education

Access to tertiary education has improved significantly in recent years, but remains low for certain groups. Public and private colleges account for the greatest share of the rapid expansion of higher education (Hazan and Tsur, 2021[60]), and 12% of adults hold tertiary credentials below a bachelor’s degree, for example professional colleges (OECD, 2021[45]). The share of Arab-Israelis in tertiary enrolment doubled to 20% within only a decade, but the group is still underrepresented in higher education (Amaria and Krill, 2019[61]). Women make up more than 60% of all Arab university students. While Arabs are still more likely to choose professional and teacher training colleges over universities, the gaps are shrinking.

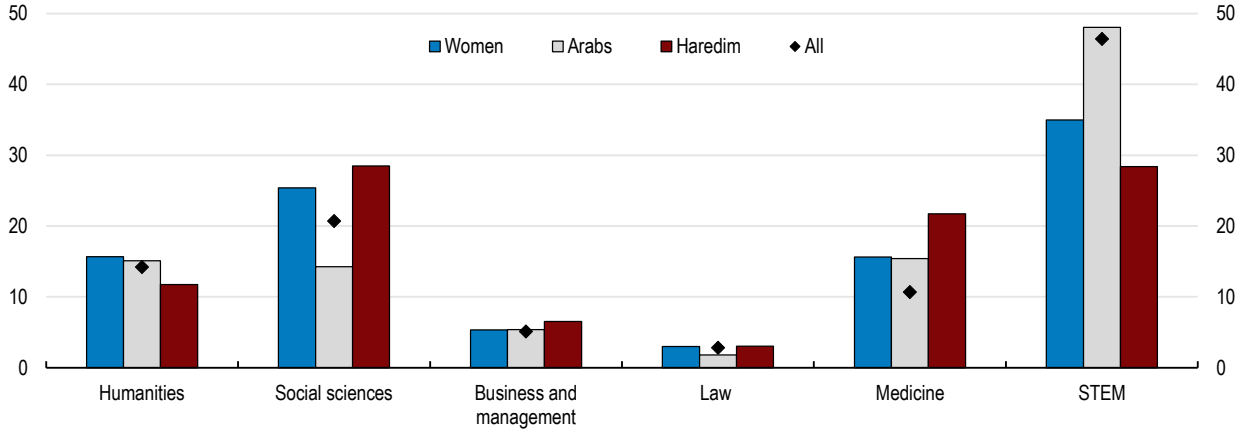
Many university students major in STEM subjects such as mathematics, statistics, computer science or engineering (Figure 2.16). Arab-Israeli students are now relatively well-represented in professions with high earnings potential such as STEM and business and management, as well as in medical studies, although within those fields they still are under-represented in the subfields with the highest earnings potentials. For example, their share in the medical field is skewed towards paramedical courses rather than training to be a doctor (for which many Arab-Israeli students go abroad). Women are underrepresented in STEM, although their share has significantly increased over the last decade and the female representation in STEM subjects in Israel is higher than in many other OECD countries (Mostafa,

2019[62]). As in other countries, female representation in STEM is partly a reflection of gender stereotyping and subject specialisation already in upper secondary school. In the specific case of Israel, women are also less exposed to technological roles during their military service compared to men (Israel Innovation Authority, 2022[63]). Promoting female role models at all stages of the education system, building girls' confidence, and training teachers to recognise and address biases are policies seen as promising to improve female representation in STEM (OECD, 2017[64]).

The vast under-representation of graduates of the Haredi school system in higher education – only 2% of all students – is to some degree a reflection of insufficient preparation by the school system. Only around 10% of Haredi pupils (and only 3% of boys) take and pass the matriculation exams that are a general requirement for college admission. Many members of the community further avoid co-educational campuses for cultural reasons. There has been some success with offering post-secondary courses – such as computer science at the "practical engineering" level, a two-year vocational degree – in seminaries for Haredi women. These are segregated by gender, are organised as a community enclave, and admission requirements are tailored to the secondary credentials issued by Haredi girls schools. This education has allowed for a successful labour market integration of Haredi women into skilled professions (Labour Division, 2019[57]). Overall, expanding higher education access for the Haredim rests on a combination of three policies that are discussed below and above: (i) improving pathways between post-secondary VET degrees and tertiary studies, which would open up opportunities for those who acquire skills at a later learning stage, (ii) improving education quality in the Haredi school system to prepare pupils better for higher education, and (iii) incentivising Haredi families to participate in labour market relevant education and training, especially core subjects in secondary school, and improving their performance in matriculation exams.

Figure 2.16. Many university students choose STEM subjects, but some groups still lag behind

Share of fields of study among population groups, %, first-degree first-year students, academic year 2019-20



Note: STEM stands for Science, Technology, Engineering and Mathematics. It comprises the sum of categories "Natural science and mathematics", "Agriculture" and "Engineering and architecture" as reported by the Central Bureau of Statistics.
Source: Israel Central Bureau of Statistics.

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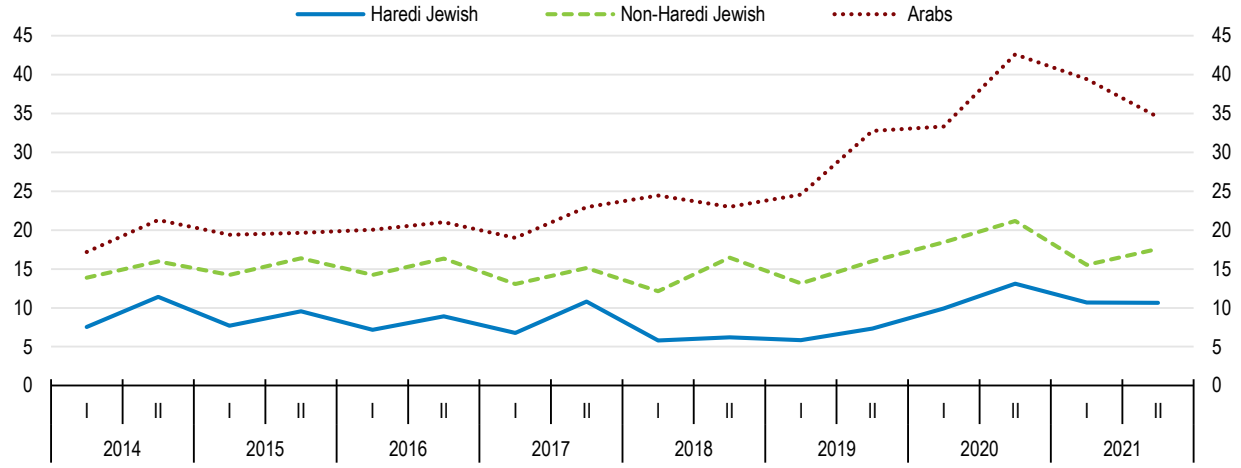
Average wage gaps between university and college graduates are significant. The fact that colleges tend to be less selective than traditional universities, as well as differences in the quality of education they provide, contribute to a lower valuation of their degrees on the market. Moreover, university students benefit from a more challenging learning environment with high-ability peers, as well as from access to better alumni networks (Krill, Hakt and Fischer, 2018[65]). Graduates of colleges earn 10-20% less than university graduates on average (Achdut et al., 2018[66]), and they struggle more to find adequate jobs for their formal level of qualification (Lipiner, Rosenfeld and Zussman, 2019[67]). To better inform post-secondary education choices, the government has recently launched the online tool *Avodata* with salary

and employment information of graduates by field, based on statistical analysis of labour force data. It also provides information on the wage returns to careers by educational institution, enabling prospective students to make better informed enrolment choices. This is in line with recommendations in previous Surveys (OECD, 2018[4]) to introduce mandatory tracking of graduate outcomes by universities.

A high share of young Arab-Israeli men are not in education, employment or training (Figure 2.17). This share had been progressively increasing before 2020 – in contrast to young Jewish men, for whom it had been declining. A major explanation for the persistent difference in NEET rates is the fact that about 35-40% of non-Haredi Jews of similar age are in mandatory military service in the Israeli Defence Forces (IDF) and therefore are counted as working. Moreover, due to their exemption from military service, Arab-Israelis need to make career choices including about post-secondary studies around age 18, whereas their Jewish classmates tend to arrive at this juncture in their mid-20s. The structured environment of the IDF also offers opportunities to make up for missed education in teenage years, including re-taking the *Bagrut* exams. Other explanations are weaker educational outcomes among Arab-Israelis (see Figure 2.15) which render many of them ineligible for university studies, and lack of good employment or education opportunities in Arab cities. NEET rates are particularly high for young Arab men from weak socio-economic backgrounds (Haddad Haj-Yahya and Shaviv, 2021[68]), reflecting the low degree of inter-generational mobility among Arab-Israelis (Batz and Krill, 2019[29]; Batz and Geva, 2022[69]). This has individual as well as societal consequences, as lack of opportunities and perspectives make young Arab men more vulnerable to recruitment by organised crime (Haddad Haj-Yahya and Shaviv, 2021[68]).

Figure 2.17. A high share of young Arab men are not in education, employment or training (NEET)
Share of NEET in population, men aged 18-24, %



Source: Labour Branch in the Ministry of Economy; Israel Central Bureau of Statistics.

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A long-standing proposal in Israel is a "gap year" around age 18 to provide Arab-Israelis with opportunities for skills and personal development that military service usually provides to Jewish Israelis, including more maturity and independence when entering post-secondary education. Such a programme is currently being implemented at large scale. The government should carefully monitor and evaluate this policy, and whether it serves its purpose of improving integration of young Arab-Israelis into post-secondary and tertiary education and subsequently the labour market. There is a risk that the current programme, with a focus on crime prevention and at-risk youth, may not be perceived as an attractive option by many young Arab-Israelis, and perhaps may even give a negative signal to future employers.

There is also a risk that a gap year simply pushes the problem of NEET youth by one year into the future, if there are no incentives for programme providers to achieve good post-programme outcomes. The development of skills and exploration of interests during a gap year should be complemented with guidance on further education and career choice, for example in cooperation with existing local employment centres

in Arab municipalities. The goal should be that each graduate from the "gap year" has a clearer plan of their future career path, be it admission to university, a place in a VET programme, or enrolment in a programme to re-take the *Bagrut* exam. The government should consider conditioning the funding of "gap year" providers on successful placements in follow-up programmes.

In addition to general programmes as the "gap year", existing and planned sectoral programmes that provide orientation to young people about professions and careers could help bridge the gap between school and work or professional training. According to practitioners and sector experts, in order to be effective such programmes should include targeted support to address the specific barriers that young Arab-Israelis face, such as language barriers and lack of opportunities in their place of upbringing, and offer personalised professional and socio-emotional support. Examples include initiatives at universities in the form of foundation year programmes to improve access of underrepresented groups who receive insufficient preparation in secondary education, or in the high-tech sector to organise coding bootcamps to attract more talent from underrepresented groups to the sector.

Embedding high-quality vocational and educational training in a national qualifications framework

Adult learning plays an especially important role in context of the fragmentated schooling system and the skill gaps it produces. In all OECD countries, digitalisation and automation pose risks to existing jobs especially of those with qualifications below the tertiary level (OECD, 2019[70]). Adult learning systems that promote life-long learning help re-skill and upskill those workers. In Israel, adult learning can further build job-relevant skills that individuals fail to acquire at earlier educational stages. A major component of adult learning systems is vocational education and training (VET), which equips school leavers who do not continue to higher education with workplace-relevant skills. The VET system in Israel consists of four different pathways, and military service plays a major role in shaping these pathways as well as the incentives of technical students and employers (Box 2.2)

Few young Israelis pursue VET as terminal degrees (Figure 2.18). More than nine out of ten young Israelis aspire to professional occupations that typically require university or other tertiary degrees (Figure 2.19). This may partly be influenced by the importance of education in Jewish history (Botticini and Eckstein, 2015[71]) and the high returns to professional qualifications, e.g. university degrees (Achdut et al., 2018[66]). But it likely also reflects the low status that is given to VET tracks, which are often seen as options of last resort for weak students, high-school drop-outs, or those that did not pass the Bagrut exam (Kuczera, Bastianić and Field, 2018[72]). The latter is the gateway to higher education, and while about 95% of all non-Haredi secondary pupils take the exams, only 80% receive a matriculation certificate and 70% do so with results sufficient for university admission (see Figure 2.15, Panel C). While some reputable and successful programmes with high labour market returns exist in certain technical fields, notably a two-year practical engineering degree (*MAHAT)*, a significant part of the VET system seems to offer low returns and is not perceived as attractive by many young adults. Increasing the attractiveness of VET would boost skills at the lower end for a relatively lower budgetary cost than tertiary education.

The authorities are aware of the need to reform VET. Main reform proposals, including by the National Economic Council at the Prime Minister's Office (National Economic Council, 2016[73]), the OECD (Kuczera, Bastianić and Field, 2018[72]; Musset, Kuczera and Field, 2014[74]), and the Committee for Employment Advancement towards 2030 (The Employment 2030 Committee, 2020[14]), emphasise the need to: (i) create a National Qualifications Framework; (ii) modularise educational degrees to create flexible pathways for mobility between upper-secondary schooling, post-secondary VET, and tertiary degrees; and (iii) improve the quality and labour market relevance of VET, including through integrated work-based training.

Box 2.2. The VET System in Israel

The VET system consists of four pillars:

- Upper-secondary "technological tracks" under supervision of the Ministry of Education, which is a form of compulsory schooling for under 18-year-olds, leading to a *Bagrut* exam.
- An extension of upper-secondary VET ("13th and 14th year"), taught in vocational secondary schools under supervision of the Ministry of Education, which requires previous completion of upper-secondary technological tracks with a full *Bagrut* exam.
- Post-secondary VET provided by technological colleges, some of which are members of large school networks. These provide one or two year courses that lead to an occupational certification, under the purview of the Labour Branch in the Ministry of Economy.
- Short adult learning VET courses, offered as on-the-job training or for unemployed workers. These are financed by the Labour Branch and subsidiary agencies (such as the Israel Employment Service), sometimes as part of active labour market programmes, sometimes offered at a local level, e.g. in local employment centres.

Military service plays an additional role in the Israeli VET landscape. Serving in the IDF is mandatory for all non-Haredi Jewish Israelis, and consists of three years of service for young men and two years for young women. Most Israelis complete military service between their secondary education and further studies. Given the length of service, many young adults are trained in a technical profession by the army, and qualifications are typically recognised in civilian life. The "13th and 14th year" pathway also takes place in close coordination with the IDF. Students generally need a deferral of military service in order to enrol into the programme, they often receive a scholarship from the IDF, and complete a longer military service where they exercise the technical professions they were trained in. The army also offers school drop-outs or those who failed to pass the *Bagrut* the opportunity to complete their secondary schooling. Finally, military experience also plays a key role in future study and career choice.

Work-based learning should be strengthened to improve the quality and relevance of VET. Currently work-based learning is very low (Figure 2.20), reflecting limited employer involvement in accredited VET training (as opposed to unaccredited short training programmes responding to specific employer training needs). Employers have limited incentives to invest into general rather than specific training, due to the externality involved with portable skills. This is a problem especially in Israel given the long military service, which means that firms cannot benefit from work-based VET as a tool to recruit secondary graduates, in the way apprenticeships work in other countries. The flipside, however, is that many VET graduates from the "13th and 14th year" can put their acquired technical skills immediately into practice during their military service. They enter the civilian labour market with substantial practical experience in their profession. Work-based learning should therefore focus on post-secondary VET.

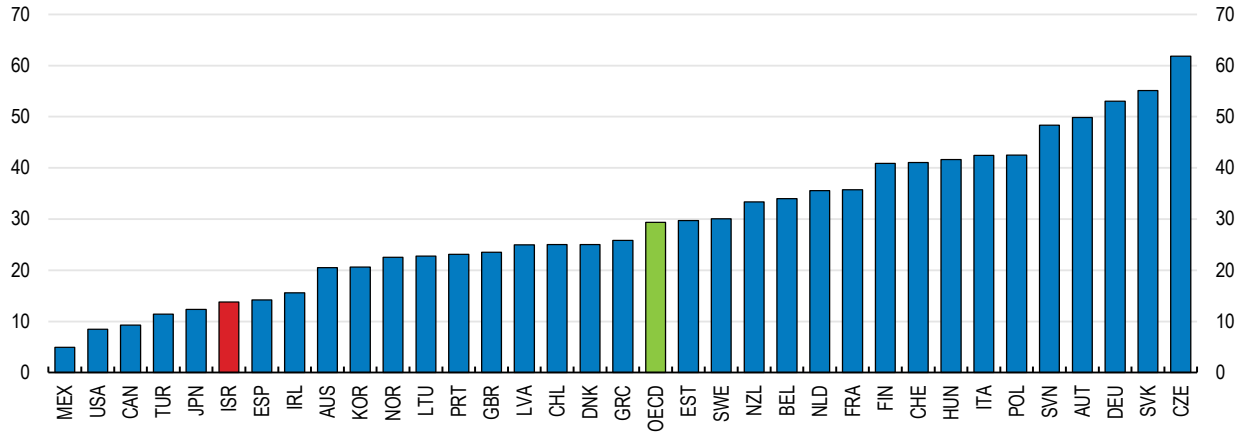
One possibility to overcome barriers to employer participation would be to introduce sectoral training levies or the establishment of sectoral training associations, in agreement with social partners. These have been successfully implemented in several European countries, and share the cost of work-placed training between all employers of a sector. For example, Hungary recently introduced Sectoral Training Centres to provide training and help firms dealing with administrative tasks. In Germany, there is a long tradition of training centres governed by the Chambers of Commerce.

Apprentice wages are relatively low, which lowers the cost for firms (Kuczera, Bastianić and Field, 2018[72]). However, many VET students are older if they enrol in the programme after military service, and around half complete VET courses part-time in the evening while engaging in full-time work. Therefore they may demand higher compensation for work placements than young apprentices in other countries. The government could financially support work placements, especially of underrepresented groups and those

without practical professional experience from military service. In Canada, for example, CAD 5000 (and higher amounts for certain disadvantaged and priority groups) are available for firms who offer work placements to post-secondary students.

Figure 2.18. Take-up of VET is low

Share of young adults with upper-secondary and post-secondary non-tertiary qualifications that also hold VET, adults aged 15 to 34, %, 2018 or latest available year



Note: VET refers to Vocational Education and Training. OECD is an unweighted average of the countries shown.
Source: OECD (2020), OECD Employment Outlook 2020: Worker Security and the COVID-19 Crisis, OECD Publishing, Paris, https://doi.org/10.1787/1686c758-en.

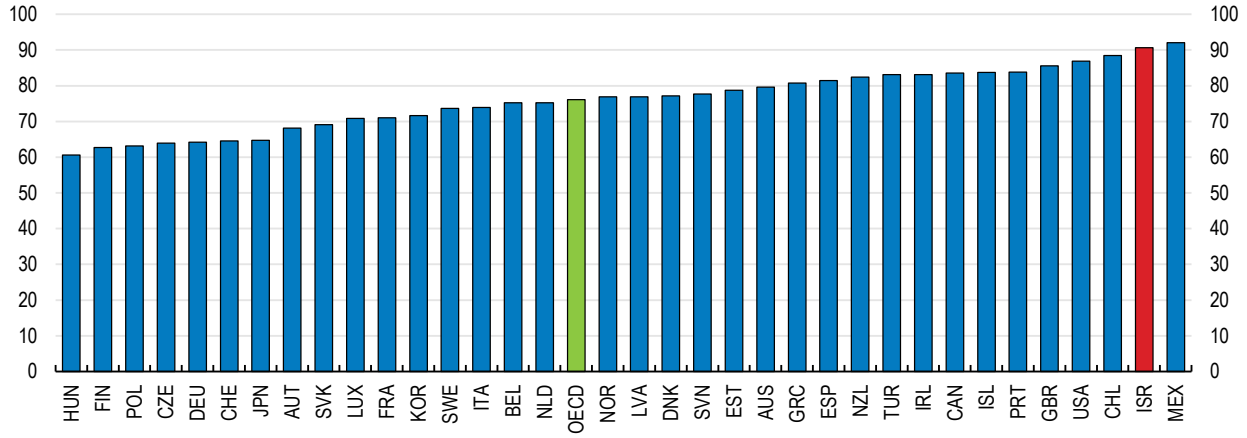
StatLink https://stat.link/ls10pb

Quality of VET can also be improved by empowering students to make better informed choices about programmes and training providers. This complements the authorities' current efforts to increase the quality of training providers and to provide training with good value for money. The government will condition funding for post-secondary VET institutions on demonstrated minimum wage returns, 6% for most courses and 4% for shorter programmes. To guide student enrolment choices, statistical information on wage returns and graduate outcomes in VET is now made public through the *Avodata* tool that also publishes wage information for tertiary education graduates. Ideally the collection, analysis and dissemination of labour market information of VET graduates should be integrated into a single labour market data hub (see below).

The government should expedite and complete the process of creating a National Qualifications Framework (NQF). Such a framework would help give clear recognition to the different secondary and post-secondary qualifications, including VET, as part of an integrated model of life-long learning. This is important in the context of fragmented accreditation: secondary vocational schools are supervised by the Ministry of Education, technical colleges offering VET are accredited by the Labour Branch in the Ministry of Economy, while academic colleges and universities are accredited by the Council of Higher Education, and the IDF has its own system of qualifications. In addition, short-cycle adult training course are offered by a plethora of providers, including the IES, different ministries, and many local and private institutions. In a changing world of work, such incremental training to update and upgrade skills is becoming increasingly important (OECD, 2019[70]). Clearly defined learning outcomes would provide transparency about the educational content and the level of skills acquired, and help to establish comparisons or equivalence of individual components of different qualifications. This could raise the profile of VET qualifications by clarifying the skills they provide. Israel has been working with the European Training Foundation to establish a national framework on the model of the European Qualifications Framework (Box 2.3) and a working group of experts has been established. However, few concrete steps have been taken, despite a government resolution from 2015 that created the necessary legal basis for developing the NQF (European Training Foundation, 2021[75]).

Figure 2.19. More young people aspire to skilled professions than in most other countries

% of 15-year-olds who aspire to skilled occupations, PISA 2015



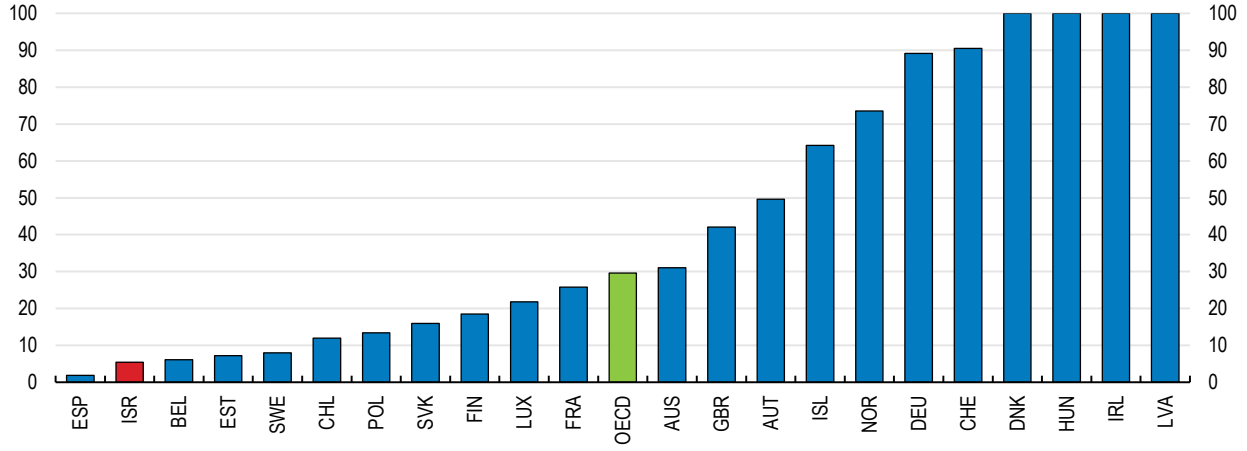
Note: Skilled occupations include professionals, managers, technicians and associate professionals, which typically require post-secondary education and training including post-secondary vocational and longer academic degrees. PISA data in Israel are representative for the Non-Haredi Jewish and Arab education streams.

Source: Kuczera, M., T. Bastianić and S. Field (2018), Apprenticeship and Vocational Education and Training in Israel, OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, https://doi.org/10.1787/9789264302051-en.

StatLink https://stat.link/jiwek6

Figure 2.20. Work-based learning is low

Share of VET students enrolled in combined school- and work-based programmes, 2020



Note: VET students in upper-secondary education.

Source: OECD Education Statistics database.

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Box 2.3. The European Qualifications Framework (EQF)

In the European Union, the European Qualifications Framework (EQF) forms the basis for 38 national qualifications frameworks. The EQF groups qualifications into eight reference levels defined in terms of learning outcomes, each with an increasing level of complexity, abstraction, and demands on autonomous thinking and judgement. The framework eases the portability and transfer of qualifications across systems, sectors and learning contexts. It also facilitates the recognition of qualifications obtained abroad. By mapping qualifications based on learning outcomes, the EQF helps establish equivalence of qualifications from different education and training sectors, and clarifies where and how they are related to each other. This helps in pointing out pathways between different qualifications, and in defining how different qualifications should be valued.

The EQF serves as an important reference point for NQF, including for countries that are not members of the European Union. Türkiye, Switzerland, and Norway all have referenced, i.e. formally linked, their NQF to the EQF. Australia and New Zealand have carried out pilots comparing their NQF with the EQF. In many countries, the EQF has served as a blueprint for the development of comprehensive national qualifications frameworks based on learning outcomes.

The government should also enhance mobility between different qualifications. Currently, the opportunities to acquire labour market skills for young people who fail to obtain a *Bagrut* are limited. All secondary schools, including vocational schools, notionally prepare pupils for the *Bagrut* examination, which is the only fully recognised secondary qualification. The *Bagrut* exam forms a single entry gate to tertiary education. Most tertiary education programmes require a *Bagrut* to a certain standard, plus satisfactory performance on a national psychometric test. Many Haredi or Arab-Israeli students do not meet this requirement. One option for them is to attend foundation year programmes offered by some universities to prepare talented but insufficiently prepared candidates for admittance as full undergraduate students. The government should support expansion of these pathways to enable more students to access higher education. Another option for students with insufficient *Bagrut* results is to choose other degrees instead. For example, a third of institutions that train practical engineers are Haredi seminaries, which exclusively enrol Haredi women. Despite their generally good reputation and earnings potential relative to other non-technical fields, practical engineer graduates tend to play a subsidiary role in workplaces, since they are not educated to the same level as a full engineer trained at an academic college or university.

Progression from practical engineering and other post-secondary qualifications to degree programmes at universities and academic colleges is difficult and uncommon (Musset, Kuczera and Field, 2014[74]). An important barrier seems to be that accrediting previous coursework or waiving the requirement for a full *Bagrut* is at the discretion of individual institutions. Israel should follow other OECD countries and institutionalise such recognition mechanisms, aided by the National Qualifications Framework recommended above. This would require much closer collaboration between technological and academic colleges (Kuczera, Bastianić and Field, 2018[72]). In the United States, for example, community colleges offer a pathway to higher education to students from disadvantaged backgrounds. They allow students to enrol close to their home, at an institution with lower admissions requirements and lower attendance costs, and in courses offering recognised two-year terminal degrees, academic or vocational. At the same time, credit recognition allows students with satisfactory performance at community colleges to continue into four-year universities. In the United Kingdom (England), Progression Agreements that create pathways for students to progress from colleges into universities are established through a coordinated mechanism, obviating the administratively costly need to negotiate bilateral agreements between institutions.

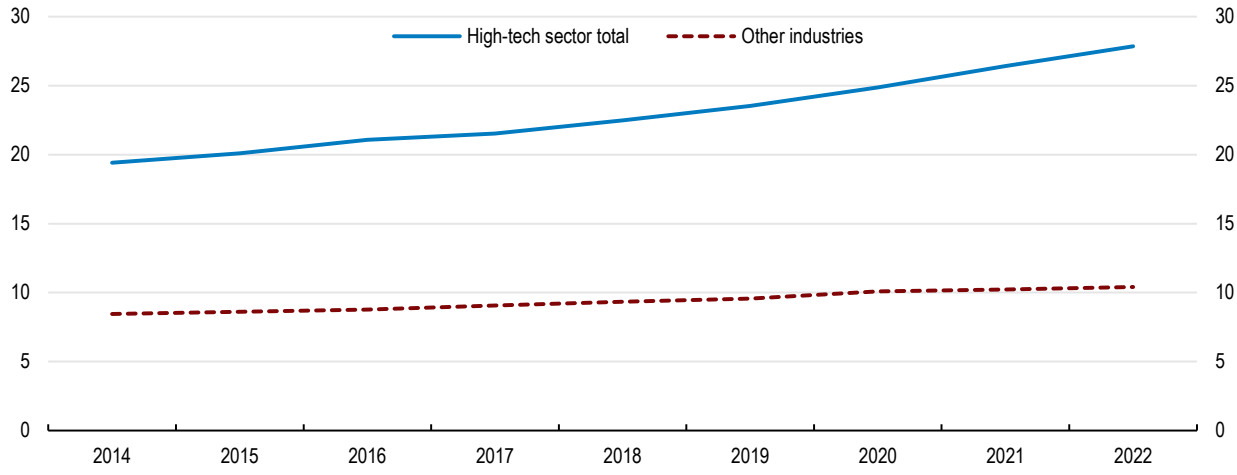
Increasing job mobility and improving labour allocation

Better job mobility helps workers, employers, and improves overall efficiency

Improving participation of all population groups also requires addressing inequality in access to high-paying occupations and industries. Average wages in the high-tech sector are three times higher than those in the rest of the economy (Figure 2.21). While to some degree such business sector duality reflects skills differences (Tsur, 2018[76]), significant wage gaps exist even among workers with the same skill level (Debowy, Epstein and Weiss, 2021[77]). Such wage gaps among workers with similar skills can arise when firms pay wage premia to workers they compete for, meaning that the same worker can earn different wages depending on which firm they work in (Card, 2022[78]). Wage differences between firms and sectors account for a significant share of the overall wage dispersion in the Israeli labour market, also compared to other OECD countries (Box 2.4).

Figure 2.21. Wages in the high-tech sector have diverged from the rest of the economy

Average wages per employee job, NIS thousand



Source: Israel Central Bureau of Statistics.

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Strengthening job mobility can boost earnings and aggregate productivity. Job-to-job mobility in Israel is relatively low compared to European countries (Figure 2.23). Voluntary job-to-job mobility, i.e. moving from one employer to another, is one of the strongest sources of wage growth in advanced economies (Haltiwanger et al., 2018[79]). This reflects not only accumulation of experience and practical skills over a worker's career, and a better match between workers and firms, but also upward mobility towards firms with higher wage premia. However, moving jobs involves uncertainty for both sides and is costly. Barriers to job mobility are especially high for workers from disadvantaged backgrounds who are less informed, have weaker credentials, and lack personal networks. For example, recent evidence suggests mobility over time into more established and higher-paying firms (i.e. with higher wage premia) is an important contributor to the successful labour market integration of immigrants from the former Soviet Union in Israel (Arellano-Bover and San, 2020[80]). At the same time, improving job mobility helps firms get the workers they need without the need to pay high wage premia that would be necessary to attract workers when frictions or mobility costs are high.

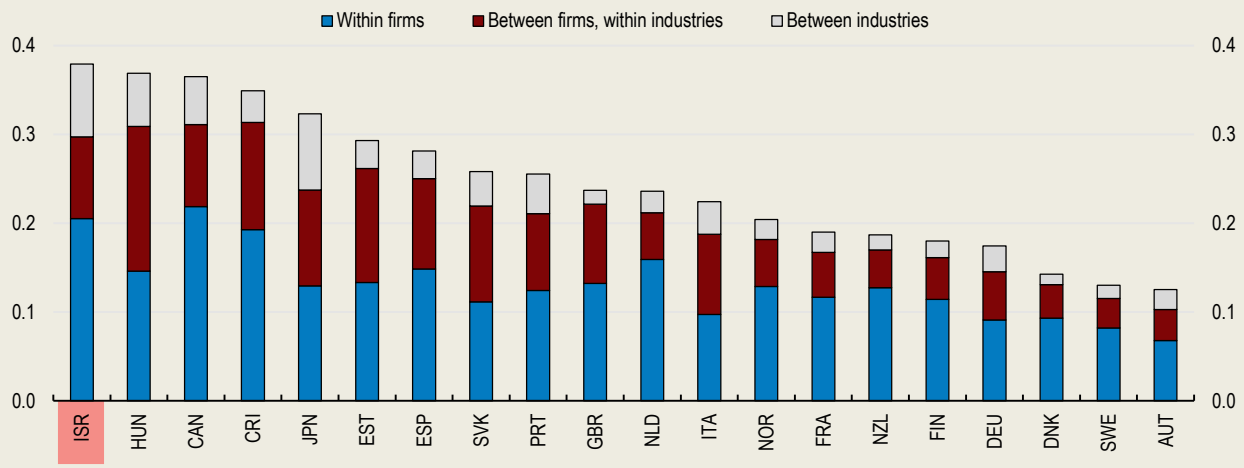
Box 2.4. Wage dispersion between firms as a symptom of business sector duality

Wage dispersion in Israel is highest among the set of OECD countries where comparable data are available (Figure 2.22). Wage dispersion between firms – the dispersion of average firm wages – accounts for about 45% of the total. While this is similar to the OECD average, about half of the between-firm wage dispersion is accounted for by wage differences across sectors, a higher share than in any other country. These results draw on recent OECD analysis of linked employer-employee micro data, which was extended to Israel for this *Survey*, in collaboration with the Ministry of Finance. They illustrate how the duality in the business sector translates into labour market duality with large earnings differences across firms and sectors.

Different channels can explain between-firm and between-sector wage dispersion: on the one hand, skill premia and the clustering of similar-skilled workers in firms; on the other hand the possibility that some firms, especially in certain sectors, offer wage premia to similarly skilled workers. Firm wage premia reflect different capacity to pay by firms with different productivity, as well as their ability to set wages that deviate from those of their competitors in the labour market (OECD, 2021[37]). Whereas to some degree this is desirable as it reflect incentives set by higher-productivity firms to attract workers in the market, large and persistent wage premia can also be a symptom of uncompetitive labour markets, for example due to limited job mobility (Card et al., 2018[81]). The resulting wage-setting power of firms not only limits the pass-through of productivity growth to workers earnings, but it also prevents efficient allocation of labour to the most productive firms, which can hold back aggregate growth.

Figure 2.22. Wage inequality between firms and industries is high

Wage dispersion, latest available year



Note: Latest available year: 2011 for Hungary; 2013 for Japan; 2014 for Israel and Norway; 2015 for France, Italy and Sweden; 2016 for Canada, Germany, Netherlands and Spain; 2017 for Costa Rica, Denmark, Finland, Portugal, New Zealand; 2018 for Austria, Estonia, Slovakia and the United Kingdom.

Source: OECD (2021), The Role of Firms in Wage Inequality: Policy Lessons from a Large Scale Cross-Country Study, OECD Publishing, Paris, https://doi.org/10.1787/7d9b2208-en; and Technical Background Paper.

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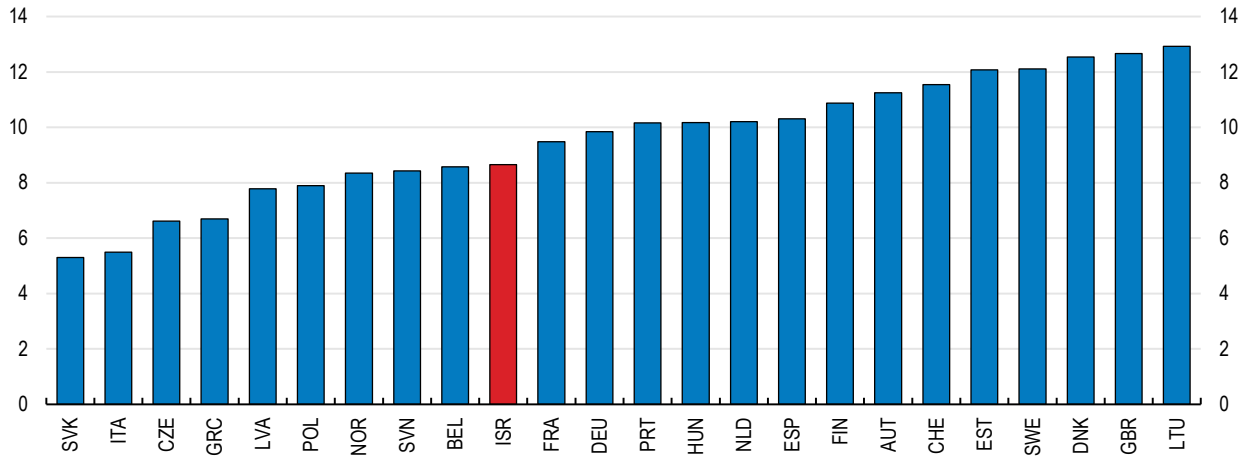
Figure 2.23. Job mobility is relatively low

Rate of job-to-job transitions, %, 2019



Note: Data for ISR are from the Ministry of Finance and have been computed as the average between Q1-2019 and Q1-2020.
Labour market transitions for European countries are computed as the number of working-age individuals moving between two statuses from one year to another as a share of average employment between these two years. Job-to-Job transitions measure job changes from one job to another. Data refer to 2019 with the exception of NOR (2018).
Source: OECD calculations based on Ministry of Finance of Israel; and Causa, O., N. Luu and M. Abendschein (2021), "Labour market transitions across OECD countries: Stylised facts", OECD Economics Department Working Papers, No. 1692, OECD Publishing, Paris, https://doi.org/10.1787/62c85872-en.

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Better job mobility for women, Arab-Israelis and Haredim would improve their representation in high-paying sectors. Under-representation is particularly pronounced in the industries of the high-tech sector (Figure 2.24), where only one third of workers are women and only about 2% are Arab-Israelis. Such under-representation extends to professional and managerial occupations in general (Kasir and Yashiv, 2020[47]; Malhi and Liss, 2017[82]). Part of it can be explained by the lower skills and lower incidence of higher educational credentials among Arab-Israelis and Haredim, as well as differences in university majors (de Malach, 2021[56]). However, differences in fields of study cannot account alone for this under-representation. For example, at secondary level, Arab-Israeli women study science subjects at higher rates than do Jewish women (Fuchs, 2017[83]); yet they are seven times less likely to work in high-tech. Likewise, representation of Arab-Israelis in higher education, including in STEM subjects, has dramatically improved to almost 20% in recent years, but they still make up only 3% of young workers in high-tech (de Malach, 2021[56]). Therefore, barriers to job mobility and labour market integration beyond education and skills need to be addressed: removing regulatory barriers to job mobility, alleviating geographic mismatches, improving the flow of talent into the high-tech sector, and improving information on job opportunities. In addition, attention should be paid to the possible role of discrimination in reducing opportunities for minority groups (Box 2.5).

Box 2.5. Labour market discrimination

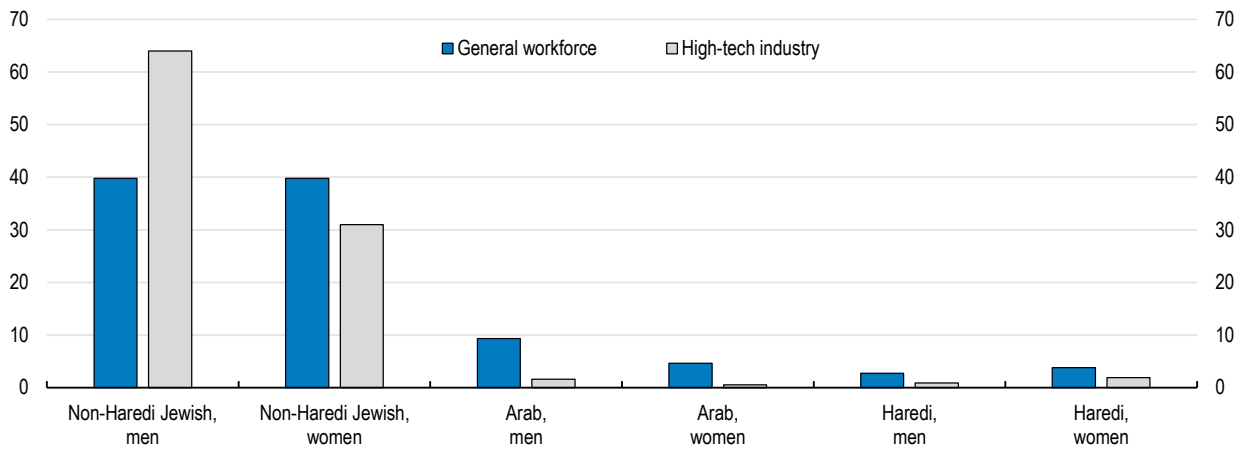
Economists generally distinguish between two types of discrimination: taste-based discrimination (Becker, 1957[84]) and statistical discrimination (Arrow, 1973[85]; Phelps, 1972[86]). Taste-based discrimination lowers interactions of prejudiced individuals with the discriminated group, resulting in fewer economic opportunities and thus lower wages and employment. Statistical discrimination, by contrast, occurs when economically relevant average characteristics are projected on all members of a group. Discrimination can be asymmetric and directed by the majority at a minority; or it can take the form of in-group bias where each group prefers their own co-members relative to others.

In Israel, several rigorous studies – mostly following the audit study methodology pioneered by Bertrand and Mullainathan (2004[87]) – document the presence of discrimination in different settings. In the labour market, specifically in personal services, Arab-Israeli workers are exposed to customer discrimination, which results in preferences by their employers towards Jewish workers (Bar and Zussman, 2017[88]). Arab-Israelis face statistical discrimination in the used-car market (Zussman, 2013[89]). In the housing market, Arab-Israelis (Bar, 2018[90]) and Orthodox Jews (Sansani, 2019[91]) are more likely to be refused as prospective tenants, largely as a result of discriminatory "tastes" by landlords. In-group bias between religious and non-religious Jews has been detected in the context of matriculation exams marks (Lavy, Sand and Shayo, 2022[92]), among Arab and Jewish driving instructors (Bar and Zussman, 2019[93]) and among Arab and Jewish judges in small claims courts (Shayo and Zussman, 2011[94]).

While these studies are rigorous enough to isolate discrimination as the cause of unequal treatment within the bounds of the experiment, they cannot quantify how much of the overall observed differences across groups are due to discrimination. However, they provide robust evidence suggesting that discrimination is *one* factor that limits employment opportunities and residential mobility for Arab-Israelis. In-group bias – by either side – seems also to be a possible factor behind the low representation of Haredim and Arab-Israelis in the mainstream, non-Haredi Jewish business economy, as well as the large degree of residential segregation of these groups.

Figure 2.24. Women, Arab-Israelis and Haredim are underrepresented in high-tech

% of employees in the general workforce and in the high-tech industry, by population group, 2019



Source: State Comptroller and Ombudsman of Israel (2021), "Workforce 2030", http://www.mevaker.gov.il/En/publication/Documents/2021-WORKFORCE-2030.pdf#search=workforce%202030.

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Reducing regulatory barriers to job mobility

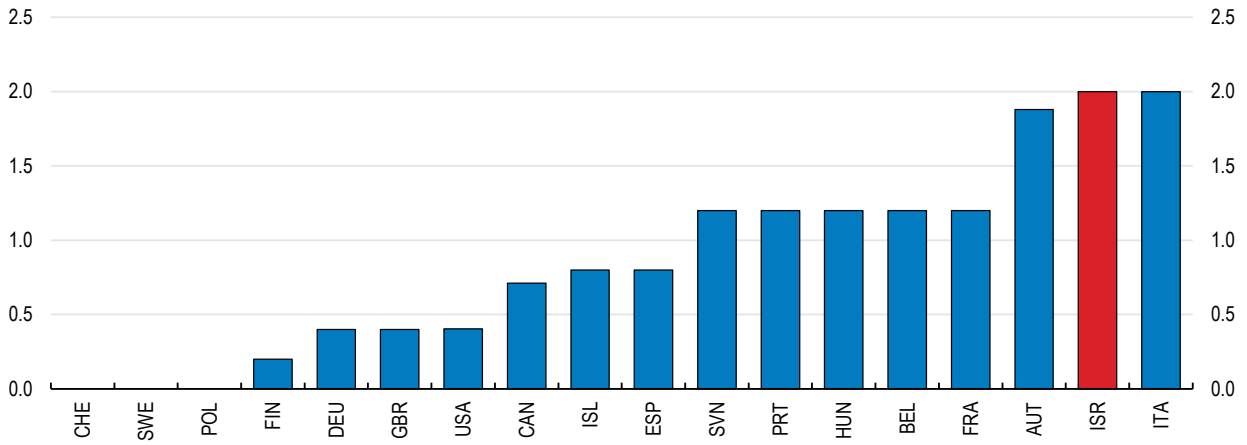
Employment protection legislation (EPL) can be designed without undue limitations to job mobility by focusing on social protection to workers rather than protecting jobs, as recognised by the OECD Jobs Strategy (OECD, 2018[18]). Israel undertook a major reform of severance pay in 2008, as part of the introduction of a mandatory defined-contribution pension scheme. This reform in effect replaced severance pay upon dismissal – which increases firing costs for firms and reduces incentives for voluntary job moves by workers – with monthly employer contributions into portable individual savings accounts that eventually become part of pension entitlements. This decouples the cost to firms and the entitlement for workers from the number of dismissals. There are still some further options for reforming parts of EPL, for example shortening the statute of limitations for dismissal cases from currently seven years. Cases brought to court that long after a dismissal significantly increase firms' compliance cost and risk without clear benefits to unfairly dismissed workers. The government should consider bringing this period in line with other OECD countries, where the median time to file an unfair dismissals case is only two months.

Occupational entry regulations in professional services prevent some foreign-trained professionals from practising their profession in Israel (Figure 2.25). This largely reflects the fact that many professions lack recognition mechanisms that would allow individuals with foreign qualifications to practice in Israel, including architects, lawyers, civil engineers or nurses (von Rueden and Bambalaite, 2020[95]). Overall the share of licensed professions in Israel is significantly higher than in the EU or the United States (Osheroff and Kleiner, 2019[96]). One example where mobility restrictions coupled with a shortage of domestically-trained professionals lead to significant shortages are medical professions (discussed in more detail in *Chapter 1*). The government should establish or streamline recognition mechanisms of foreign qualifications in licensed professions. In order to facilitate recognition, the government should consider harmonising Israeli licensing regulations with those of major foreign jurisdictions. A similar alignment is currently taking place in the field of product standards regulation (see *Chapter 1*).

The minimum wage is set at an intermediate level and does not create a significant barrier in the labour market. Minimum wages can offset some labour market power (monopsony) that limited job mobility grants to firms (OECD, 2021[37]; Card, 2022[78]). This can have positive effects on reallocation and hence labour productivity when higher wage floors push workers out of low-productivity low-paying firms – which would not be able to compete in the market without the ability to undercut wages – into more productive and higher-paying employers (Dustmann et al., 2021[97]). Evidence that minimum wage pressures are highest for small, low-productivity businesses (Drucker, Mazirov and Neumark, 2019[98]) suggests that the minimum wage in Israel is beneficial for reallocation. These benefits, as well as the protection of workers and reduction of inequality, must be weighed against the potential loss of employment from an excessively high minimum wage. In view of these different policy goals, the minimum wage seems to strike an adequate balance. It is set by law to at least 47.5% of the average wage; in practice collective agreements in recent years have resulted in somewhat higher levels. The resulting ratio of the minimum wage relative to the median wage is about average among OECD countries (Figure 2.26). Collective bargaining plays only a minor role in setting wage floors. Coverage by collective agreements has fallen from Nordic levels in the 1980s with more than 80% of employment covered to about 20% today. The authorities should continue their policy of cautious minimum-wage setting at intermediate levels relative to average wages.

Figure 2.25. Mobility restrictions in professional services are high

Occupational entry regulations (OER) indicator for professional services, mobility restrictions component, from 0 to 6 (most regulated)



Note: The occupational entry regulations (OER) indicator of mobility restrictions measures the ease with foreign professional qualifications are recognised as equivalent to national qualifications in licensed occupations. The indicator is scaled to take values between 0 (full recognition) and 6 (no recognition).

Source: Von Rueden and Bambalaite (2020), "Measuring occupational entry regulations: A new OECD approach", OECD Economics Department Working Papers, No. 1606.

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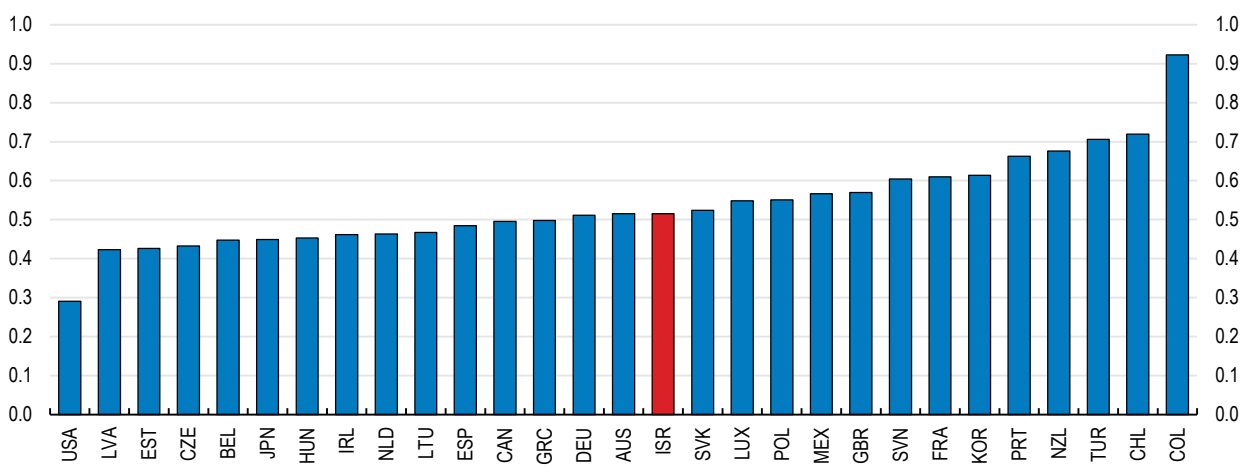
Figure 2.26. The minimum wage is set at intermediate levels

Minimum relative to median wage of full-time workers, ratio, 2021



Source: OECD Labour Earnings database.

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Changes to the public pay system to align it better with the skills and competencies required for each position would improve the allocation of talent within the public sector, and between the public and private sectors. The public pay system is mostly based on education and seniority (*Chapter 1*). In addition, complexity associated with many different job classifications, allowances, and the parallel use of different contract modalities blurs pay information for external candidates and limits job mobility (OECD, 2021[99]). A public pay system that is simpler, more closely aligned with the competencies and complexity demanded in each position, and more responsive to performance and demand for sought-after skills would contribute to a better allocation of talent and a public service which is forward-looking, flexible and fulfils its service obligations to the population.

Addressing labour shortages and improving inclusion in the high-tech sector

Labour shortages have been prevalent in the high-tech sector for a number of years (Figure 2.27), contributing to strong wage growth (see Figure 2.21). About 60% of high-tech employers report difficulties attracting R&D workers, the most sought-after group of professionals (Israel Innovation Authority and Start-Up Nation Central, 2020[100]). Traditionally, the main reason for labour shortages was the limited supply of suitable graduates. For example, whereas there were 19,000 open tech positions in 2019, the annual number of university graduates (which make up 75% of the high-tech workforce) in relevant subjects was only about 6,000 – and not all of them end up working in the sector (Israel Innovation Authority and Start-Up Nation Central, 2020[100]).

The labour market in the high-tech sector has tightened further given that in recent years the demand for "core" workers in high-tech professions has accelerated more than for general positions such as in human resources and marketing (Labour Division, 2021[22]). This is despite the fact that the high-tech sector has moved from a "start-up nation" to a "scale-up nation", which was expected to tilt the high tech workforce towards less technical, more business-oriented roles (such as in sales, finance). By contrast, the increasing specialisation in technological roles that has occurred limits the degree to which high-tech firms can poach workers from other sectors. This reliance on a high degree of technical specialisation would explain the rise in the high-tech wage premium, as companies fiercely compete for a limited talent pool.

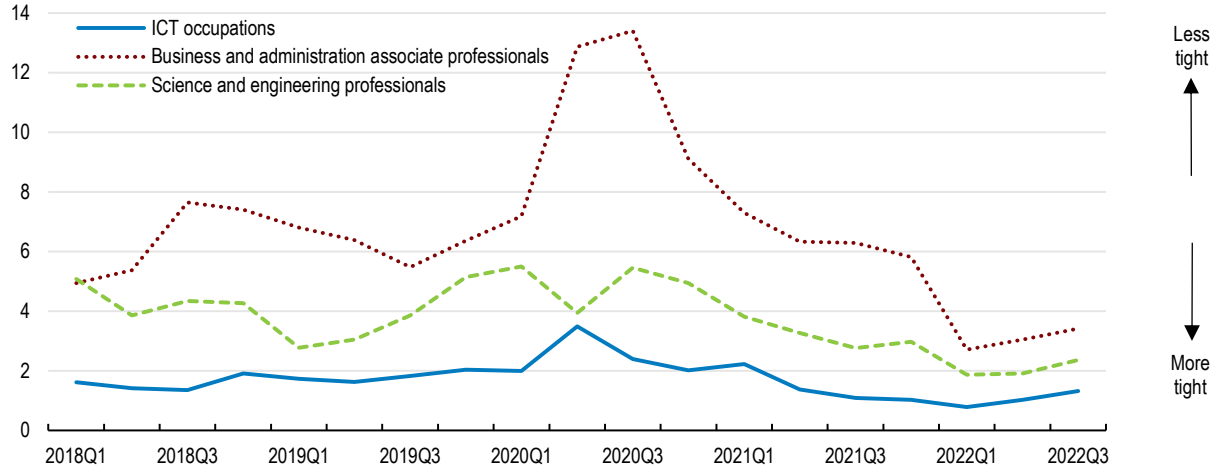
The need for qualified labour in high-tech has sharply risen during the COVID-19 pandemic, during which the sector has boomed and raised unprecedented amounts of funding. The Israel Innovation Authority estimates a need of about 150,000 additional workers for the sector over five years. Absorbing a workforce of this size in such a short time requires innovative and creative solution, as this demand cannot be met by the education system alone. For reference, each year around 23,000 young people graduate from universities in *all* fields. The supply of STEM graduates, especially in computer science and adjacent fields, has already risen significantly in recent years (Figure 2.28) and is high in international comparison (see Figure 2.16). This indicates that wage premia send the right signals to prospective students; though it takes time and resources to train them. Firms need to become more flexible and creative if they want to fill all their vacancies, and the government should support reallocation to the sector with a comprehensive strategy that increases the high-tech employability of workers and eases the flow of existing talent, and at the same time improves inclusiveness. More training in high-tech relevant subjects such as computer science would ensure a more adequate and sustainable supply of talent.

The government should actively promote new pathways for entry into the high-tech sector, in collaboration with the industry. One positive example is the integration of Haredi women into the high-tech sector through a combination of offering computer science degrees at the practical engineering (two years of post-secondary VET) level at Haredi women's colleges and creating female-only workplaces near Haredi cities. This offers quality employment to these women, and at the same time provides skilled workers for the industry. At the same time, it is important to ensure that gender-specific workplaces do not come at the cost of equal opportunities for men and women in the workplace.

Upgrading the skills of associate professionals that have shown their talent and potential could provide more workers for demanding R&D roles while opening up entry-level roles for fresh talent. A pilot programme is being implemented by the Innovation Authority, with co-financing by companies (Israel Innovation Authority and Start-Up Nation Central, 2020[100]). Such programmes should be coordinated by the government in collaboration with training institutes and companies, and ideally integrated in due course into a National Qualifications Framework.

Figure 2.27. The labour market is chronically tight in the high-tech sector

Supply-to-demand ratio



Note: Ratio between labour supply (the number of persons who sought work in the last 12 months) and labour demand (the number of job vacancies). A lower supply-to-demand ratios indicates a tighter labour market. Time series only starts in 2018Q1 because of a structural break due to a change in the Labour Force Survey questionnaire as of January 2018.
Source: Israel Central Bureau of Statistics.

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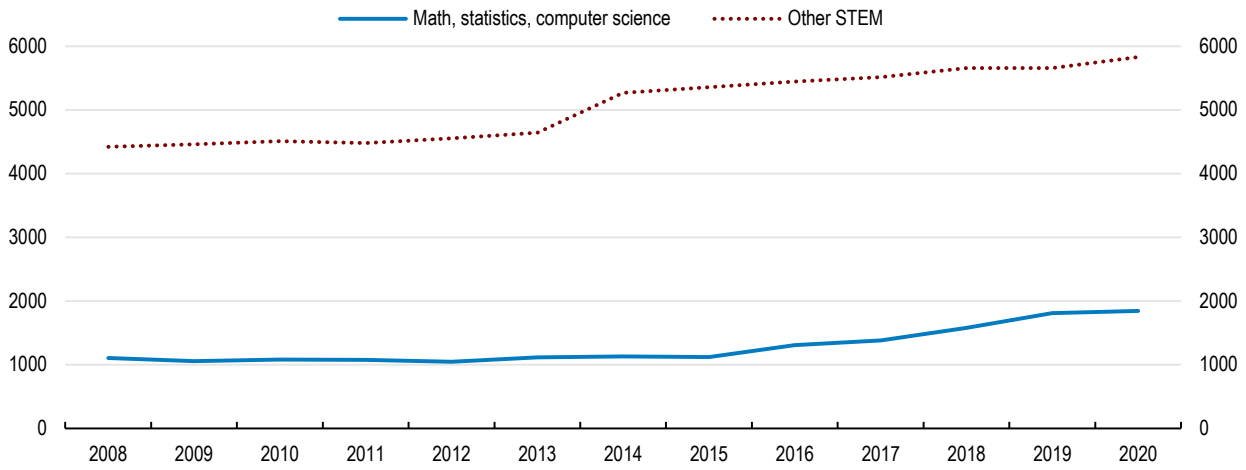
Offering incremental training in high-tech skills to professionals educated in other fields offers another possibility for expanding pathways. High-level digital jobs typically require a mix of general cognitive skills and specific technical skills, such as programming, data analysis, or database management (OECD, 2022[101]). Incremental training, such as one-year master's programmes or shorter post-graduate certificates, teach technical skills to degree holders who acquired their general skills in a different field. There is scope to increase such training provision, which is more feasible to do in the short term compared to expanding full first degree programmes. The number of second-degree graduates in mathematics, statistics and computer science only rose by about 20% between 2008 and 2019 – in line with the average across fields – and these fields make up only 3% of second degrees. Besides enlarging the talent pool for the high-tech sector, such incremental training could also improve the digital skills of professionals in the more traditional sectors of the economy, which are lagging behind (*Chapter 1*).

In the medium term, university places in mathematics, statistics and computer science, both at the undergraduate and postgraduate levels, should be increased by more than the general trend increase in university places in order to reflect their growing demand. In addition, foundational skills in mathematics, statistics and data science should already be laid in middle school, before pupils choose their specialisation. At the same time, given that an increasing number of programmers and other IT workers in many countries are not necessarily fully-trained computer scientists but acquired their practical technical skills in a variety of ways, incremental post-secondary and tertiary training should be evaluated as a potentially low-cost and relatively flexible pathway for training workers in high-tech and digitally intensive roles even in the medium term.

Figure 2.28. The supply of graduates in high-tech fields is rising

Number of graduates from universities in selected subjects



Note: Other STEM fields include engineering and architecture; agriculture and biological sciences; physical sciences.
Source: Israel Central Bureau of Statistics.

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Personal networks and practical experience play an important role in young professionals' entry into high-tech firms. Networks fulfil critical functions especially for entry-level workers, including career guidance, dissemination of job vacancies, and references for applicants' abilities and character (Topa, 2011[102]). Due to the high degree of residential, educational, and workplace segmentation, inequality in labour market networks is large. Arab-Israelis have fewer connections to people working in high-paying firms compared to Jews, and this explains part of the wage gap between the two groups (San, 2020[103]). An additional factor is the military service (Box 2.6), which is mandatory for non-Haredi Jews but not for Arab-Israelis and Haredim. Experience and networks gained in technological units of the IDF are an important gateway into high-tech employment. Recruitment in high-tech is highly personal, and many firms offer large financial bonuses for workers who refer their friends and acquaintances (Kozlovski, 2020[104]).

At the same time, many high-tech employers are reportedly reluctant to recruit recent graduates, who lack practical experience and a significant personal network in the industry – the so-called "junior problem" (Israel Innovation Authority, 2021[2]). While it seems paradoxical that potentially qualified young people face recruitment difficulties in a sector with labour shortages, many stakeholders in the high-tech sector report that firms are reluctant to lower their recruiting standards, or to train workers who are not yet sufficiently qualified to perform the practical tasks of the workplace. The firms seem particularly wary of the risk that an inexperienced or unvetted worker poses to complex or sensitive projects; and of the externality involved with investing in general human capital.

The government should expand initiatives to improve professional integration opportunities of specific population groups that are under-represented in high-tech, such as Arab-Israelis, Haredim and women. Many such initiatives provide practical experience and training at the same time as networking and placement opportunities, and involve private sector companies, universities and NGOs. Current examples include coding boot camps, which receive public financial support with "pay-for-performance" funding tied to the rate at which graduates of the programme find qualified jobs (Israel Innovation Authority, 2018[105]; Israel Innovation Authority, 2018[106]). The Innovation Authority also created special training and employability programmes during the COVID-19 crisis (Israel Innovation Authority and Start-Up Nation Central, 2020[100]). One common feature of all of these programmes is that they are adapted to under-represented populations.

Box 2.6. The role of the Israel Defence Forces (IDF) in building a high-tech workforce

Alumni of technological units in the Israel Defence Forces (IDF) make up a substantial fraction of the high-tech workforce. While official data on military background are not available, studies estimate that 30-50% of all high-tech workers have a background in IDF technological roles (Swed and Butler, 2013[107]; Israel Innovation Authority, 2022[63]). Several factors can explain this: a meticulous screening process for recruits with high technological ability; extensive training; a risk-loving culture with flat hierarchies and decision-making delegation to file and rank soldiers, which mirrors start-up business culture; and access to strong alumni networks in the high tech sector (Forbes, 2016[108]).

While the recruitment of veterans provides the industry with a continuous supply of highly able, well-prepared and already experienced workers, over-reliance on this hiring channel limits the talent pool from which the industry can draw. Not only does it exclude Arab-Israelis and Haredim, which are largely exempt from military service, but even within the military population, men and those from more advantaged socioeconomic backgrounds are over-represented in technological units. For example, only 23% of soldiers in military development and cyber units during mandatory service are women, and only 13% in core cyber roles (Israel Innovation Authority, 2022[63]).

Another way of supporting professional integration are work placements, including internships. While these already exist in Israel and many university students additionally work part-time, students from underrepresented groups face higher hurdles, including lack of networks, geographical barriers, or lack of social capital. The government should support dedicated internships for Arab-Israelis and Haredim. To enable students to profit from internships in-person and reap the greatest benefits in terms of skill development and professional networking, this could include additional financial and logistical support for obtaining housing in Tel Aviv. Existing pilot programmes should be evaluated and, if promising, scaled up. The government could also organise an umbrella programme for supporting work-based placements in the high-tech industry, including programmes for VET students (see above). This might help improve the perception of non-university trained talent in the industry and support the widening of the talent pool that flows into the industry.

Attracting new talent may also require a change in human resources (HR) practices in the business sector, a process which the government should support. Traditional recruitment channels, with a reliance on incumbent workers personal networks, provide access to a limited talent pool; which has largely already been absorbed into the high-tech sector. According to the Innovation Authority, more modern HR practices, including those integrating diversity, equality and inclusion (DEI) considerations, are gradually being introduced, mostly by foreign companies. While this ultimately requires changes within the private sector itself, the government can speed up the diffusion process of best practices by sponsoring roundtables, reports, and other support activities. For example, rewarding 'diversity champions' through awards and labels is practiced already by governments in a number of OECD countries (OECD, 2020[109]).

The spread of new working arrangements that incorporate telework opens up a much larger labour market in geographical terms for the Tel Aviv-centred high tech sector, as the experience of hybrid and "work from anywhere" models of tech companies in the United States Silicon Valley shows. In principle, this would even allow high-tech firms to hire workers from outside Israel, alleviating some of the most urgent staffing pressures. Successfully adopting such new work models, however, requires changes in management practices (Criscuolo et al., 2021[110]), as well as complementary investments into digital infrastructure in the more peripheral regions, as discussed in more detail below and in *Chapter 1*.

Improving information provision in the labour market to increase job mobility

Improving job mobility and the allocation of workers to jobs requires better information for market participants as well as for authorities tasked with implementing labour market policy. Wages in principle provide important price signals about demand and supply for particular skills or in particular sectors.

However, workers tend to have only very partial and often inaccurate information, mainly informed by their own personal limited experience or that of their close contacts. For example, international research has documented that workers are on average not well informed how well-paid they are in their current firm relative to the market, since they tend to extrapolate from their own current wage (Jäger et al., 2021[111]). In addition, students, especially from lower socioeconomic backgrounds, are not well informed about the earnings potential that specific tertiary institutions and courses provide (Hastings, Neilson and Zimmerman, 2015[112]). Better information about earnings potentials and labour market returns is important for implementing the government's ambitious labour market targets embodied in the 2030 Employment Committee, and is a cross-cutting issue in several individual recommendations that this *Chapter* makes.

Very rich administrative and survey data are available, but are currently fragmented across different parts of the government, limiting their usefulness. There would be significant economies of scale from centralising data management, treatment and access provision, as well as potentially some analysis and building of administrative, technical, and human capacity in a specialised data hub. Such a unit would collect and combine all available data, in collaboration with all relevant stakeholders. It would also improve communication and coordination across the different parts of government that are producers and users of data, while respecting data protection and confidentiality. For example, Statistics Norway worked together with the Norwegian Centre for Research Data and the Norwegian Research Council to create microdata.no, a digital portal offering improved and simplified access to detailed and mergeable microdata with embedded privacy protection. In addition, a new statistics law in 2021 strengthened the coordination role of Statistics Norway, including by convening a committee on official statistics comprised of all public authorities that are owners of administrative data used in official statistics (Eurostat, 2021[113]).

The hub could facilitate or sometimes directly carry out monitoring and evaluation of individual labour market programmes, and how they contribute towards the 2030 employment and wage targets. This would complement existing data-driven policy formulation and analysis, which is often constrained by lack of data. For example, the Ministry of Economy does not have access to a mapping of skills by region, which would enable it to take local skills supply into consideration when formulating regional development priorities. Better coordination and integration of data and analysis of demand and supply at the regional level could improve the effectiveness of regional development planning. The Israeli Employment Service (IES) already carries out impact evaluations with academic researchers (e.g. (Schlosser and Shanan, 2022[114])) and supports its programme implementation with statistical profiling of jobseekers and skills assessment and anticipation (SAA), among other services. However, better data integration could enhance the value of these services. For example, the IES lacks data on the long-term outcomes, especially with regards to job quality, of its previous users. This prevents it from better targeting this important dimension of labour market re-integration after an episode of unemployment (see above). Similar constraints on data availability and access were mentioned by other government ministries and agencies, including the Labour Branch in the Ministry of Economy.

Alleviating geographical mismatches

Highly productive firms are clustered in a few regions. Around 70% of all high-tech jobs are located in Tel Aviv and the surrounding Central District (Figure 2.30), and around 60% of high-tech workers live in these districts (Israel Innovation Authority, 2021[2]). This clustering implies unequal access to jobs for residents of other regions. The situation puts at a disadvantage particularly the Arab-Israelis, who have traditionally lived in mostly segregated cities in the North and South, with only around 10% residing in the centre (Kasir and Yashiv, 2020[47]). However, mobility of young Arab-Israeli families to mixed and Jewish cities is on the rise (Weinreb, 2021[115]). By contrast, most Haredi communities are located in the metropolitan areas of Jerusalem and Tel Aviv, although not all are well-connected by public transport. Geographical mobility towards the economic centre is lower in Israel than in many other OECD countries (Figure 2.30). Integrating disadvantaged groups in the labour market therefore also requires alleviating geographical

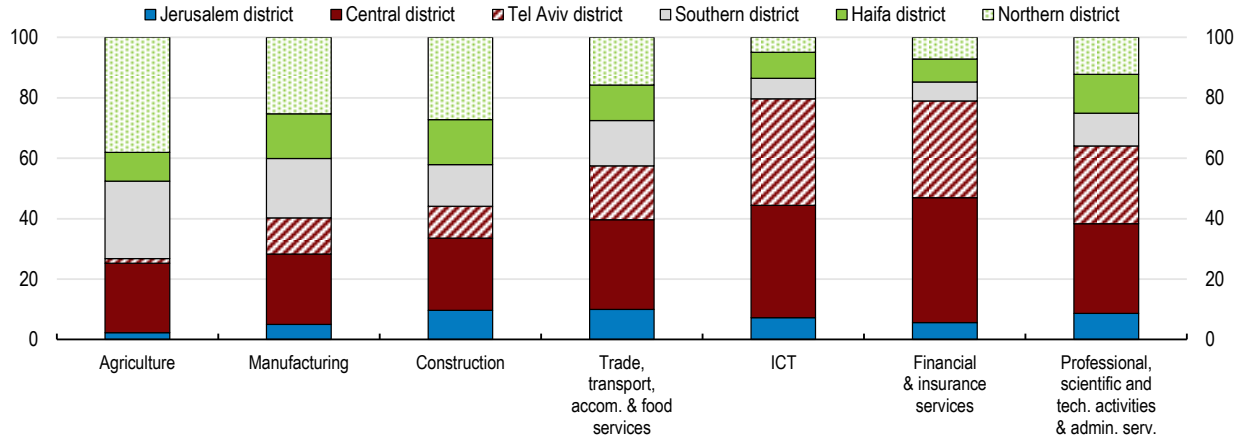
mismatches. This includes improving access of workers to jobs by means of housing and transport policies, but also to geographically spread out the location of good jobs via local business development policies.

High costs of living price out lower income workers from thriving regions. Israel faces a housing deficit, where the rate of construction of new housing has not kept pace with the rapid population growth (OECD, 2017[116]). This has contributed to price pressures, with the real cost of housing doubling since 2008, and a high cost of living especially in the Tel Aviv region. The rate of homeownership is similar to the OECD average (around 70%), but it reaches 90% among Arab households (Central Bureau of Statistics, 2019[117]). This might be a partial explanation behind the especially low residential mobility observed in this group (Brill and Naor, 2018[118]). For those households that rent, a large share of disposable income goes towards rental expenditure. In early 2022, the government responded to accelerating house price growth by re-instating a previous policy of discounted apartment lotteries. However, without an increase in supply, such demand-stimulating measures risk exacerbating the problems in the housing market rather than solving them. Selectively providing housing at discounted prices below market prices also leads to possible lock-in effects that hinder residential mobility and thus labour mobility in response to economic opportunities.

Instead, the government should focus on the provision of housing supply and its alignment with economic opportunities and demographic needs. An important distortion in the housing market is the gap between business and residential property tax rates. Higher tax rates on commercial property make municipalities favour commercial over residential development. As recommended in the 2020 *Survey* (OECD, 2020[3]), a tax reform should therefore close the gaps in tax rates. A recent OECD review of local government finance provides a detailed menu of reform options (OECD, 2021[119]). The government should encourage greater provision of social housing, which currently is concentrated in the periphery (OECD, 2020[3]), in areas with economic opportunities. One disincentive for providing social housing again lies in the recurrent tax on immovable property, which encourages municipalities to compete for large and low-density properties. Moreover, sales proceeds from public land are higher for high-value properties. Another disincentive lies in the cost of locally provided public services, which accrue per resident and increase for lower socio-economic groups (OECD, 2021[119]). The existing stock of social housing could also be used more efficiently by re-assessing eligibility criteria of residents more frequently, and by increasing the role of housing subsidies as a tool to support households that graduate from social housing but might struggle to afford full private-sector rents, especially in the centre of the country. Other reforms to encourage housing supply include decentralisation and increasing flexibility of land-use planning, as well as conversion of commercial property (such as offices) into residential buildings.

Figure 2.29. High-productivity, high-wage industries are clustered in a few prosperous regions

Regional employment shares in selected sectors, %, 2019



Source: OECD Regional Statistics database; and OECD calculations.

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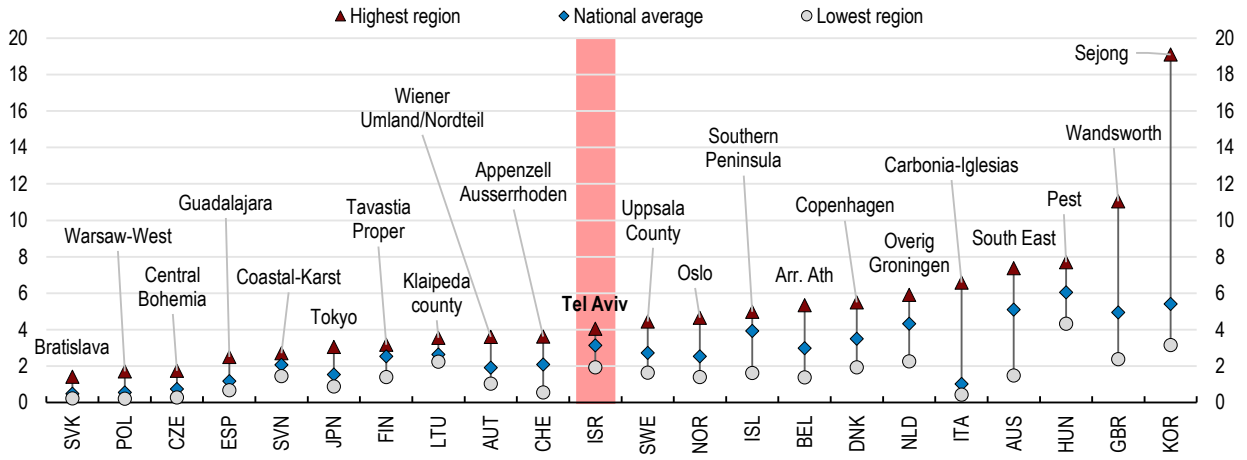
Figure 2.30. Mobility towards economic centres is lower than in other countries

Inter-regional mobility rate, % of new residents from another region over population, 2018



Note: Labels refer to the region with the highest rate. Regions are defined at the TL3 level.
Source: OECD Regional Statistics database.

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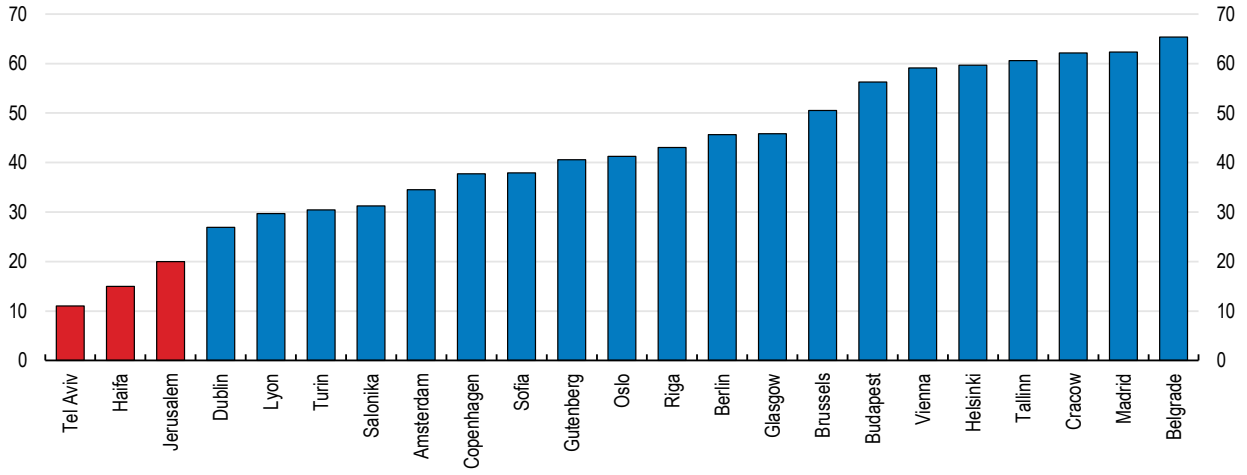
Public transport infrastructure should be improved to better connect workers to jobs. Public infrastructure capital has not kept pace with population growth. Israel is especially lagging behind in public transport infrastructure (OECD, 2020[3]; Bank of Israel, 2019[44]). The result is high car dependence and significant traffic congestion from road traffic (Figure 2.31) leading to high commuting times. The economic cost from congestion is estimated at 3% of GDP (Ben-Bassat et al., 2021[120]). High congestion and low availability of public transport reduce incentives for workers to commute into other localities, which would otherwise be highly feasible in a geographically small country such as Israel. Especially in poorer areas, the lack of public transport options restricts workers' option in the market and gives employers that provide door-to-door transportation (e.g. with shuttle buses) to workers considerable wage-setting power (Suhoy and Sofer, 2019[121]).

Figure 2.31. Public transport is underutilised in Israeli cities

Public transit journeys, as % of all motorized trips, 2011–2017



Source: Bank of Israel (2019), "Raising the Standard of Living in Israel by Increasing Labour Productivity".

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A substantial expansion of public transport infrastructure is planned. The 2021-22 government budget included a significant increase in public transport investments from 1% to 1.6% of GDP, with more investment planned in later years. A large share will be devoted to urban transport infrastructure, notably in the greater Tel Aviv region where a light rail system is under construction and a metro with three lines is being planned. Other investments in the periphery focus more on road connections between localities in addition to public transport. The additional investment will bring the infrastructure stock in Israel closer to other OECD countries.

The government needs to ensure on-time and on-budget implementation of these large and complex transport infrastructure projects. This includes the approval and implementation of appropriate legal and administrative framework conditions. Some of these proposals face political headwinds. For example, legislation to pave the way for implementation of the Tel Aviv metro project was to be approved by the Knesset in 2021, but has been delayed several times since. The creation of a Metropolitan Transport Authority for Tel Aviv in line with recommendations in the 2020 *Survey* has advanced but requires the collaboration of a large number of government ministries and local authorities, which makes the process politically difficult. As in other countries, there are risks that projects run over schedule and over budget due to their complexity and changes in circumstances. Applying the OECD Council Recommendations on the Governance of Infrastructure (OECD, 2020[122]), especially promoting a coherent, predictable and efficient regulatory framework and coordinating infrastructure policy across all levels of government, as well as creating financial certainty by long-term budgeting of projects, could help Israel with implementing these complex projects.

Recent legislation to introduce congestion charging in the Tel Aviv metropolitan area, as recommended the previous *Survey* (OECD, 2020[3]), is an important step to set additional incentives to shift traffic from individual vehicles to public transportation. The government needs to work together with local authorities to ensure that congestion charging will be implemented as planned.

Development of the regions to bring jobs to workers is an important complement to improving transportation infrastructure in the centre in order to provide opportunities to all Israelis**.** Road transport links between different population centres in the periphery boost regional development. Local business development policies can further incentivise highly productive firms to locate in disadvantaged areas, tapping into cheap land and a labour reservoir. One important rationale for attracting high-productivity firms to peripheral areas are spillovers of technology and productivity to local firms, which would then also benefit their workers (Greenstone, Hornbeck and Moretti, 2010[123]). These benefits have to be weighed against the costs and possible distortions of targeted industrial policy.

Local business development support should be better balanced across industries and activities. Currently, the flagship policy tool for business development in the periphery is the Law for the Encouragement of Capital Investments (LECI), which provides preferential tax treatment and investment grants to export-intensive or research-intensive firms that locate in designated development areas in the periphery. According to the Ministry of Economy, the LECI is more effective in influencing the location decisions of large manufacturing establishments, with their large investments that qualify for tax breaks, than that of services firms. The government should therefore broaden its regional development policy mix, adding more high-powered incentives for other types of firms, such as firms in services or medium-sized establishments. Location decisions of such firms are more sensitive to the existence of local value chains, or local amenities for its workforce, both of which are subject to economies of scale. Pillars such as the promotion of regional economic clusters in agritech or foodtech, or the creation of industrial parks, could be strengthened and broadened to more sectors. For example, France supports regional industrial clusters through its competitiveness poles (*pôles de competitivité*) programme initiated in 2004, which brings together firms, research institutions and training centres. Besides earmarked and coordinated R&D and innovation support, the poles provide visibility on national and international markets, and facilitate local skills development. The supported clusters are periodically evaluated and reviewed.

Existing local business development policies would also benefit from better coordination. For example, the Ministry of Economy is focussed on supporting remote peripheral areas with programmes largely aimed at the manufacturing sector (including LECI and industrial manufacturing parks). The National Economic Council prioritises the development of secondary cities through regional clusters in the services sector including high-tech. While some policy experimentation might be beneficial, and allows for a differentiated focus, lack of coordination limits economies of scale or attention to spillover effects to other sectors. Better coordination is also needed between agencies that support local labour supply (e.g. skills and training policies) and the local business development policies that boost labour demand. The government should evaluate existing projects and integrate them into a general regional development strategy across the whole of government. Many OECD countries have created regional development agencies (RDA) for this purpose (OECD, 2016[124]). For example, in Canada, regional development agencies such as the Atlantic Canada Opportunities Agency act as coordination centres for regional development policies, as well as one-stop shops for businesses seeking support.

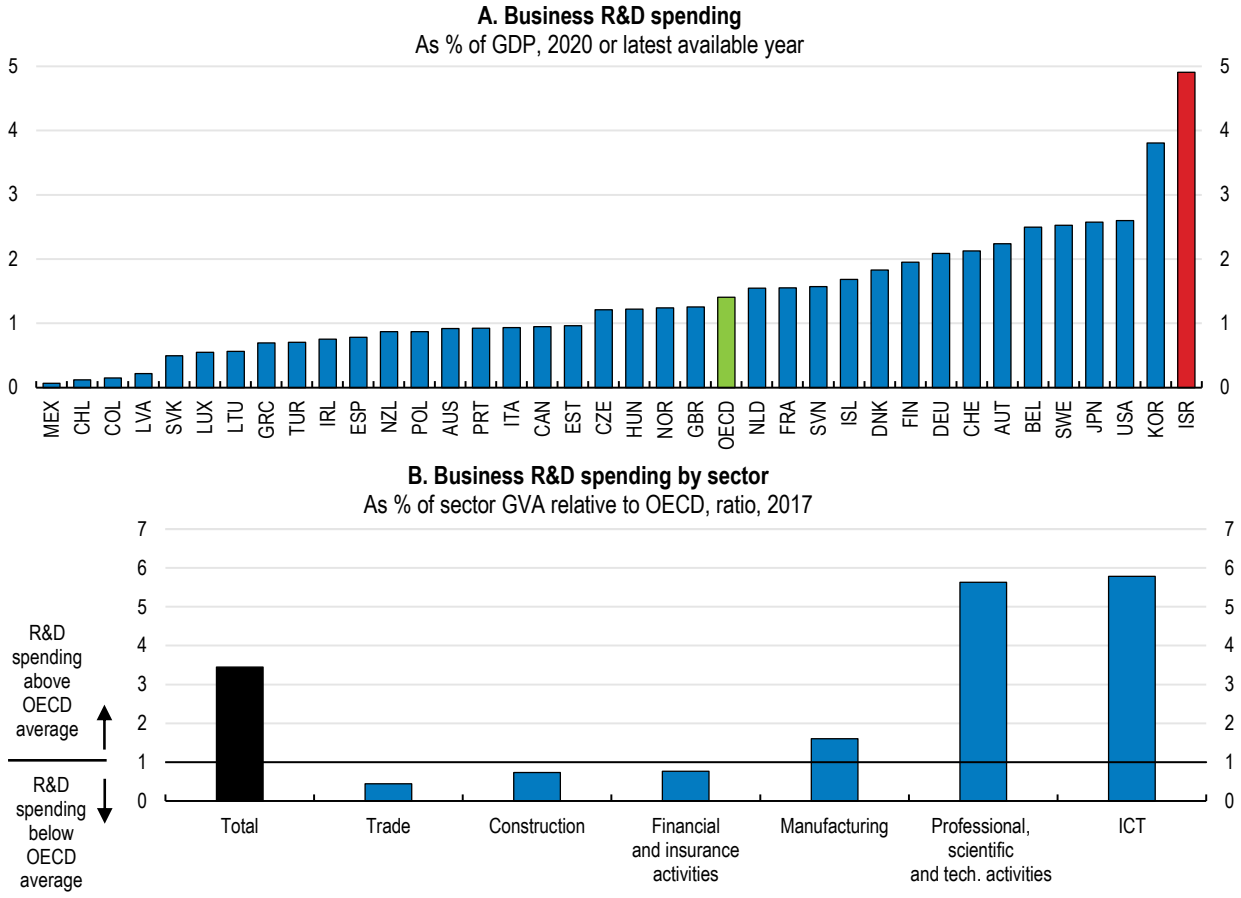
Telework provides a way to bring together workers and jobs without the need of physical proximity. As in most other OECD countries, the use of telework increased significantly during the COVID-19 pandemic, and the use of telework and hybrid work arrangements continued after the reopening of the economy (BOI, 2022[125]). However, gaps in digital infrastructure, low digital skills, and a higher prevalence of occupations requiring on-site presence in the periphery limit the adoption of telework, which is lower in Israel than in other countries (Adrjan et al., 2022[126]). Investment into digital infrastructure in the periphery, as discussed in more detail in *Chapter 1*, is therefore a key priority that should be accelerated. Improving opportunities to telework could also alleviate traffic congestion in the Tel Aviv metropolitan area.

Lifting the productivity of jobs at the bottom

Low productivity and wages are in many cases also a reflection of the technological and organisational tools that workers have at their disposal. More productive firms pay higher wages not only because their workers are better qualified, but also because the firms themselves are more productive. Fostering technology absorption and innovation, higher capital intensity, and stronger competition are all ways to lift the productivity of firms at the bottom, and with it the productivity of jobs in these firms.

Size-dependent distortions accentuate business sector duality. Although Israel is a top performer in overall R&D spending, there are large differences in R&D intensity across sectors (Figure 2.32). The LECI allocates preferential treatment based on sharp minimum thresholds, e.g. for the share of exports in sales or for the share of R&D workers in the total workforce. International evidence suggests that such size-based thresholds can create significant distortions in the business sector (Garicano, Lelarge and Van Reenen, 2016[127]). Given that exporters are generally among the more productive firms in the economy (Melitz, 2003[128]), preferential treatment to this group of firms is also likely to exacerbate the duality of the business sector. Finally, without a concurrent increase in labour supply of high-tech workers, the subsidies may just increase wage premia for high-tech workers, and distort the allocation of such workers across firms, without any real increase in innovation output (OECD, 2015[129]; Goolsbee, 1998[130]). The wage premia enjoyed especially by workers in the high-tech sector (see Figure 2.21) are an indication of the presence of such distortions (Bank of Israel, 2019[44]). The government should therefore perform a thorough evaluation of the LECI and consider changes to the Law that remove these distortions, as recommended in the previous *Survey* (OECD, 2020[3]).

Figure 2.32. Israel is a leader in research and development, but innovation is heavily skewed across sectors



Note: The top panel shows the R&D intensity of the whole economy for Israel compared to other OECD countries. The bottom panel shows the ratio of R&D intensity by sector in Israel relative to the *same* sector in other OECD countries.
Source: OECD Research and Development Statistics database; OECD Structural Analysis (STAN) database; OECD Economic Outlook: Statistics and Projections database; and OECD calculations.

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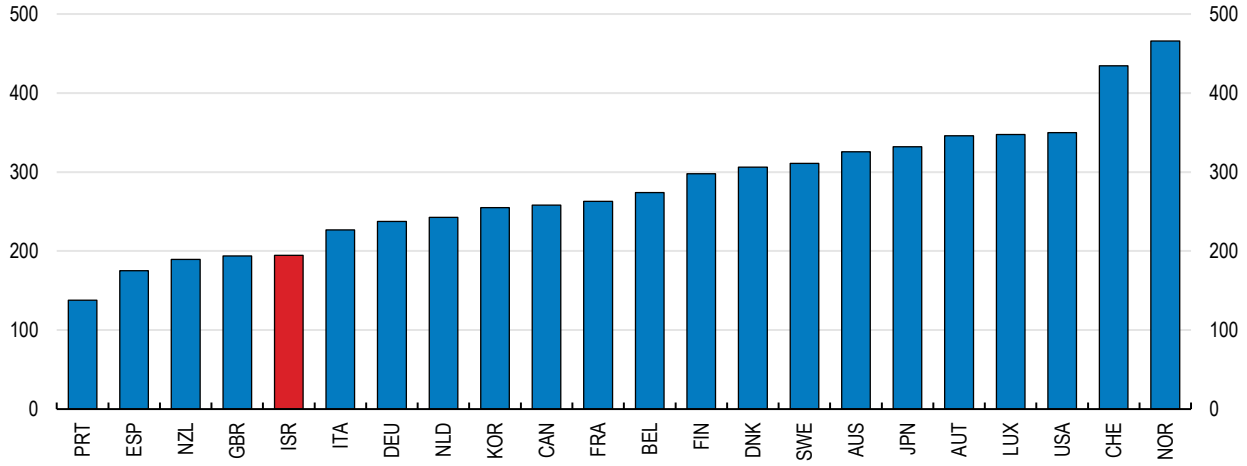
Business investment is low, especially in low-productivity, low-wage sectors (Bank of Israel, 2019[44]; Eckstein, Lifshitz and Menahem-Carmi, 2020[131]). Israeli workers need to work with much lower levels of capital than in other countries, which is associated with lower productivity for each hour worked (Figure 2.33). On aggregate, some lower capital intensity might be expected given the large weight of the high-tech sector which is intensive in intangibles rather than physical capital. However, there is evidence, that in many traditional sectors, low skills of the workforce and low capital per worker reinforce each other (Hazan and Tsur, 2021[60]). Such dynamics then lead to a situation where some sectors find themselves in a low-cost, low-productivity, but labour-intensive equilibrium. The government should encourage investments in sectors outside manufacturing and high-tech, including digital technologies in traditional industries (see Chapter 1). One step towards this goal is to foster links between the high tech sector, which develops technology, and other sectors that are potential adopters of technology. Currently the high-tech sector is outward-looking and has few links with domestic firms (Gandal, Roccas Gandal and Kunievsky, 2021[132]), even though there is a potential for testing technology developed by high-tech in Israel first, for example in the agriculture or health sectors. Public R&D funding could also be used to encourage innovation and technology adoption in the lagging sectors. However, currently public funding is mostly targeted to a few, already highly innovative sectors (OECD, 2020[3]).

Figure 2.33. Israeli industries have a low degree of capital deepening

Productive capital stock per person employed, thousands USD, 2021 or latest available year



Note: 2021 data for Israel.
Source: OECD Productivity database.

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Table 2.1. Recommendations for addressing labour market challenges

FINDINGS	RECOMMENDATIONS (key recommendations in bold)
Raising labour market participation	
Employment of Haredi (ultra-Orthodox) men rose only moderately over 2010-2020, and remains significantly below other groups and short of employment targets. Specific benefits and exemptions for Haredi men discourage and delay labour force participation.	**Remove government subsidies for yeshiva students and condition childcare support on fathers' employment in addition to mothers' employment.** Reduce the military draft exemption age to reduce negative incentives to participate in post-secondary education and work.
The share of the working poor in the population is high, especially among single-earner and large households.	**Permanently re-introduce the bonus for second earners in the Earned Income Tax Credit and align fathers' benefits with that of mothers.**
Take-up of Earned Income Tax Credits (EITC) is low among Arab-Israelis, who are over-represented among low-wage earners.	Gradually introduce auto-enrolment to EITC based on available income tax information.
The gender pay gap is one of the highest in the OECD. Women work fewer hours and earn lower hourly wages than men. The gender employment gap is highest among Arab-Israelis.	**Increase the provision of accredited child care in Arab municipalities.** **Introduce paid paternity leave.** Switch to a five-day school week.
Spending on active labour market programmes is low, and labour market mismatch is high.	Expand effective active labour market programmes, such as training and data-driven job placements.
Education to build better skills for all	
Resources allocation is unequal across schooling systems. Especially at the secondary level, the Arab education system receives less funding than state Hebrew streams, has less resources, and significantly lower learning outcomes.	**Increase funding for Arab schools to equalise their budget to schools with similar socio-economic profiles in the Hebrew sector.** Increase Hebrew teaching and modernise general pedagogy in Arab schools.
Haredi independent schools, especially for boys, do not provide sufficient core curriculum teaching in labour market-relevant subjects. A "state Haredi" model with supervised schools that teach the full core curriculum exists, but covers a small minority of Haredi schools and pupils.	Make funding to Haredi schools conditional on core subject instruction and on supervision by the Ministry of Education.
The share of Arab youth not in employment, education or training (NEET) is high. A "gap year" to provide extra training and guidance to Arab school leavers is being introduced.	Make funding for institutions providing the "gap year" conditional on follow-up education and employment outcomes.
VET qualifications are in general not perceived as attractive by young adults. The VET landscape is fragmented. Workplace training is low. Few students progress from post-secondary VET to higher degrees.	**Create a National Qualifications Framework and improve pathways for mobility between upper-secondary schooling, post-secondary VET, and tertiary degrees.** Strengthen work-based learning and employer participation in post-secondary VET, for example by encouraging the establishment of training associations. Expand information on wage returns provided by the "Avodata" platform to VET training institutions.
Increasing job mobility and improve labour allocation	
The high-tech sector faces labour shortages. Women, Arab-Israelis and Haredi Jews are underrepresented in the high-tech sector. Personal networks play an important role in recruitment of the sector, including those formed in the military.	**Implement a comprehensive strategy to broaden the high-tech talent pool, including foundational skills in middle school, post-graduate degrees and short-cycle technical certificates, coding bootcamps, internships and mentoring activities.** Assess pilot initiatives for professional integration of underrepresented groups and scale up effective initiatives.
Rich administrative data on labour market programmes and outcomes are fragmented across ministries and agencies, while firms and workers have limited information on market conditions. There is room to better use data to inform labour market policy.	Create a single data hub for collection, analysis and dissemination of labour market data.
High costs of living price out workers from thriving regions with employment opportunities in the Centre.	**Reduce the difference between non-residential and residential property tax rates**, expand low-cost rental housing and encourage urban renewal projects in central regions.
Public transport infrastructure has not kept up with population growth, resulting in high car dependence and significant traffic congestion.	Establish metropolitan transport authorities in major cities to coordinate and manage planned public transport infrastructure investments
Investment into R&D and physical capital are low in many industries. Productivity differences across industries are large.	Review and reduce size-dependent distortions from the corporate income tax schedule.

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The Israeli economy has rebounded strongly from the COVID-19 pandemic and has proven resilient to the repercussions of Russia's war of aggression against Ukraine. Inflation has risen above the central bank's target range amid strong demand and a tight labour market. Demographic challenges, related to the rising share of population groups with weak labour market attachment and ageing, will put pressure on future growth and fiscal sustainability. Addressing these challenges and reducing large labour market disparities will require setting appropriate work incentives and providing better support for working parents; improving skills at all stages of the learning cycle; as well as increasing mobility and reallocation towards high productivity jobs and firms, in particular in the high-tech sector. To maintain good health outcomes, emerging doctor shortages need to be addressed and the interaction between the public and private health care sector reformed. Reducing digital gaps across households and firms, by improving digital infrastructure, upgrading skills, raising competition and reducing financing constraints, can boost productivity growth and narrow the productivity divide between the high-tech sector and the rest of the economy. Fully harnessing Israel's solar energy potential can help accelerate the green transition.

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