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OECD Economic Surveys: Korea 2024

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Foreword

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries. The economic situation and policies of Korea were reviewed by the Committee on 29 April 2024. 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 31 May 2024. The cut-off date for information included in this report is 3 July 2024.

The Secretariat's draft report was prepared for the Committee by Jon Pareliussen, HyunJeong Hwang, Yoonyoung Yang and Axel Purwin, under the supervision of Vincent Koen. Statistical research assistance was provided by Axel Purwin, editorial assistance by Sisse Nielsen and communication assistance by Laura Fortin.

The previous Survey of Korea was issued in September 2022.

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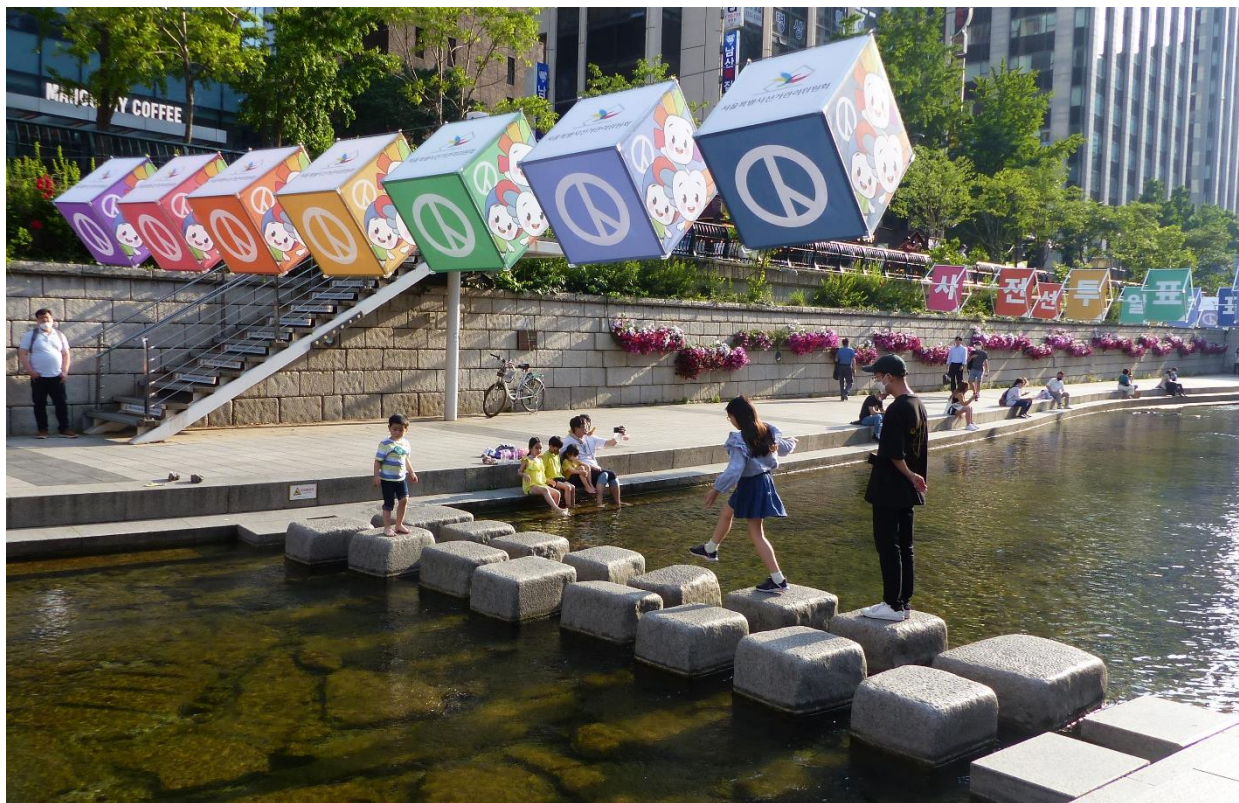


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BASIC STATISTICS OF KOREA, 2022

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	51.6		Population density per km ²	529.0	(39.0)
Under 15 (%)	11.6	(17.2)	Life expectancy at birth (years)	82.7	(79.6)
Over 65 (%)	17.5	(18.0)	Men	79.9	(77.0)
International migrant stock (% of population, 2019)	2.3	(13.2)	Women	85.6	(82.4)
Latest 5-year average growth (%)	0.1	(0.4)	Latest general election	March 2022	
ECONOMY					
Gross domestic product (GDP)			Headline inflation (y-o-y % change, May-2024, OECD: Apr-2024)	2.7	(5.7)
In current prices (billion USD)	1830.7		Key monetary policy rate (% , June-2024)	3.50	
In current prices (trillion KRW)	2323.8		Value added shares (%)		
Latest 5-year average real growth (%)	2.4	(1.7)	Agriculture, forestry and fishing	1.8	(2.8)
Per capita (000 USD PPP)**	55.5	(56.0)	Industry including construction	34.7	(28.0)
			Services	63.5	(69.2)
GENERAL GOVERNMENT (Per cent of GDP)					
Expenditure	38.0	(42.9)	Gross financial debt (2021, OECD; 2022)	47.6	(113.2)
Revenue	36.3	(39.6)	Net financial debt	23.4	(67.4)
EXTERNAL ACCOUNTS					
Exchange rate (KRW per USD)	1288.37		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	810.43		Machinery and electronics	41.5	
In per cent of GDP			Transportation	14.0	
Exports of goods and services	45.3	(33.4)	Chemicals	10.3	
Imports of goods and services	45.3	(34.8)	Main imports (% of total merchandise imports)		
Current account balance	1.3	(-1.0)	Fuels	29.9	
Net international investment position	42.8		Machinery and electronics	27.4	
			Chemicals	9.1	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	62.1	(57.5)	Unemployment rate, LFS (aged 15 and over, %)	2.9	(5.0)
Men	71.5	(65.3)	Youth (aged 15-24, %)	7.0	(10.9)
Women	52.9	(50.1)	Long-term unemployed (1 year and over, %)	0.0	(1.2)
Participation rate (aged 15 and over, %)	63.9	(60.6)	Tertiary educational attainment (aged 25-64, %)	52.8	(40.7)
Average hours worked per year	1901	(1752)	Gross domestic expenditure on R&D (% of GDP, 2021)	4.9	(2.9)
ENVIRONMENT					
Total primary energy supply per capita (toe)	5.6	(3.8)	CO ₂ emissions from fuel combustion per capita (tonnes)	10.6	(7.8)
Renewables (%)	2.5	(12.0)	Water abstractions per capita (1 000 m ³ , 2020)	0.4	
Exposure to air pollution (more than 10 µg/m ³ of PM 2.5, % of population, 2020)	99.1	(56.5)	Municipal waste per capita (2020)	0.4	(0.5)
SOCIETY					
Income inequality (Gini coefficient, OECD: latest available)	0.324	(0.316)	Education outcomes (PISA 2022 score)		
Relative poverty rate (% , OECD: 2020)	14.9	(11.7)	Reading	515	(476)
Median disposable household income (000 USD PPP, 2021, OECD: 2020)	31.9	(26.7)	Mathematics	527	(472)
Public and private spending (% of GDP)			Science	528	(485)
Health care	9.7	(9.2)	Share of women in parliament (%)	18.6	(32.5)
Pensions (2020, OECD: 2019)	4.7	(9.5)	Net official development assistance (% of GNI)	0.2	(0.4)
Education (% of GNI, 2021)	3.8	(4.4)			

* The year is indicated in parenthesis if it deviates from the year in the main title of this table. Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries.

** OECD aggregate refers to weighted average.

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

Growth resumes after a soft patch

Growth has strengthened after a soft patch, largely reflecting the fortunes of semiconductor exports. Monetary policy loosening is on the horizon, while fiscal restraint is needed to prepare for ageing.

Trade is a key driver of growth but creates dependencies. Exports, of semiconductors in particular, have accounted for much of the cyclical ups and downs since the exit from the COVID-19 crisis, with GDP growth projected to recover to 2.6% in 2024 and 2.2% in 2025. Trade tensions between Korea's main trading partners, the United States and China, are felt but with limited economic fallout so far. High supply chain

dependencies on individual countries for some critical inputs are key risks to hedge.

Private consumption has been weak, pulled down by high interest rates and weak real wage growth but shored up by strong employment and pandemic-era excess savings. With disinflation, interest rates having peaked and housing prices stabilising, consumption is expected to gradually pick up going forward.

Table 1. Growth is picking up in 2024

Annual growth rates, %, unless specified

	2022	2023	2024	2025
Gross domestic product (GDP)	2.7	1.4	2.6	2.2
Private consumption	4.2	1.8	1.4	2.4
Gross fixed capital formation	-0.2	1.4	1.0	2.1
Exports	3.9	3.6	6.9	2.4
Imports	4.2	3.5	1.2	2.4
Unemployment rate (%)	2.9	2.7	2.9	3.0
Headline CPI inflation	5.1	3.6	2.5	2.0
Current account balance (% of GDP)	1.3	1.9	4.5	4.7
General government fiscal balance (% of GDP)	-1.7	-0.8	-0.9	-0.3

Source: OECD Economic Outlook 115, updated with recent data releases.

The government has started to consolidate public finances, after fiscal policy supported demand and reduced poverty during the pandemic. A proposed fiscal rule can help meet spending pressures from rapid ageing, while a tax revenue shortfall in 2023 points to room for improving fiscal and debt management frameworks.

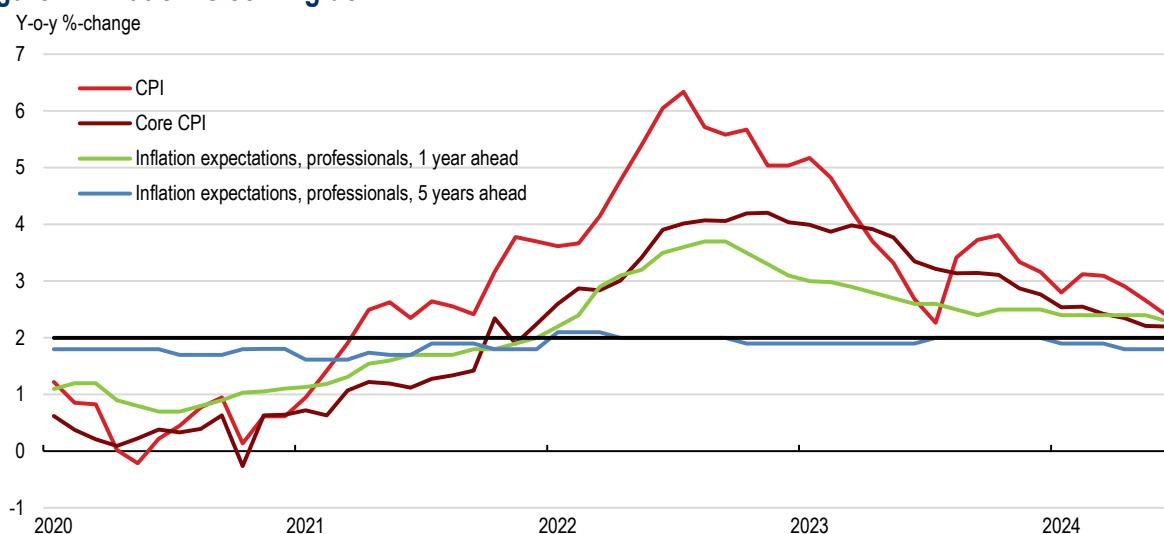
Inflation expectations have remained well anchored. The policy rate has been kept at 3.5% since early 2023 after a cumulative tightening of 3 percentage points. Inflation has trended down since July 2022, and is in the process of reverting to target (Figure 1).

A weak property market caused financial turbulence. Housing prices fell around 9% in nominal terms during the year to June 2023, after

which they stabilised. Macroprudential easing and policy lending contributed to nominal stabilisation, and macroprudential regulations have limited the risk of widespread defaults on household debt. The combination of tight

financial conditions and a weak property market has uncovered vulnerabilities in non-bank financial institutions, centred on construction project finance, but systemic risk remains low.

Figure 1. Inflation is coming down



Source: OECD, Economic Outlook (database); Bank of Korea.

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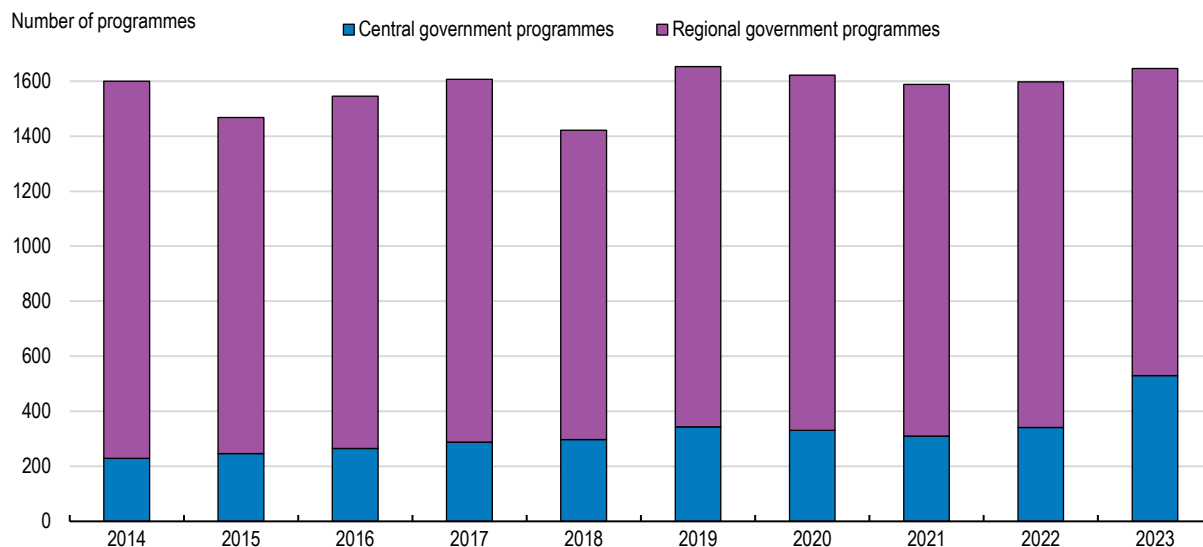
Competition can spur productivity

Productivity growth has declined in Korea, reflecting the global trend and less scope for catch-up growth as Korea has reached the OECD average per capita GDP. Past GDP growth resulted largely from increasing employment and heavily investing in capital and education. Going forward, considerable scope remains to raise SME productivity towards that of large companies by means of pro-competition reforms levelling the playing field in the domestic market.

A “red light” reform to consolidate state support could help break a vicious cycle. Central government spending on SME subsidies is high and increasing. A total of 1646 programmes were in place in 2023 to support SMEs, 530 run by 18 ministries and central government agencies and 1116 by the 17 regions (Figure 2). SMEs also enjoy special treatment in public procurement, lower taxes, size thresholds in regulations and other benefits. Consolidation of support and protection in various forms could reduce the risk that these policies lock resources in low-productive uses and thereby hold back overall productivity.

A “green light” reform removing regulatory hurdles could foster private enterprise. Korea

has streamlined regulations over time, and overall product market regulations are around the OECD average. Greater foreign competition could be particularly beneficial in domestic markets requiring scale to compete, such as those dominated by the large Korean conglomerates and network sectors. Competition reforms in sectors with heavy state involvement would help provide services more cost-effectively and correct relative price distortions, notably for electricity and rail. Korea has a well-developed system of regulatory sandboxes and “Regulation free zones” which allow trialling new technologies and business models. Many projects are coming to the end of their sandbox period which makes it a priority to speed up the related regulatory overhaul.

Figure 2. 1646 schemes subsidise SMEs

Source: Ministry of SMEs and Startups.

StatLink  <https://stat.link/th421a>

A fork in the road for climate policy

Korea has pledged to reduce greenhouse gas emissions by 40% in 2030 and become carbon neutral in 2050 (Figure 3). Proper calibration of allocations to Korea's emissions trading scheme can ensure that the targets are reached.

Emissions peaked in 2018 and the policy framework is moving forward. Approximately three quarters of Korea's greenhouse gas emissions are capped by the emissions trading scheme. Setting its 2026-30 emissions limit in line with the 2030 target is necessary to inspire confidence in Korea's overall target achievement.

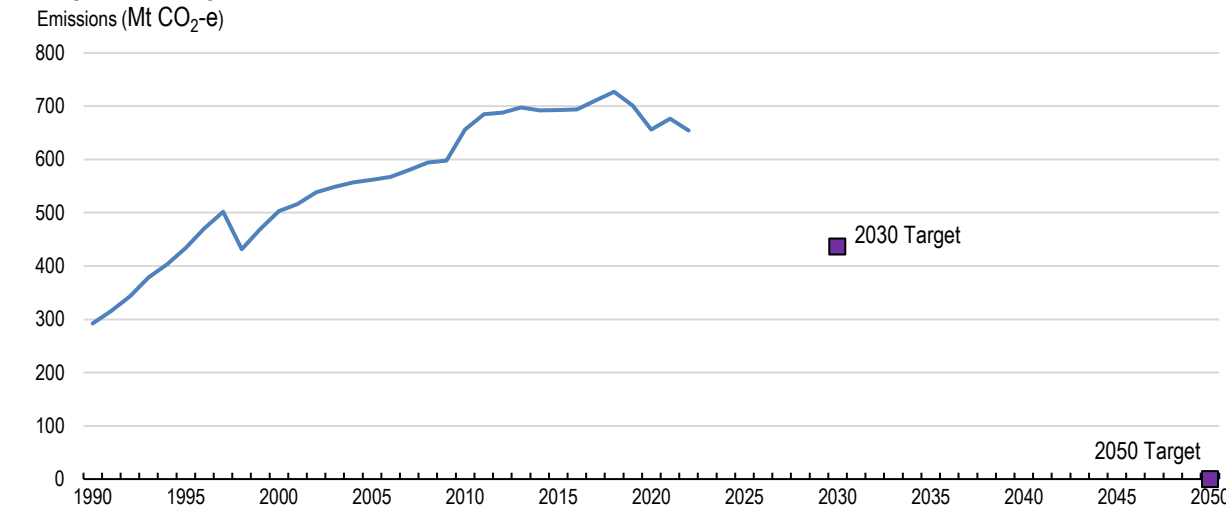
Korea's economy is very energy intensive. Decarbonising sectors such as petrochemicals, iron and steel will require additional clean electricity and energy savings. In the current system, the carbon price from the emissions

trading scheme is not fully reflected in electricity generation. The government has raised electricity prices considerably to better reflect the true cost of energy, but they remain regulated and vary across categories of end users.

Koreans support action on climate, but concrete policy instruments are unpopular. Support for necessary but unpopular policies could be built by means of dialogue, place-based measures and by bundling climate policy with policies supporting structural change, reducing inequalities and boosting incomes.

Figure 3. Korea targets net zero emissions

Total greenhouse gas emissions, excl. LULUCF



Source: OECD, Air and climate (database).

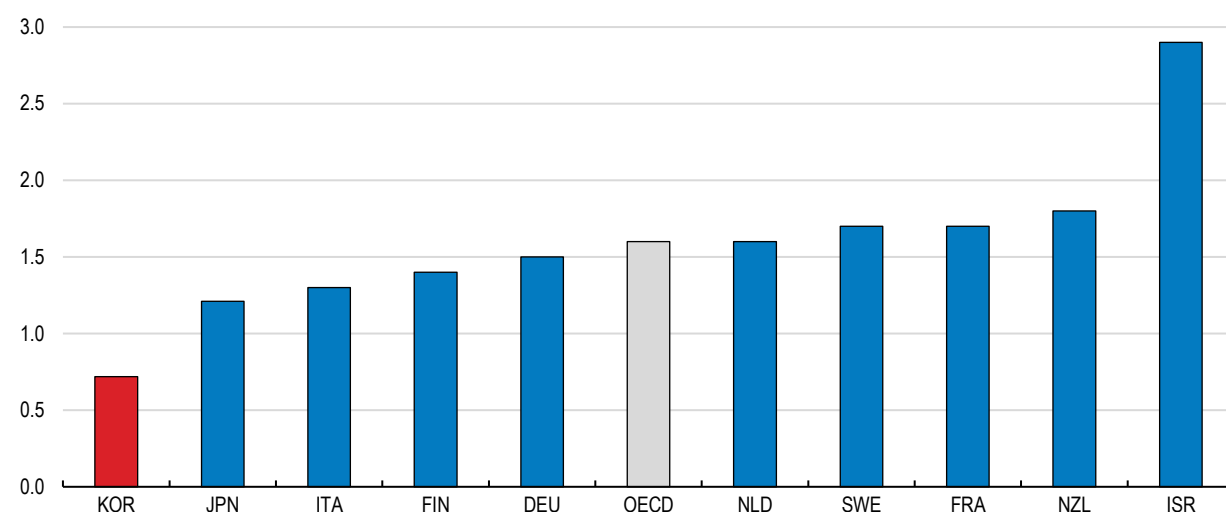
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Responding to population decline


The Korean fertility rate has fallen to the lowest in the world (Figure 4). As a result, the population is set to halve over the next six decades and the old-age dependency ratio is projected to surge rapidly, putting considerable strain on labour supply and public finances. Supporting people to have the number of children they desire would dampen the projected population decline, while lengthening working lives and welcoming more foreign workers would counteract the adverse effects of ageing.

Figure 4. Korea's fertility rate is at a record-low

Total fertility rates, 2023 or latest



Source: OECD Family Database.

StatLink  <https://stat.link/kiulm6>

Improving the work-life balance could help reverse the decline in the fertility rate while boosting female employment. Spending on childcare has significantly increased, but the current childcare system does not fully meet the needs of working parents, partly reflecting scarcity of quality childcare and short opening hours. Despite improvements, Korean parents underutilise paid parental leave due to stringent eligibility criteria, low benefits, and a fear of adverse career consequences reflecting the cost on employers.

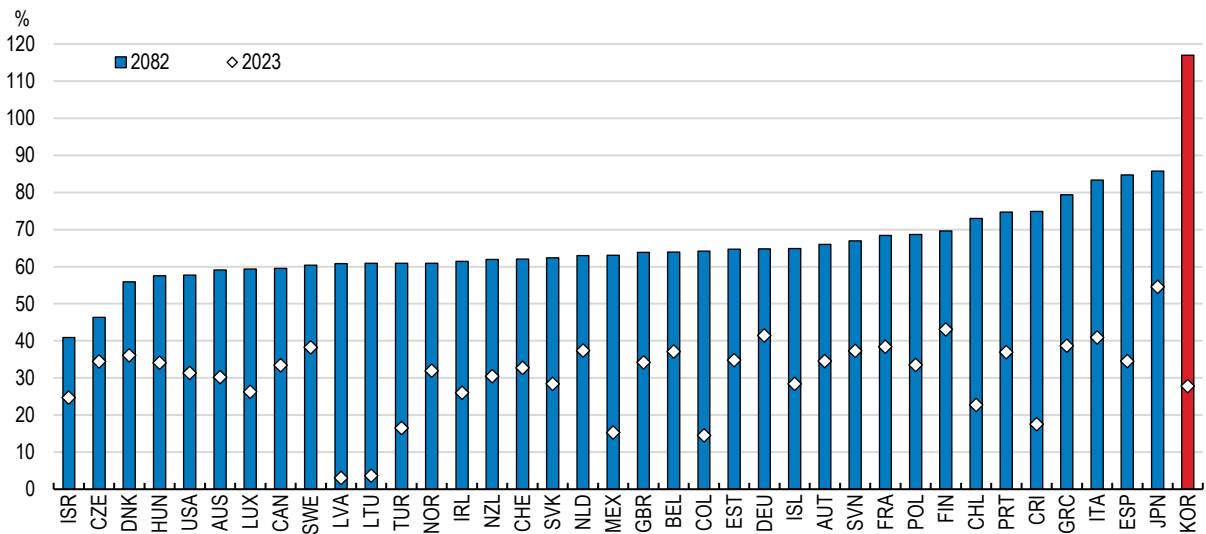
The weak financial position of youth holds back family formation. Addressing labour

market dualism by a combination of streamlining employment protection and strengthening social insurance would help. Alleviating the burden of high housing cost and reducing the need to pay for expensive private tutoring would also strengthen the economic position of parents.

Korea must prepare for and adapt to the inevitable challenges of ageing. The old-age dependency ratio will surge even more than elsewhere (Figure 5). Combined reforms to increase immigration, employment and fertility can dampen a dramatic increase in the number of elderly to be supported by each person employed.

Figure 5. The old-age dependency ratio will be the highest in the OECD

Ratio of individuals aged 65 and over to those aged 20 to 64



Source: OECD (2023), Pensions at a Glance.

StatLink <https://stat.link/awlkuf>

Careers are shortened by the seniority-based wage system which renders older workers less appealing to firms when the wage rises above productivity. Company-specific mandatory retirement ages below the legal pension age and the practice to encourage older employees to voluntarily leave even before reaching this mandatory retirement age also contribute to premature retirements from their main job.

The potential to increase immigration and make better use of foreign labour is considerable. Current low-skill work immigration policies allow low-productivity firms to overly rely on migrant workers on temporary work visas and making these workers dependent on their employers. Meanwhile, high-skill immigration is held back by various visa hurdles. Foreign students find it difficult to stay after graduation and start-up visa issuance remains low, despite growing interest.

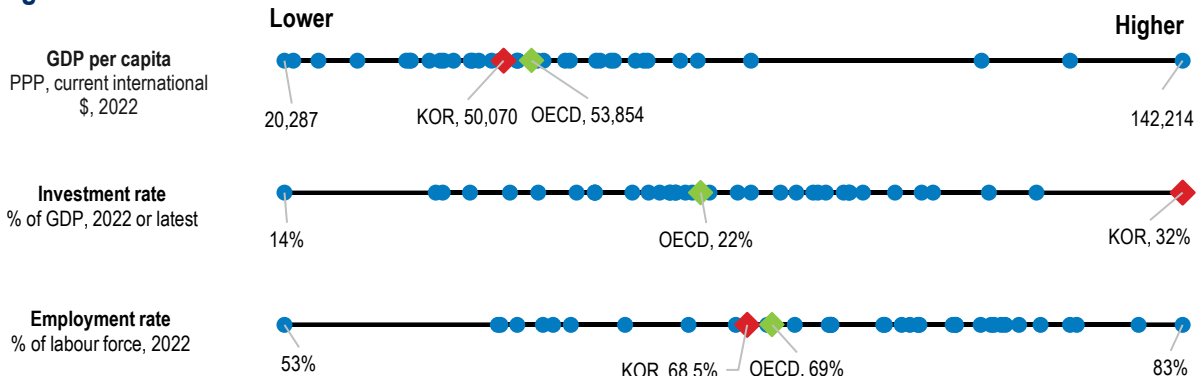
Main findings and key recommendations

Main findings	Key recommendations
Responding to inflation and fiscal challenges	
The government has proposed a numerical fiscal rule, which is pending parliamentary approval. This rule is meant to complement the current fiscal framework's long-term projections and spending reviews.	Adopt the proposed fiscal rule and continue to carry out regular spending reviews to ensure long-term fiscal sustainability.
The budget is projected to remain in deficit in 2024 and 2025.	Restrain spending in 2024 and 2025 in line with current plans.
Inflation is trending down towards target, despite inflationary pressures related to food and energy in early 2024.	Condition monetary policy easing towards late 2024 on inflation approaching the target.
Levelling the playing field to boost SME productivity	
A large share of SMEs receive subsidies, while their productivity gap to large companies remains well above the OECD average.	Limit the scope for broadly defined public support to companies to a list of permitted causes linked to market imperfections, regardless of company size.
A fragmented and poorly coordinated system of 1646 SME subsidy programmes run by 35 public entities differentiates support by company size.	Consolidate public support to companies into a small number of programmes operated by a dedicated public entity at an arms-length distance from politics.
Overall product market regulation stringency is around the OECD average, with ample room to reduce barriers to trade and state involvement in business operations in services and network sectors.	Shift to a comprehensive negative-list regulatory system.
Achieving climate targets	
Allocations for the fourth trading period (2026 to 2030) of Korea's emissions trading scheme will cap three quarters of Korea's emissions.	Allocate a total number of allowances to the emissions trading scheme fully proportional to the 2030 target.
Korea's emissions trading scheme has experienced low liquidity in the past.	Auction a considerable share of allowances in regular auctions.
In the current system, the carbon price from the emissions trading scheme is not fully reflected in electricity generation. The government has raised electricity prices to better reflect the true cost of energy, but they remain regulated and vary across categories of end users.	Build on planned electricity market reforms to move towards a market-based system where the true cost of energy and emissions is fully reflected in electricity supply and use.
80% of Koreans support carbon pricing if revenues are used to support low-carbon technologies and environmental infrastructure. Necessary actions to reduce greenhouse gas emissions can have negative distributional consequences.	Link revenue from carbon pricing politically to green expenditure, and link reforms to correct energy prices to labour market reform and a strengthening of the social safety net.
Responding to population decline	
Workplace childcare and public childcare are preferred but in short supply, while there is excess supply of low-quality private childcare, and formal childcare hours do not align with full-time workweeks.	Tighten and enforce quality criteria for private childcare, improve the accessibility of public childcare, encourage workplace childcare, and extend formal childcare hours to accommodate working parents' needs.
A considerable share of the workforce is not eligible for paid parental leave due to strict eligibility criteria.	Expand parental leave coverage to the entire workforce.
The government recently raised the parental leave benefit ceiling in cases when both parents take the leave, while lengthening the maximum duration of the leave.	Increase the parental leave ceiling for all leave takers, while introducing the option to take shorter leave at a higher replacement rate, bridging potential funding gaps.
Employers carry a considerable share of parental leave costs and co-workers often end up working extra when leave is taken, leading relatively few parents to use their paid parental leave rights compared to other OECD countries.	Finance maternity, paternity and parental leave benefits and associated charges with public resources, eliminating the direct costs to employers.
Sanctions for workplace discrimination are weak and legal enforcement is patchy.	Strengthen sanctions for workplace discrimination and the capacity of the labour inspectorate to follow up.
Many young people either postpone their careers to land high-quality jobs in large firms, or start at smaller companies with non-regular contracts.	Break down labour market dualism by relaxing employment protection for regular workers, while expanding social insurance enrolment.
The housing supply shortage, particularly in Seoul, drives escalating prices, partly hindered by stringent regulations limiting private sector involvement.	Consider further relaxing regulations on reconstruction and presale price caps, as they undermine the profitability of private housing projects, thereby restricting housing supply.
Many workers are forced to retire early, mainly due to the practice of honorary retirements, company-specific mandatory retirement ages, and the seniority wage system.	Introduce a flexible wage system tying wages to job characteristics and performance, irrespective of age, and restrict honorary retirement. In this context, consider phasing out company-specific mandatory retirement ages.
The pensionable age is currently 63, one of the lowest in the OECD, and set to increase more slowly than in other OECD countries.	Raise the pension eligibility age further than currently legislated by 2035 and link it to life expectancy thereafter.
The inflow of skilled migrant workers significantly lags behind other OECD destinations, partly reflecting stringent visa regulations.	Relax strict visa eligibility requirements for skilled migrants.
Many migrant workers with a visa for low-skilled time-limited work already possess the education sought by employers for higher-skilled jobs.	Streamline the transition from temporary low-skilled status to skilled trade worker status.


1 Korea needs an upgraded growth model

Korea's rapid ascent from destitution to catch up with OECD average per capita income (Figure 1.1) was founded on competition- and export-friendly reforms, sound macroeconomic policies and a strong commitment to education. Exports continue to shape Korea's economic fortunes. Demand normalisation after the pandemic led to semiconductor production overcapacity and the global inflation shock related to Russia's war of aggression against Ukraine generally lowered the demand for goods, holding back growth in 2023. Now, with inflation falling back and renewed demand for computer chips to power a wave of investment in artificial intelligence, exports are again driving growth. Trade dependencies have created disruptions which have so far been manageable, but diversification can reduce risk. Employment has increased almost continually since early 2021, unemployment remains low, and the initial shocks from inflation, higher interest rates and falling housing prices that were holding back consumption are abating. Monetary policy easing is on the horizon, while the government plans to improve the fiscal balance. All in all, growth should strengthen, but high household debt remains a concern.

Figure 1.1. Economic indicators



Source: World Bank; OECD Database on consumer price indices; OECD Database on labour market statistics; OECD calculations.

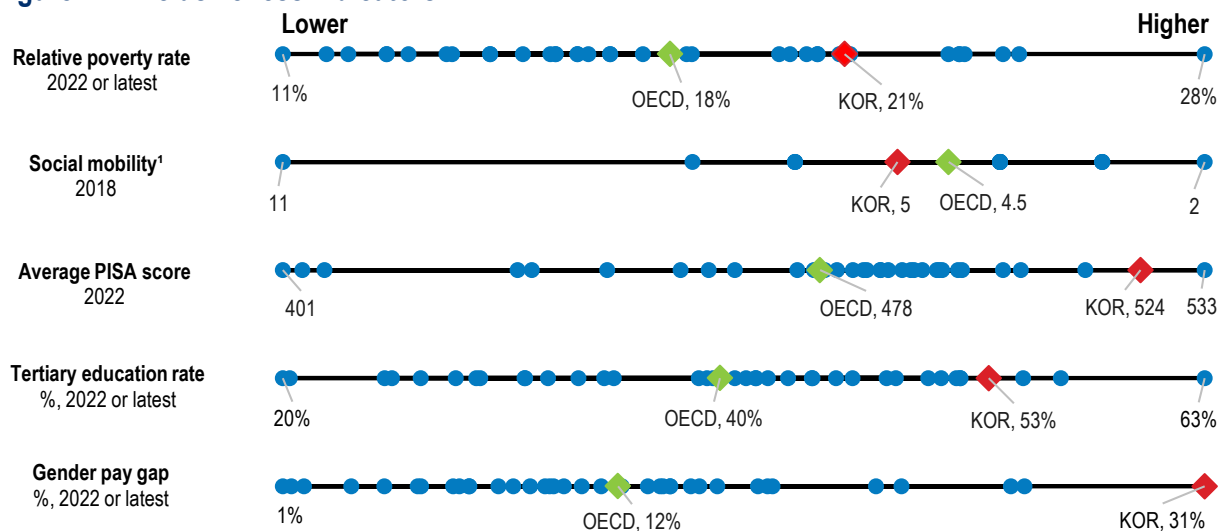
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This Survey argues that after serving the country well for decades, the export-oriented growth model needs a decisive upgrade for Korea to catch up with best-performing OECD countries in terms of incomes, environmental sustainability and well-being. Manufacturing exports are and should remain an important source of growth, but the domestic economy has considerable untapped potential. Productivity gaps between large and small companies and between manufacturing and services are due in part to weak competition in considerable segments of the domestic economy. A cobweb of support schemes and regulations exists to support the SME sector in which 85% of employment is found. Institutional change to systematically consolidate business supports and regulations would facilitate productivity catch-up by levelling the playing-field in the domestic market and incentivise SMEs to grow. There is also room to further open up to foreign investment and trade and reduce public interventions in the economy

(Chapter 3). Productivity gaps are mirrored in labour market duality with large differences in pay, job quality and social protection. Bringing SME productivity closer to that of large companies by means of pro-competition reforms, while reducing gaps in employment protection and social protection would increase the purchasing power of SME employees, notably those who are today earning low incomes in precarious jobs.

The fertility rate of 0.72 child per woman in 2023 is the lowest in the world. It implies that today's parent generation is set to outnumber their children's generation by roughly three to one, and their grandchildren's generation by nine to one, with dire consequences for labour supply and public finances. Duality, seniority-based pay and insufficient protection against discrimination exacerbate earnings losses related to temporary child-related absences from working life, and combining work and family is difficult due to inflexible working practices. The career costs of childbirth are largely borne by mothers due to prevailing gender norms, leading women to postpone or renounce family formation. Private tutoring expenditure is also high as parents want their children on the winning side of productivity gaps and labour market dualities. Korea has strengthened family policies considerably over time, but turning around the situation requires broad structural reform to product and labour markets, completing family policies, and changing norms and practices (Chapter 5; Figure 1.2).


Figure 1.2. Inclusiveness indicators



1. Indicator reversed so that the right side of the scale corresponds to higher social mobility.

2. Note: The relative poverty rate is the share of people earning less than 60% of the median income, after taxes and transfers. Social mobility is the expected number of generations for children belonging to a family at the bottom 10% of the income distribution to reach average income. The PISA score is the average for mathematics, science and reading. The gender wage gap is measured at the median.

Source: OECD Income Distribution Database; OECD (2018), *A Broken Social Elevator? How to Promote Social Mobility*, OECD Publishing, Paris; OECD PISA database; OECD Education at a Glance database; OECD calculations.

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Concerns of adding cost to business and reducing external competitiveness have also so far stood in the way of tightening climate policies sufficiently to align them with Korea's climate targets. The economy is emission-intensive and remains reliant on coal (Figure 1.3). In the current system, the carbon price from the emissions trading scheme is not fully reflected in electricity generation. The government has raised electricity prices considerably to better reflect the true cost of energy, but they remain regulated and vary across categories of end users. A decision on allocations to the emissions trading scheme is to be made in the near future. Giving more room to the market to set prices by means of deregulation and tightening of the emissions trading scheme is the least-cost way of reaching climate targets, even though it would visibly raise the cost of energy and polluting for some (Chapter 4).

An upgraded growth model should be based on growing incomes by a combination of productivity catch-up and reducing labour market duality, strengthening the social safety net, and boosting employment, including by enabling both mothers and fathers to balance career and family. Concrete policies include: boosting competition by reducing unnecessary public support, regulations and other barriers to domestic and foreign competition while intensifying efforts against market power abuse; reducing rigid employment protection while protecting people and incentivising risk-taking by strengthening the social insurance system; making labour practices more conducive to work-life balance by legislation, enforcement and a strengthened social dialogue; meeting inevitable ageing by increasing immigration and lengthening working lives; and continuing education reforms to dampen pressures on children and parents. Taken together, this would boost average incomes and let more thereof accrue to those who will spend it, in particular today's low-income households and households with children, thereby revitalising private consumption as an additional growth engine for the coming decades (Table 1.1).

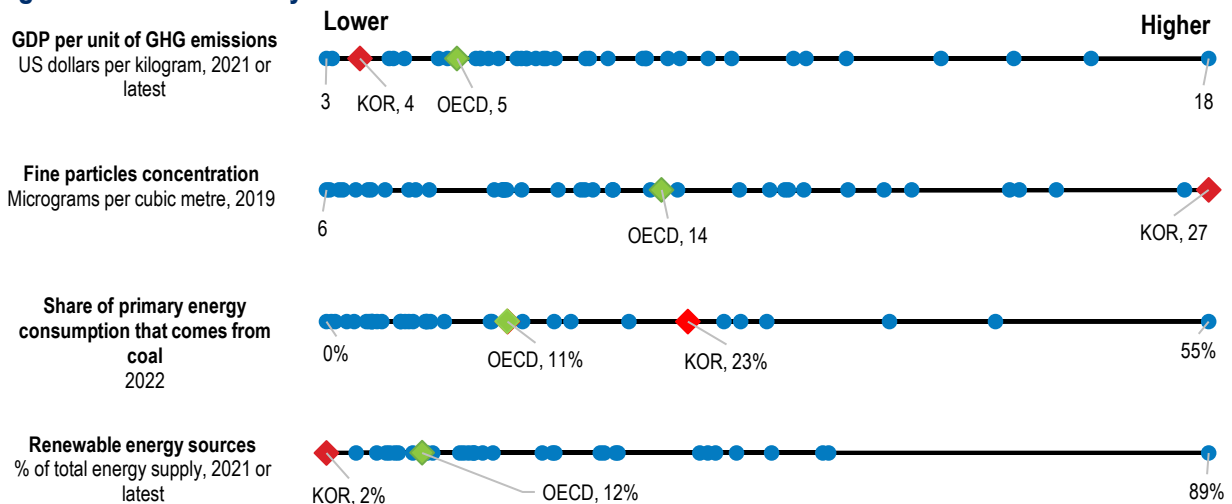
Table 1.1. Illustrative impact on GDP per capita of structural reforms

% difference in GDP per capita level compared to no-reform baseline

	10 years	2060
Boosting productivity by reforming state support and regulations		
Productivity convergence corresponding to closing 2/3 of current wage gaps of youth (15-29, relative to 30-34 year-olds), women (to men) and elderly (50-74 year-olds to 45-49 year-olds)	4.8	19.6
Boosting employment to meet demographic challenges		
Raising female employment (converging to male employment rate by 2040)	2.2	4.5
Raising elderly employment rate (increasing elderly employment by 1/3 of the difference with the previous age group by 2040)	1.7	7.1
Increase the legal retirement age to 68 by 2035, and raise it by two thirds of life expectancy gains thereafter	0.9	9.1
Raising the youth employment rate (converging to the current OECD average by 2040)	0.8	1.0
Increasing net immigration (from current 30 000 to 250 000 by 2040)	-0.3	0.8
Total	10.1	42.1

Source: OECD Economic Surveys: Korea 2022; OECD estimates based on the Economics Department's Long-Term Model.

Figure 1.3. Sustainability indicators



GDP per unit is production-based CO₂ productivity. Fine particles concentration is the mean population exposure to PM_{2.5}.

Source: OECD Green Growth Indicators Database: OurWorldInData.org/energy; OECD calculations.

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

- Fiscal policy needs to align with long-term pressures from rapid ageing in line with the proposed fiscal rule. Conditional on inflation approaching the target, monetary policy easing could start towards late 2024.
- Strengthening fair competition on a level playing field would boost productivity among SMEs. Reforms should go in the direction of limiting by law or other institutional arrangements aid to companies except in explicitly allowed cases, reducing state interventions and facilitating foreign trade and investment in the domestic economy.
- Setting the overall cap of the emissions trading scheme in line with the 2030 target will take the country three-quarters of the way to meeting its 2030 emission reduction target, while a failure to do so would put the target in question. Building on planned electricity market reforms, Korea should move towards a market-based system where the true cost of energy and emissions is fully reflected in electricity supply and use.
- Society needs to support young women and men to have the number of children they desire by filling gaps in family policies and social insurance, forcefully fighting discrimination, lowering housing and education costs and reforming labour markets to better balance career and family. Inevitable ageing should be met by lengthening working lives, mobilising underutilised labour resources and expanding immigration.

2

Macroeconomic outlook and policies

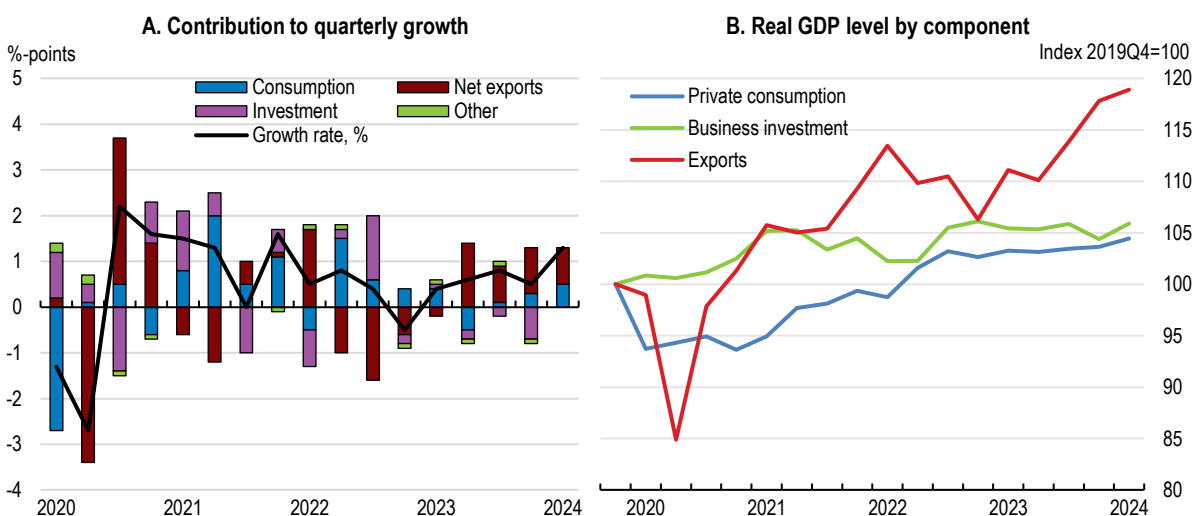
Jon Pareliussen
Yoonyoung Yang

Korea is emerging from a patch of weak growth. Increased global demand for semiconductors and other manufactured goods boosted exports during the pandemic, but semiconductor production overcapacity followed and the global inflation shock generally lowered demand for goods. Now, with inflation falling back, along with renewed demand for computer chips to power a wave of investment in artificial intelligence, exports prospects have improved. Trade dependencies have created disruptions and price spikes which have so far been limited and manageable, but diversification can reduce risk. Employment increased almost continually from early 2021 before stabilising in 2023. Unemployment remains low, interest rates have likely peaked, and housing prices have stabilised, all of which should support consumption going forward. Monetary policy easing is on the horizon. Fiscal policy should remain prudent in 2024 and 2025, and the proposed fiscal rule should be legislated and put into practice together with structural reforms to meet spending pressures from ageing. All in all, growth should strengthen somewhat, but high household debt remains a concern. Construction-related project finance has emerged as a pressing financial stability risk which needs to be carefully steered going forward.

Growth is rebounding from a soft patch

The Korean economy relies heavily on goods exports. Korea's concentration in the manufacture of semiconductors was an important driver of growth as the world invested in home offices and home entertainment equipment during the time of social distancing, leading to growth of 4.6% in 2021. However, global overcapacity in semiconductor supply emerged in 2022. At the same time Russia embarked on a war of aggression against Ukraine. The ensuing energy crisis pushed up inflation across the world, accentuated by post-COVID frictions in global value chains. Relatively low direct reliance on Russia and Ukraine, together with early monetary tightening already from August 2021 dampened the inflation shock in Korea compared to most OECD peers. Nonetheless, inflation, high household debt, increasing interest rates and falling housing prices have held back private consumption after the initial post-pandemic catch-up and continue to do so, even though excess savings and a resilient labour market have prevented an outright contraction of domestic demand (Figure 2.1). Fiscal policy also turned from highly expansionary during and immediately after the pandemic to contractionary in 2023 as pandemic-related spending was discontinued.

Figure 2.1. Growth is normalising after a slump tightly linked to weak exports

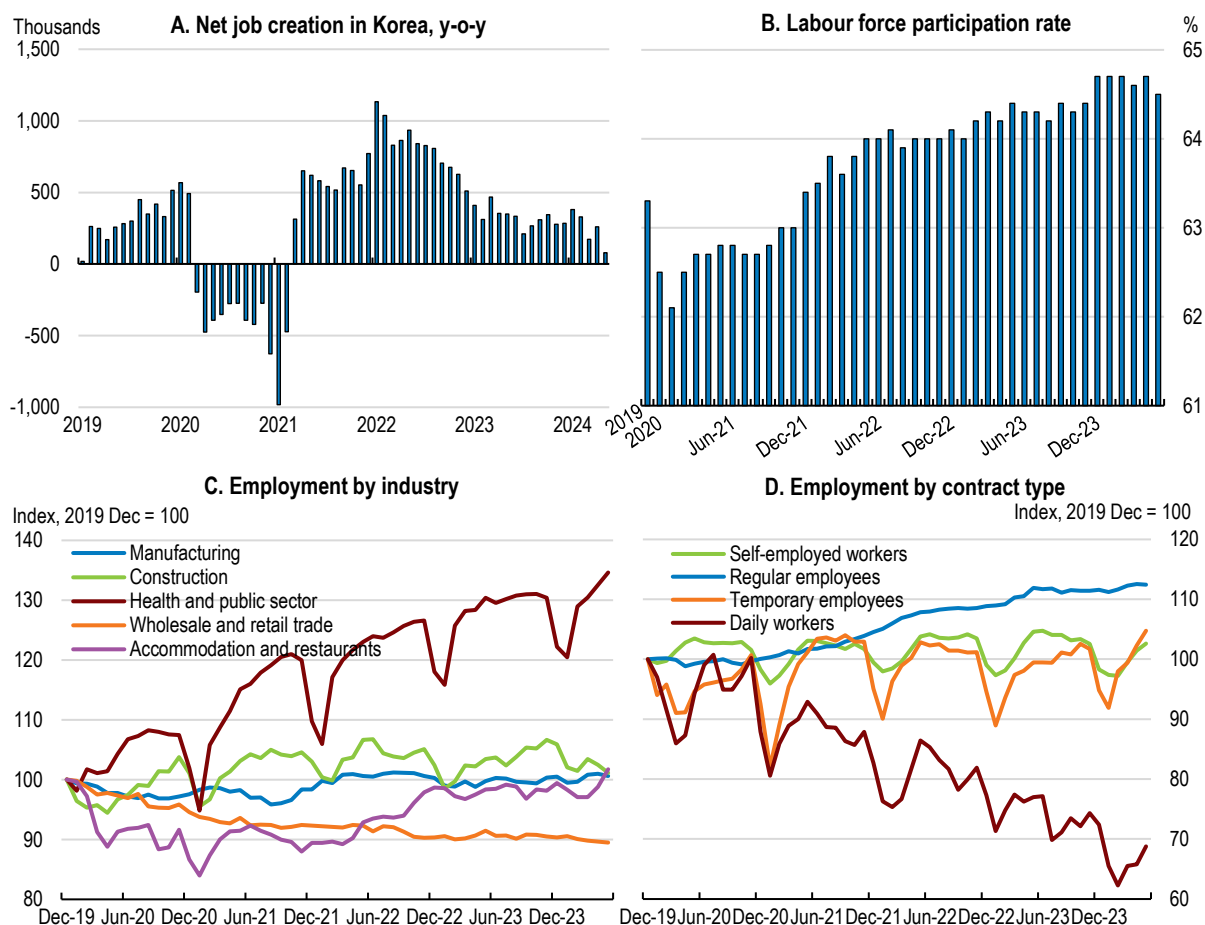


Source: Bank of Korea; OECD Economic Outlook database.

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The labour market has held up well, with net job creation every month since March 2021 (Figure 2.2, Panel A) and labour underutilisation steadily falling since the start of the pandemic. The employment to population rate (ages 15-64) increased from 66.5% in 2021 to 69.2% in 2023. The unemployment rate hovered around historical lows of around 2.5% during most of 2023 before it edged up to 2.8% in early 2024, and labour force participation expanded to record-high levels (Panel B). Job growth since the start of the pandemic has been concentrated in health care and public services. Employment in the accommodation and restaurants sector is back to its previous level after the pandemic-induced slump. Employment in manufacturing and in construction has hovered around pre-pandemic levels, while employment has fallen in wholesale and retail trade (Panel C). Job quality has improved with a reform capping the work week at 52 hours fully implemented in 2021, and with the share of regular employees on the rise until mid-2023 and stabilising thereafter (Panel D). Nominal wage growth has moderated, particularly in manufacturing, where shrinking bonuses during the tech downcycle have helped alleviate inflationary pressures.

Figure 2.2. The labour market is strong



Source: Bank of Korea; and Statistics Korea.

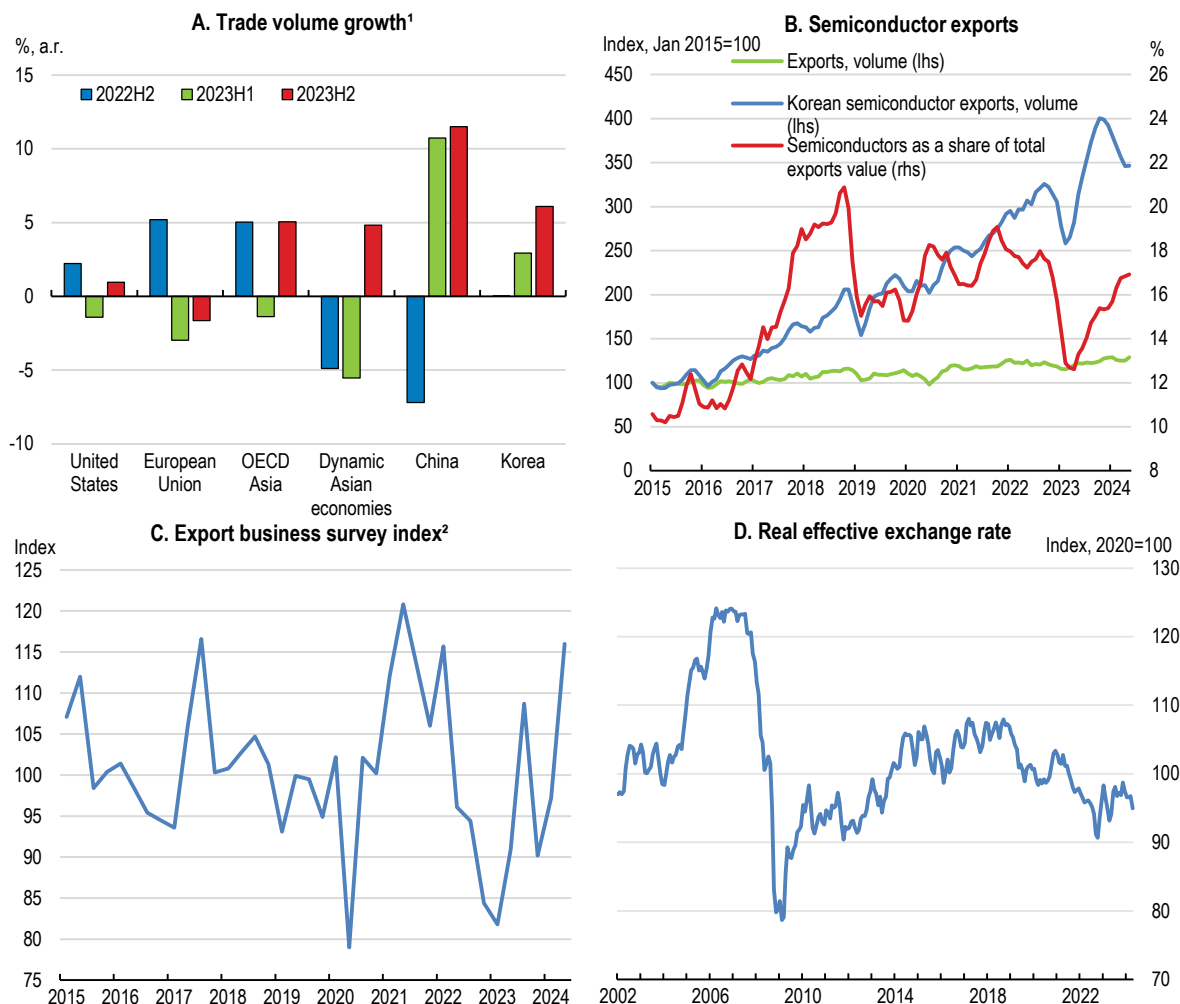
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Real GDP growth picked up in spring 2023 following a weak spell in late 2022 and early 2023, mainly driven by exports. Global trade volumes have picked up, semiconductor export volumes and prices are recovering, the sentiment of exporters has bottomed out, the real effective exchange rate has stabilised (Figure 2.3) and the current account is back into solid surplus. The first quarter of 2024 saw a sharp and broad-based acceleration, with real GDP up by 1.3%. While some of the factors driving private consumption and construction investment may have reversed in the second quarter, domestic demand momentum may have reached a turning point. Consumer sentiment has improved, even though the labour market has shown signs of weakening. Inflation continues to trend towards target: after inching above 3% in February and March 2024, headline fell to 2.4% in June, while core continued to decline, reaching 2.2% in June. The Bank of Korea has kept the policy rate at 3.5% since January 2023 after a cumulative tightening of 3 percentage points. Falling real-estate prices have led to some financial stress in construction-related project finance, but incidents so far have been contained (Box 2.2 further down).


Against this background, real GDP growth is projected to strengthen from 1.4% in 2023 to 2.6% in 2024 and 2.2% in 2025. Exports are set to keep improving with robust semiconductor demand. Elevated debt servicing burdens and accumulated inflation will continue to weigh on private consumption and investment in the short term, but domestic demand should strengthen from the second half of 2024. Inflation is on course to gradually moderate and reach the target in late 2024. The policy rate is expected to remain at the current level until late 2024, before being cut gradually to 2.5% by mid-2025. The budget for 2024 rests on an expected increase in tax revenue, which has so far not materialised, and contained expenditure

growth. The projected contractionary fiscal stance in 2025 is in line with the government’s consolidation plan (Table 2.1).

Figure 2.3. Exports are strengthening, led by semiconductors



1. Change in goods and services trade volume, at annualized rate, compared with the previous half year.
 2. A number below 100 means pessimists outnumber optimists, and vice versa.
 Source: OECD, Economic Outlook (database); Bank of Korea; Statistics Korea; Bank for International Settlements.

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There are risks to this growth scenario. Trade restrictions, especially between the United States and China, have already started shaping Korean companies’ value chains, albeit to a limited extent and in an orderly fashion so far. Supply chain dependencies on critical inputs have materialised as shortages occasionally arose but only as individual cases that have been solved with limited consequences, and the government is implementing measures to reduce the risk of shortages of critical inputs, as discussed below. More abrupt decoupling has a low probability but would come at a considerable cost to the Korean economy. Other low-probability risks are related to household debt and real estate. Nominal housing prices fell by about 9% from their post-pandemic peak before stabilising, but could fall further. Related to this, project finance for real estate investments has turned out to be a particularly vulnerable segment of the financial market (see below). A large fall in property prices could expose weaknesses on a larger scale and trigger a loss of confidence with potentially serious consequences depending on the policy response (Table 2.2).

Another and longstanding source of tail risk relates to North Korea. North Korea's economy, North-South cooperation and related risks to South Korea's economy are discussed in more detail in Annex A.

Table 2.1. Macroeconomic indicators and projections

Annual percentage changes unless specified, volume (2020 prices)

	2020	2021	2022	2023	2024	2025
	Current prices (KRW trillion)					
Gross domestic product (GDP)	2,058	4.6	2.7	1.4	2.6	2.2
Private consumption	984	3.7	4.2	1.8	1.4	2.4
Government consumption	350	5.6	4.0	1.3	1.3	1.3
Gross fixed capital formation	639	4.3	-0.2	1.4	1.0	2.1
Final domestic demand	1,973	4.3	2.7	1.6	1.3	2.1
Stockbuilding ¹	-0.6	-0.0	0.1	-0.2	-0.9	0.0
Total domestic demand	1,983	4.2	2.8	1.4	0.4	2.2
Exports of goods and services	713	10.8	3.9	3.6	6.9	2.4
Imports of goods and services	637	10.2	4.2	3.5	1.2	2.4
Net exports ¹	0.5	0.6	0.0	0.0	2.4	0.1
Other indicators						
Output gap (% of potential GDP)		-0.7	-0.5	-1.0	-0.5	-0.5
Unemployment rate (% of labour force)		3.6	2.9	2.7	2.9	3.0
Consumer price index		2.5	5.1	3.6	2.5	2.0
Core consumer prices (excluding food and energy)		1.4	3.6	3.4	2.2	2.0
Current account balance (% of GDP)		4.4	1.3	1.9	4.5	4.7
General government fiscal balance (% of GDP)		-0.3	-1.7	-0.8	-0.9	-0.3
Structural balance (% of potential GDP)		0.0	-1.4	-0.2	-0.4	0.2
General government gross debt (% of GDP) ²		47.6	50.5	50.9	52.4	53.3

1. Contribution to changes in real GDP; 2. National Accounts basis excluding unfunded liabilities of government-employee pension funds.

Source: OECD Economic Outlook No. 115, updated with recent data releases.

Table 2.2. Events that could lead to major changes in the outlook

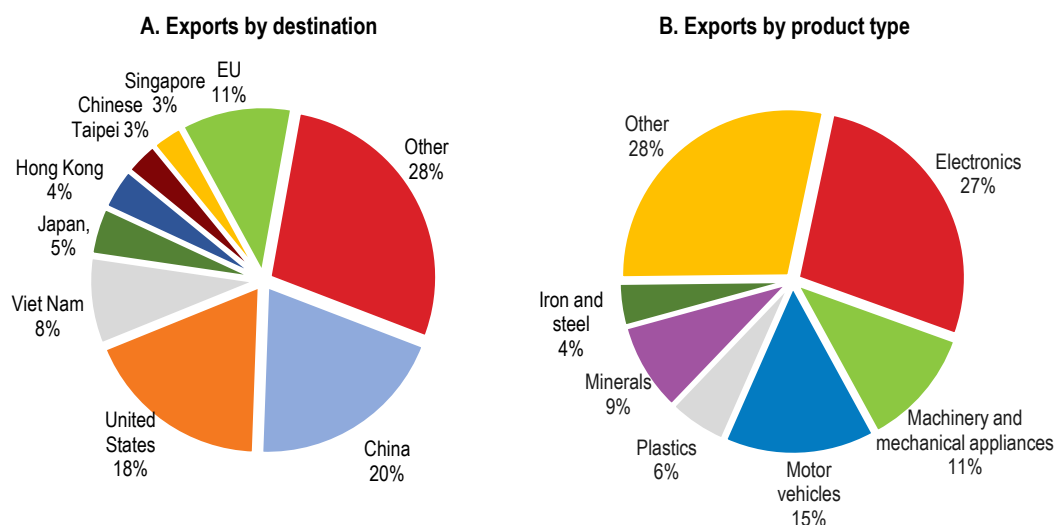
Shock	Possible outcomes
Geopolitical tensions lead to more tit-for-tat trade restrictions and move global trade more firmly into separate blocs centred on the United States and China.	Korean firms would need to redesign their value chains at considerable cost, and shortages of critical imports would create bottlenecks until alternative supply could come on line.
Housing prices fall considerably from their current levels. A loss of confidence turns recent isolated financial incidences related to project finance and savings cooperatives into a broader crisis.	Highly indebted households would reduce consumption. Vulnerabilities in housing-related project finance could trigger further financial turmoil. Broader turmoil is possible, but should even in an adverse scenario be avoidable if financial authorities continue to respond to future incidences by providing sufficient liquidity backstops while systematically working to clean up financial sector balance sheets.
Geopolitical tensions in the Korean Peninsula intensify with border clashes and possibly escalation. The North Korea regime collapses or other unforeseen events trigger South Korea's constitutional commitment to peaceful reunification.	Financial markets and capital flows have proven resilient to past incidents, including nuclear tests, rocket launches, border clashes and succession of power in the North but further escalation could increase financial market volatility. Large-scale armed conflict would have large and unpredictable negative consequences. The economic consequences of reunification are uncertain and dependent on its form and shape. It would place a large burden on fiscal policy initially, but could also create economic opportunities.

Trade is a key driver of growth, and trade dependencies key risks to hedge


Korea's economy depends heavily on goods exports. Exports, notably of semiconductors, drove growth coming out of the COVID-19 crisis, dampened growth in 2023, and are again driving growth in the current juncture. The United States and China are its main export destinations, with exports to the United States surpassing those to China in December 2023 for the first time since 2005, even though China remained the biggest export destination for the full year (Figure 2.4). This shift reflects the relatively weak state of Chinese demand in 2023 and stronger competition from domestic Chinese producers, but it is likely also affected by trade restrictions, since a considerable share of Korean exports to China consists of semiconductors as inputs to Chinese products. China remains the largest country of origin for Korean imports and a key partner in Korean companies' value chains. Approximately 21% of imported items for the material, parts and equipment industries depended more than 50% on supply from China in 2022, according to the Ministry of Industry, Trade and Energy (MOTIE, 2023a). Korea's geographical concentration of trade with the United States and China and rising tensions between the two create vulnerabilities, accentuated by the fact that Korea's trade with China and the United States is to a large extent centred on strategic high-tech sectors.

Figure 2.4. Exports are concentrated geographically and in terms of products

2023



Source: Korea Customs Service.

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Supply chains have started to shift in response to geopolitical rivalries and protectionist policies, notably with Korean multinationals investing in new overseas production facilities to diversify their supply chains. However, the pace of change has been moderate and clear negative consequences for Korean firms in aggregate have so far not materialised (Box 2.1). Korea has also experienced an increase in inward direct investment as foreign multinationals seek to diversify their own supply chains (MOTIE, 2024).

The importance of supply chain dependencies for critical inputs has come to the fore on several occasions in recent years. China limited exports of urea, a key input for the chemical, transport, fertiliser, and car production industries in November 2021, causing prices to spike and some disturbances to production (OECD, 2022a). Dependency on China for urea dropped to about 70% after this incident but bounced back to 90% due to China's cost competitiveness by December 2023, when China again restricted urea exports. Another manifestation of vulnerabilities came at the start of Russia's invasion of Ukraine, as Korea relied heavily on Russia and Ukraine for raw materials to produce semiconductors. China tightened export

controls on gallium, germanium and graphite in 2023, in what appears to be tit-for-tat responses to announcements by the United States, the European Union, and the Netherlands to restrict certain advanced semiconductor sales to China (Blakemore, 2023). Korean companies, in cooperation with the government, have so far managed these disruptions by a combination of sourcing from alternative suppliers, increasing stockpiling and establishing own production.

Box 2.1. US and EU legislation affecting Korean companies' value chains

United States CHIPS and Science Act

The 2022 Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act offers large subsidies and tax credits for semiconductor investment in the United States against requirements to repatriate excess profits, submit sensitive corporate data, and refrain from expanding semiconductor manufacturing facilities and technical cooperation in China. Korean companies have responded by increasing investment in production facilities in the United States. The Korean government and Korean companies have also engaged in dialogue with the United States to relax rules compared to the original draft. The final rule limits expansion to no more than 5% of semiconductor production capacity in countries of foreign concern (China, North Korea, Russia, and Iran) for 10 years after receiving the subsidy and restricts technical cooperation with them. It allows beneficiaries to expand the capacity of existing facilities and equipment producing legacy semiconductors by up to 10% and continued technical cooperation on ongoing research. These are relaxations compared to the original draft and help avoid immediate disruption, while Korean companies are expected to diversify production away from China going forward (Lee and Do, 2023; MoFA, 2023).

The Clean Electric Vehicle Tax Credit of the United States Inflation Reduction Act (IRA)

The Clean Electric Vehicle Tax Credit totals \$7 500 per electric vehicle if final assembly takes place in North America, fulfils certain thresholds for local production and does not use critical minerals or battery components sourced from a foreign entity of concern. The impact on Korean brands is expected to be minimal as a new local production plant is completed in 2024. The Korean battery industry is expected to be positively impacted for the time being as Chinese producers are excluded from the US market. Chinese joint ventures with American carmakers could dilute this effect. The industry also needs to reduce dependence on China for some key battery materials and components to meet the rules of origin of the act (Bown et al., 2023; Kim and Ko, 2023).

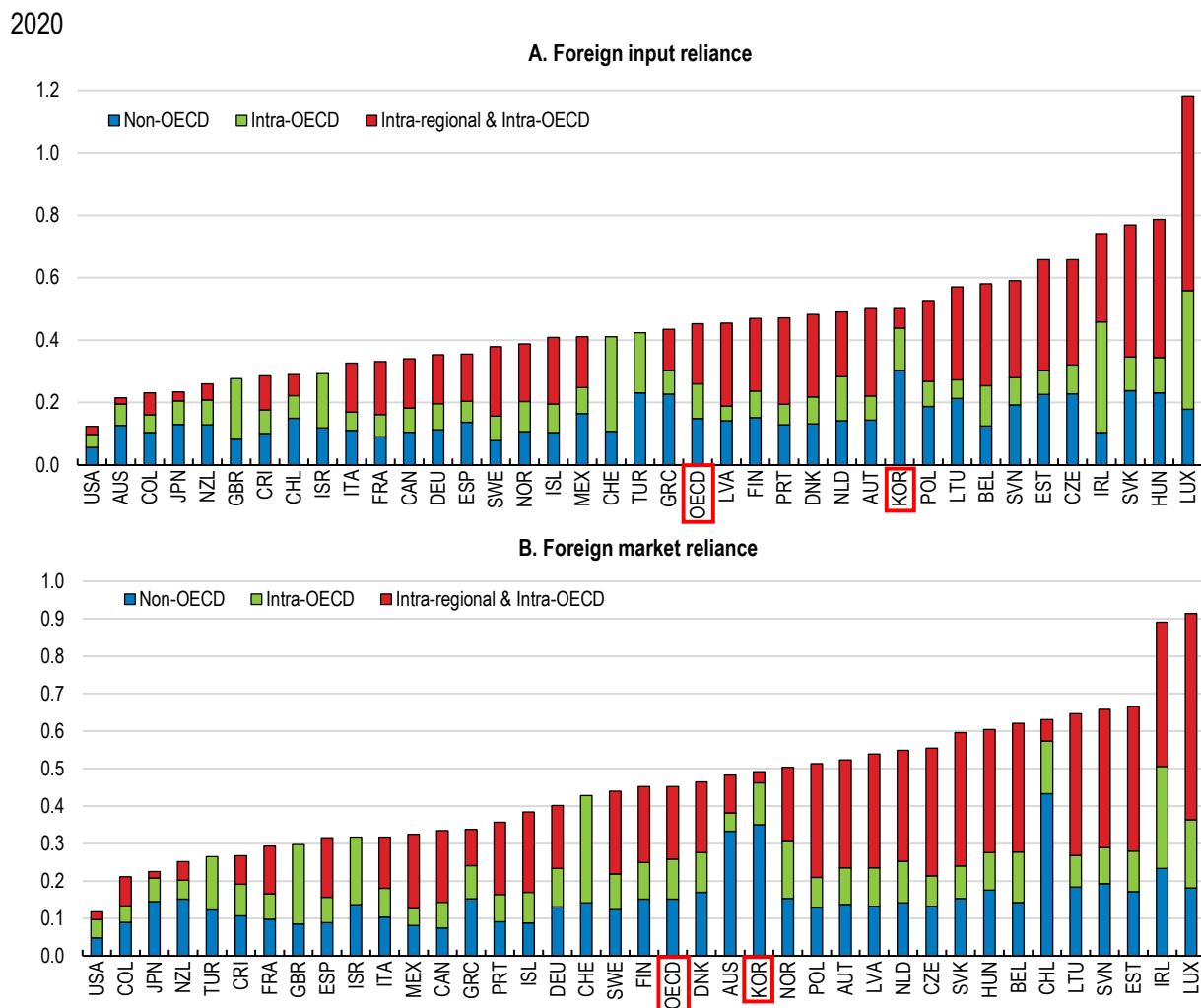
The European Union Critical Raw Materials Act (CRMA)

The draft Act, released by the European Commission in March 2023, aims to increase local production capacities as a share of EU annual demand by 10% for strategic materials in extraction, 40% in processing, and 15% in recycling by 2030, while at the same time diversifying sources of supply so that EU dependence on imports of strategic materials from a single country does not exceed 65%. The rule is most relevant to Korean electric vehicle battery cell manufacturers and their suppliers, which use five of the 16 strategic raw materials, including lithium and nickel, and have a high proportion of exports to the European Union. It could also affect other products that use permanent magnets, such as household appliances and heat pumps. However, the draft does not include a mandatory use of local products or explicit discrimination against foreign products, and the cap on dependence on a particular country does not apply at the individual company level. The direct impact on Korean companies is for these reasons unlikely to be significant at this stage, but the CRMA is likely to trigger further examination of the dependence on specific countries and efforts to secure compliance with social and environmental sustainability requirements of key inputs upstream in the value chain (Han, 2023).

Korean value chains are more exposed to disruptions in foreign inputs and foreign markets than the OECD average. Korea's reliance on inputs from non-OECD countries is the highest in the OECD and the reliance


on non-OECD markets is the second highest in the OECD, reflecting to an extent its close value chain integration with China (Figure 2.5). The 2022 OECD *Economic Survey of Korea* argued that it is largely private companies' responsibility to reduce their supply chain dependencies according to their own business interest. The main ways to reduce such dependencies include diversification by introducing redundancies in supply chains, increasing stockpiling, and vertical integration combined with moving production to the home country or another location seen as less risky. All these options have a cost. In some cases, the societal cost of supply chain dependencies is higher than the private cost to companies, justifying a role for the government, especially when supply is concentrated in a small number of countries and firms, or of strategic importance, such as for energy (Schwellnus et al., 2023).

Figure 2.5. Korean value chains are reliant on foreign inputs and markets



Note: Foreign input reliance and foreign market reliance can be interpreted as the share of total domestic output exposed to foreign disruptions upstream and downstream in global value chains. Both measures account for the size of exposure to a partner in the value chain and the distance to this partner in the value chain. Individual industries in each country are aggregated through a weighted average, where the weights are gross industry output. The regional aggregates taken into consideration are between members of the OECD with intra-regional trade agreements: EEA countries, Asia and Oceania OECD countries and NAFTA+3 countries (including Chile, Colombia and Costa Rica). More details can be found in Schwellnus et al. (2023), "Global Value Chain Dependencies under the Magnifying Glass", *OECD Science, Technology and Industry Policy Papers no. 142*.

Source: OECD, ICIO database.

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Government action can help identify risks and coordinate measures to improve resilience by clarifying the scope of strategically important products, collecting and disseminating information on the concentration of supply and stress-testing to identify potential supply chain bottlenecks. Based on such stress tests, countries can require private suppliers of essential goods to implement contingency plans to avoid or mitigate supply chain disruptions. Governments can facilitate stockpiling of essential goods based on risk assessments and cost/benefit analyses of investing in stockpiles. Committing to regular purchases of a minimum quantity from a supplier at a set price in exchange for a commitment by the latter to stand ready to temporarily scale up production in the case of an emergency surge in demand can be considered. Governments can also support the development of domestic production capacity with due consideration of costs involved, including the opportunity costs of public funds and possible costs of introducing other distortions into markets (OECD, 2022a; Schwellnus et al., 2023).

In December 2023, to strengthen supply chains of critical raw materials and equipment, the government (MOTIE) identified 185 “supply chain stabilisation items” among imported material, parts and equipment items based on import dependence and economic importance, and unveiled the Industrial Supply Chain 3050 Strategy, which aims to reduce the dependence on these items from specific countries from an average of 70% in 2022 to 50% or less by 2030. For designated items the government can support technology development and mergers and acquisitions, apply regulatory exemptions, support the relocation of overseas plants to other overseas destinations (dubbed “P-turns”), recommend to companies to expand their inventories based on national economic needs and support them in covering the associated cost. In an emergency, the government can order companies to home-shore production (MOTIE, 2023a).

Korea's Framework Act on Supporting Supply Chain Stabilisation for Economic Security took effect in June 2024, encompassing all imported core items and services such as logistics. According to the law, the Ministry of Economy and Finance (MOEF) designated 300 “economic security items” in June 2024 to extend support for their stable introduction, production, and stock management. It also operates an early warning system for economic security items and prepares crisis management manuals. A supply chain stabilisation committee consisting of ministers and private experts acts as a pan-governmental control tower for the national-level supply chain resilience policy master plan. This plan will be updated every three years, with corresponding implementation plans under each ministry. A supply chain stabilisation fund operated by the Export-Import Bank will be launched to support private firms in reinforcing their supply chains, including by diversifying their imports by country of origin, expanding domestic and foreign production, developing technology, and expanding stockpiles (MOEF, 2024).

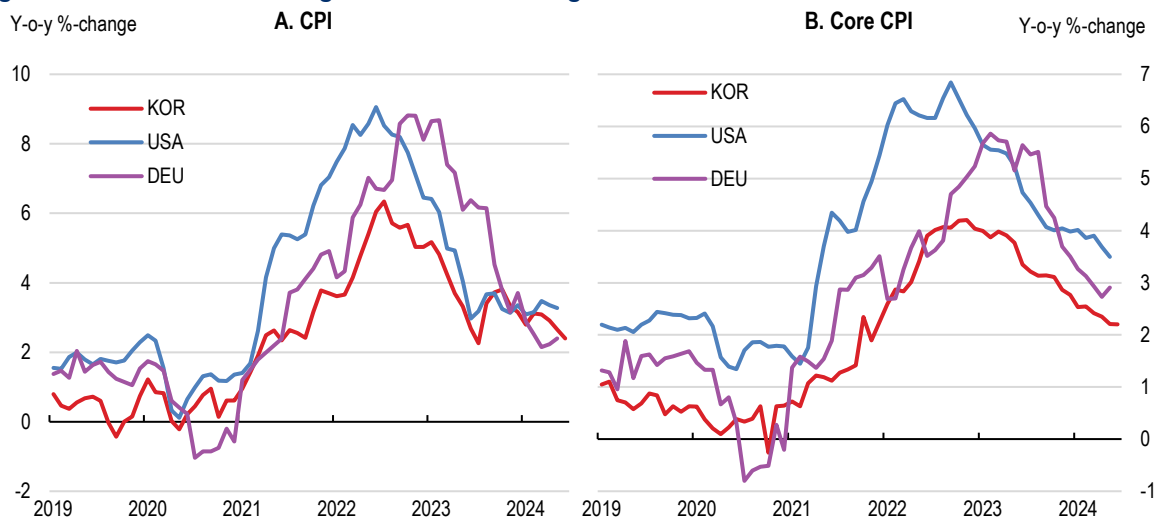
To secure resources, the government also plans to gradually expand its stockpiles of 20 key minerals and 35 items to an average of 100 days supply, expand the supply chain overseas development assistance that links resources from key mineral-producing countries with Korean technology, and actively participate in multilateral cooperation platforms (MOTIE, 2023a). Korea has participated in the Indo-Pacific Economic Framework (IPEF), a key multilateral channel for responding to supply chain disruptions, and signed its Supply Chain Agreement in November 2023, creating a joint response system among Indo-Pacific countries (MOTIE, 2023b). IPEF also agreed to launch a “Critical Minerals Dialogue” (The White House, 2023).

Korea's proactiveness in dealing with supply-chain risks is at the outset a strength and a necessity, but careful cost-benefit analyses are needed to prevent unnecessary and costly interventions. This is especially important in the case of homeshoring of production which may enjoy popular support but should generally be a last resort to boost supply chain resilience due to its high cost. It is natural and sensible to address risks to Korea's key exporting industries, but resources channelled to incumbent industries inevitably raise hurdles for emerging ones competing for labour and capital but lacking lobbying power.

Inflation is moving towards the target and expectations are anchored

The Bank of Korea (BoK) embarked on a tightening cycle already in August 2021, partially motivated by an ambition to dampen household credit growth (OECD, 2022a). CPI inflation peaked in July 2022 at 6.3% (y-o-y), following Russia’s war of aggression against Ukraine and the ensuing energy price shock. Since then, both headline and core inflation have trended down towards the 2% target in line with expectations, as discussed above (Figure 2.6). Following cumulative hikes of 300 basis points, the BoK has held the policy rate at 3.5% since January 2023 (Figure 2.7, Panel A), while signalling that the policy stance will likely remain restrictive for some time.

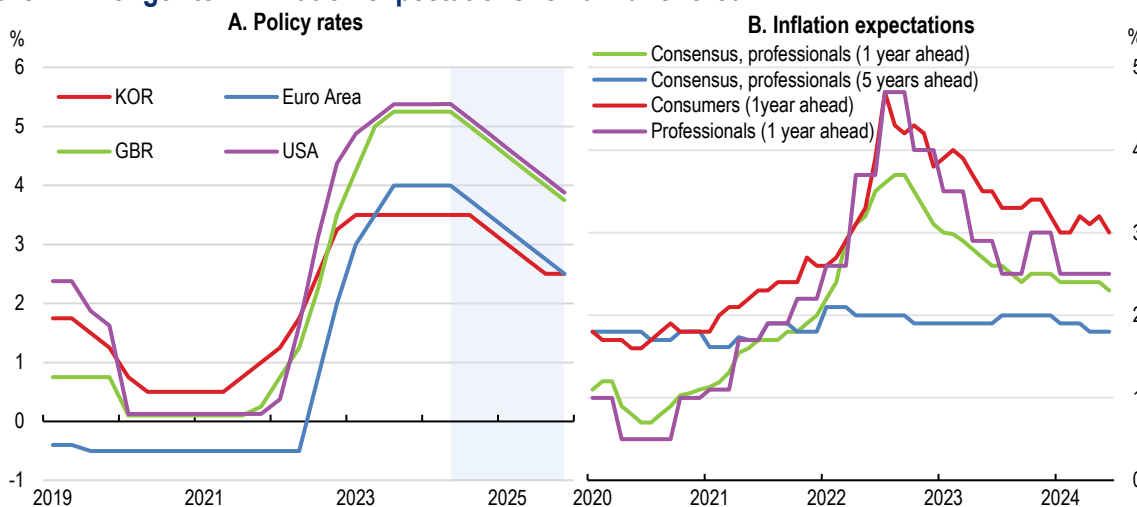
Figure 2.6. Inflation is easing, but still above target



Source: OECD, Prices and Purchasing Power Parities (database).

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Figure 2.7. Longer-term inflation expectations remain anchored



Note: Panel A: shaded area denotes the OECD projection in Economic Outlook No. 115.

Source: OECD, Economic Outlook (database); Bank of Korea.

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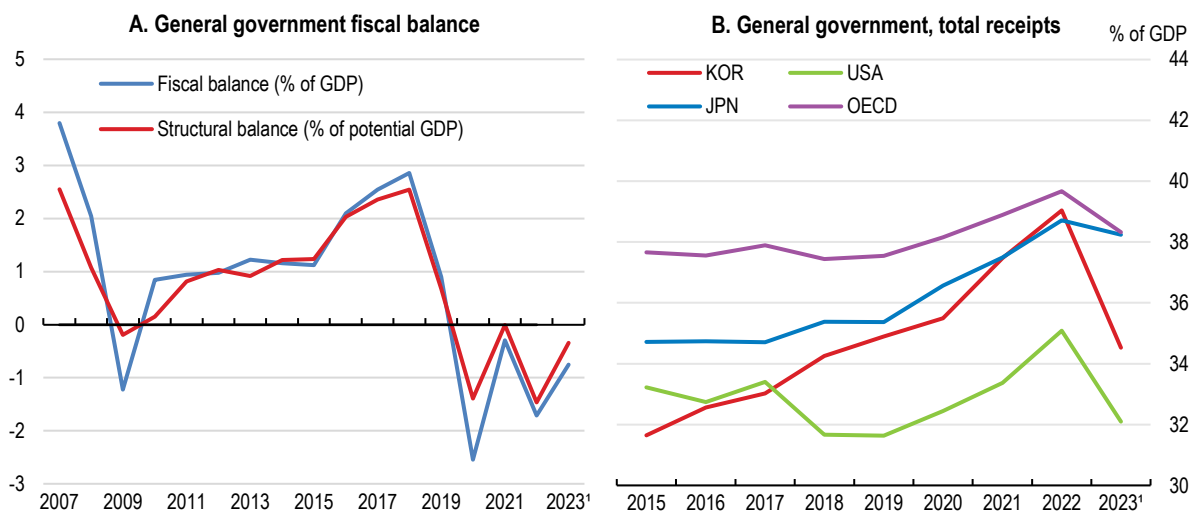
Long-term inflation expectations remain solidly anchored. Consumer inflation expectations one year ahead stood at 3.0% in mid-2024 after having peaked at 4.7% in July 2022, while professionals’ year-ahead expectations were down to 2.5% in the second quarter of 2024. Professionals’ five-year expectations

remained within a decimal point of the 2% target since the beginning of 2022 before dropping to 1.8% in the second quarter of 2024 (Figure 2.7, Panel B), indicating that trust in BoK's monetary policy execution is solid.

Fiscal policy has supported stabilisation

The government has embarked on fiscal consolidation after fiscal policy supported demand and reduced poverty during the pandemic. A record fiscal deficit in 2020 was followed by a strengthened fiscal balance in 2021 which largely reflected unexpectedly high tax revenue. The largest emergency budget amendment in Korea's history (2.9% of GDP) was enacted in the summer of 2022 at a time when the post-pandemic recovery was already solidly underway. The budget deficit was contained at 1.7% of GDP, however, as tax revenues continued to exceed forecasts on strong business profits (Figure 2.8, Panel A). In a reversal of fortunes from the two preceding years tax revenues fell 13% from 2022 to 2023 and ended up 14% below original estimates (Panel B). The falling revenue largely reflects a shrinking tax base, notably weak corporate incomes and the weak property market reducing transaction taxes, although tax relief also contributed. The government funded spending without additional bond issuance, in part by withdrawing government deposits and funds, including from the foreign exchange stabilisation fund, and in part by reducing transfers to local governments.

Figure 2.8. A revenue shortfall weakened the fiscal balance in 2023



1. OECD projection for 2023.

Source: OECD (2023), Economic Outlook 115 (database).

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When annual budgets are approved by the National Assembly before the start of the year, taxes and other fiscal revenues are by definition estimates, as is the case for some rules-based expenditure items (for example needs-based minimum income support). It is challenging to correctly project revenues from year to year, as they fluctuate over the economic cycle in ways that are not fully predictable. It would nonetheless be natural to re-examine the tax revenue projection methodology in light of the large shortfall, and explore if cyclicality could be taken into account more accurately.

The role of the legislature in public debt management varies considerably across countries. Best practice is when parliaments establish the broad framework through legislation and delegate borrowing authority to the executive, while using the budget process for oversight and accountability. Legislatures have roles that go well beyond this in a number of countries, ranging from approving every transaction in Austria and

Czechia to hard debt limits in the United States, although in many of these cases the role of the legislature is seen as a formality (Awadzi, 2015). Within the limits set by the National Assembly in regular budgets on expenditures and rules and rates for taxes and rules-based expenditure, borrowing should be allowed to balance the books between regular budget events. Borrowing limits are redundant and can undermine fiscal policy's countercyclical role, if for example spending is kept lower than budgeted because negotiating to increase the borrowing limit would mean re-opening discussions about the already approved budget. Borrowing limits could be warranted if revenue and expenditure estimates were systematically biased, but this is not the case in Korea. Korea should therefore consider abolishing borrowing limits, while continuing to use the regular budget process and annual accounting and auditing for oversight and accountability. If deemed necessary as part of such reform, the National Assembly Budget Office (NABO), Korea's fiscal watchdog, could be explicitly tasked with evaluating whether fiscal projections suffer from any systematic biases.

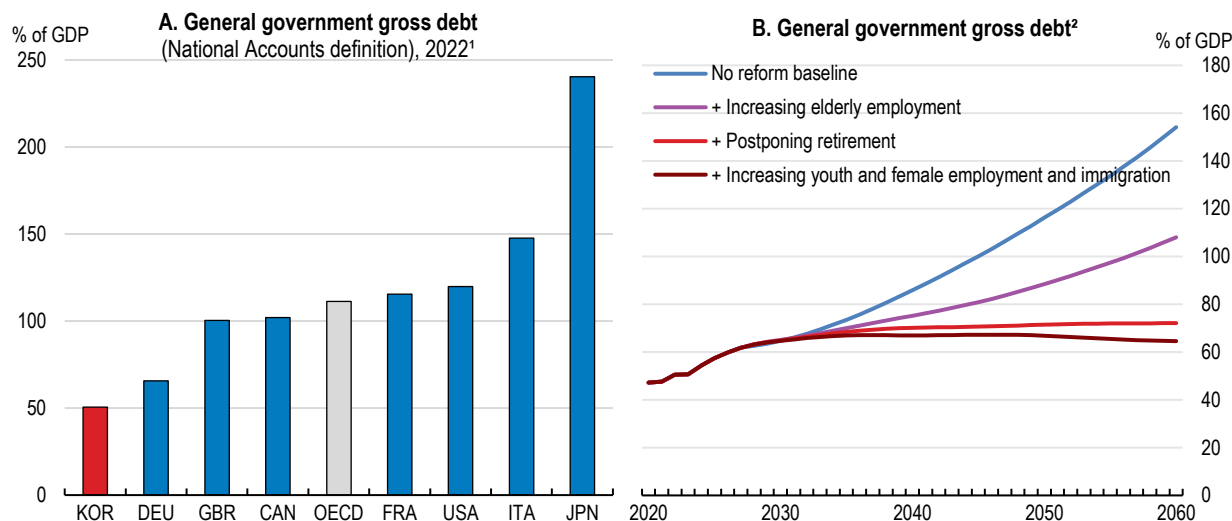
Fiscal policy tightened in 2023, with the cyclically-adjusted primary balance narrowing from -1.4% of potential GDP to -0.2%. The fiscal stance is set to be broadly neutral in 2024 with contained expenditure growth. The increased revenues which underpinned the 2024 budget on the expectation that some of the drivers of the tax shortfall in 2023 are likely to reverse as exports recover and property prices stabilise have so far failed to materialise, with nominal tax revenues down by almost 6% in the first five months of 2024 compared to a year earlier. A minimum corporate tax of 15% for multinationals has taken effect from 2024 and may bring additional revenues as Korea implements Pillar two of the OECD Base Erosion and Profit Shifting agreement. The Government has also announced a number of tax incentives varying by company size and sector to boost emerging industries.

All in all, fiscal policy tightening has supported monetary policy in keeping inflation expectations anchored since late 2022. Fiscal measures have also been put in place to directly steer inflation. Tariff reductions enacted on key foodstuffs and other goods can reduce prices permanently if kept in place, while boosting productivity and welfare. Direct price interventions are on the other hand distortive. A temporary fuel tax reduction was put in place early 2022. In the context of high and volatile global oil prices, the measure has since been extended a number of times and remains in place. The government continues to clearly communicate that the measure will eventually be allowed to expire, has shortened the intervals of reviewing the tax cut from every six months to every two months, and has reduced the discount from July 2024. This tax subsidy should be abolished altogether, as it is costlier than alternative policies to help households struggling with energy bills, benefits high-income households disproportionately, leads to overconsumption in the long term and runs counter to climate targets (OECD, 2022a). The government has also sought to avoid price hikes for utilities, transport and other public services which have faced increasing input prices to alleviate burdens on households and businesses. These measures contributed to flatten the peak of inflation in the summer of 2022, but they distort prices at least temporarily and accumulate contingent liabilities for central and local governments. The most visible example of these imbalances relates to artificially low electricity prices, which have ballooned Korea Electric Power Corporation's (KEPCO) debt to roughly 10% of GDP (Chapter 4). Korea Railroad Corporation (KORAIL) has also run deficits for the past decade, with its debt close to 1% of GDP. The government raised electricity prices by a cumulative 44% in 2023, the first substantial increases since 2012. This welcome and necessary move returned KEPCO to running surpluses since the third quarter of 2023. The current environment of inflation close to target and trending down provides an excellent window of opportunity to allow prices in general to align with fundamentals.

Korea needs an improved fiscal framework to better align fiscal policy in the near term to long-term ageing challenges (Chapter 5), while allowing sufficient room for short-term stabilisation. Public debt remains low compared to most other OECD countries (Figure 2.9, Panel A), but rapid ageing is set to increase fiscal pressures going forward. In October 2022, the government tabled a bill enshrining a fiscal rule in law that would limit the managed budget deficit (excluding social security) to 3% of GDP, reduced to 2% if debt exceeds 60% of GDP, but with an escape clause for major shocks. The bill has not been passed, however,

and the rule is set to be broken in 2024, when the managed budget deficit is projected by the Ministry of Economy and Finance to reach 3.9%. The government has committed to abide by the rule by 2025 at the latest. Without action to strengthen public finances, public debt is set to increase rapidly going forward and exceed 150% of GDP by 2060. Adherence to the rule would strengthen public finances considerably in the long term. However, upholding the rule in the absence of additional reform to boost employment of the elderly, women and youth as well as increasing immigration, as discussed in Chapter 5, would be challenging. In this case, spending pressures from ageing, including pensions, health care and long-term care, would have to be met by a combination of higher taxes and reduced spending (Panel B).


Figure 2.9. Ageing pressures call for structural reform and fiscal prudence



1. OECD projection for Korea.

2. National accounts definition. Scenarios are cumulative. All scenarios cap general government revenue at 33% of GDP from 2028. The Increasing elderly employment scenario assumes increasing elderly employment by one third of the difference with the previous age group by 2040 (e.g., the rate for the 60-64 group would rise to one third of the 2022 rate for the 55-59 age group). The Postponing retirement scenario assumes in addition an increase in the legal retirement age to 68 by 2035, and raising it by two thirds of life expectancy gains thereafter. The Increasing youth and female employment and immigration scenario furthermore assumes increasing net annual immigration from the current 30 thousand to 250 thousand by 2040; bringing up female employment rates to male employment rates by 2040; and bringing up the youth employment rate to the current OECD average level by 2040.

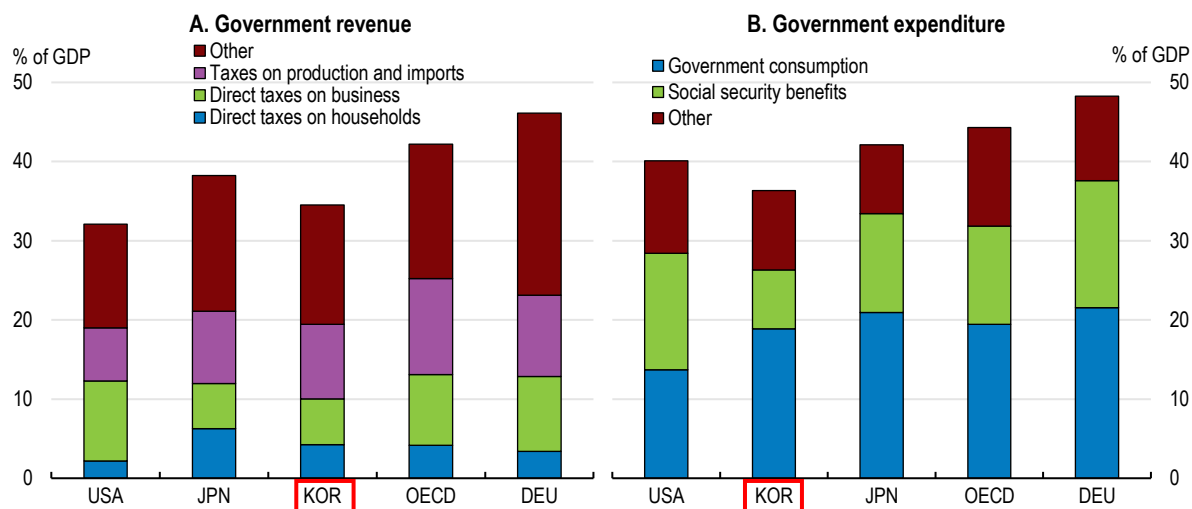
Source: OECD (2024), Economic Outlook 115 (database), updated with recent releases; OECD calculations based on the OECD Long-term model.

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Mounting fiscal spending needs related to population ageing could lead to pressures to raise taxes, against the backdrop of low government revenue as a share of GDP compared to the OECD average (Figure 2.10, Panel A). The 2018 *OECD Economic Survey of Korea* (OECD, 2018) noted that the 10% VAT standard rate in Korea is barely over half of the OECD average standard rate (which was 19.2% in 2022), pointing to one possible avenue for meeting ageing-related social spending pressures. Even so, supplementing the deficit rule with multi-annual expenditure ceilings could be helpful to ensure a balance between tax and expenditure measures (Manescu and Bova, 2020). There is also room to improve the expenditure structure, and thereby create fiscal space to meet fiscal pressures from ageing and fund structural reforms. For example, social security benefit expenditure is low compared to other OECD countries (Panel B), while SME supports are very high and have increased over time with likely negative effects on productivity, as discussed in Chapter 3. Reversing half of the increase of state support to SMEs from 2017 to 2023, fully reversing the fuel tax cut, as planned, and increasing auctioning in the next phase of Korea's emissions trading scheme taken together could more than fully finance the recommendations in this Survey to fill gaps in employment insurance, maternity- paternity- and parental leaves. (Table 2.3).

Figure 2.10. Social security benefits are low compared to the OECD average

2023



Source: OECD Economic Outlook (database).

StatLink  <https://stat.link/9qvstd>**Table 2.3. Illustrative impact of selected proposed reforms on the budget balance**

Static full-year effect as fully implemented

Recommendations	% of GDP
Consolidate SME subsidies by reversing half of the spending increases since 2017	0.32
Fully phase out of the fuel tax cut as planned	0.19
Auction 50% of allowances from the emissions trading scheme (K-ETS) in the 2026-30 trading period	0.56
Reduce the unemployment benefit floor to the OECD average while increasing the ceiling from 53% to 60% of the average wage and increasing its maximum duration from five months to eight	-0.19
Expand (un)employment insurance to the entire workforce	-0.19
Finance maternity, paternity and parental leave benefits and associated charges in full	-0.04
Increase the parental leave ceiling for all leave takers, while introducing the option to take shorter leave at a higher replacement rate	-0.03
Expand parental leave coverage to the entire workforce and triple take-up rates to the OECD average	-0.13
Double the capacity of the Labour Inspectorate	-0.002
Total	0.50

Note: The quantified impacts are merely illustrative and subject to large uncertainties. Estimating the exact fiscal impact of the recommendations of this Survey is challenging due to the lack of suitable theoretical or empirical models. Therefore, only the static effect of a selection of reforms are quantified, based on scenarios and simplified assumptions. Central government SME subsidies currently amount to 5.1% of spending (1.4% of GDP) annually. Current disbursements under maternity- paternity and parental leave are 0.1% of GDP, while disbursements for employment insurance are 0.5% of GDP. K-ETS auction revenue assumes that overall allocations are made in line with Korea's 2030 Nationally Determined Contribution, and that the average auction price per allowance in the 2026-30 trading period equals KRW 44 100 (approximately EUR 31), the highest observed price to date. Doubling the capacity of the Labour Inspectorate is assumed to increase expenditure by approximately 0.005% of GDP, partially offset by proportionately increased revenues.

Source: OECD calculations; Statistics Korea; KIHASA (2022), "[Research on plans to reform maternity, paternity, and parental leave systems](#)", Korea Institute for Health and Social Affairs (in Korean).

Korea's proposed fiscal rule is a useful tool to help achieve responsible fiscal outcomes, but its successful implementation depends on political commitment and solid institutions. Political commitment is brought about by building consensus around the rule and the general fiscal framework, by ensuring transparency,

and abiding by the framework over time. Independent fiscal councils can help build trust and ensure transparency. Overly rigid fiscal rules tend to undermine commitment, as they either lose relevance and break when economic shocks hit, as has repeatedly happened in the European Union, or force countries to follow a sub-optimal fiscal policy as happened in Germany where the fiscal rule was enshrined in the constitution (OECD, 2023). With too much flexibility and too frequent adjustments, as has been the case for example in the United Kingdom (OECD, 2022b), fiscal frameworks can lose their function as a guideline and anchor for fiscal policy. As a middle way, an organised process for infrequent adjustments can help build commitment by ensuring that fiscal frameworks remain relevant over time. Sweden, a country with strong fiscal discipline, has for example a set process to evaluate its budget surplus target every eight years. Korea has some way to go in building consensus supporting the rule. It has not yet been approved by the National Assembly even though the rule is relatively similar to a rule proposed by the opposition while they were in power. The country has strong institutions to build a fiscal framework on, notably the Ministry of Economy and Finance, a trusted civil service in charge of fiscal policy. In addition, the National Assembly Budget Office (NABO), established in 2003, provides projections of economic growth and tax revenue and analyses national fiscal management, including the annual budget proposed by the President. It also evaluates government spending programmes and estimates the cost of legislation proposed in the National Assembly. An independent fiscal council could further strengthen the fiscal framework (OECD, 2022a) but for now, the priority should be to pass the fiscal rule as proposed.

High household debt exerts a drag on consumption and housing prices

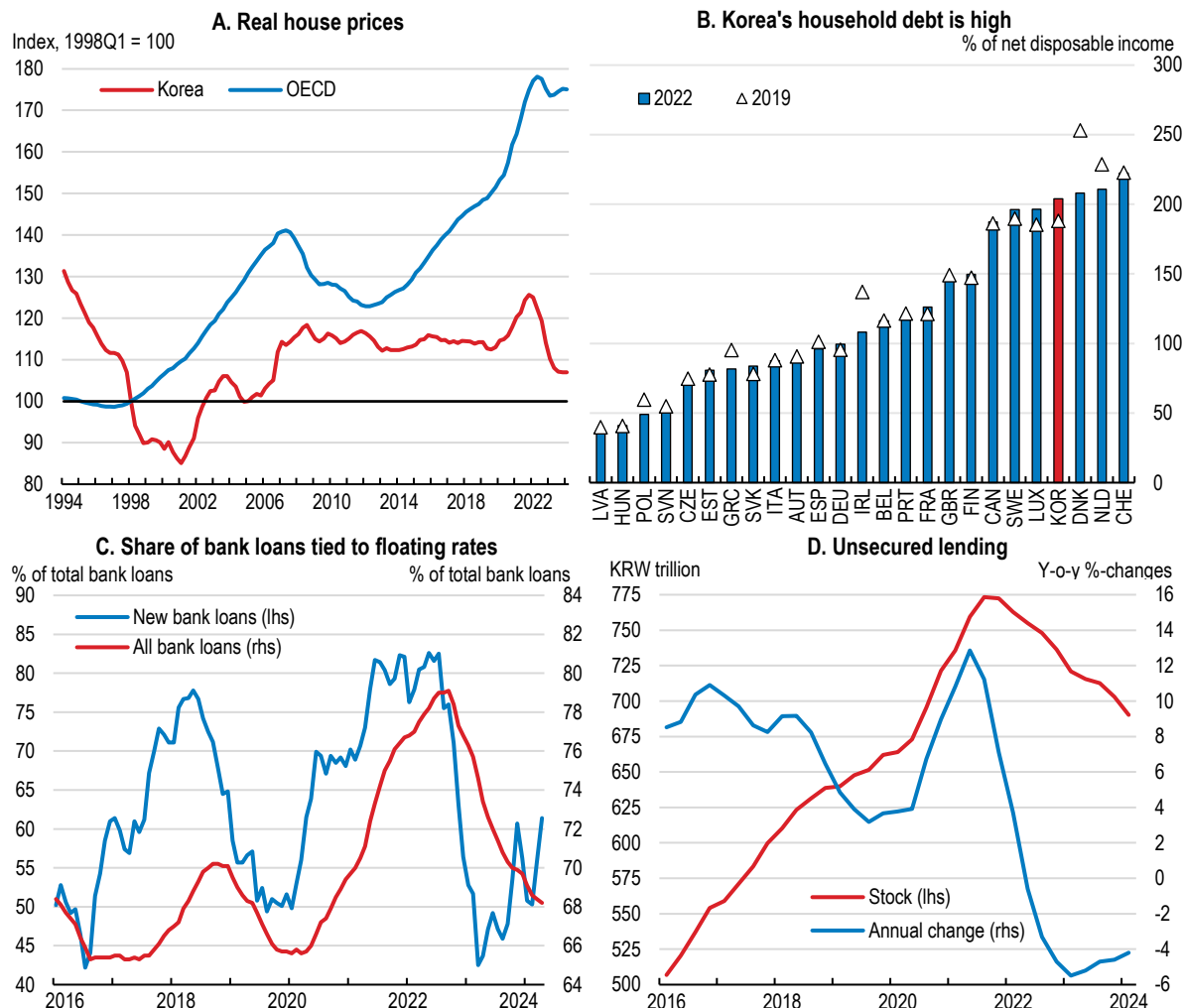
Private consumption picked up in the first quarter of 2024 after having moved sideways since late 2022, reflecting a combination of forces. On the one hand, households' purchasing power was hit by falling real wages and rising debt servicing burdens. On the other, a strong labour market with historically high employment has supported incomes. Furthermore, excess savings of 4.7%-6% of GDP amassed during the pandemic are largely held in liquid assets and likely have contributed to limiting the toll on consumption compared with past crisis episodes (BoK, 2023b).

Despite the moderating effect of excess savings (BoK, 2023b), housing prices declined by almost 15% in real terms from their peak in Q4 2021 until Q1 2024 (Figure 2.11, Panel A). Nominal prices remain above pre-pandemic levels after a fall of approximately 9% from June 2022 to June 2023 and stabilising thereafter. Throughout 2022, housing transactions plunged, inventories of unsold properties surged, and mortgage lending slowed. This correction was among the most pronounced in the OECD despite the policy rate only increasing by three percentage points, reflecting high household debt compared to other OECD countries (Panel B). 68% of bank loans carried a floating rate in April 2024, even as the share of fixed rate loans has increased (Panel C). A considerable share of outstanding debt remains unsecured, even though credit tightening has led unsecured lending to contract (Panel D). The average debtor spent just over 40% of their disposable income servicing debt as of end-March 2023 (BoK, 2023c).

Relatively tight borrower-based macroprudential measures have limited the financial stability risk associated with household debt. The loan-to-value limit for housing loans ranges between 30% and 70%, depending on the region, the purpose of buying and the number of properties the lender owns. The loan-to-value limit for first-time buyers is 80%. Two different measures are in place to limit households' debt servicing burden. The debt servicing -to-income limit (DSR) applies to amortisation of housing debt plus interest payments on non-housing debt. It ranges between 40% and 60% depending on the region, except for non-metropolitan areas while it is 60% for first-time buyers. The debt servicing limit stipulates that amortisation of household debt (housing and non-housing) totalling KRW 100 million or more should not exceed 40% of the borrower's annual income. The "Stress DSR", a debt servicing limit considering possible future interest rate rises, is being rolled out in 2024. The rate of non-performing loans is on the rise but remains low by historical standards (BoK, 2024), banks' capital to risk-weighted assets are below the OECD average, while the ratio of capital to unweighted assets is just above (Figure 2.12). The main direct

risk from high household debt remains the macroeconomic risk that indebted households hold back consumption as interest rates increase and property values fall. This scenario is already realised, as discussed above, but could intensify especially if sentiment is hit.

Figure 2.11. Housing prices have fallen amid high household debt



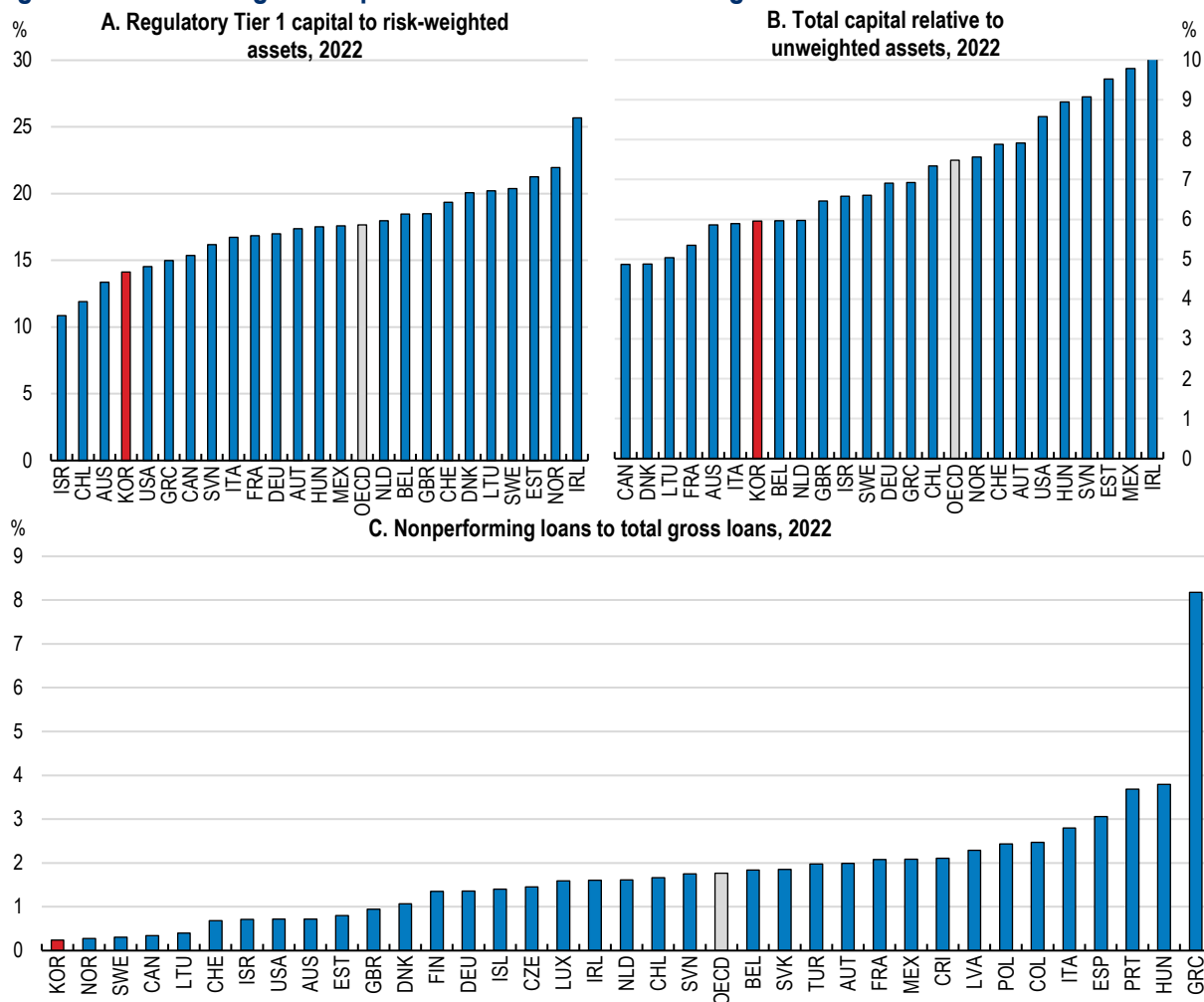
Source: OECD, House Price Indicators (database); OECD, Household debt (indicator); Bank of Korea.

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To prevent excessive price falls, the authorities eased macroprudential regulations, reduced housing-related taxes, relaxed regulations including for zoning and reconstruction, and introduced a policy lending programme (*Bogeumjari*), including for young, newlyweds and borrowers with new-born children. These policies helped shore up demand, and housing prices bottomed out in mid-2023 in nominal terms before stabilising, although in real terms they continued to edge down throughout the year. However, rising housing prices and transactions in certain locations also contributed to a renewed rise in already high household debt. More recently, the focus of prudential measures has again shifted from supporting the housing market to containing the increase in household debt, with several measures announced to tighten mortgage lending. Even so, the government introduced a new policy lending programme for families with newborns in January 2024: the "Newborn Special Loan" offers lending significantly below market rates to households with young children and annual incomes below KRW 130 million (approximately \$98,000). The 2022 *Economic Survey of Korea* pointed out that frequent changes in housing-related taxes and

macroprudential policies should be avoided (OECD, 2022a). Frequent policy changes increase volatility, and new policies may not have the intended effect if households expect them to be temporary. Making sure housing supply is well-functioning should be the top priority to secure that housing is affordable, and thereby dampen household indebtedness, as further discussed in Chapter 5.

Figure 2.12. Risk-weighted capital is below the OECD average



Note: OECD averages do not include Japan and New Zealand.

Source: IMF Financial Soundness Indicators.

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In the Korean leasehold deposit market (*jeonse*), renters transfer a large interest-free deposit (often around 50-70% of the house value) to the landlord instead of monthly rent. The deposits landlords can expect to receive from a new leaseholder have fallen in tandem with housing prices, which has increased the risk that landlords cannot return the deposit in full. A sizeable share of *jeonse* deposits are guaranteed, but not all. *Jeonse* deposit default rates increased considerably in 2023. The housing market stabilisation should help mitigate repayment risks along with temporarily eased lending-related regulations for *jeonse* landlords. Overall, BoK stress tests indicate that systemic risks from households and *jeonse* debt remain contained, even though the loss absorption capacity of some financial institutions needs to be strengthened (BoK, 2023c; BoK, 2024).

Weaknesses have emerged in property-related project finance

Even though the direct risks from household debt seem contained, the weak housing market is spilling over to project financing in the construction sector. Project finance has been central to three recent events of financial market volatility (Box 2.2).

Box 2.2. Three high-profile events have rocked Korea's financial markets

The first event was related to the default in October 2022 on asset-backed commercial paper for the construction of a Legoland theme park. The bond was backed by the real estate of the theme park and its surrounding area and guaranteed by the Gangwon provincial government. The park opened in May 2022, but earnings were at least initially lower than expected, preventing the project from servicing its debt. A softened national real estate market reduced the value of the collateral, putting the guarantee into play. Debt restructuring negotiations were ongoing when the newly elected provincial governor declared that the guarantee would not be honoured. This triggered a broader loss of confidence and spikes in spreads for commercial paper and corporate bonds. Spreads eased significantly following implementation of multiple market stabilization measures. Equity, government bond, and forex markets remained resilient during this episode (BoK, 2023c).

The next incident was an incipient bank run on MG Community Credit Cooperatives (MGCCC), a non-bank financial intermediary originally established as part of a rural development project in 1963. MGCCC held assets equal to 12% of GDP in May 2022. MGCCC is governed by the Ministry of Interior and Safety and has been subject to looser prudential regulations and reporting standards than institutions under the Financial Supervisory Service, notably as macroprudential measures on mortgages were tightened from 2020 to 2022. Delinquency rates tripled from 2021 to 2023 caused by increasing debt servicing burdens and local branches' exposure to local construction sectors and real estate prices, which have fared worse than the national average in many locations especially outside of the Seoul area. Various irregularities prompted the Ministry to initiate a special inspection (Kang, 2023). To contain systemic spillovers, the government announced in July 2023 that it would protect all deposits in merged branches, provide tax and interest incentives for redeposits, and form a joint taskforce to strengthen management and monitoring of MGCCC. Private and policy banks provided joint liquidity support to MGCCC, coordinated by financial authorities along with an indication that the government would provide direct liquidity support if needed. Deposit inflows resumed after the announcement of these measures.

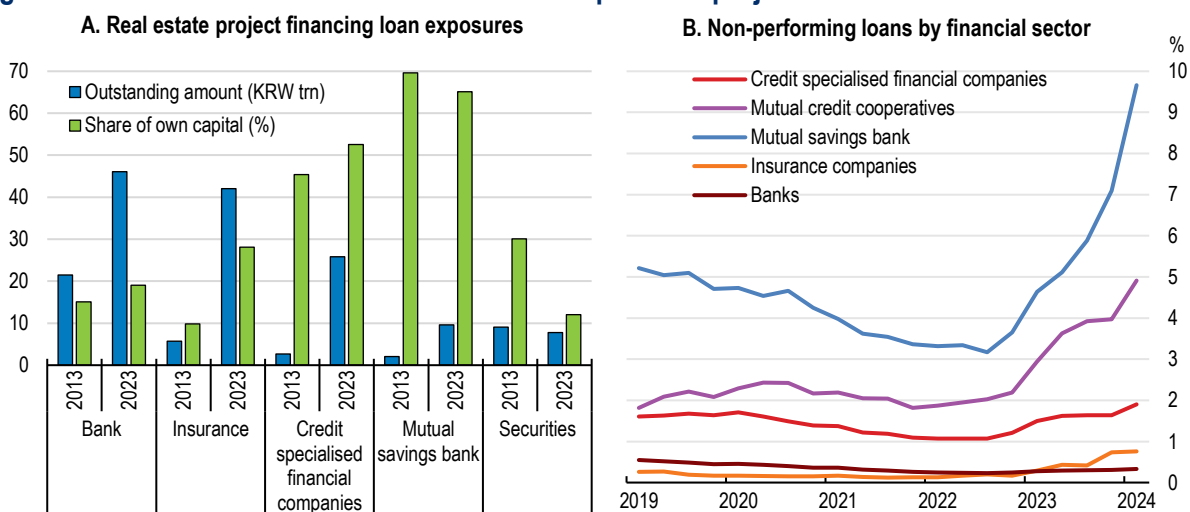
A liquidity shortage linked to high interest rates and a slumping property market also hit Taeyoung Engineering & Construction, Korea's 16th largest construction company, which defaulted on its debt towards the end of 2023. The crisis seems contained for now, as the company has reached agreement with its creditors on a debt restructuring plan, aided by guarantees from its parent company and profitable affiliates of the Taeyoung group. The agreement with creditors was made easier thanks to reforms to the debt restructuring framework made following the Legoland case.

MG Community Credit Cooperatives (MGCCC) is a special case due to its history and unique governance by the Ministry of Interior and Safety, but it is not the only non-bank financial institution to escape the full scrutiny of regulated banks. Non-bank financial institutions have increased their market share since the global financial crisis, holding over 60% of total assets in the financial system in 2023. While banks reduced their exposure to real estate project finance as a share of own capital over the past decade, non-bank financial institutions including insurance companies, consumer credit companies, savings banks and securities companies all increased their exposure considerably (Figure 2.13, Panel A). Delinquency rates remain relatively low, even though they have risen rapidly among mutual savings banks and mutual credit

cooperatives (Panel B). The financial sector is relatively well-capitalised, and stress tests indicate that systemic risks related to real estate project finance loans remain relatively limited (BoK, 2023c).

Swiftly announced and implemented policy measures were instrumental in containing recent incidents, stabilizing financial and housing markets and preventing more widespread losses of confidence. These measures were coordinated in regular meetings between the heads of the Ministry of Economy and Finance, the Financial Services Commission, the Financial Supervisory Service, and the Bank of Korea. Important measures put in place under the auspices of this coordination since October 2022 include liquidity provision, asset purchases, postponing the implementation of planned prudential measures, providing new credit guarantees and reaffirming regional governments' commitments to existing ones (IMF, 2023).

Figure 2.13. Non-bank financial institutions are exposed to project finance



Source: Bank of Korea.

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The crisis response was all in all necessary and appropriate, but will create expectations that similar rescue operations will be carried out in the future, thereby leading financial markets to not price in the full range of risks. Systemic change is needed to prevent such moral hazard and to correct the structural weaknesses uncovered. The Financial Supervisory Service has appropriately instructed financial institutions to clean up their balance sheets by conservatively raising provisions related to project financing in stages, and writing off unviable bridge loans used to secure property for projects that could not be converted to regular project finance by the end of 2023. Furthermore, the government is working to improve institutions, and is commissioning research on these issues to specialized agencies such as Korea Development Institute. The government should review regulations of community credit cooperatives, gradually align regulatory requirements with those of other non-bank financial institutions and narrow regulatory gaps between non-banks and banks. It should also consider how credit cooperatives could be brought into the fold of the Financial Supervisory Service to increase the transparency and system-wide overview of the regulator while continuing to foster local economies through credit intermediation. Finally, even though Korea's financial authorities have made institutional efforts to improve gender diversity in the board of directors of financial firms, further steps should be taken to increase diversity of management in the financial sector, notably by improving the gender balance. Women accounted for only 9% out of 899 executives at 23 domestic financial companies, including the five major commercial banks, major insurance companies and credit card companies, as of mid-2023. Excluding state-run, foreign banks or cooperatives, there had never been a female CEO at a domestic commercial bank until an internet bank (Toss Bank) appointed a female

CEO from March 2024. When management is skewed toward a specific gender, this increases the risk of groupthink and biased decision-making.

Recommendations to support growth and financial stability

FINDINGS (Main ones in bold)	RECOMMENDATIONS (Key ones in bold)
Maintaining responsible fiscal policy	
The government has proposed a numerical fiscal rule, which is pending parliamentary approval. This rule is meant to complement the current fiscal framework's long-term projections and spending reviews.	Adopt the proposed fiscal rule and continue to carry out regular spending reviews to ensure long-term fiscal sustainability.
The budget is projected to remain in deficit in 2024 and 2025.	Restrain spending in 2024 and 2025 in line with current plans.
Temporary measures put in place to manage inflation are distortive, weaken the fiscal balance and create contingent liabilities.	Increase prices for public services and utilities in line with costs and investment needs.
Reaching the inflation target while ensuring financial stability	
Inflation is trending down towards target, despite inflationary pressures related to food and energy in early 2024.	Condition monetary policy easing towards late 2024 on inflation approaching the target.
Supports put in place stabilised falling housing prices. Housing affordability remains a concern and a hurdle to family formation.	Gradually withdraw policy support to allow a downward adjustment of housing prices, while prioritizing households with children.
Tighter credit and falling property prices revealed weaknesses in project finance. Swift and sensible action by authorities in the case of three major incidents prevented a broader crisis but entails moral hazard risk.	Clean up financial sector balance sheets by instructing financial institutions to conservatively raise provisions to project financing and write off bad debt as planned. Narrow regulatory gaps between non-bank financial institutions and banks, and unify regulatory responsibilities under the Financial Supervisory Service.
Despite recent efforts, women remain largely underrepresented at the executive level in the financial sector.	Take further steps to increase diversity of management in the financial sector, notably by improving the gender balance.
Confronting geopolitical risks and supply chain dependencies	
Russia's war of aggression on Ukraine has highlighted the importance of supply chain resilience.	Develop consistent and evidence-based policy tools to identify potential supply chain bottlenecks and implement appropriate measures after careful cost-benefit analyses.

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Annex A. North Korea's economy, North-South cooperation and risks to South Korea's economy

Previous Surveys have discussed the North Korean Economy as a contingent liability to the South, focusing mainly on the fiscal cost in the case of a future unification through a gradual and peaceful rapprochement to which both countries were legally committed. However, absent a decisive change of direction in the relationship between the two countries, unification through gradual rapprochement now seems unrealistic. The two countries are still formally at war after the 1953 ceasefire agreement ended hostilities. With ups and downs, the two Koreas were gradually increasing economic cooperation from the late 1980s. Industrial cooperation in the Kaesong Industrial Zone, which started construction in 2003, was the most tangible symbol of such cooperation. South Korea withdrew from the cooperation in 2016 in response to North Korea's accelerated nuclear weapons development. Efforts to re-open culminated in 2018 with the opening of the Inter Korea Liaison Office and the restoration of water supply from the South. However, cooperation took a turn for the worse following the breakdown of the 2019 North Korea-United States Summit in Hanoi. South Korea and North Korea jointly decided to close the liaison office temporarily at the start of the COVID-19 pandemic. North Korea blew up the office in June 2020 in response to defectors sending leaflets and flash drives into North Korea. The frequency of hostile actions, including missile launches, has increased since. In December 2023, Kim Jung Un stated that North-South relations had shifted from being compatriots to entering a hostile state of war between the two countries. In January 2024, he designated South Korea as the North's "principal enemy", requested the deletion of text in the constitution promoting peaceful unification and ordered officials to close state agencies dedicated to unification and inter-Korean tourism. Along with the gradual deterioration in the relationship between the two countries, North Korea's changed policy towards the South increases the risk of incidents happening and escalating, with economic consequences for the South. South Korea remains constitutionally committed to peaceful reunification and it could still happen, for example if the regime in the North were to collapse. It would have considerable macroeconomic consequences, the most certain of which is that it would require considerable fiscal resources to bring infrastructure up to date and increase living standards in the North.

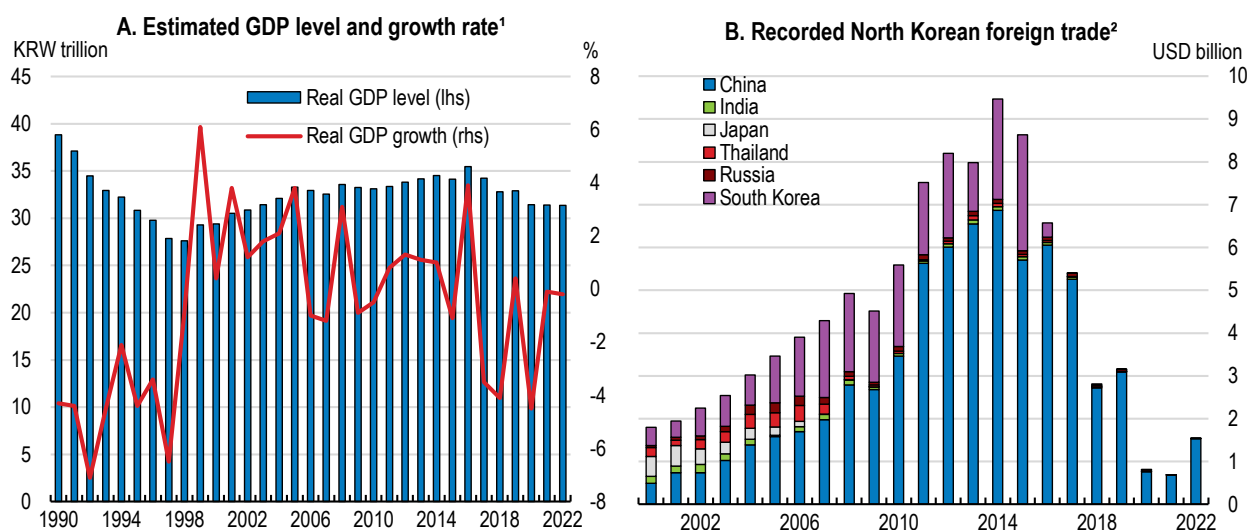
Economic developments

When the COVID-19 pandemic hit in early 2020, the North Korean economy had experienced a brief rebound by an estimated 0.4% in 2019, after severely contracting in 2017 and 2018 as a result of tightened international sanctions. Drastic measures were put in place to curb the COVID-19 virus, blocking human and material exchanges across the border and restricting domestic movement, at considerable economic cost (OECD, 2022). GDP fell by an estimated 4.5% in 2020 and 0.1% in 2021 (Annex Figure A 1, Panel A). North Korean authorities declared victory over COVID-19 in August 2022, but only partially opened their borders. Trade with China resumed but only slowly (Annex Figure A.1, Panel B). GDP declined further by an estimated 0.2% in 2022, with a rebound in light industry and services offset by a large drop in heavy industry and contracting agricultural output.

The economy seems to have recovered somewhat, driven by increased trade and food production. In 2023, trade with China more than doubled from 2022 to USD 2.3 billion, recovering to 83% of 2019 levels.

Exports rose to USD 0.3 billion, exceeding 2019 exports, led by false eyelashes, wigs and false beards. Imports grew to USD 2.0 billion, driven by hair, soybean oil, textiles, and chemical fertilisers, but only recovered to 78% of 2019 levels (China Customs). External trade is expected to increase further, as trade between Dandong and Sinuiju by truck, which accounted for a large share of North Korea-China trade, appears to have resumed since late 2023 (Nikkei, 2023). Trade between North Korea and Russia is also suspected to have expanded since the North Korea - Russia summit in September 2023. North Korea is believed to supply arms for Russia's war in Ukraine and supplies such as oil were shipped from Russia into North Korea (AP News, 2023; UN, 2024). In February 2023, Russia allowed North Koreans to stay in the country visa-free for up to six months, which could lead to an increase in labour migration (Kim, 2023). However, some COVID-related bottlenecks remain. For example, tourism, which is not targeted by UN sanctions and was North Korea's most important source of foreign currency before the pandemic, is still largely closed with exceptions for selected small Russian groups (Reuters, 2024a).

Figure A.1. Sanctions and the pandemic have shrunk the North Korean economy



1. Estimated at 2015 constant prices (using South Korea relative prices). Estimates are subject to considerable limitations (see Koen and Beom, 2020).

2. The data shown here are based on mirror statistics produced by North Korea's trading partners and do not capture smuggling and illegal ship-to-ship transfers of coal, oil and other materials circumventing United Nations sanctions.

Source: Bank of Korea; Statistics Korea and Korea Customs Statistics.

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North Korea is thought to have suffered severe food shortages from 2020 to 2022 due to border closures and failing crops. The estimated number of undernourished North Koreans increased from 8.3 million between 2004 and 2006 to 11.8 million between 2020 and 2022, representing 45.5% of the population (FAO et al., 2023b). Increased imports of fertiliser, mobilisation of military factories to produce agricultural equipment and favourable weather conditions are estimated to have raised the 2023 harvest to 4.8 million tonnes, its highest level since 2017 (Kim, 2024; Rural Development Administration, 2023). Grain imports from China also grew to 0.28 million tonnes in 2023, doubling from 2022 (China Customs). Nevertheless, food shortages remain, and the UN's Food and Agriculture Organisation (FAO) declared in 2023, for the 17th consecutive year, that North Korea requires external food assistance (FAO, 2023a).

UN sanctions had already pushed North Korea's economy towards self-subsistence before the pandemic, and a clear rebound seems unlikely as long as sanctions remain in place. Progress on denuclearisation, which could lead to the loosening of sanctions and renewed growth, is not expected to happen in the near future (KINU, 2024). Sanctions on imports of metals and machinery will hold back investment. A South Korean survey of North Korean defectors found that state-owned enterprises in the mining and

manufacturing sectors are running at shorter hours due to intensifying power shortages and difficulties in securing raw materials (MOU, 2024). Productivity in the battered economy is therefore set to take a further hit over time (Lee, 2023). The informal market economy and services which had been growing before the pandemic is also challenged, as North Korean authorities tightened state control over markets and external trade during the pandemic and seem determined to maintain control going forward. Deteriorating public services and diminishing public food distribution are nonetheless increasingly driving up inequalities of living standards (MOU, 2024; Jung, 2024).

As a consequence of stagnation in the North, economic gaps with South Korea have widened further in recent years. Gross national income per capita was about 30 times higher in South Korea than in the North in 2022, up from 22 times in 2016. South Korea's recorded foreign trade was 892 times higher than North Korea's (Annex Table A.1). In tandem with deteriorating relations, North-South Korea trade has plummeted since 2019, with no trade in 2023 (Korea Customs Service).

Table A.1. Comparison of North and South Korea in 2022

	North Korea (A)	South Korea (B)	Ratio (B/A)
Population (millions)	25.7	51.6	2.0
GNI (trillion KRW)	36.7	2193.5	59.8
GNI per capita (million KRW)	1.4	42.5	29.7
Total trade (billion USD)	1.6	1415.0	892.1
Exports	0.2	683.6	4298.8
Imports	1.4	631.4	512.5
Industrial statistics			
Power generation (billion kWh)	26.4	594.4	22.5
Steel production (million tonnes)	0.3	65.8	227.8
Agricultural production			
Rice (million tonnes)	2.1	3.8	1.8
Fertilizer (million tonnes)	0.7	2.0	3.1

Source: Bank of Korea.

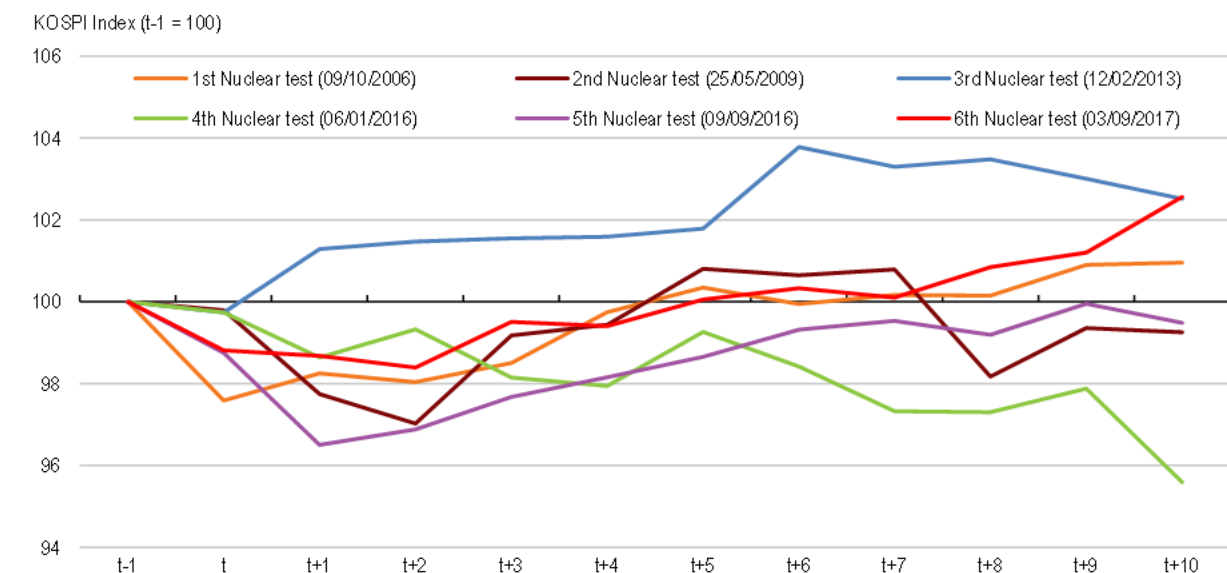
Risks and potential impacts on South Korea

The change in North Korea's policy towards the South has been interpreted as a reflection of its desperate economic situation (Lee, 2024), while it increases the country's isolation and worsens its economic plight. Only 10% of North Korean defectors say the economy has improved under Kim Jong Un. Negative views of Kim and the legitimacy of the succession have become increasingly common over time and access to foreign cultural content has increased, while the regime has responded with tighter ideological control (MOU, 2024). As North Korea's economic stagnation and exhaustion grow, and the lack of a solution is increasingly perceived as a regime crisis, it is not inconceivable that the regime will attempt to step up military provocations (Lee, 2024). However, US and South Korean authorities say there are no signs that North Korea is preparing for war (Reuters, 2024b; VOA, 2024), and the likelihood of a large-scale armed conflict remains very low (Seiler, 2024; Jang, 2024).

The risk of border clashes and other incidents could increase volatility and risk premia in South Korea. North Korea-related events have caused some volatility in South Korea's stock markets in the past, but the effects were short-lived and their impact on the real economy was negligible. For example, when Kim Jong-il died in December 2011, the stock market fell 3.4% that day but recovered within two days. The impacts of the past six nuclear tests hit the stock market for only a few days, except for the fourth test (Annex Figure A.2). This limited reaction suggests that financial markets have not perceived North Korea's past provocations as a systemic risk as tensions have escalated and eased repeatedly (Kim, 2017). South

Korea's Kospi index fell 1.1% and 2.5% on the day and the day after Mr. Kim's hostile rhetoric in January 2024, but reversed course one day later (KRX, 2024).

Figure A.2. North Korea's nuclear tests had short-lived impacts on equity prices in the South



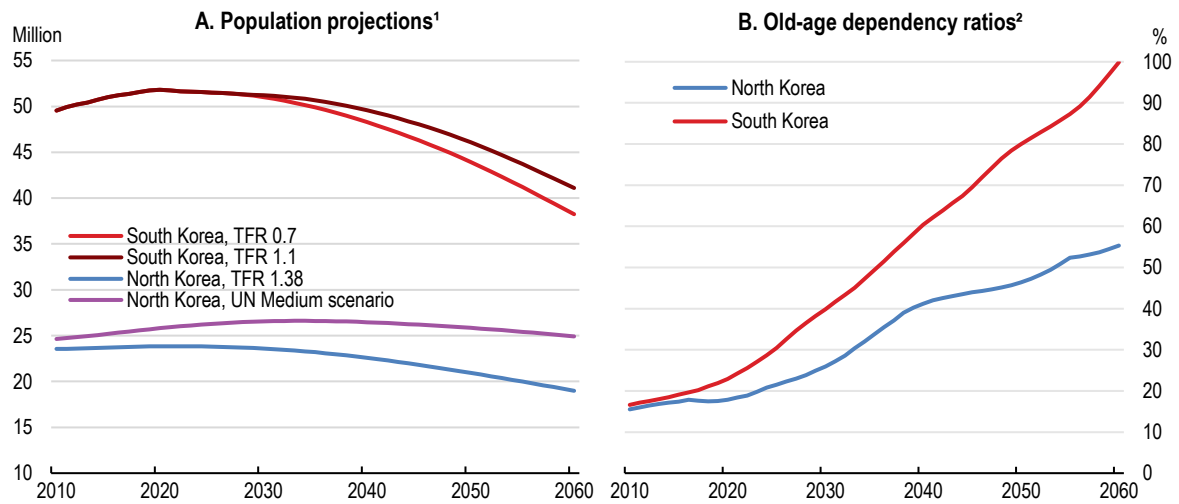
Note: t refers to trading day.

Source: Bank of Korea; KRX.

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South Korea remains committed to peaceful and gradual reunification, but regime collapse or other events in the North could abruptly trigger rapprochement. This scenario remains unlikely, but would have considerable impacts on the economy and fiscal sustainability. In the case of the peaceful but abrupt reunification of Germany in 1990, net transfers from West Germany to the East amounted to around DM 120-140 billion per year, or around 4.5% of West Germany's GDP between 1991 and 1999, for social assistance and infrastructure investments (Bibow, 2001; Lee and McKibbin, 2018). Following tax hikes and spending cuts to reduce the pressure of mounting public debt, GDP growth, which had been 5% in 1991, averaged only 1.5% for the rest of the 1990s. Within the first 15 years of reunification, almost 10% of the East German population moved to the West in search of better opportunities (Lee and McKibbin, 2018). Considering that the economic gap between North and South Korea is far greater than that between East and West Germany at the time of reunification, fiscal burdens to secure a minimum income for North Koreans and to fill infrastructure gaps could be much higher. Depending on assumptions about how quickly and to what extent the gap would close, the National Assembly Budget Office (NABO, 2014) estimated it at an average of 3.9% of the unified Korea's GDP per year for 45 years after reunification, while Ahn (2011) estimated it between 1.3% and 7.6% of South Korean GDP per year in the first decade after the reunification, based on different scenarios. This fiscal burden, coupled with South Korea's ageing population, could seriously jeopardise South Korea's fiscal sustainability (Chapters 2 and 5). Ageing is less serious in North Korea than in the South and the fertility rate remains higher, even though there is some reason to believe that the United Nations fertility rate estimate for North Korea is too high (Lee and Kim, 2023). North Korea has also seen a shift in gender norms, with women's increased economic activity and participation in the market economy leading to later marriages, more divorces, and lower fertility (MOU, 2024). South Korea's population is set to age and shrink faster than North Korea's, but it is uncertain to what extent reunification would alleviate future labour shortages, as the skills of the population in the North might not match employment opportunities (Annex Figure A.3).

Figure A.3. South Korea's population is set to age and shrink faster than North Korea's



1. The total fertility rates (TFR) are assumed to remain constant at their current levels in the “South Korea, TFR 0.7” and “North Korea, TFR 1.38” scenarios converge to its new level of 1.1) by 2040 for “South Korea, TFR 1.1”. For more information on the UN medium scenario, see <https://population.un.org/wpp/DefinitionOfProjectionScenarios/>.

2. The old-age dependency ratio is defined as the number of individuals aged 65 and over per 100 people aged 20 to 64. The total fertility rates are assumed to remain constant at 0.7 for South Korea and 1.38 for North Korea.

Source: OECD calculations based on the OECD Long-term model and Lee and Kim (2023), United Nations.

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3

Red light, Green light reforms to boost productivity

Jon Pareliussen
Yoonyoung Yang

Korea's growth adventure took off following market-friendly reforms in the mid-1960s but has progressively slowed in recent decades. Going forward, productivity needs a boost by means of making more with less as opposed to past growth, which was mainly created by increasing employment and investing in capital and education. This necessitates profound reforms to ensure fair competition on a level playing field in the domestic market for goods and services which would increase productivity in the SME sector and narrow the gap to larger companies. One key element of such reform is to shift to a "Red light" regime for public subsidies, limiting the scope for aid to companies in any form except in explicitly allowed cases. A second key element is to remove regulatory hurdles to private enterprise, including a decisive shift towards a "Green light" regulatory regime in which activities are generally allowed except if explicitly prohibited.

A comprehensive reform programme is needed to boost productivity

Market-friendly reforms in the 1960s kicked off decades of stellar growth in Korea, but productivity has slowed since, weighed down by persistent performance gaps between the vast SME sector and large companies. Extensive reforms are needed to support Korean SMEs' productivity catch-up by boosting fair competition on a level playing field in the domestic market for goods and services. This chapter argues for:

- **A Red light to state support:** Many policies are in place to protect and support SMEs, including more than 1600 subsidy schemes. Consolidating these policies would reduce the risk that the sum of support and protection in various forms lock in resources in low-productive uses and thereby end up undermining the strength of the SME sector. Korea should only allow subsidies to companies in a limited number of special cases. A reformed system should contain only a small number of programmes targeting clearly identified market imperfections with a system of centralised rules, coordination and oversight.
- **A Green light to private enterprise by removing regulatory hurdles:** Previous OECD Economic Surveys have recommended to move to a negative list approach of regulations, meaning that activities are generally allowed unless explicitly prohibited (Table 3.1). Lowering trade barriers can boost competition across company sizes in the domestic market and create opportunities for SMEs supplying the conglomerates to diversify their customer base and thereby reduce dependence. Competition reforms in sectors with heavy state involvement would also help provide services more cost-effectively and correct relative price distortions, notably for electricity and rail.

The following policy areas should also feature in a comprehensive reform package to promote productivity. These are mentioned here for their importance and for completeness. Some of these areas are discussed further in other parts of this Survey and the others in previous Surveys, as indicated:

- **Continued efforts are needed to prevent the abuse of market power by large companies and unfair subcontracting practices**, including strengthening anti-trust regulation and enforcement as well as transparency and anti-corruption policies, as argued in the *2018 OECD Economic Survey of Korea*. The state of play and recent developments in transparency and anti-corruption policies are presented below.
- **Labour market reforms are key to reduce duality and shift from the current seniority-based wage system to one that better reflects job performance.** Thus fostering the efficient reallocation of labour will boost productivity and welfare. Labour market structures are also closely related to low fertility, and therefore covered in more detail in Chapter 5 of this *Survey*, Yang et al. (2024) and Choi and Ham (2024).
- **Strengthening the social safety net is a central enabling policy.** In Korea, due to the common practice of early retirement, second careers in the SME sector are de facto part of the social safety net. Chapter 5 discusses measures to move away from this practice. Increasing coverage of unemployment insurance combined with strengthened active labour market policies are essential to prevent hardship and boost social acceptance of structural reform (Chapter 5).
- **High-quality vocational education and training and life-long learning could better match skill supply with jobs.** Vocational graduates from Meister schools and the Work-Learning Dual System show good labour market outcomes and escape the excessive and unnecessary competition to obtain additional educational qualifications, but weak demand from students and weak employer commitment point to room for improvement. Life-long learning is key to improve matching of older workers, and to meet structural change from the green and digital transitions. These issues are discussed in the 2020 and 2022 *OECD Economic Surveys of Korea*.

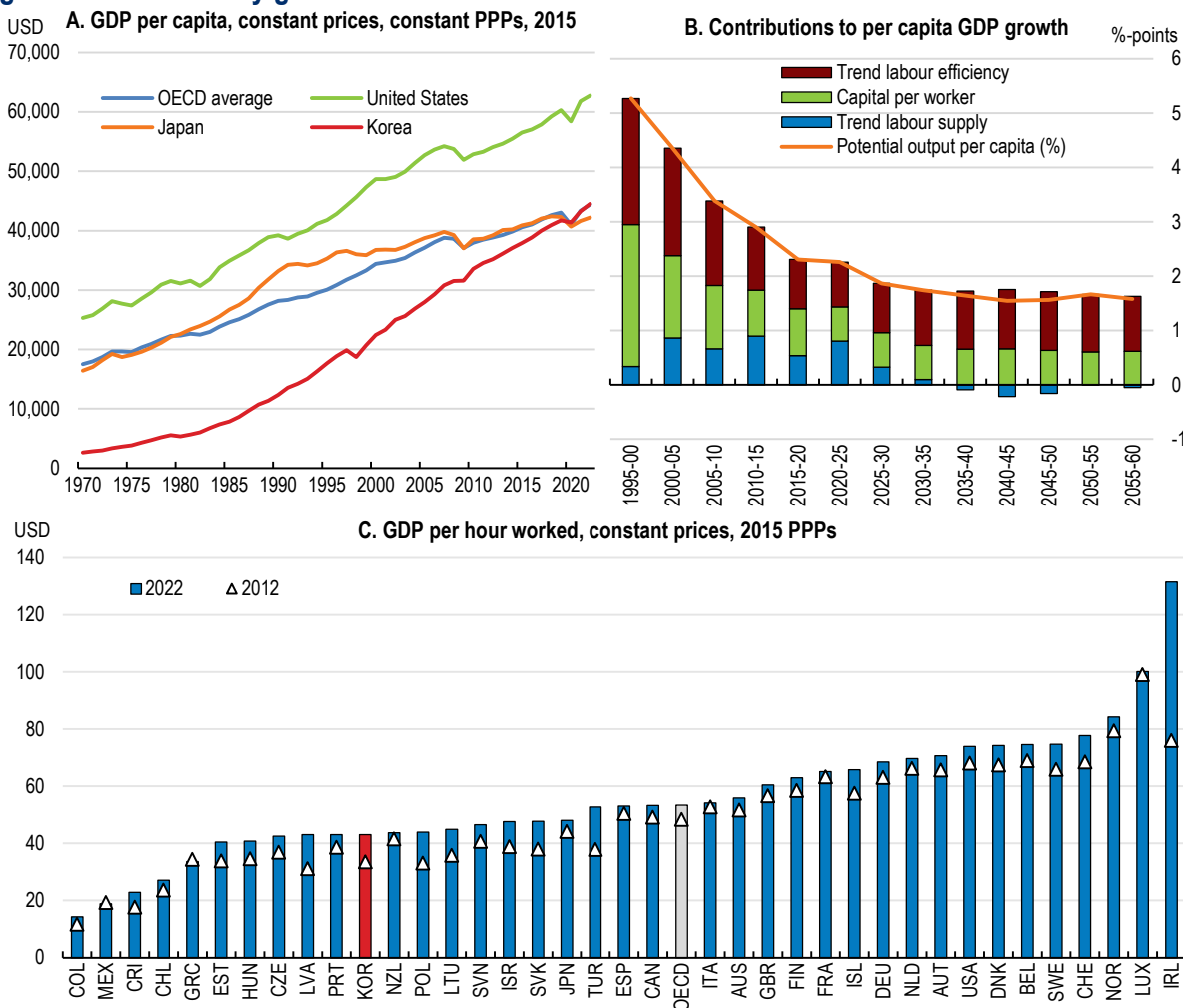
Table 3.1. Past recommendations to reduce productivity gaps and actions taken

Recommendations from past Surveys	Actions taken
Reduce the stringency of product market regulation by shifting to a comprehensive negative-list regulatory system, expanding the use of regulatory sandboxes and generalising reforms successfully trialled.	So far, 70 out of 200 sandbox projects in the ICT sector and 74 out of 487 projects in the Industrial Convergence sector and 21 out of 48 projects in Regulation Free zones have led to general deregulation.
Expand the coverage of SME graduation schemes to ensure that public support for SMEs encourages the growth of innovative firms rather than the survival of non-viable ones, while supporting affected workers and providing training and employment services.	The Framework Act on Small and Medium Enterprises has been amended to extend the grace period for graduation from three to five years, effective from August 2024.

Productivity in Korea: external convergence and internal divergence

Korea’s GDP per capita has converged to the OECD average, with average growth approaching 10% per year during the past five decades (Figure 3.1, Panel A). Growth has mainly been driven by labour efficiency and capital accumulation. Capital accumulation was particularly strong from the late 1970s to the start of the Asia crisis in 1997. A strong focus on education has boosted skills, as reflected in labour efficiency. Indeed, Korea’s 15 year-olds are among the top performers in maths, science and reading, as measured in the OECD’s PISA Survey (OECD, 2023a).

Figure 3.1. Productivity growth has trended down



Note: The methodology for Panel B is explained in Chaux and Guillemette (2019).

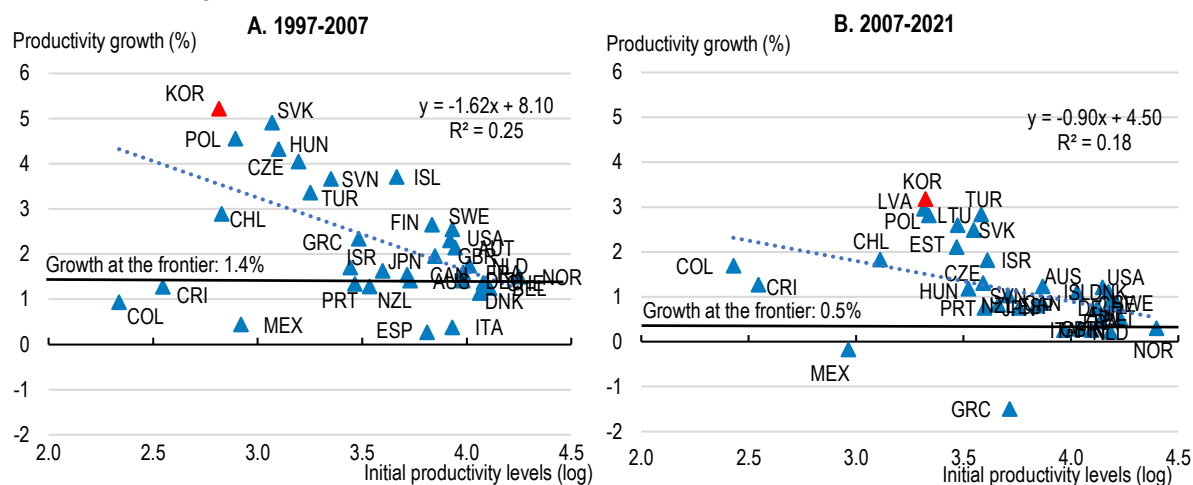
Source: OECD, Economic Outlook 115 database; OECD, Productivity database.

Labour supply has contributed to growth over the whole period and by as much as one third in the early 2010s and early 2020s. This reflects a combination of a rising share of the population being of working age as well as increasing employment among the working-age population. Labour force participation is set to increase further, driven by women and the elderly, while the working-age population is set to shrink due to Korea's very low fertility rate (Chapter 5). These two forces combined will lead to a much-diminished positive contribution from labour supply in the coming decade, turning negative in the late 2030s (Figure 3.1, Panel B). Productivity per hour worked is still well below the OECD average, reflecting comparatively low total factor productivity (TFP) and long working hours (Panel C). Annual hours worked have been decreasing at the most rapid pace among OECD countries, but were still at 1901, 8.5% above the 1752 OECD average, in 2022 (OECD, 2023b).

Slowing productivity growth in Korea reflects a global trend. TFP growth in the highest-productivity countries has slowed, reducing the pull from an expanding global productivity frontier. Also, as the gap between Korea's productivity and the frontier narrows, the process of catching up to best practices slows down. Hourly productivity growth in countries at the productivity frontier slowed from 1.4% during the 1997-2007 period to 0.5% in 2007-21. Productivity growth in Korea has been catching up in both periods, growing by more than 5% per year from 1997 to 2007 and still by over 3% from 2007 to 2021 (Figure 3.2). In other words, Korea's productivity is steadily catching up with the frontier, and at decent rates compared to other OECD countries.

Figure 3.2. Productivity growth has slowed across the OECD, but Korea is still catching up

Initial level and change in GDP per hour worked



Note: Initial productivity levels are measured by the log of GDP per hour worked, USD thousands, constant prices, 2015 PPPs, in the initial year of the periods indicated. Productivity growth is the annual average productivity growth of GDP per hour worked over the periods in per cent. Productivity at the frontier is the average productivity growth of the five countries with the highest productivity levels at the beginning of the relevant period. Ireland and Luxembourg are omitted due to extreme values in their productivity levels and growth rates, linked to their relatively small size compared to large multinational companies operating there.

Source: André and Gal (2024).

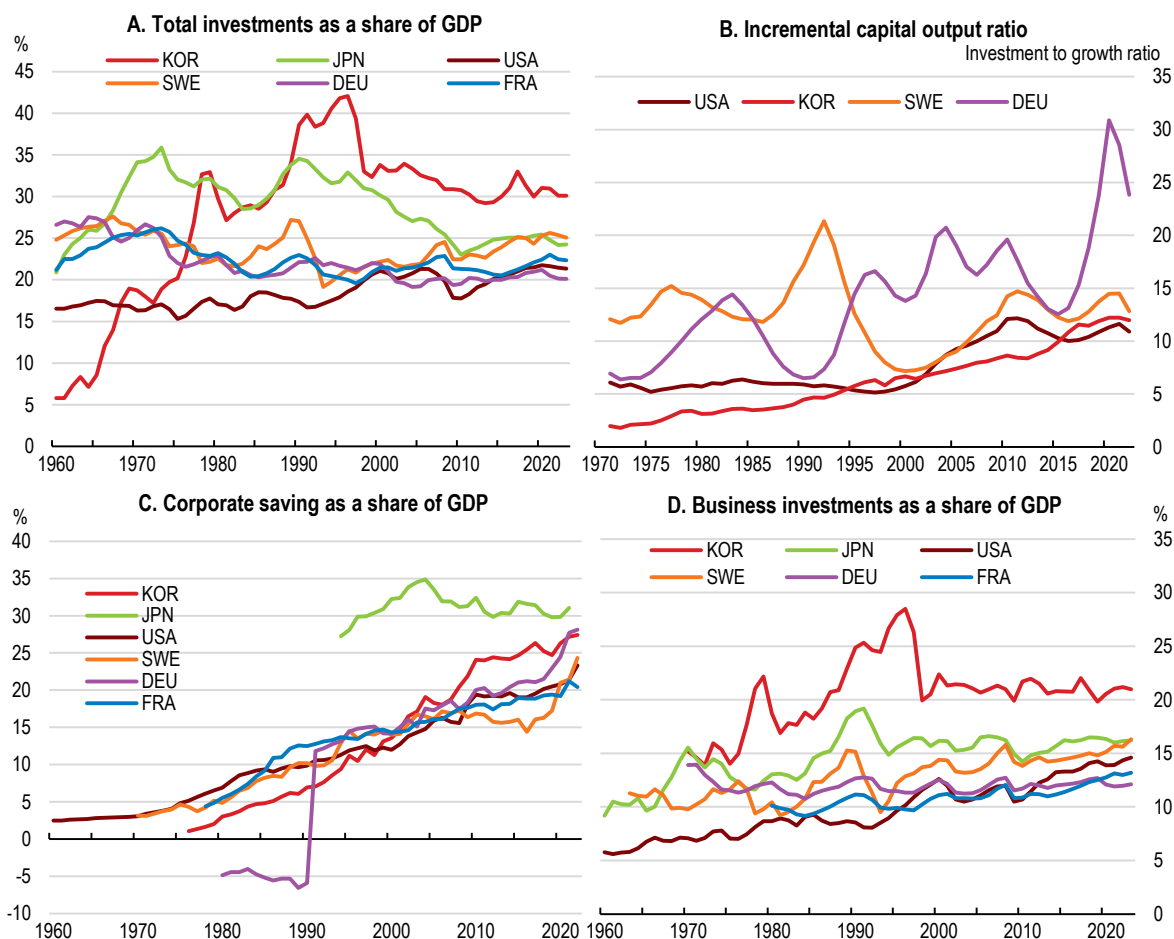
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Even so, Korea needs to boost productivity further to raise living standards. Rapid ageing implies that a smaller share of the population will need to produce the goods and services consumed by all (Chapter 5), a burden that can be alleviated by boosting productivity. Furthermore, there is a need to reduce working hours to improve work-life balance and help turn around the fertility trend (Chapter 5). Hourly productivity needs to continue to increase to ensure healthy income growth. Shim and Kim (2020) found that firms affected by the first stage of a reform which was rolled out from 2018 to 2021 to limit the maximum weekly work hours (including overtime) from 68 to 52 increased the number of regular employees compared to

the control group while there were no negative effects on sales or value added per employee. In other words, hourly productivity increased to fully offset the reduction in work hours.

Korea has less scope to add to productivity by increasing factor inputs and education levels than in the past (Swiston and Tam, 2022; Cho, 2023). As discussed in Chapter 5 and previous Surveys, an exaggerated focus on formal qualifications has led to a race to get into the top universities to land high-quality jobs, dubbed the “golden ticket syndrome”. Young Koreans are therefore now the highest educated in the OECD, while educational attainment in younger cohorts has levelled off. It is doubtful if further investments in education will boost productivity, although there is scope to reform the education system to improve matching to labour market needs, boost productivity and people’s well-being (Chapter 5; OECD, 2022). Accelerated capital deepening is also not a credible or desirable option to boost living standards going forward. Following Korea’s rapid capital accumulation since the 1960s, investment as a share of GDP remains among the highest in the OECD (Figure 3.3, Panel A). The return on additional investments has decreased, with the investment needed per unit of growth having already surpassed that in the United States (Panel B). Strong growth in corporate saving, which exceeds 30% of GDP (Panel C), has been accompanied by stable business investment of around 20% of GDP. This indicates that the corporate sector sees limited scope for additional productive business investments in Korea above and beyond the current trend (Panel D).

Figure 3.3. GDP catch-up potential from accelerated capital deepening is limited



Source: OECD, Economic Outlook 115 database; OECD, Analytical database, Author’s calculations.

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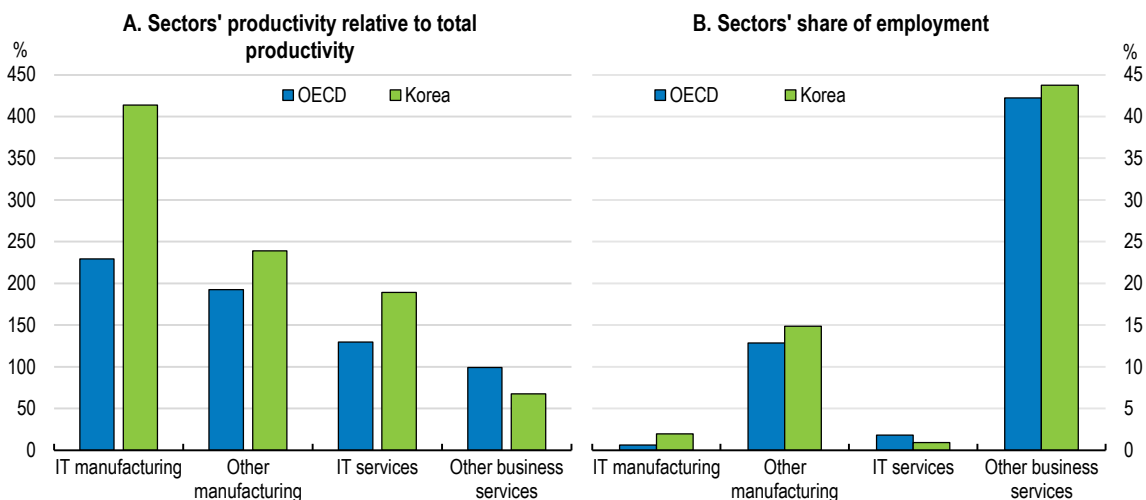
Even in R&D and advanced technologies there is a need for greater value added rather than boosting factor inputs further. Korea invests more than 5% of GDP annually on R&D (2022), a level only matched by Israel among OECD peers. Korea is a frontrunner in digital technologies and one of the top five contributors to the development of emerging digital technologies. Korea accounted for 9% of global IP5 patent family filings from 2017 to 2019 (OECD, 2023c), and it files a considerable share of patents in the top 25 fast-growing information and communication technology (ICT) fields (OECD, 2020). A national Artificial Intelligence (AI) strategy was presented in 2019. Five universities were designated as AI Engineering schools, and Korea's leading companies are investing aggressively in the technology. Korea launched the AI Strategy High-Level Consultative Council in April 2024. The number of AI Engineering schools has expanded from 5 in 2019 to 19 in early 2024. However, also within R&D there is a case to prioritize the quality of investments over quantity and channel already substantial inputs towards uses that better contribute to broad-based productivity growth.

To properly understand Korea's case, it is useful to see it under the lens of broadly defined technology diffusion. Total factor productivity rises through: firms at the productivity frontier expanding the possible (innovation); non-frontier firms adopting new technologies, know-how and working practices invented by frontier firms and thereby catching up to higher productivity levels (diffusion); and (re-) allocation of resources between sectors and firms with different productivity levels through firm entry and exit and reallocation of labour and capital. These three channels are interrelated, and competitive markets for products, services, capital and labour are central to their effectiveness (André and Gal, 2024).

Korea's dynamism in digital technologies is reflected in its high share of value added and employment in ICT manufacturing sectors (Figure 3.4). Even so, economy-wide productivity is far below the OECD average. This reflects several structural features. Low-productivity sectors like trade, transportation, accommodation and catering account for a higher share of total employment than the OECD average (28% against 25%). Moreover, most jobs created in new Korean small and medium sized enterprises (SMEs) are in low-productivity activities, like in many OECD countries (OECD, 2019c): in 2017, 56% of jobs created by the birth of new SMEs were in trade, transportation, accommodation and food services. Furthermore, in high-productivity sectors like manufacturing, SMEs account for a high share of enterprises and of employment, but are less productive than large firms (2018 OECD *Economic Survey of Korea*). This productivity gap is observed across OECD countries but is substantially wider in Korea (OECD, 2020a).

Figure 3.4. Services employment is high, while productivity is low

2018



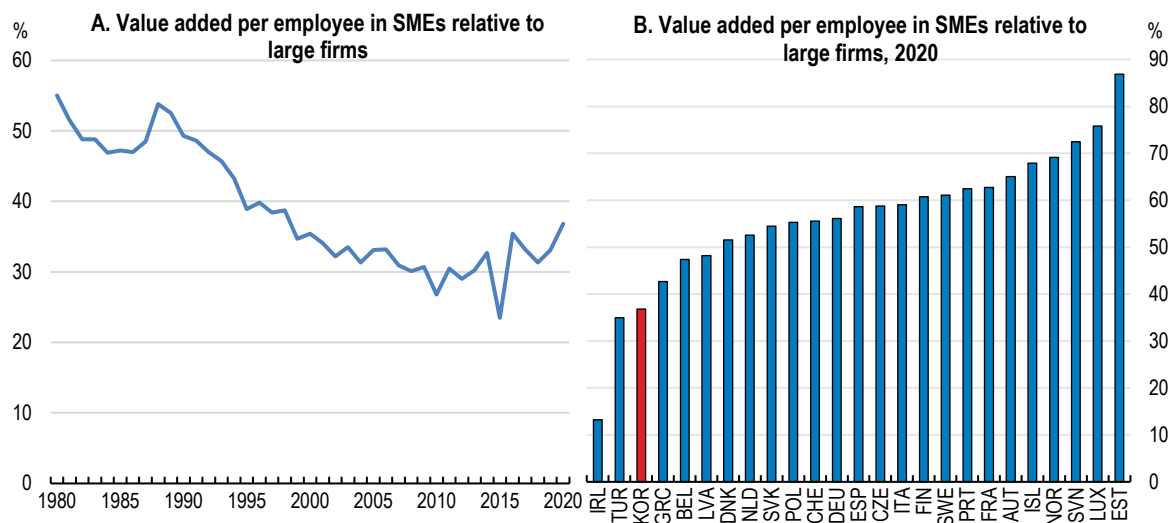
Note: 'ICT manufacturing' includes manufacture of computer, electronic and optical products. 'ICT services' include publishing, telecommunication and IT services. 'Other business services' excludes the housing sector.

Source: OECD STAN Database.

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Low productivity in services and SMEs has been found to be a main contributor to productivity dispersion in Korea (KIET, 2020), even though industry structure, with a high share of value added and employment in ICT manufacturing sectors, plays a role (Figure 3.4). The employment share of SMEs is the highest in the OECD, and SME productivity is only about one third of that of large companies, compared to around half in other OECD countries (Figure 3.5).

Figure 3.5. Productivity gaps between large and small manufacturers are large



Source: OECD Structural and Demographic Business Statistics (ISIC Rev. 4) (database).

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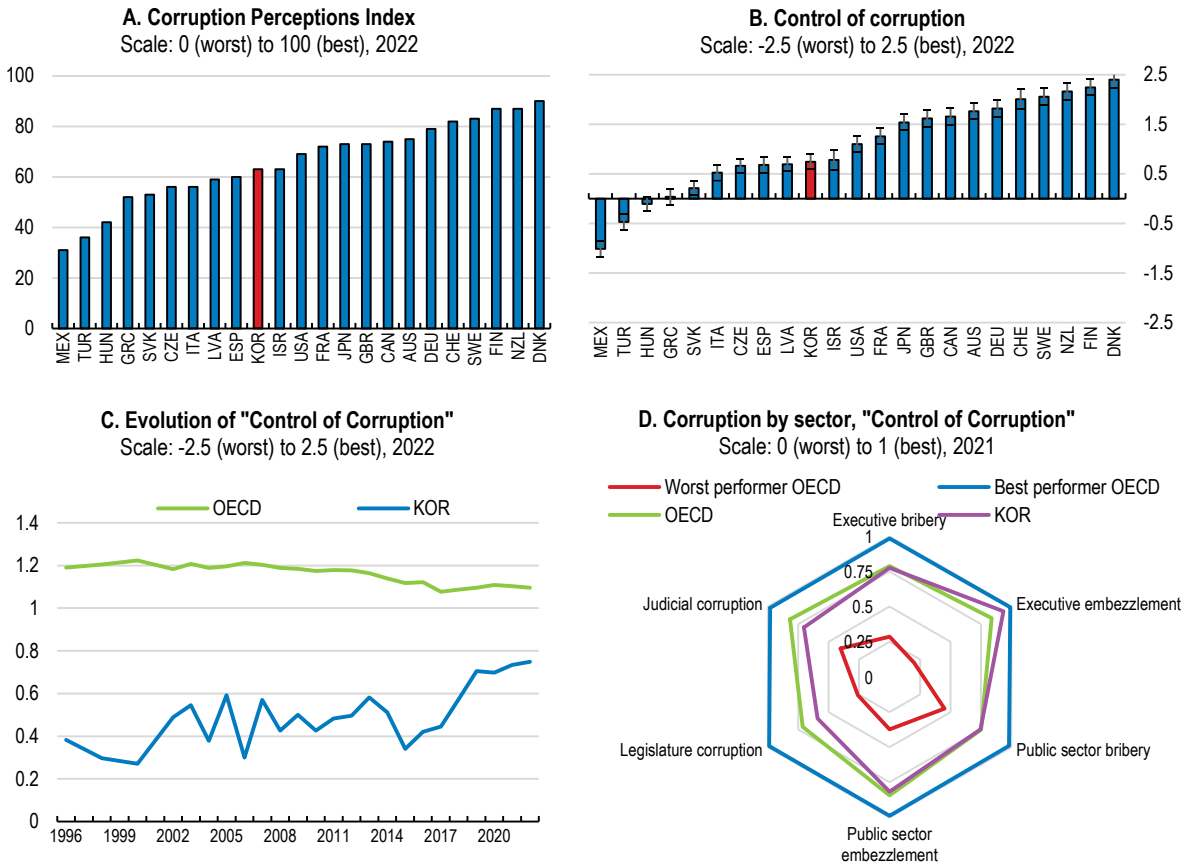
Korea can draw valuable lessons from its own past, when export-friendly and market-friendly reforms, skilful macroeconomic management and a commitment to education were instrumental to its stellar growth performance, while periods of more interventionist policies created imbalances and likely held back growth (Nam, 1995; Irwin, 2021; Kim, Lee and Shin, 2021). The 2018 OECD *Economic Survey of Korea* discussed in detail how productivity gaps between large and small companies are rooted in both the concentration of economic power among large companies, notably the large family-controlled conglomerates (*chaebol*), and insufficient competition in segments of the domestic economy dominated by SMEs. Both can be traced back to past periods of interventionist industrial policy, which contributed strongly to the dominance of the *chaebol* in the domestic market, and a subsequent counterreaction with interventions to protect SMEs.

The business groups need to maintain high productivity to compete internationally, and typically offer highly-educated workers well-paid jobs, good working conditions, regular employment and social insurance coverage (OECD, 2022). However, their size can give them market power domestically. SMEs that supply products to large firms frequently complain that they are unfairly squeezed. Issues relating to how the *chaebol* are organised as conglomerates and how the interests of owner families may not align with those of other shareholders are also seen as a key explanation of the “Korea discount”, the undervaluation of Korean equity prices compared to other countries (OECD, 2018). The inheritance tax rate of up to 50% of market value is the second highest in the OECD and is seen by business owners as a cause of the Korea discount. It cannot be ruled out that the inheritance tax leads owner families to take actions that hold back the market value of their companies, but there is no definitive causal evidence of this happening. Such actions can be hard to prove empirically and even harder to separate from other causes of owner families channelling profits to companies in which they hold a higher ownership share (“tunnelling”). Taxing inheritance is in general an efficient form of taxation, and it serves the important purpose of reducing intergenerational persistence of economic power. These issues deserve further research. Reducing the

tax rate should be considered against the benefits of the tax and alternative reforms, including narrowing the scope for owner families to manipulate the tax base by means of regulations, supervision and a general strengthening of competition, governance and minority shareholder rights.

The sheer size and importance to the Korean economy of the *chaebol* is also a macroeconomic risk, compounded by their complex ownership structures, as was clearly demonstrated during the 1997-98 Asia crisis (OECD, 2018; OECD, 2022). The traditional tight bonds between *chaebol* and policymakers have manifested themselves in corruption, including scandals involving former presidents during their time in office. Control of corruption as measured by the Worldwide Governance Indicators has improved considerably over the past decade, but remains below the OECD average (Figure 3.6). Korea is proactively disclosing government data, and has strong regulations on political finance, but needs to further strengthen lobbying regulations or transparency tools (OECD, 2023d). While legal amendments hampering investigation and prosecution of foreign bribery offences have represented a setback, continuous steps have been taken over time to prevent market power abuse and corruption, including measures to prevent chaebols' use of legal loopholes to expand business and the owner families' pursuit of benefits at the expense of minority shareholders.

Figure 3.6. Control of corruption is improving



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.

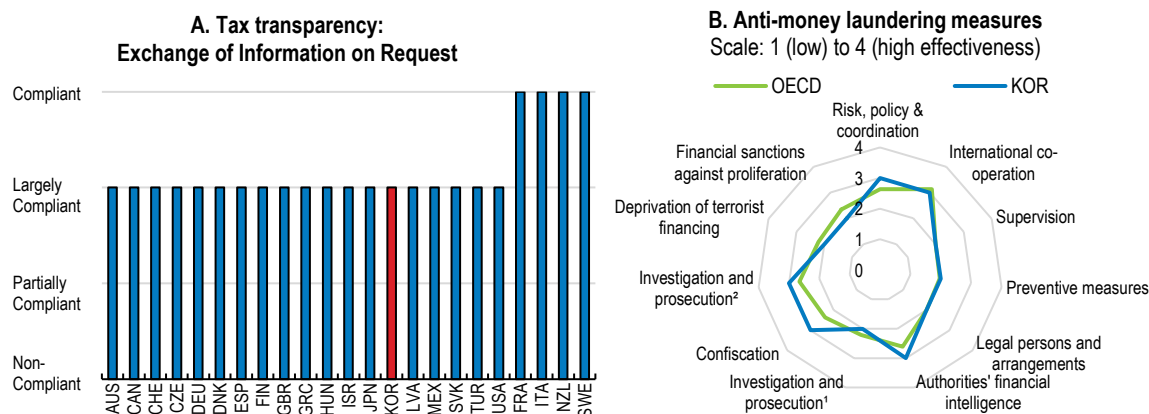
Source: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Project, V-Dem Dataset v12.

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In 2021, the OECD Working Group on Bribery noted that while 22 out of its 36 Phase 4- recommendations had been fully or partially implemented, there was still much to be done. It welcomed Korea's efforts to strengthen its capacity to enforce the foreign bribery offence, but noted that Korea needed to increase its

efforts to train and provide adequate guidance to officials working with foreign bribery investigations to improve detection and enforcement. Korea was also urged to step up its level of foreign bribery enforcement and to address key unimplemented recommendations concerning, among others, the false accounting offence and its anti-money laundering reporting framework (Figure 3.7).

Figure 3.7. Tax transparency and anti-money laundering measures



Note: Panel A summarises the overall assessment on the exchange of information in practice from peer reviews by the Global Forum on Transparency and Exchange of Information for Tax Purposes. Peer reviews assess member jurisdictions' ability to ensure the transparency of their legal entities and arrangements and to co-operate with other tax administrations in accordance with the internationally agreed standard. The figure shows results from the ongoing second round when available, otherwise first-round results are displayed. Panel B 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: OECD Secretariat's own calculation based on the materials from the Global Forum on Transparency and Exchange of Information for Tax Purposes; and OECD, Financial Action Task Force (FATF).

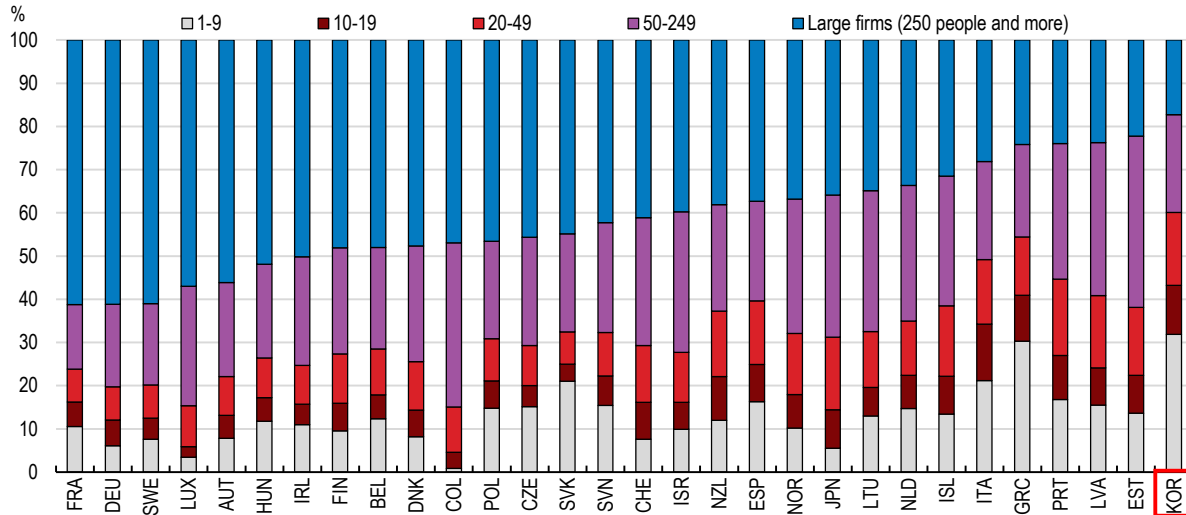
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In 2022, the Korean National Assembly adopted substantial amendments to the Prosecution Service Act and Criminal Procedure Act, hampering the Prosecution Office's ability to investigate and prosecute foreign bribery offences, according to the OECD Working Group on Bribery. The Government has taken actions to minimise possible negative effects, including by bringing the case before the Constitutional Court (OECD Working Group on Bribery, 2022). Going forward, Korea should ensure that the Prosecution Office and the police have the appropriate powers to effectively enforce the foreign bribery offence, and increase efforts to train and provide adequate guidance to officials working with foreign bribery investigations to improve detection and enforcement.

Unfair subcontracting practices and home market dominance from large companies can hold back productivity in SMEs, but there are also other important reasons for low SME productivity in Korea. SMEs employ more than half of the work force in all OECD countries except the United States. Korea has a particularly large SME sector (Figure 3.8), partially because many who retire early from their career jobs (see Chapter 5) use their retirement allowance to set up a business. SMEs are thus a key element of the Korean social safety net (OECD, 2018). Low-productivity SMEs are often in the domestic-oriented service sector and hire a larger share of non-regular workers who earn less pay. Social insurance coverage is steadily improving but remains incomplete and considerably lower in SMEs than large companies (Figure 3.9). Many of these firms are not able to attract the skills needed to boost productivity, for example by adopting digital technologies (OECD, 2022). Indeed, firms with at least 300 employees pay young workers 50% higher wages than those with less than ten employees, and only employ 14% of their work force on non-regular contracts, compared to almost half in large companies (OECD, 2018; OECD, 2022; OECD, 2020).

Figure 3.8. The share of employment in SMEs is high

Employment by firm size, share of all persons, manufacturing sector, 2020 or latest available year¹

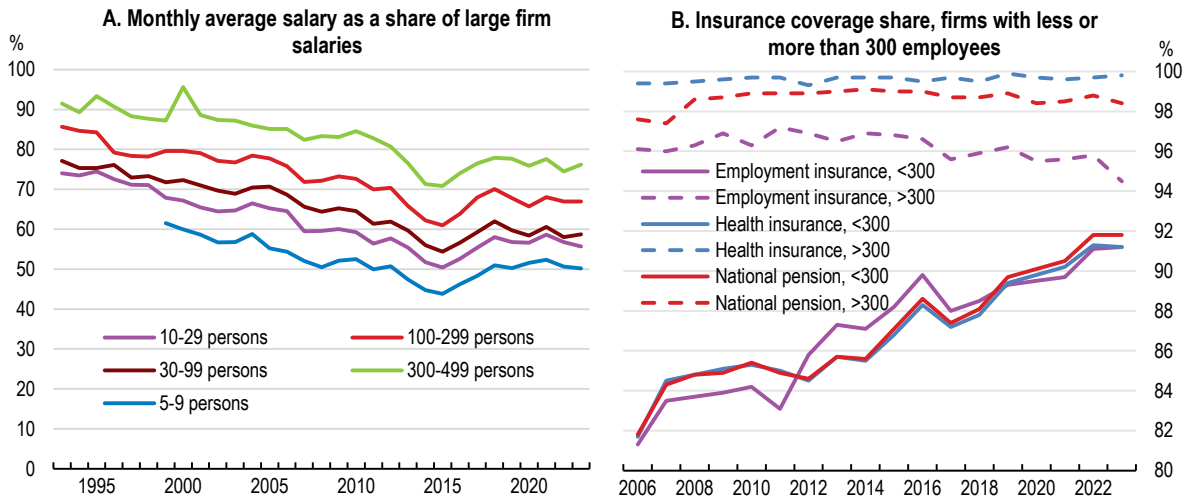


1. 2017 for Colombia and 2019 for Israel. For Korea, firm sizes 50-299 and 300 people or more are used.

Source: OECD Structural and Demographic Business Statistics (ISIC Rev. 4) (database).

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Figure 3.9. Productivity gaps lead to gaps in income and social insurance coverage



Source: Statistics Korea.

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The existing policy mix tilted towards subsidies and other special treatment for SMEs has not narrowed the overall productivity gap between large and small companies. This point is illustrated by Woo and Han (2017), who showed that SMEs receiving the most public support saw lower growth in productivity and value added than those receiving the least. In a similar vein, businesses receiving policy financing had lower productivity and higher survival rates than what would otherwise be the case (OECD, 2018). Recent literature on size-based regulations in France and Canada confirms that firms hold back growth to stay below size thresholds, and that such regulations hold back innovation with considerable negative effects on productivity and wages (Aghion, Bergeaud and Van Reenen, 2023; Lehoux, 2024).

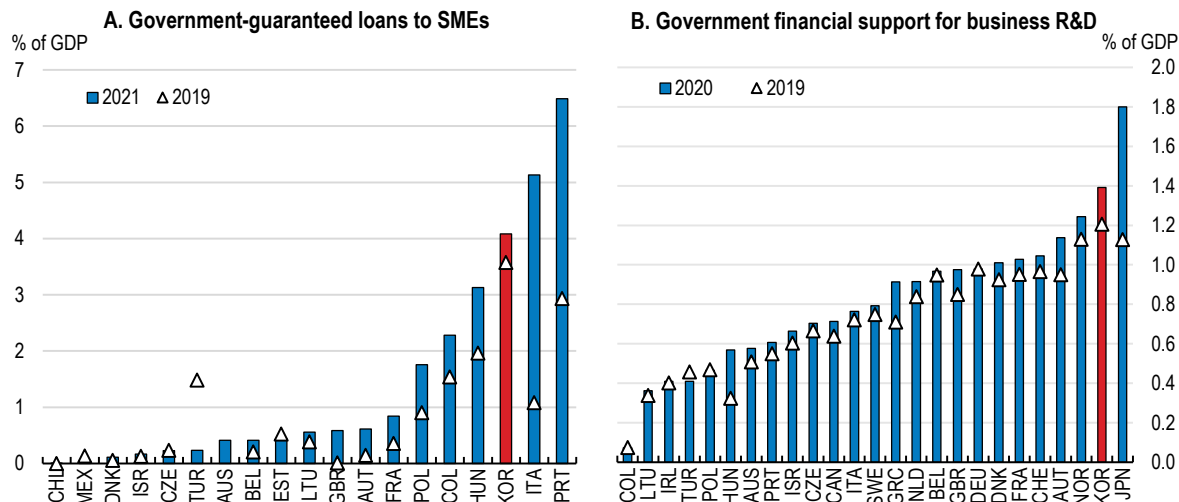
Public support schemes are discussed in detail below. In addition, SMEs are assisted through preferential treatment in public procurement, lower tax rates at both central and local government levels, exemptions

that lower taxable income, exclusions from the Monopoly Regulation and Fair Trade Act for associations of SMEs, the right to hire foreign workers under the low-skill time-limited work immigration scheme (Chapter 5) and discounted prices for water and electricity (OECD, 2018; OECD, 2021; Chapter 4). Many regulations contain size thresholds to reduce the regulatory burden on SMEs, while they may at the same time be entitled to support for regulatory compliance and enforcement may be lenient. One example is the Duru Nuri social insurance support programme which subsidises mandatory pension and employment insurance premiums for low-income workers in companies with fewer than ten employees (OECD, 2020). Despite this support, 8% of the work force, who should be registered in the employment insurance scheme, are not. Korea also has a tradition to support sectors deemed to be new growth engines by various means including direct support and tax measures. Even though such sectoral policies are not explicitly discussed here, they contribute to the complexity and inefficiencies discussed below. Most of the arguments to limit size-based policies would apply equally to sector-based policies. A reform programme to boost SME productivity convergence should boost fair competition on a level playing field. Consolidating SME support and removing regulatory barriers to competition are key in this respect.

Red light to distortive state support

Central government spending on programmes subsidising SMEs amounted to 5.1% of its total spending in 2023, up from 4.3% in 2017. Comparable data for total SME support across the OECD is not available, but Korea’s SME credit guarantees and its overall R&D support to companies of any size were the highest in the OECD in 2019, the last normal year before the pandemic. These supports remained among the most generous of the OECD during the pandemic, and they have risen over time (Figure 3.10).

Figure 3.10. Korean SME support is generous



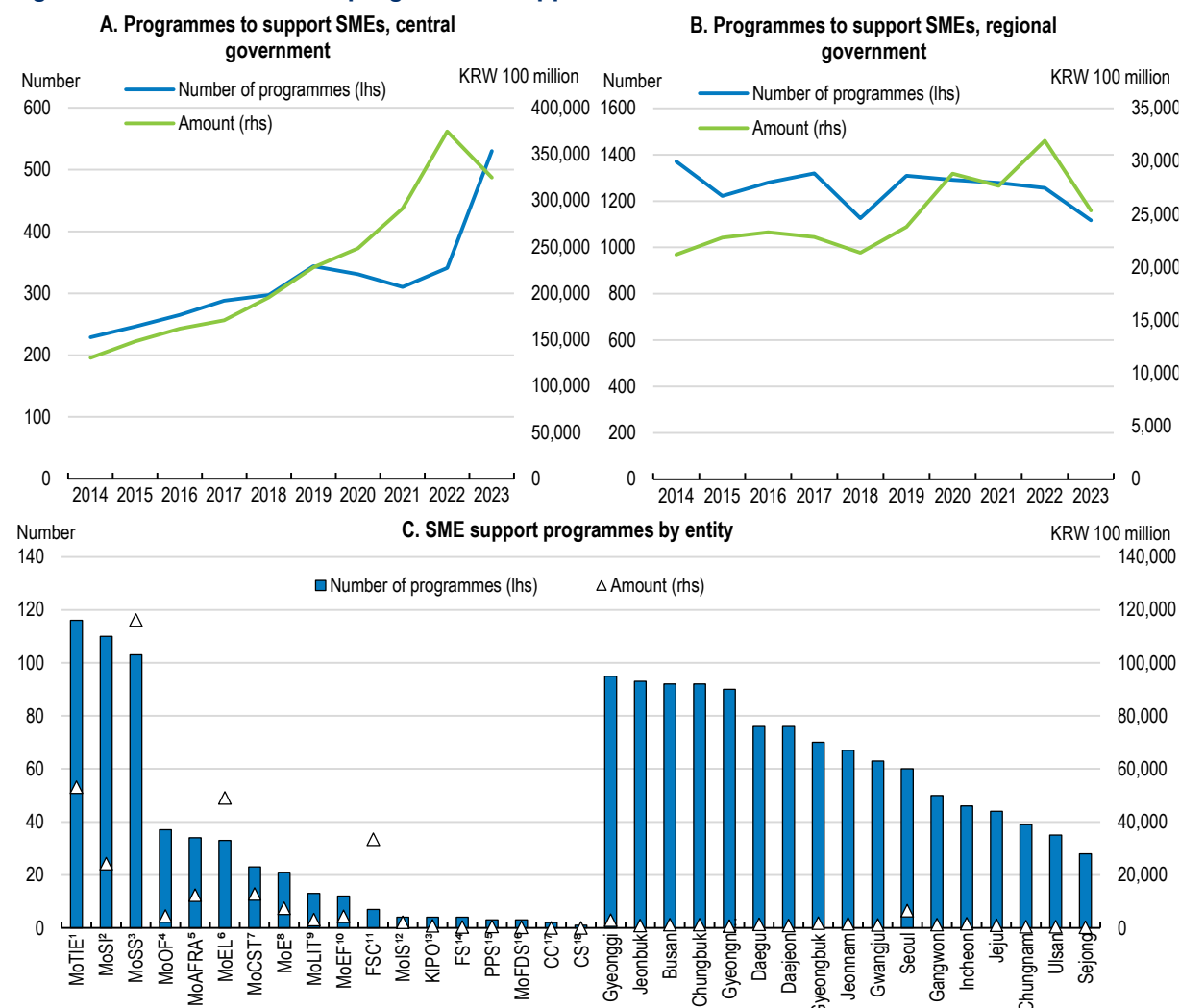
Source: OECD, Financing SMEs and Entrepreneurs: An OECD Scoreboard; OECD, R&D Tax Incentive Indicators (database)..

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The system in place to support businesses is fragmented. SMEs are under the responsibility of the Ministry of SMEs and Startups, while the Korea Fair Trade Commission, the Ministry of Justice, and others are in charge of general policies that apply to all businesses including large enterprises. A total of 1646 programmes were in place in 2023 to support SMEs, 530 run by 18 different Ministries and central government agencies and 1116 run by the 17 regions. The number of central government programmes and the amounts distributed have increased since 2014, while both the number and amounts have been relatively stable at the regional level. The amount of support peaked during the Covid-19 pandemic, as policies were put in place to help affected SMEs, micro-enterprises and self-employed. It came down

somewhat in 2023, as pandemic-related supports were reversed (Figure 3.11). Considerable streamlining and budget consolidation of research and development support is underway in 2024.

Figure 3.11. More than 1600 programmes support SMEs



1. Ministry of Trade, Industry and Energy. 2. Ministry of Science and ICT. 3. Ministry of SMEs and Startups. 4. Ministry of Oceans and Fisheries. 5. Ministry of Agriculture, Food and Rural Affairs. 6. Ministry of Employment and Labour. 7. Ministry of Culture, Sports and Tourism. 8. Ministry of Environment. 9. Ministry of Land, Infrastructure and Transport. 10. Ministry of Economy and Finance. 11. Financial Services Commission. 12. Ministry of Interior and Safety. 13. Korean Intellectual Property Office. 14. Forest Service. 15. Public Procurement Service. 16. Ministry of Food and Drug Safety. 17. Communications Commission. 18. Customs Service.

Source: Ministry of SMEs and Startups.

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State support to companies can boost productivity if it is well-designed and corrects for market imperfections such as positive externalities from research and development and credit constraints that can affect companies with good business models but little collateral. The digital and green transitions strengthen the case for some of these kinds of supports. Against this background, the Government will for example provide customised support for digital manufacturing innovation to 25 000 small and medium-sized manufacturing companies by 2027 to advance smart factories in public-private collaboration. Twelve major national innovation technologies and the New Growth 4.0 Project have been supported since 2022. Support is also provided for 100 core technologies for carbon neutrality (Chapter 4).

However, in practice the sum of support schemes may hold back competition and prevent restructuring of low-productivity SMEs. Public support not targeting market imperfections normally shifts society's resources, notably labour and capital, from more productive to less productive uses, thereby exerting a drag on productivity and growth. Even if a market imperfection has been clearly identified, a subsidy may do more harm than good unless it is able to correct for it and it is the best policy instrument available. This is a high hurdle to pass, as information asymmetries between the recipient and the administrator create scope for rent seeking and make it hard to evaluate the effectiveness of subsidies. The high number of schemes and actors involved reduces transparency and oversight from the point of view of government and that of recipients, increasing the risks of poorly conceived and designed subsidies as well as rent-seeking behaviour.

Consolidating the public support framework into a small number of programmes with centralised rules, coordination and oversight would increase the likelihood that such supports manage to target market imperfections while minimising new distortions. If possible, remaining subsidies should have a competitive design to ensure cost efficiency, like for example the Contract for Difference Scheme to support renewable energy in the United Kingdom (Pareliussen et al., 2022). Subsidy design and application procedures should be as simple as they can be while at the same time maintaining the subsidy's purpose and the integrity of the system. The system should be a common one for all company sizes, although this does not prevent easier access to some sub-categories of support for SMEs, or even exclusive access in the case of for example startup and seed funding, as is common practice in many OECD countries.

As a good practice example of streamlining, simplifying and professionalising subsidy administration, most state and regional aid in Norway (excluding agriculture) is administered by the innovation agency Innovation Norway, owned 51% by the Ministry of Trade, Industry and Fisheries and 49% by the county authorities. One important reason why state aid in Norway is relatively limited and consolidated is that as a member of the European Economic Area, it is obliged to follow EU state aid rules. Even though these rules were designed to facilitate cross-border trade within the European Economic Area, the principles applied are ground rules for level playing field competition, and therefore equally relevant in a single-country context. The basic framework for state aid in the European Union remains intact, even though the application of the rules has become considerably more lenient over the past few years in the face of the COVID-19 pandemic and the energy crisis caused by Russia's invasion of Ukraine. The EU Treaty declares as a general principle that state aid is illegal, except in some specified circumstances related to market imperfections and overriding policy objectives (European Union, 2008). Other key mechanisms in the EU framework include: establishing a centralised system to assess the legality of new supports before their introduction (and as a consequence having oversight from the outset); transparency about who receives aid for what; and accountability and liability in the case of illegally conceived and awarded support. State aid is in general meant to support growth. Firms in difficulties are therefore excluded in principle (Box 3.1).

Box 3.1. State aid rules in the European Union

State aid is defined as an intervention in any form conferred by national public authorities giving the recipients an advantage on a selective basis. This includes grants, interest and tax reliefs, guarantees, government holdings of all or part of a company, or providing goods and services on preferential terms. It excludes subsidies granted to individuals or general measures open to all enterprises, like general taxation measures or employment legislation.

State aid is illegal in the European Union, except in order to achieve a number of defined policy objectives. New aid measures in compliance with these objectives must be notified to the European Commission and authorised under a set process before the measure is put into effect. Pre-agreed "Block Exemptions", typically establishment and investment support for SMEs, R&D support and investment support to reduce greenhouse gas emissions, and "de minimis" aid (max EUR 200 000 over three years) are exempt from mandatory notification. If one project is eligible for support under more

than one scheme, the total support amount is in general limited to the highest amount permissible under any single scheme. Supporting firms in difficulties is prohibited.

Transparency is high, with searchable information about awarded aid, including the name of the beneficiary, amount, location, sector and objective freely available to anyone. Parties affected by unlawful state aid can bring action before national courts for damages, recovery and/or injunctive measures. Companies and consumers in the European Union may also trigger investigations by lodging complaints with the European Commission. Decisions to recover illegal state aid can also be made by the European Commission.

Source: European Commission (2023), [State aid – European Commission](#), Brussels.

In contrast to the EU general prohibition against broadly defined state aid, Korea's Constitution declares that the "State shall protect and foster SMEs". This principle is operationalised through the Framework Act on Small and Medium Enterprises and a range of other laws spanning from SME promotion and establishment, market and product facilitation, regional development and local SMEs, supporting human resources for SMEs, SME business conversion, SME cooperation with large companies, fair transactions in subcontracting, venture businesses, female-owned businesses, technology innovation promotion and credit guarantees (KLRI, 2013). The Framework Act requires the government to consistently strive to expand support and investment to foster SMEs (Article 18-2). Support measures should help SMEs improve the efficiency of management, develop technology, establish markets such as procurement, encourage fair competition, protect business areas in the designated fields, and secure the workforce (Articles 6 to 15). Policy instruments to be used include legislative and fiscal support (Article 18), and financial support such as credit guarantees and tax benefits (Article 19).

A better operationalization of the State's obligation to foster SMEs would be to limit public support by law or other centralised institutional arrangements, with exceptions as outlined above. Successive governments have taken actions in this direction. Spending on public supports is evaluated by fiscal authorities and the National Assembly as part of the budget process. A 2015 amendment to the the Framework Act (Article 20-3) sets out the government's duty to improve the efficiency of SME support programmes using the Integrated Management System of SME Aid Programmes (SIMS). As part of its efforts to improve the efficiency of SME support programmes the government introduced graduation schemes for credit guarantees in 2018 and policy loans in 2019. It introduced an evaluation scheme supported by the SIMS in 2019. Expanding the coverage of graduation schemes could increase the efficiency of support (OECD, 2022). Aided by the SIMS, some programmes have mechanisms in place to prevent support from being skewed towards a limited number of companies. The system to set up new schemes seeks to avoid duplicate support schemes. The government is also working to expand the share of support with market-based co-funding.

In addition, Korea has a system in place for centralised oversight of SME support, but the system has room for improvement. Currently, when a ministry or municipality plans to establish or revise a SME support programme it must discuss the plan with the Ministry of SMEs and Startups in advance (Article 20-5 of Framework Act on SMEs). The Ministry will review the plan, including whether it is feasible and does not duplicate the purpose or beneficiaries of existing programmes. Based on this it will accept, conditionally approve or demand a revised plan ("re-consultation"). If the two sides do not reach an agreement on a revised plan, it will be submitted for "coordination" with the SME Policy Deliberative Council, chaired by the Minister for SMEs and Startups (Article 20-5 of Framework Act on SMEs), with the goal of reaching an agreement. The applicant should follow the Council's decision if there is no "special reason" not to do so. There are no set sanctions for ignoring the decision but in such cases the Minister for SMEs and Startups will discuss the budget for the plan with the Ministry of Economy and Finance. This system would work better if public support was only permitted in specific cases with sanctions for non-compliance, consolidated and operationalised through one or a limited number of entities making rules-based decisions on individual cases at an arms-length distance from political decision-makers.

While with the SIMS, some programmes have mechanisms in place to prevent support from being skewed towards a limited number of companies, there is no legal cap on the maximal amount of support a single firm or project can receive from different programmes for different purposes. Examples of programmes applying limits are loans operated by the Korea SMEs and Startup Agency, SME credit guarantees operated by the Korea Credit Guarantee Fund, Technology Credit Guarantee Fund and Regional Credit Guarantee Fund, and R&D projects supported under the ministries of SMEs and Trade and Industry's SME R&D graduation System. A rule modelled on the EU system capping support to any project to the highest amount permissible under any single scheme could help limit deadweight losses, enhance competition and reduce administrative resources wasted in “support shopping”.

The SIMS has a number of potential uses in a scenario where state aid becomes more limited by law. It can for example be used to assess and consolidate existing programmes based on new criteria, to implement caps on total support received by projects and firms and to instil accountability. The information in SIMS is currently disclosed to the public upon request in accordance with the Open Government Data Act. A revision of the Framework Act on SMEs makes anonymised microdata from SIMS available to institutions and organisations for statistical and policy purposes from July 2024. This is an important step to help evaluate programmes and improve the efficiency of the system. If public support rules were tightened in the future, it would be natural to allow public access to data about who receives what to increase transparency and accountability. Non-anonymised data is currently only available to authorized institutions and related agencies.

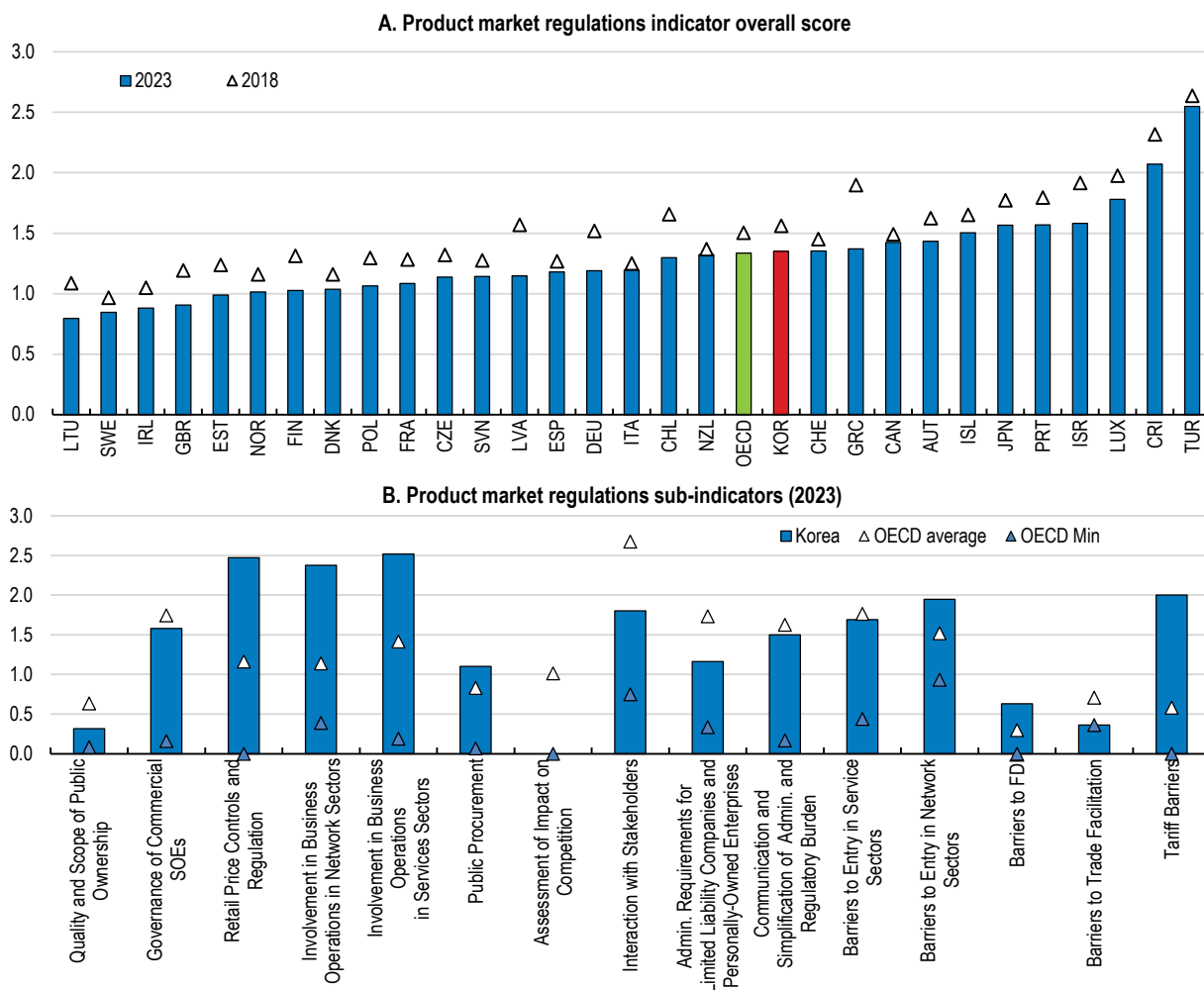
Green light to private enterprise and trade

Considerable empirical evidence shows that reforming anticompetitive regulations in markets for goods and services, as measured by the OECD indicators of product market regulation (PMR), can boost total factor productivity (Vitale et al., 2020). Restrictive regulations reduce competition not only in the directly regulated sectors, but also distort prices for the products and services they supply to other sectors. Korea has streamlined regulations over time and performs around the OECD average on the composite PMR indicator (Figure 3.12, Panel A). Out of 15 sub-indicators of regulatory barriers to competition, Korea is at or close to OECD best practice in three, underperforming the OECD average in seven, and far behind OECD best practice in five (Panel B).

Korea's main weaknesses in the PMR indicator revolve around tariffs, barriers to foreign direct investment, and state involvement in business operations in services and network sectors. The OECD Services Trade Restrictiveness Index (STRI) paints a similar picture, with notably high restrictions on foreign entry and competition in digital and transport network services, accounting and legal services (OECD, 2023e). These weaknesses reflect that after the Korean war and the period of import substitution in the 1950s, Korea opened to the world primarily by promoting exports. Progress on opening up the domestic market to foreign trade and investment in line with OECD best practice has been significant, but slower. Increasing foreign competition could be particularly beneficial in sectors requiring scale to compete, such as those dominated by the large conglomerates and network sectors. Opening network sectors, such as electricity (Chapter 4), rail and gas to competition, while improving governance of remaining state-owned enterprises would boost growth. State-owned companies operating in markets (even imperfect ones) should focus on delivering their core services as cheaply and efficiently as possible, while social goals should be kept separate from business operations. There is also considerable room to lower barriers to imports and foreign direct investment, as well as to improve competition in public procurement. Regulatory barriers to entry in service sectors are also above average. The regulatory burden in services sectors is high (OECD, 2018), partly related to regulations in place to protect SMEs against competition, as discussed above. A decisive move towards a negative-list approach, meaning that activities are generally allowed unless specifically prohibited could help boosting service sector dynamism.

Figure 3.12. Considerable scope remains to streamline regulations

Index scale 0 to 6 from most to least competition-friendly regulation



Source: OECD Product market regulations database.

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Previous OECD Economic Surveys have argued that regulations should shift to a comprehensive green-light (“negative-list”) principle, with activities allowed unless explicitly prohibited. Legislation to prioritise the negative-list approach when creating regulations for new technology services or products was passed in 2019. The Ministry of SMEs and Startups (MSS) is easing excessive regulatory burdens on SMEs aided by the SME Regulatory Impact Assessment system. Regulation should be used to correct market imperfections, but only if it is the best tool available and its benefits outweigh its costs. In this respect, State ownership and direct control are tantamount to regulation, and should only be used in specific circumstances where market solutions are not viable or clearly inferior.

There may be valid reasons to deviate from the green-light principle in specific areas where there is a risk that consequences of new products or activities are unacceptable. In such cases, smaller scale experiments of deregulation may be a good option. Korea started implementing regulatory sandboxes in 2019, and has since built a comprehensive system of sandboxes and “regulation free zones”, geographical zones where specific regulations do not apply. At the end of 2023, 1139 projects were included in the sandbox programme, of which 487 are under the Industrial Convergence sub-programme, 293 under Financial Innovation, 200 under ICT Convergence, 51 under Smart City, 84 under Special Regional Zones and 24 under ICT Zones. Sandbox projects can receive three types of regulatory assistance. Some only

need a confirmation that the envisaged activity is in line with existing regulations. For this, companies can request a rapid confirmation from the Korea Chamber of Commerce, and the applicant is notified within 30 days. When applying for exemptions from existing regulations, a thorough 90-day review is conducted. Through this process, it has been confirmed that 55 projects do not violate the law. 973 projects have been approved as special cases for demonstration and allowed to operate with exemptions from existing regulations within a limited scope (area, size, period, etc.) for safety testing and verification. A third category of the sandbox is when the sandbox application itself triggers a revision of laws and regulations. In this case the project is given a temporary permit for two years, renewable once and in any case extendable until the legal revision is concluded.

To achieve the full potential of the sandbox approach, successful trials should be quickly transposed into economy-wide and permanent deregulation. So far, 70 out of 200 sandbox projects in the ICT sector and 74 out of 487 projects in the Industrial Convergence sector have led to general deregulation. However, as more services are coming to the end of the demonstration period of up to four years, it should be a priority to speed up the regulatory overhaul.

Another key priority should be to remove regulatory size thresholds put in place to protect SMEs (OECD, 2021). These include size-based regulations in the Commercial Act and set-asides for SMEs in public procurement in accordance with the Act on Facilitation of Purchase of Small and Medium Enterprise-Manufactured Products and Support for Development of Their Markets, which allows only domestic SMEs to participate. Preferential treatment in public procurement may not apply in cases with for example specific technology, quality or performance requirements or when the qualified SME has fewer than two employees. Public officials have the discretion to not apply the act if costs outweigh benefits. Regulations should apply universally to large and small companies as well as foreign entrants, and size thresholds should be used very sparingly after careful cost-benefit analysis showing that the regulations in question introduce costs that are out of proportion to the benefits when applied to SMEs. In this case, one should carefully consider if the regulation is necessary in the first place, regardless of company size. In the same vein, regulations in place should be systematically enforced for all companies. If complying with existing well-founded regulations with a positive net benefit to society is seen as an undue burden on certain SMEs, it is in society's interest that those SMEs either raise their productivity so they can shoulder the additional burden, scale down or exit.

Recommendations to boost productivity growth

FINDINGS (Main ones in bold)	RECOMMENDATIONS (Key ones in bold)
Red-lighting distortive state support	
A large share of SMEs receive subsidies, while their productivity gap to large companies remains well above the OECD average.	Limit the scope for broadly defined public support to companies to a list of permitted causes linked to market imperfections, regardless of company size.
A fragmented and poorly coordinated system of 1646 SME subsidy programmes run by 35 public entities differentiates support by company size.	Consolidate public support to companies into a small number of programmes operated by a dedicated public entity at an arms-length distance from politics.
The Integrated Management System of SME Aid Programmes keeps track of public support programmes and offers considerable opportunities to improve the system.	Use the Integrated Management System of SME Aid Programmes to consolidate public support programmes and reduce business support expenditure.
There is no cap on the maximal amount of support available to a single firm or project, which may accentuate deadweight losses, adverse competitive pressures and resources wasted in “support shopping”.	Cap the support to any project to the highest amount it is entitled to under any single scheme.
Green-lighting private enterprise	
Overall product market regulation stringency is around the OECD average, with room to reduce barriers to trade, state involvement in business operations and barrier to entry in services.	Shift to a comprehensive negative-list regulatory system. Reduce state involvement in services and network sectors.
Size thresholds in regulations are common, creating barriers to firm growth and reducing the effectiveness of existing regulations. Enforcement is in some cases lenient on SMEs.	Systematically unify and enforce regulations of private business regardless of company size.
A well-developed system of regulatory sandboxes and “Regulation free zones” allows trialling new technologies and business models.	Generalize reforms successfully trialled in regulatory sandboxes and “Regulation free zones” in a systematic and timely manner.
Preventing market power abuse and fighting corruption	
Substantial amendments in 2022 to the Prosecution Service Act and Criminal Procedure Act seriously hamper the Prosecution Office’s ability to investigate and prosecute foreign bribery offences.	Ensure that the Prosecution Office and the police have the appropriate powers to effectively enforce the foreign bribery offence. Increase efforts to train and provide adequate guidance to officials working with foreign bribery investigations to improve detection and enforcement.

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4 Key policies to reduce emissions by 40% by 2030

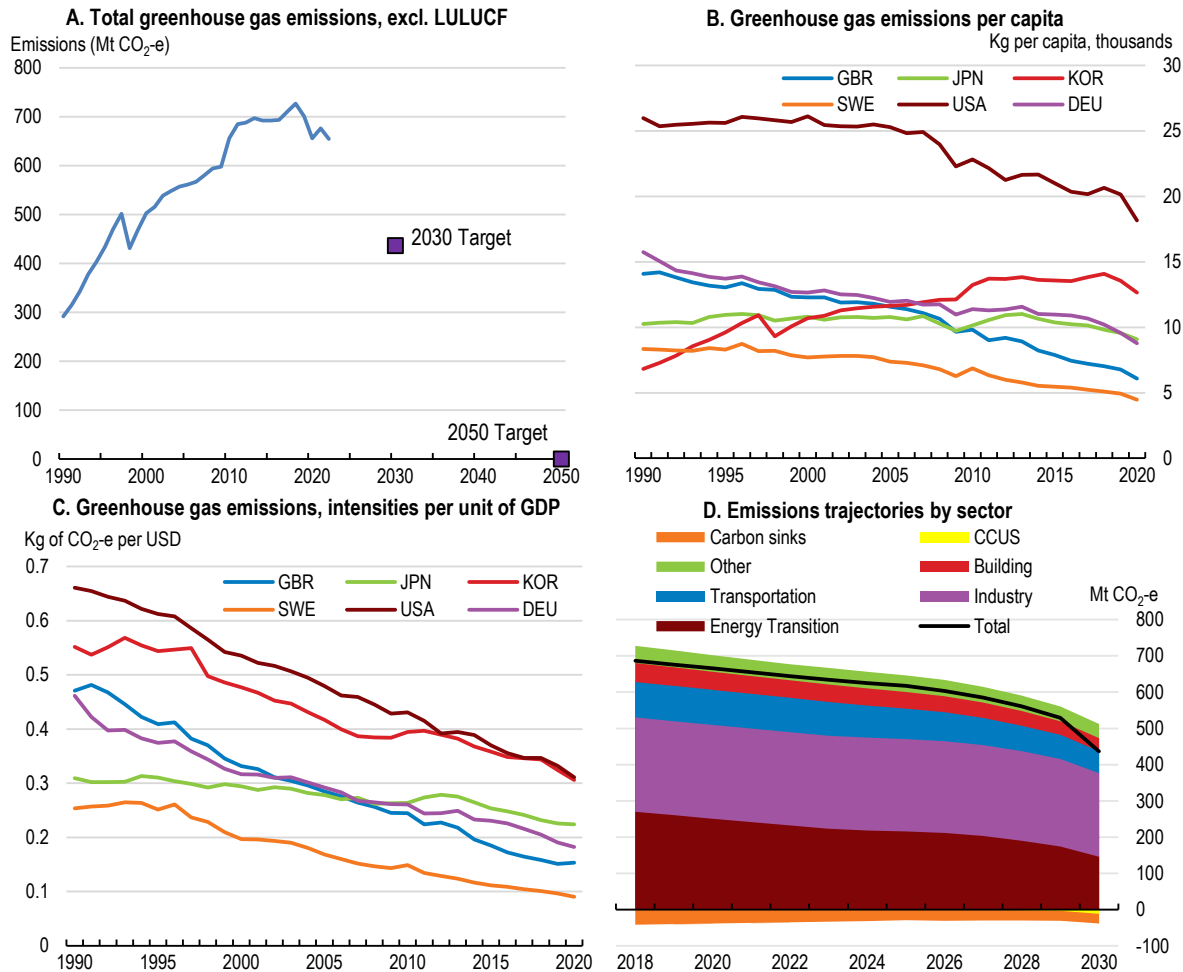
Jon Pareliussen

Korea has pledged to reduce greenhouse gas emissions by 40% by 2030 and become carbon neutral in 2050. Emissions peaked in 2018 and the policy framework is moving forward. Target-consistent allocations to the emissions trading scheme for the 2026-30 period are needed to ensure that businesses emitting roughly three-quarters of greenhouse gases reduce emissions in line with the 2030 target. Reforms to energy markets would reduce the cost to society of decarbonisation and incentivise clean electricity supply and energy savings. Some groups will be negatively affected by increasing energy prices and Korea's transition away from fossil fuels. Support could be built by means of dialogue, place-based measures and by bundling together policies tackling environmental, economic and social challenges.

Introduction

Korea is among the largest greenhouse gas (GHG) emitters in the OECD. Emissions rose fast during a long period of rapid economic development until they peaked in 2018 (Figure 4.1, Panel A). Per capita emissions also increased over the same time period, largely reflecting income growth (Panel B). Emission intensity per unit of GDP has improved but remains high compared to OECD peers (Panel C). Main emitting sectors are electricity generation and manufacturing, reflecting Korea’s heavy dependence on manufacturing exports, including steel and chemicals, and a continued high reliance on coal in electricity production (Panel D), which also contributes to high levels of particle pollution.

Figure 4.1. Emissions need to fall faster to reach targets



Note: LULUCF stands for land use, land use change and forestry.

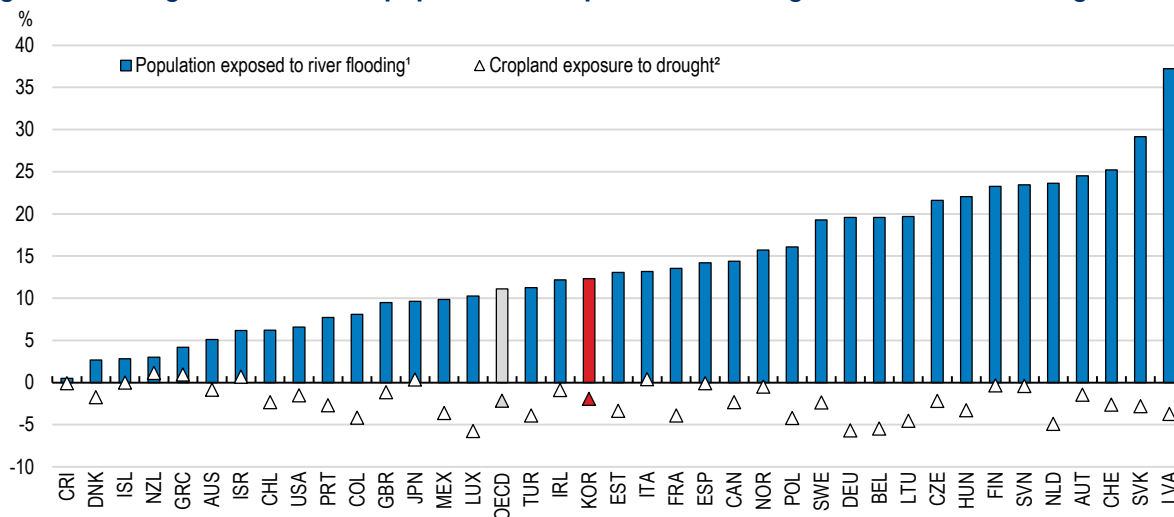
Source: OECD, Air and climate (database); The Presidential Commission on Carbon Neutrality and Green Growth.

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The consequences of climate change are also being felt, with the annual mean temperature over the past 30 years (1991-2020) up by 1.6 degrees Celsius compared to the past (1912-1940). Over the past 30 years, summers have become approximately 20 days longer, and winters 22 days shorter. Mean precipitation has increased, while the number of rainy days has decreased, increasing the risks of both flooding and drought (Figure 4.2). The sea level has risen by 10 cm. Particular risks to property and infrastructure are related to flash flooding and typhoons during *Changma*, the East-Asian Monsoon, while heatwaves are expected to be the most prominent risk to human life. By the end of the century (2081-

2100), the mean temperature in Korea is expected to increase by an additional 2.3-6.3 degrees Celsius from current levels, depending on global emissions. The number of heat wave days is set to increase nine-fold, and the sea level is expected to rise by an additional 45 to 82 cm (Presidential Commission on Carbon Neutrality and Green Growth, 2023; Oh, Lee and Jeon, 2017).


Figure 4.2. A higher share of the population is exposed to flooding than the OECD average



1. Share of population expected to be affected by river flooding at least once over a 10-year period (2020).

2. Cropland soil moisture change (%) compared to the baseline climatology (1981-2010), 2018-22 average.

Source: OECD, International Programme for Action on Climate, Climate Action Dashboard.

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A systematic assessment of climate risks to people and the economy can help select and implement adequate adaptation policies. This involves correctly identifying changes in weather patterns at the local level, and assessing exposure and vulnerability based on for example population density, cropland and economic activity potentially affected by changes in the local climate under different scenarios. Adaptation measures range from: technical measures like flood barriers, irrigation systems and green roofs; infrastructure planning or regulatory measures to for example change the settlement structure and transport systems; behavioural and organisational measures like changing working hours and diet; and structural economic adjustments like research and development into adaptation, reallocation of economic activity away from affected sectors and diversification of trade and production. A common framework to assess and prioritise adaptation actions is useful, given the broad array of available adaptation actions, the considerable uncertainty and wide range of actors involved. Cost-benefit and cost-effectiveness analyses are essential tools in this respect. Multicriteria analyses can help rank alternative options using both quantitative and qualitative data to prioritise: no-regret actions, which are cost-effective under current and a range of future climate conditions and do not present hard trade-offs with other policy objectives; low-regret actions, which are low-cost actions with large benefits under projected future climate change; and win-win actions, contributing to adaptation while having social, economic and environmental policy co-benefits, including in relation to mitigation, over actions with less robust net benefits (Pisu et al., 2024).

Korea established the First National Climate Change Adaptation Plan (NAP) for 2011-15 in 2010, and has since published NAPs every five years. The third NAP (for 2021-25) is built on three key policy pillars: i) improving climate resilience; ii) strengthening monitoring, forecasting and assessment; and iii) mainstreaming adaptation in all corners of society. Adaptation is supported by the Korea Adaptation Center for Climate Change, established in 2009 to systematically support adaptation policy and research. Policies are supported by VESTAP, a vulnerability assessment tool, and MOTIVE, a model of integrated impact evaluation. Local governments have been legally required to do adaptation planning since 2015. Public entities in possession of and managing climate-vulnerable facilities have been required to establish and

implement their own adaptation plans since Korea's Framework Act on Low Carbon and Green Growth (The Framework Act), which entered into force in 2022. Korea launched an Enhanced Third NAP (for 2023-25) in 2023 to strengthen implementation of adaptation measures at the company and civil society level. A Public Review Panel comprised of experts, local government, industry, civil society and youth is set up to engage in establishing, implementing and evaluating adaptation plans (Government of Korea, 2021).

Korea has pledged to achieve carbon neutrality by 2050 and to reduce emissions to 40% below the 2018 level by 2030 (Government of Korea, 2021). The Framework Act required the government to present the first Basic Plan for Carbon Neutrality and Green Growth (the "Basic Plan") in 2023 for a planning period of 20 years, and to revise it every five years thereafter. The Presidential Commission on Carbon Neutrality and Green Growth acts as a climate policy council, advises on targets and policies and reviews progress on mitigation and adaptation every year.

The 2023 Basic Plan presents non-binding emission targets and annual trajectories by sector up until 2030. The biggest reduction is planned in electricity generation, which is set to reduce emissions by approximately 46% compared to 2018, corresponding to 124 Mt CO₂e and 43% of the total planned emission reductions. Industry, the second-largest emitting sector, is set to reduce emissions by 11%, which is still 10% of the total planned emission reductions. Transport emissions are planned to fall by 38%, contributing 13% of total efforts. International mitigation cooperation under the Paris Agreement Article 6 is also planned to contribute 13% of the total (Presidential Commission on Carbon Neutrality and Green Growth, 2023).

The formulation of the Basic Plan is a major step forward, and its broad thrust is in line with the analyses of the 2022 *OECD Economic Survey of Korea*, which also pointed to electricity generation where coal can be phased out and replaced by tested and available technologies at a moderate abatement cost. Furthermore, abatement costs will likely be more than offset by gains from reducing excess mortality and ill health caused by particle pollution (Kim et al., 2020; Lanzi et al., 2022). Analyses with the OECD long-term model indicate that reducing emissions in Korea consistent with the world reaching net zero emissions by 2050 would lower potential output by less than 1% in Korea, if done cost-effectively. This is well below the OECD average cost and lower than in most OECD countries (Guillemette and Château, 2023). However, concrete policy steps need to be taken urgently to reach Korea's 2030 emission reduction target with reasonable certainty and at a reasonable cost to society. Such steps would also put emissions on a credible path towards net zero in 2050. This chapter argues that the main elements of a target-consistent, cost-effective and implementable policy package (D'Arcangelo et al., 2022) are the following:

- The allocations for the fourth trading period (2026 to 2030) of Korea's emissions trading scheme (K-ETS) will be set soon. This is a fork in the road for Korea, as setting the overall cap in line with the 2030 target will take the country roughly three-quarters of the way to meet its 2030 emission reduction target, while a failure to do so would put the target in question. To maximise the efficiency of the ETS and minimise cost, price discovery should be supported with more auctioning and other reforms, and the marginal carbon price needs to pass through fully to all covered entities, including electricity supply (Table 4.1).
- Phasing out coal while decarbonizing industry and transport will require a considerable increase in electricity supply combined with increased energy efficiency. Supporting the ETS in achieving this includes strengthening policies supporting renewables and continuing to expand nuclear power while investing in energy storage solutions and the transmission grid. A number of policies, including regulations and targeted assistance schemes are in place to encourage energy savings in industry and households. These policies will only achieve their full potential if end users pay the true cost of energy.
- General policies to make markets more flexible (Chapter 3), boost the social safety net (Chapter 5) and support technology development in for example low-carbon steel production and small modular reactors would increase acceptance of necessary structural change and reduce its negative

consequences. Targeted measures may be warranted in cases when negative consequences are concentrated on certain population groups, sectors and geographies. Popular support for some necessary policy reforms is lacking, but could be strengthened through dialogue, place-based policies and bundling measures to strengthen Korea's environmental, economic and social performance.

Table 4.1. Past recommendations to reduce reach greenhouse gas emission targets

Recommendations from past Surveys	Actions taken
Align the emission trading scheme cap with domestic emission reduction targets and expand its coverage.	Pending K-ETS fourth trading period allocation plan.
Systematically apply a target-consistent price of greenhouse gas emissions in public sector cost-benefit analyses.	No action taken.
Comprehensively review the institutional framework hindering the carbon price from passing through and holding back emission reductions in the electricity sector.	Reforms in the direction of more competition are outlined in the 10 th Basic Plan on Electricity Supply and Demand.
Auction a larger share of allowances to K-ETS entities, and link auctioning revenue to subsidies for green technologies and infrastructure.	Pending K-ETS fourth trading period allocation plan.
Replace temporary fossil fuel price support in due course by targeted policies like “energy voucher” transfers to low-income households who are hard hit by soaring energy prices.	The temporary tax reduction has remained in place so far, but is now up for review every two months, as opposed to every six months when it was introduced. The discount will be reduced from 25% to 20% for petrol and from 37% to 30% for diesel from July 2024.

Use the emissions trading scheme to reach the target and minimise cost

Korea's emissions trading scheme (K-ETS) covers about three-quarters of greenhouse gas emissions and should be the main tool to reach Korea's climate pledges. The sum of allocations to the system through auctioning and handed out for free sets the upper limit of emissions during any trading period (the “cap”). The fourth trading period runs from 2026 to 2030, so the cap for this period, to be determined in the near future, will determine whether these three-quarters of greenhouse gas emissions will be reduced in line with the 2030 target or not. Outlining the level of allocations also for future trading periods could further boost green investments, which typically have a much longer investment horizon than five years.

K-ETS has seen limited liquidity and imperfect price discovery. This could be solved, notably by increasing auctioning of allowances and removing restrictions on saving allowances for future periods (“banking”). Current regulations restrict banking of excess allowances to use them for compliance in future trading periods, which prevents the carbon price from reflecting expected scarcity in the future. This is illustrated by the fact that the market price did not increase following the tightening of Korea's climate targets (Nationally determined contribution, NDC) in 2020, even though rational market participants should expect this to lead to tighter supply in the future. The banking restriction was put in place in 2019 in response to low liquidity as companies hoarded allowances allocated for free, but has since been loosened somewhat. Companies are also allowed to carry over a limited amount of allowances from the third to the fourth trading period (Yoon, 2023). Banking restrictions should be abolished as of the fourth trading period to foster price discovery.

Liquidity is best ensured by increasing the share of allowances allocated by regular auctions, and fully opening up these auctions to all K-ETS participants, banks, brokerages and other serious intermediaries. This is in contrast to the third trading period, when 100% of allocations to trade-exposed industries and 90% of allocations for other ETS participants were handed out for free (OECD, 2022a). Introducing a market stability mechanism with a mandate to auction additional allowances held in reserve (within the overall cap) in periods of low liquidity, as is the case in the EU and United Kingdom market stability mechanisms, would further boost liquidity in times of market stress (OECD, 2022b). Alternatively, the New Zealand ETS, the Regional Greenhouse Gas Initiative and the California ETS successfully operate price-

based market stabilisation mechanisms, where reserve allowances are released above a price threshold and auctions held back or allowances purchased by the ETS operating entity if prices fall below a threshold (Yoon, 2023). All these alternative market stabilisation mechanisms require that a considerable share of allowances are eventually sold by the relevant authority as opposed to handed out for free.

The third reform necessary to make the best possible use of K-ETS is to make sure the carbon price feeds through to electricity production. The Basic Plan foresees a major reduction in coal generation, and the 10th Basic Plan on Electricity Supply and Demand sets out to gradually abolish 28 coal-fired power plants by 2036 and switch fuel to LNG. Some coal-fired power plants may be kept in place as a cold reserve (IEA and KEEL, 2023).

Given the structure of Korea's electricity market, dominated by state-owned Korea Electric Power Corporation (KEPCO), a certain degree of top-down planning to close existing facilities may be warranted. However, renewable electricity has become increasingly competitive over time, and electricity market regulations should make sure the facilities with the lowest marginal cost of production, including the prevailing market price for K-ETS allowances, supply electricity at any time in order to efficiently use the existing production capacity and incentivise investment in additional capacity. The most efficient solution would be electricity market deregulation. In the current "Cost based pool", Korea Power Exchange conducts a cost evaluation based on fuel costs and fixed costs for each power plant and then purchases electricity at a price equal to the highest variable cost of the generation capacity needed to clear demand. The 10th Basic Plan on Electricity Supply and Demand signals a shift towards market pricing in a Price Bidding Pool where power generators autonomously submit bids, and the market price is determined based on this. The transition is set to be gradual, with implementation only on Jeju island with its high penetration of renewables and bids only accepted within a predetermined range initially (MOTIE, 2023).

The government also considers to introduce a two-way bidding system in which not only the supply side (generators) but also retail electricity providers (which is today a monopoly under KEPCO) bid. Other envisaged reforms to improve the functioning of the market include introducing a long-term contract market for low-carbon power sources, a real-time electricity market in addition to the current day-ahead market, and a capacity payments market that commercialises and trades baseload and reserve power. These changes are expected to boost competition and improve price discovery in the electricity market (MOTIE, 2023). Until these reforms are fully implemented, the formula that dispatches electricity production should include the prevailing market price for ETS allowances multiplied by actual emissions from the production facility (OECD, 2022a).

Carrying out the reforms outlined above to align the ETS and electricity regulations with climate targets requires close coordination between the Ministry of Environment and the Ministry of Economy and Finance, which are jointly responsible for K-ETS, and the Ministry of Trade, Industry and Energy, which is responsible for regulating the electricity and manufacturing sectors. As outlined in the 2022 *OECD Economic Survey*, target-consistent carbon pricing policies also need to be developed outside of the ETS. Fuels for transport, construction and heating can likely be included in the ETS (or taxed) by charging refineries and importers based on the carbon content of fuels sold domestically as done in Quebec (Canada), California and Germany, and planned in the European Union. Double taxation of the same emissions could be avoided with a refund mechanism for fuel consumption already covered by the ETS. Negative emissions from natural and engineered removals of carbon will over time need to offset remaining emissions. They could also be included in the ETS by crediting verified removals with ETS-eligible allowances. Consistently applying the price of greenhouse gas emissions in public sector cost-benefit analyses would make sure policies across government are in line with emission reduction targets. The UK system of cost-benefit analyses regulated by the "Green book" is a good practice example, where target-consistent "carbon values" are systematically applied (OECD, 2022a).

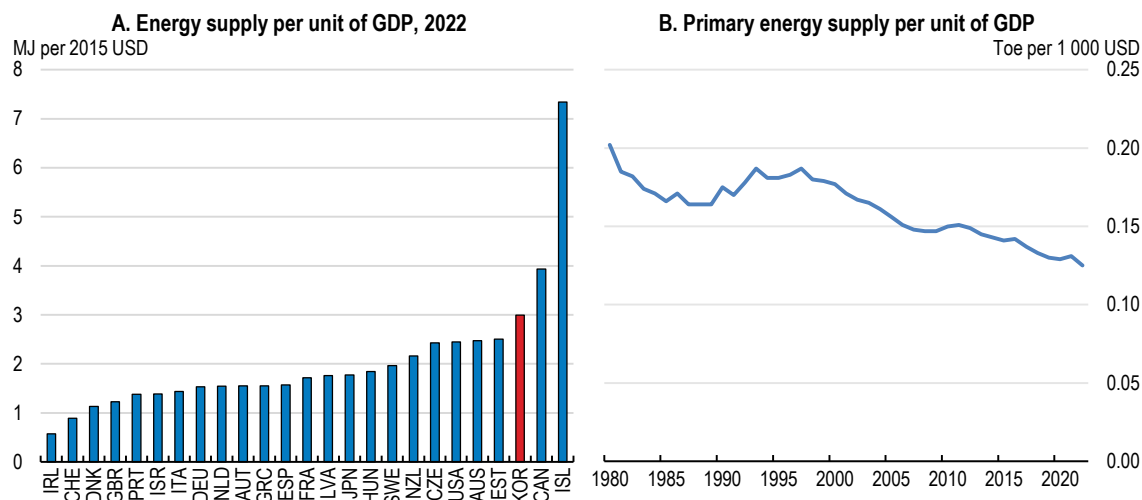
Korea plans to realise 13% of its emission reductions for the 2030 target abroad. The Paris Agreement Article 6 allows countries to reach their targets (NDCs) in bilateral or multilateral cooperation, or by trading

emission reductions in an international framework supervised by the Conference of the Parties. Such cooperation is in principle welfare enhancing as it contributes to align the marginal cost of emission reductions across borders. The EU ETS and Effort Sharing Agreement are notable examples of multilateral cooperation under Article 6. However, if trading with countries whose NDCs are inconsistent with net zero, the prospect of selling emission rights might discourage them from tightening their targets. Furthermore, such trade depends on trust that trading partners will indeed fulfil their net zero consistent NDCs, demonstrated by clear plans and timely policy action (OECD, 2022b). As of March 2024, Korea had already signed bilateral agreements with four countries, including Vietnam and Mongolia, aimed at utilising voluntary cooperation under Article 6 of the Paris Agreement, and is cooperating with these countries on a project basis.


Save energy and expand low-carbon electricity for green and resilient growth

Korea's economy is one of the most energy-intensive in the OECD, with the third-highest energy use per unit of GDP (Figure 4.3, Panel A). This largely reflects Korea's reliance on energy-intensive industries including petrochemicals, iron and steel. Steady energy efficiency improvements have reduced the energy intensity of the economy by around 30% since the start of the century (Panel B). Continued energy efficiency improvements are needed going forward, and they should centre on the industrial sector, which accounted for 63.3% of the country's total energy consumption in 2021. By comparison, residential and commercial energy consumption accounted for 17.4%, transportation 16.9%, and the public sector 2.4%. Energy consumption in the industrial sector increased more than four-fold from 1990 to 2021, much faster than in the other sectors. In the 3rd Energy Master Plan from 2019, Korea set targets to reduce total energy consumption by 14.4% by 2030, 17.2% by 2035, and 18.6% by 2040 below the projected business-as-usual level (Aridi et al., 2023).

Figure 4.3. Energy intensity has fallen, but remains high



Source: International Energy Agency; OECD (2024), Primary energy supply (indicator). doi: 10.1787/1b33c15a-en (accessed on 18 February 2024).

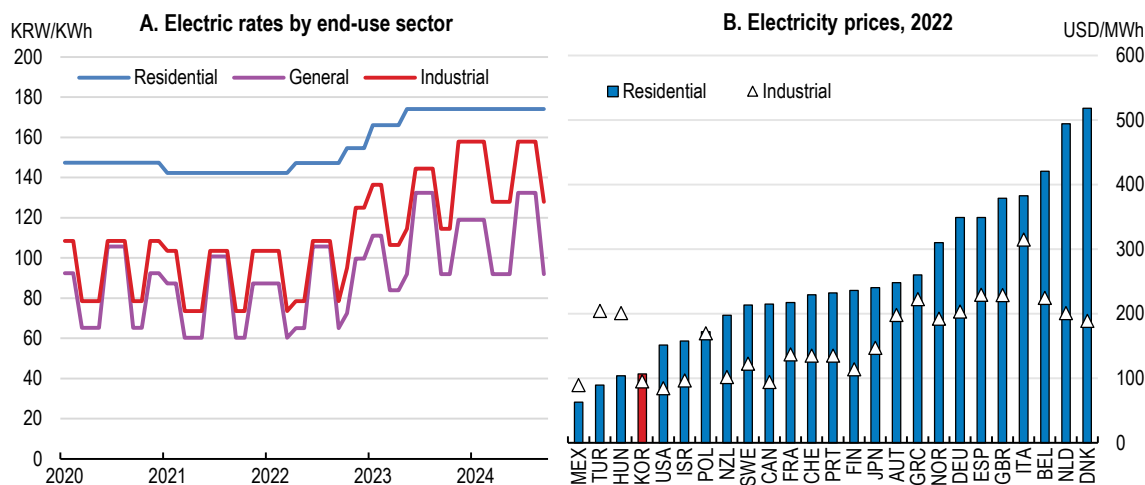
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Korea has put extensive policies in place to improve energy efficiency, but such policies would be much more effective if end-users had faced the true cost of energy use. Allowing the temporary fuel tax cut put in place in 2022 to lapse would be one step in this direction, while market-friendly regulatory reform in the electricity sector should be a priority going forward. Korea's electricity price is in principle set to reflect the cost of provision by KEPCO, the state utility, but within limits and subject to government approval. Electricity bills consist of four elements: a fixed charge ("demand charge"), a variable (by consumption)

energy charge, a variable “climate change and environmental charge” and a variable fuel cost pass-through adjustment rate. The energy charge is reviewed annually to reflect the difference between baseline fuel prices and the actual fuel prices consumed during the preceding year. The variable fuel cost pass-through adjustment rate is in principle adjusted every quarter, but increases are limited to maximum KRW 5 (USD 0.004) per kWh per quarter. The climate change and environmental charge is set at KRW 9 to compensate KEPCO for the cost of the sum of the renewable portfolio standard (RPS), K-ETS and coal generation reduction (KEPCO, 2024).


In line with its commitment to resolve the deficits of KEPCO and Korea Gas Corporation (KOGAS) and strengthen their balance sheets, the government allowed substantial electricity price increases to go ahead in 2022 and 2023, returning KEPCO to profit from the third quarter of 2023. These were the first substantial increases since 2012, and important steps to align energy prices with their true cost. Before this, KEPCO’s recommendations to increase prices had repeatedly been overturned. Prices remain differentiated by six consumer categories, including households, agriculture and industry, leading to distortive cross-subsidies between sectors (Figure 4.4). Electricity used in agriculture for example costs approximately 40% of electricity used by households. KEPCO also shoulders rebated electricity provision to low-income households. KOGAS, the state-owned natural gas monopoly, has faced similar issues. Companies and individuals will respond to underpriced electricity by overconsuming. Even in the buildings sector, where energy efficiency requirements have tightened a lot, behavioural change from occupants is needed to maximise the associated energy savings (Park and Chung, 2023). Besides incentivising overconsumption of energy, keeping prices artificially low has led to large accumulated deficits in KEPCO and KOGAS and mounting contingent liabilities. This may slow down the considerable required investments in the transmission system, which is also owned by KEPCO. Electricity sector reform should therefore be a priority, with competition in production and retail sales of electricity ensuring full pass-through of relevant costs, including that of ETS compliance, overseen by an independent regulator in line with OECD best practice (OECD, 2021a; OECD, 2022a).

Figure 4.4. Electricity prices were raised in 2022 and 2023



Note: The electric rates by end-use sectors refer to the prices for residential use ([high voltage], the second stage price), general use ([A], low voltage) and industrial use ([B], high voltage B middle load), including the climate change and environmental charge.

Source: Korea Energy Economics Institute; OECD-IEA, Energy Prices and Taxes Statistics Database.

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Pricing policy aside, Korea has systematically promoted energy efficiency through five-year Basic Plans for Rationalization of Energy Use since the 1990s, including demand-side management strategies and performance targets for industry, buildings and transportation. The policy mix ranges from mandatory regulations, voluntary performance targets, standard setting, financial support, operational support and

information generation and sharing. Many policies include a combination of several elements. Energy audits are for example mandatory for large energy consumers, but voluntary and incentivised by financial support for other companies (Aridi et al., 2023).

Korea's industrial energy efficiency policies have several strengths, but also suffer from some of the weaknesses regarding state support and regulatory complexity discussed in Chapter 3. Companies receiving support are required to report the results of individual steps taken following recognised reporting standards. Output for more indirect programmes, such as awareness raising, certifications, and networking schemes, are measured through simple metrics such as the participation rate and number of certifications. Institutes, notably the Korea Energy Economics Institute (KEEI) conduct research on improving the implementation of policies. The National Assembly Budget Office tracks budget execution. However, there are no regular comprehensive assessments or cost-benefit analyses of the outcomes from each industrial energy efficiency policy or of the outcomes from a combination of these policies (Aridi et al., 2023). Such systematic analyses should be put in place and integrated in the wider overhaul and consolidation of business support and regulations recommended in Chapter 3.

Even though energy efficiency can help balance future demand and supply of electricity, there is no doubt that the supply of clean electricity needs to expand to replace fossil fuels in the generation mix, electrify transport and industry, and produce feedstocks for chemicals production. Electricity supply was approximately 600 TWh in 2023, with coal contributing approximately 31%, natural gas (LNG) 27%, nuclear power 31% and renewables 10%, a 45% increase from 2020, but still the lowest share in the OECD. Renewables constituted only 3.6% of Korea's final energy consumption in 2020 (IEA, 2024). Expansion of renewables is held back by high costs related to prolonged permitting processes and delayed grid connections, electricity market structure limiting competition and holding back new entrants, and social opposition from local communities. Korea's mountainous topography and high population density may also contribute to drive up costs compared to other countries, as available sites may not be optimal (REI, 2023). The 10th Basic Plan on Electricity Supply and Demand forecasts electricity supply to increase to approximately 620 TWh in 2030 and 670 TWh in 2036, with a targeted renewable share of 21% in 2030 and 30% in 2036 (Table 4.2).

Table 4.2. Electricity is planned to increasingly come from nuclear and renewables

Year	Category	Nuclear	Coal	LNG	Renewables	Hydrogen/ Ammonia	Others	Total
2018	Generation (TWh)	133.5	239.0	152.9	35.6	-	9.7	570.7
	Share	23.4%	41.9%	26.8%	6.2%	-	1.7%	100%
2030	Generation (TWh)	201.7	122.5	142.4	134.1	13.0	8.1	621.8
	Share	32.4%	19.7%	22.9%	21.6%	2.1%	1.3%	100%
2036	Generation (TWh)	230.7	95.9	62.3	204.4	47.4	26.6	667.3
	Share	34.6%	14.4%	9.3%	30.6%	7.1%	4.0%	100%

Source: 10th Basic Plan on Electricity Supply and Demand (MOTIE, 2023).

The scale of new clean generation capacity needed is uncertain and depends on the speed at which renewables and nuclear should replace coal and gas-fired power plants, the pace of electrification and technology development. Korea's official carbon-neutral scenarios foresee a doubling in electricity demand by 2050. Scenarios for other OECD countries, including the United Kingdom and Sweden, also imply a dramatic increase in total electricity supply to reach net zero targets (OECD, 2023; Pareliussen et al., 2022). Replacing current coal and LNG-based electricity generation alone will eventually require approximately 300 TWh of clean electricity produced per year. Using hydrogen and hydrogen-derived fuels such as ammonia for energy production, transport and as feedstocks to chemical industries is a key part of Korea's plans to achieve carbon neutrality. However, producing green hydrogen from water by

electrolysis is very energy-intensive and other methods are either emission intensive or not yet ready to be deployed at a commercial scale. Decarbonizing Korea's production of roughly 70 million tonnes of steel per year by means of direct hydrogen reduction of iron ore, which is currently the only low-carbon steel production technology close to commercialisation after successful piloting in Sweden, would for example require roughly 250 TWh of additional clean electricity per year (Pareliussen and Purwin, 2023).

Wind and solar are weather-dependent, which can lead to an intertemporal mismatch of supply and demand. This is a particular issue for Korea, which has a relatively similar prevailing weather across the country much of the time and no international interconnections. The intermittent nature of wind and solar can also undermine profitability if prices are set in a competitive market as this Survey recommends (D'Arcangelo et al., 2022). This happens because good wind/solar conditions will boost production from wind turbines/solar panels at close to zero marginal cost, depressing prices, while prices will typically be high in periods when wind or solar facilities produce little due to weather conditions. These facilities will therefore over time earn well below the average market price for electricity, and from a system point of view there could even be shortages unless this issue is addressed. Solving this problem requires investments in energy storage, boosting transmission and flexibility of demand. Storage solutions range from hydroelectric dams, which can be further augmented by pumped storage, to different types of batteries and thermal storage technologies. Electric vehicles can also help smooth short-term variations in supply and demand by means of vehicle-to-grid-solutions. To the extent electricity market reform ensures that scarcity is reflected in prices, the very price variations caused by an increasing share of intermittent supply will incentivise storage to come online. However, in order to secure safety of supply, Korea is right to consider capacity payments for flexible production capacity and storage, as signalled in the 10th Basic Plan on Electricity Supply and Demand.

Korea's Renewable Portfolio Standard is the main policy in place to incentivise the development of new renewable electricity generation. This system mandates power producers that installed generating capacity over 500MW to produce a minimum proportion of their power using new and renewable energy sources, or fulfil their obligations by purchasing renewable energy certificates from other producers. The target has been gradually tightened from 2% in 2012, and is expected to reach 25% in 2030 in line with the Basic Plan. Renewable energy certificates are weighted, incentivising investments in some less developed and more expensive technologies. For example, some categories of bioenergy, tidal power and solar power are weighted with a factor of one. Large-scale solar, waste gasification and electricity from landfill gas are discounted with a factor below one, while onshore wind, offshore wind, floating solar and small-scale solar on rooftops have factors above one (KEA, 2024). The market for energy storage solutions has been growing quickly, also driven by the mandatory installation of an energy storage system for newly-built public buildings since May 2016. KEPCO installs these systems and uses them to regulate frequency on the grid (IEA, 2023). The government is considering to introduce a wind power bidding market and converting the Renewable Portfolio Standards system into an auction system (MOTIE, 2023). Such reform could offer a number of advantages. If competition is sufficient, an auctioning system can secure a targeted supply of any given technology while minimizing the cost to society, while incentivizing less developed and more costly technologies through separate auctions, as is done in the United Kingdom's Contract for a difference scheme (Pareliussen et al., 2022).

Some nuclear plants under construction in Korea will come online by 2030, but these are only expected to increase the nuclear share of total electricity supply by two percentage points by this time (MOTIE, 2023). If current efforts to boost nuclear supply are sustained, including efforts to develop small modular reactors, nuclear can make a substantial contribution to reaching net zero by 2050. However, clean electricity from nuclear power also poses distinct challenges. Nuclear energy has very long lead times. It can incur considerable delays and cost overruns, even though these problems have been less prevalent in Korea than in the United Kingdom, France and Finland for example. Nuclear power also warrants strict safety measures and poses challenges related to permanent storage of used fuels. Like most countries, Korea

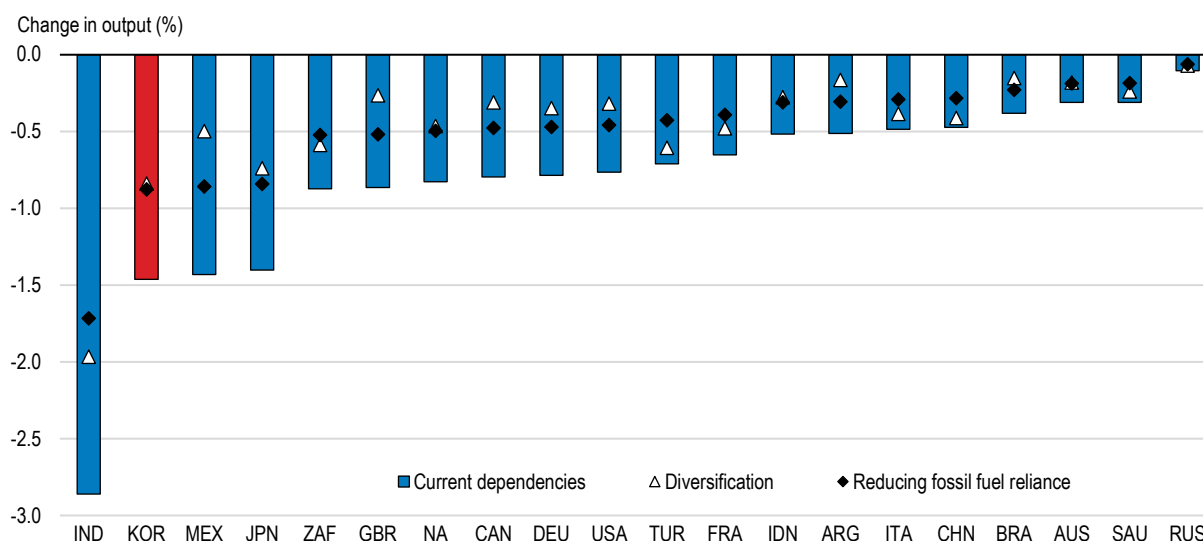
has still to designate a final repository for used nuclear fuels. Finally, nuclear is best suited to provide a stable output (“base load”), so its complementarity to weather-dependent renewable sources is limited.

Demand-side policies may help address the issues related to weather-dependent supply. Korea has implemented a demand management project that addresses both efficiency improvements and load management (IEA, 2023). If the cost of electricity to end-users reflects the cost of production, demand will adapt to variations in supply. Notably professional users in energy-intensive industry will pause production if electricity prices make production run at a loss. This can also be formalised in agreements to maintain a reserve of flexible production capacity and storage, and such stand-by agreements could in principle be auctioned out without discriminating between additional supply to be released and reduced demand at given thresholds linked to the supply-demand balance. There is already a large scope for such demand adjustments from Korean energy-intensive industries, but the potential is set to increase drastically as Korea starts to realise its ambitions for energy-intensive hydrogen production. Hydrogen electrolyzers can be turned on and off by a switch, adding a large amount of flexibility to the system. The hydrogen produced at times of plentiful and cheap electricity supply has multiple uses in industry but can also potentially be used as a stored reserve to produce electricity (MOTIE, 2023; OECD, 2023).

Policies to increase low-carbon electricity production can also contribute to build supply-chain resilience. Korea is among the most exposed OECD countries to an energy supply shock, due to its high energy intensity of GDP and high dependence on imported fossil fuels. Reducing fossil fuel dependencies by 40% would reduce the output loss from a potential energy supply shock by an order of magnitude similar to what a major push towards diversification of sources of fossil fuel imports would achieve (Figure 4.5).

Figure 4.5. Greening electricity supply can increase resilience to shocks in the supply chain

Output response to a 20% reduction in primary energy supply from the three main suppliers, %



Note: The chart presents the effect of a reduction of 20% in the supply from the top three suppliers of fossil fuels on the five most reliant industries (air transport, electricity, motor vehicles, machinery, electrical machinery). The diversification scenario is obtained by rebalancing each country and industry's total fossil fuel reliance according to each supplier's share in global fossil fuel trade. The reducing fossil fuel reliance scenario corresponds to a reduction of technological fossil fuel reliance of 40%.

Source: Schwellnus, Haramboure and Samek (2023).

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Additional policies to reduce cost and increase acceptability of the transition

Apart from policies directly aimed at reducing emissions, Korea's climate strategy rightly encompasses policies that lower the cost of the transition and seek social consensus (Presidential Commission on Carbon Neutrality and Green Growth, 2023). Enabling policies encompass a range of areas. Competition-friendly reforms streamlining regulation and employment protection combined with strengthening the social safety net can speed up structural change and minimise its negative effects on individuals and society (Chapters 3 and 5). Streamlining spatial planning can speed up investments in renewable energy and transmission. Policies can also be put in place to address market imperfections, like positive externalities from research and development (R&D) and charging networks (D'Arcangelo et al., 2022; Pareliussen et al., 2022). Policy can also be designed in ways that enjoy more popular support without necessarily reducing their effectiveness, and stakeholder consultations, dialogue and information campaigns can help to fight misperceptions. Finally, some local communities depending disproportionately on polluting activities may require targeted policies to dampen the fallout.

The positive externalities from R&D justify public support in general. Korea already assigns a large share of GDP to R&D, including by supporting companies' R&D efforts. As argued in Chapter 3, rather than adding new supports, Korea should prioritise and consolidate existing spending. Increasing the share of existing support that goes to low-carbon technologies with high relevance for Korea's main emitting sectors, many of which would also have export potential, should be considered. The Basic Plan identifies 100 core technologies for carbon neutrality, 35 of which relate to energy, 13 to transportation, 44 to industry and 8 to buildings and the environment. The goal is to support about one-third of these technologies into early commercialisation by 2030, while the others are at earlier stages with commercialisation envisaged by 2050 (The Presidential Commission on Carbon Neutrality and Green Growth, 2023). Korea already has considerable capabilities within areas such as car making, ship making, steel, petrochemical and nuclear power, where technology development could enable large potential emission reductions and reduce their associated cost. Decarbonising steel production using alternative less energy-intensive technologies to hydrogen-based direct reduction of iron ore could for example drastically reduce the need for additional low-carbon electricity and boost the profitability of steel makers, but such technologies require research, development and deployment of test facilities to reach commercialisation (Kildahl et al., 2023).

Small modular reactor (SMR) development is also within Korea's current strengths, and such reactors have the technical advantage that they could utilise the existing sites and grid infrastructure when electricity production from coal and LNG is shut down (IEA and KEEI, 2023). Korea is accelerating the development of SMRs for export and potential domestic use, with plans to complete an SMR standard design with a lifespan of 80 years by 2025 (International Trade Administration, 2024).

Repurposing by for example the deployment of SMRs can provide reemployment opportunities and ease the transition for communities heavily affected by the green transition. Electricity generation from coal and natural gas is set to be phased out completely by 2050 as part of Korea's climate efforts. More than 25 000 workers currently work in the coal generation sector alone. Other repurposing options making use of existing infrastructure and skills include using these sites for energy storage, renewable energy generation or a combination of these. In addition to quality employment, achieving just transitions requires fair treatment of workers and communities that rely on the coal industry, and compensation if sustainable employment options cannot be implemented. As a good practice example, Chungcheongnam-do developed a five-pronged strategy for a just transition when phasing down coal plants in the region, including industry diversification, worker support, local community support, restoration of land and facilities for regional development, and building a system to facilitate stakeholder involvement and the long-term transition process (IEA and KEEI, 2023).

To help policy implementation, a target-consistent and cost-effective policy package can be designed, sequenced and framed in a way that matches the preferences of the Korean people as much as possible. Recent surveys show that, like in other OECD countries, an overwhelming majority of Koreans agree that

climate change is an important problem (94%) and that it will negatively affect their personal life (86%) (Dechezleprêtre et al., 2022). Even so, problems close to home may still be perceived as more pertinent in daily life. While 60.3% of the population find climate change to be the biggest threat to humanity, only 12.7% find it to be the biggest threat to Korea. In this context, climate change ranks third after widening socioeconomic disparity (39.9%) and the low birth rate and population ageing (37.5%) (IEA and KEEI, 2023). Taking these priorities into account points to some win-win policies, including policies to reduce productivity gaps and labour market duality outlined in Chapters 3 and 5, which would also ease structural change in a green transition. However, there are also trade-offs that need to be bridged (OECD, 2021b). Decarbonisation of electricity production and pricing electricity at its true cost will likely increase energy prices on average, and will almost certainly increase them for those who enjoy favourable rates today, including low-income households and SMEs. Targeted *ad hoc* policies may have a role to play if structural change is concentrated in certain geographies and sectors, but there is a risk that targeted policies would disproportionately benefit regular workers, who are in a strong negotiating position and protected by labour unions. A general strengthening of the social safety net, notably employment insurance and re-skilling policies, would help people in a range of situations to cope with structural change from the green transition and from other causes, and should therefore be the preferred solution to soften the impact.

Public opinion does not fully match economic orthodoxy when it comes to the choice of policy instruments. Support for various concrete policy measures is moderate, except for subsidising low-carbon technologies, which is supported by 71% of the Korean population. Only 46% support a tax on fossil fuels, which is nonetheless a much higher level of support than in Germany, France and the United States, and on par with the United Kingdom and Denmark. However, support increases to around 80% if carbon revenues are used to subsidise low-carbon technologies and fund environmental infrastructure (Dechezleprêtre et al., 2022). As argued above, low-carbon technologies and environmental infrastructure need to be prioritised as part of the green transition, and there should be ample scope to present policies as a package, where carbon pricing revenue is linked at least politically to green expenditure (OECD, 2022a).

Recommendations to reduce greenhouse gas emissions in line with targets

FINDINGS (Main ones in bold)	RECOMMENDATIONS (Key ones in bold)
Use the emissions trading scheme to reach the target and minimise cost	
Allocations for the fourth trading period (2026 to 2030) of Korea's emissions trading scheme will cap three quarters of Korea's emissions.	Allocate a total number of allowances to the emissions trading scheme fully proportional to the 2030 target.
Korea's emissions trading scheme has experienced low liquidity in the past.	Auction a considerable share of allowances in regular auctions. Fully open up auctions and secondary markets to all ETS participants, banks, brokerages and other serious intermediaries. Implement a market stabilisation mechanism as a liquidity backstop.
Price discovery in Korea's emissions trading scheme has been imperfect, notably as expected future tightening of supply has not been reflected in prices.	Allow unconstrained banking of emissions allowances for future compliance as from the fourth trading period.
Korea plans to realise 13% of its emission reductions for the 2030 target abroad, as regulated in Article 6 of the Paris Agreement.	Ensure that any Internationally Transferred Mitigation Outcomes used to fulfil Korea's climate targets originate in countries with credible and net zero consistent climate targets.
Save energy and expand low-carbon electricity production	
A temporary transport fuel tax reduction was put in place early 2022. In the context of high and volatile global oil prices, the measure has since been extended a number of times and remains in place, although with a reduced rebate from July 2024.	Allow the temporary tax cut to transport fuels to lapse.
Electricity demand is set to double by 2050. The share of renewable electricity production is low. Nuclear power faces long lead times.	Ensure that policies are implemented timely to expand low-carbon electricity supply in line with climate targets.
There are no regular comprehensive assessments or cost-benefit analyses of individual industrial energy efficiency policies or the systemic outcomes from these policies combined.	Institute regular assessments and cost-benefit analyses of individual industrial energy efficiency policies and their combined effect within the overall policy framework facing businesses.
Expansion of renewables is held back by lengthy permitting processes, delayed grid connections, limited electricity market competition and social opposition from local communities.	Streamline permit- and grid-connection procedures for renewable electricity generation projects, while assigning a share of their benefits to local communities.
Policies to boost low-carbon electricity production are calibrated to meet a modest future increase in electricity demand, while alternative scenarios would imply a much steeper increase, notably related to the production of hydrogen for industrial and energy uses.	Develop contingency plans for clean electricity, transmission and storage based on alternative scenarios with higher electricity demand.
Reduce the cost and increase the acceptability of the transition	
Breakthroughs in key technologies including low-carbon steel and small modular reactors could help meet Korea's targets, boost competitiveness, and help the world decarbonise. Korea already provides generous R&D support.	Within the overall envelope allocated to R&D support, prioritise research, development and demonstration of technologies key to Korea's decarbonisation.
Fossil fuel-based electricity production will be phased out by 2050. The coal sector alone employs 25 000 people in relatively concentrated locations.	Develop place-based transition strategies for localities heavily affected by the green transition, including industry diversification and repurposing of sites, worker and community support and stakeholder engagement.
80% of Koreans support carbon pricing if revenues are used to support low-carbon technologies and environmental infrastructure. Necessary actions to reduce greenhouse gas emissions can have negative distributional consequences.	Link revenue from carbon pricing politically to green expenditure, and link reforms to correct energy prices to labour market reform and a strengthening of the social safety net.

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5 Responding to population decline

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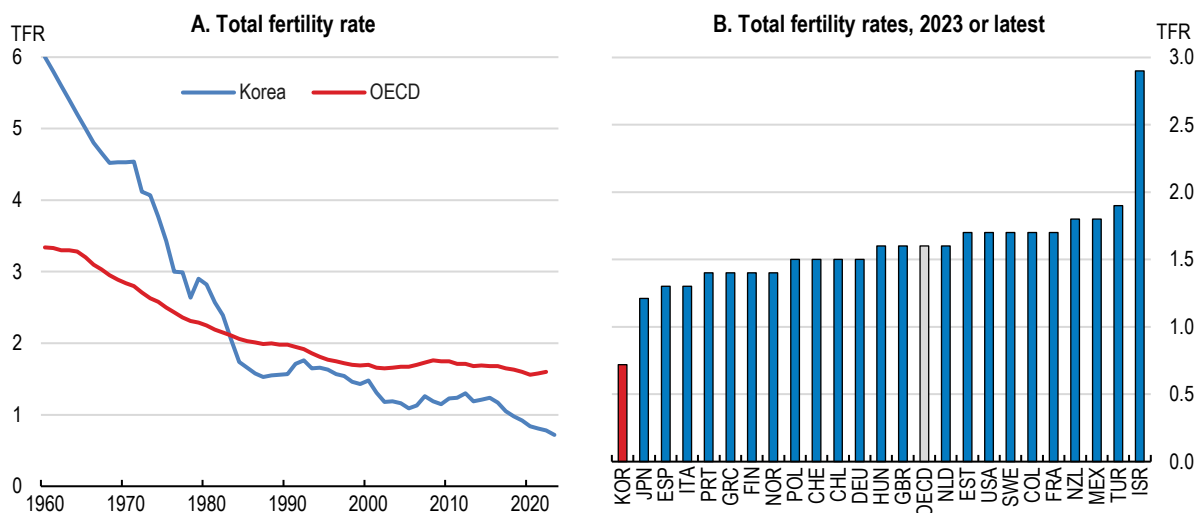
Axel Purwin

The Korean fertility rate has fallen to the lowest in the world. As a consequence, the old-age dependency ratio is projected to increase faster than in any other OECD country, putting considerable strain on labour supply and public finances. A key cause of ultra-low fertility is the high opportunity cost of having children in Korea, notably a large career cost for women who become mothers. This holds back female employment and fertility rates. Furthermore, it underpins the widest gender pay gap in the OECD. Improving the work-life balance for both genders is crucial to boost the fertility rate and female employment. Policies should also address the weak financial position of youth and lower housing costs for prospective parents. However, boosting fertility alone will not prevent a steep decline in the workforce. Therefore, Korea should tackle labour market dualism, reduce the high significance of seniority in determining wages and increase the legal retirement age in order to boost youth and female employment and extend working lives. Work immigration will also need to expand and reform is needed to facilitate high-skill immigration as well as a proper labour market integration of low-skilled immigrants.

Introduction

Over the past six decades, the fertility rate in Korea has plummeted, down to 0.7 by 2023 (Figure 5.1, Panel A). This is the world's lowest, well below Japan (1.2), Germany (1.6), France (1.7) (Panel B), and far below the 2.1 replacement rate, the threshold for maintaining a stable population over the long term. A fertility rate of 0.7 means roughly that for every 200 people in the current parent generation there will be only 70 children and 20 grandchildren. The population already began to decline in 2021, leading to the conversion of kindergartens into nursing homes and of wedding halls into funeral parlors (JoongAng, 2024) and the sales of pet strollers exceeding those of baby strollers on a leading e-commerce platform for the first time in 2023 (The Korea Times, 2023). This anecdotal evidence foreshadows the profound changes to come as large cohorts of baby-boomers reach retirement and working-age cohorts are continuously shrinking in size (Figure 5.2, Panel A). The population is expected to halve over the next six decades with the elderly (aged 65 or older) then accounting for around 58% of the total population (Panel B). During this time, the old-age dependency ratio will surge from 28% today to 155%. Even if the fertility rate were to bounce back to 1.85, the dependency ratio would surge to 117%, still turning the country from one of the youngest to the oldest in the OECD (Panel C). The combination of a shrinking and ageing population poses a formidable challenge to sustaining social insurance systems and maintaining living standards. Labour shortages will intensify as retirees make up an increasing share of the population, and the fiscal cost of health, long-term care and pensions is set to more than double to 17.4% of GDP by 2060. Responding to population decline is one of the top priorities on the government's policy agenda. Indeed, in mid-June, it announced new policy initiatives to address the plummeting fertility rate, including a plan to establish a new ministry (tentatively named the Ministry of Population Strategy Planning), declaring it a national emergency.

Figure 5.1. Fertility rates in Korea have declined reaching the lowest in the world



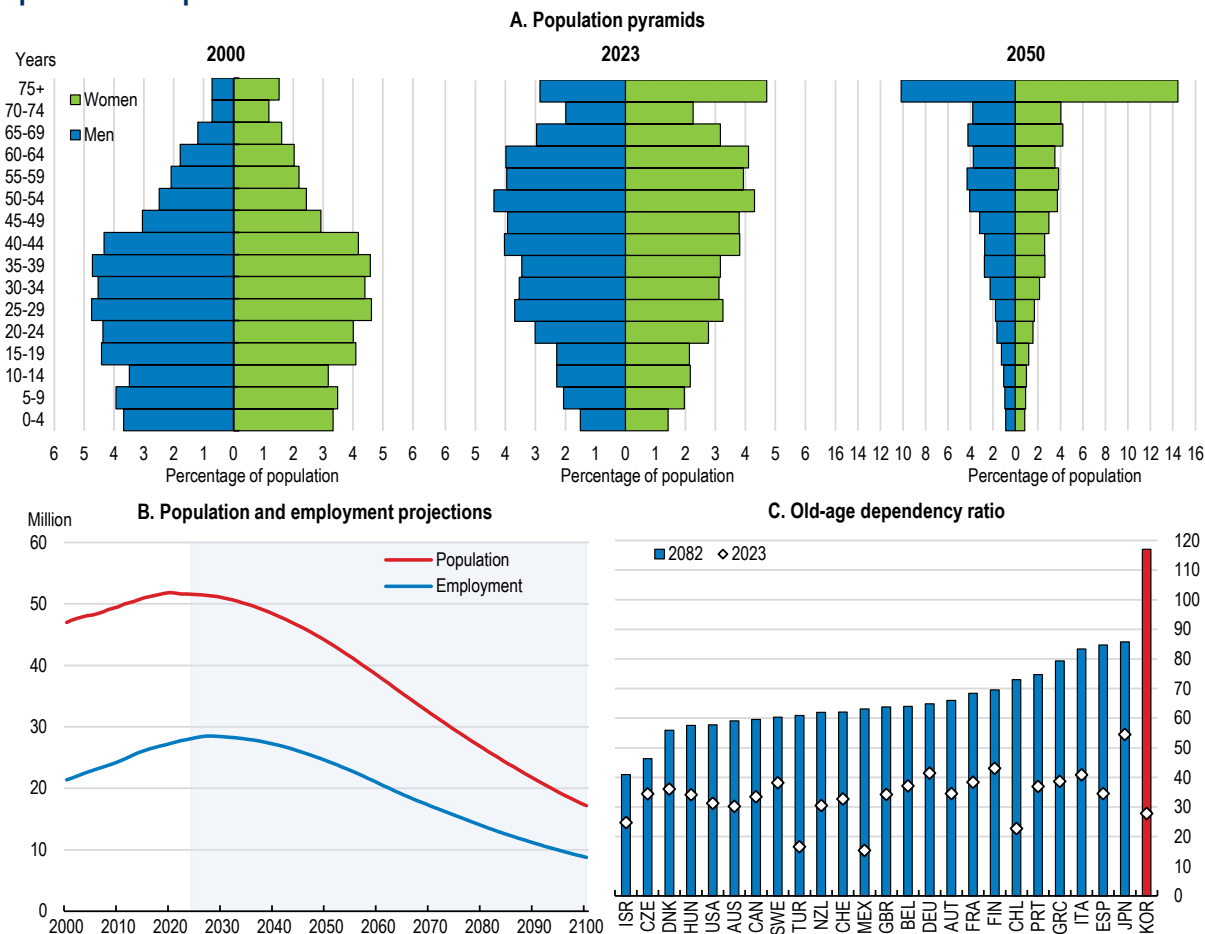
Source: Statistics Korea; OECD (2024), Fertility rates (indicator). doi: 10.1787/8272fb01-en; OECD Pensions at a Glance (2023).

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The fertility rate of 0.7 and its consequences are so extreme that it forces a fundamental re-think of how society allocates the responsibility to bear the cost of raising children. Due to Korea's rapid development it is only a few decades since children provided old-age security directly to their parents, often pooled in extended family structures. The tangible cost of bringing up children still falls largely on parents and it has increased over time, notably as income growth and women's higher levels of education and expanded career opportunities have increased the alternative cost of having children. The benefit of having children and grandchildren to provide the goods and services parents need when they reach retirement is on the

other hand shared across the entire parent generation. A couple raising two children will put in considerable investments, but this investment will on average need to secure the retirement of roughly six individuals from the parent generation.

Figure 5.2. The labour force will shrink and the old-age dependency ratio surge at an unprecedented pace



Note: Panels A and B assume that employment rates by age group, the total fertility rate (0.7), net immigration inflows (30,000 per year), and employment rates by gender and five-year age cohorts all remain constant at current levels. Panel C assumes that the total fertility rate in all countries eventually converges to 1.85 children per woman, a medium-variant forecast from the United Nations' World Population Prospects 2022. The old-age dependency ratio is defined as the ratio of individuals aged 65 and over to those aged 20 to 64.

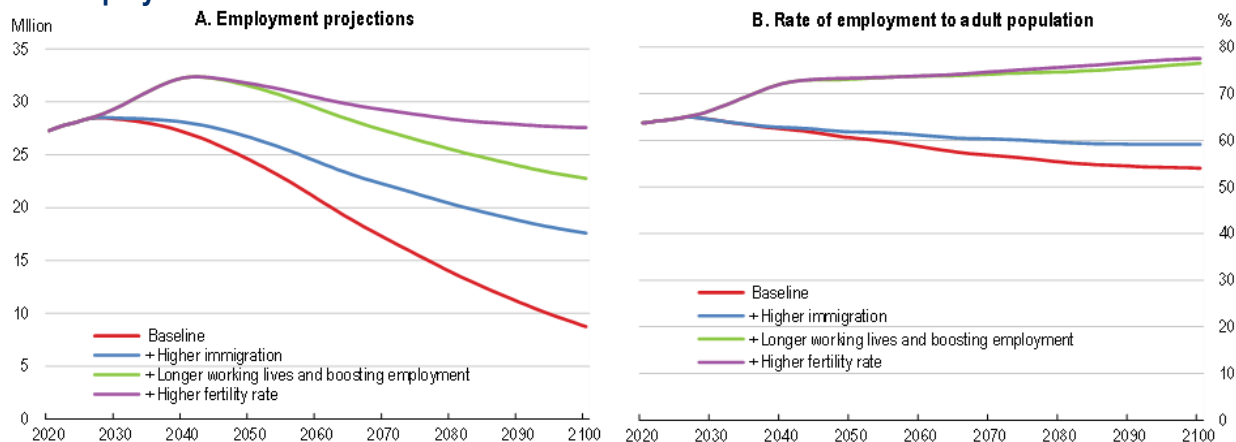
Source: OECD calculations based on the OECD Long-term Model; OECD Labour Statistics; OECD Pensions at a Glance (2023).

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Against this background, this chapter centers on addressing Korea's demographic challenges. The chapter begins by discussing strategies to support young women and men to have the number of children they desire by addressing underlying factors that drive low fertility rates and removing the barriers contributing to this trend. However, positive effects of higher fertility on the labour force only come after two or three decades when young people enter the labour market. Even tripling fertility to the 2.1 replacement rate by 2040 would not prevent the workforce from declining in the short and medium term. Korea must therefore prepare for and adapt to the inevitable challenges of an ageing and contracting population. Thus, the latter part of this chapter will explore policies to counteract the adverse consequences of low fertility, notably by lengthening working lives. Korea should also reconsider its immigration policies, as there are very few immigrants in Korea, while immigration could play a significant role in boosting labour supply and altering the dynamics of population growth. With these reforms and a rise in the total fertility rate to 1.1, employment

would increase to 29 million by 2070, about 12 million higher than in the no-reform baseline (Figure 5.3, Panel A), and the employment rate would be 75%, around 18 percentage points higher than the no-reform baseline (Panel B).

Figure 5.3. Increasing fertility, harnessing underutilised labour resources and immigration would limit employment decline



Note: Panel A: The baseline scenario is constructed by maintaining the current fertility rate of 0.7 throughout the projection period. In the higher immigration scenario, the net annual immigration inflow increases from the current 30 thousand to 250 thousand by 2040. In the longer working lives and boosting employment scenario, the following reforms are assumed: a) bringing up female employment rates to male employment rates by 2040; b) bringing up the youth employment rate to the current OECD average level by 2040; c) increasing elderly employment by one third of the difference with the previous age group by 2040 (e.g., the rate for the 60-64 group would close one third of the gap to the 55-59 age group in 2022); and d) increasing the legal retirement age to 68 by 2035, and raising it by two thirds of life expectancy gains thereafter. In the higher fertility rate scenario, the fertility rate is increased to 1.1 by 2040 which was the rate recorded in 2023 in Sejong city, the highest among cities in Korea. The scenarios are cumulative, so that, for example, the 'higher fertility rate' scenario also incorporates the effects from the 'higher immigration' and 'longer working lives and boosting employment' scenarios.

Panel B: The rate of employment to adult population is defined as the ratio of total employment to population aged 20 and over.

Source: OECD calculations based on the OECD Long-term model; Guillemette and Château (2023).

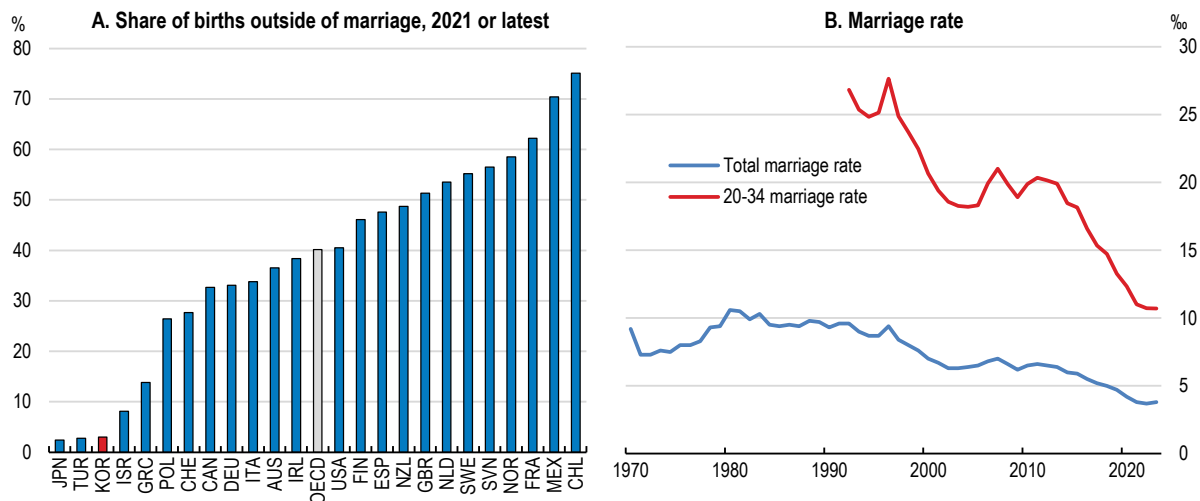
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Supporting women and men to have the number of children they desire

Only 2.5% of births happen outside of marriage between women and men in Korea (Figure 5.4, Panel A). Norms towards alternative family types are changing, but for now Korea's declining fertility rate remains directly associated with the plummeting marriage rate, like in Japan (OECD, 2024a). From 1990 to 2022, the total marriage rate plummeted from 9.3 persons per 1 000 marrying in any given year to 3.7 (Panel B). The marriage rate for those aged 20-34 plummeted from 27 per 1 000 to 10.7 over the same period (Panel B).

Those who do get married also have fewer children. Over the past two decades, the average number of children per married couple has decreased from around 1.5 to less than 1, while the ideal number of children married women desire has remained around the replacement rate of 2.1 (Figure 5.5, Panels A and B). This partly reflects a rapidly rising mean age of marriage, which has in turn increased the age when women have their first child to the highest in the OECD (Panel C). Foregone and delayed marriage have also led to a significant rise in childlessness. The share of women who have not experienced any live births by the age of 50 almost doubled from 7% in 2000 to 13% in 2020 (Panel D). Until the 2000s, most married couples had at least one child, but since the 2010s, many are choosing not to have children, indicating a notable shift in fertility behaviour (Choi and Ham, 2024). In 2022, 23.1% of 34-year-old married women born in 1988 were childless, nearly five times the 4.8% rate for those born in 1970 (Statistics Korea, 2023c).

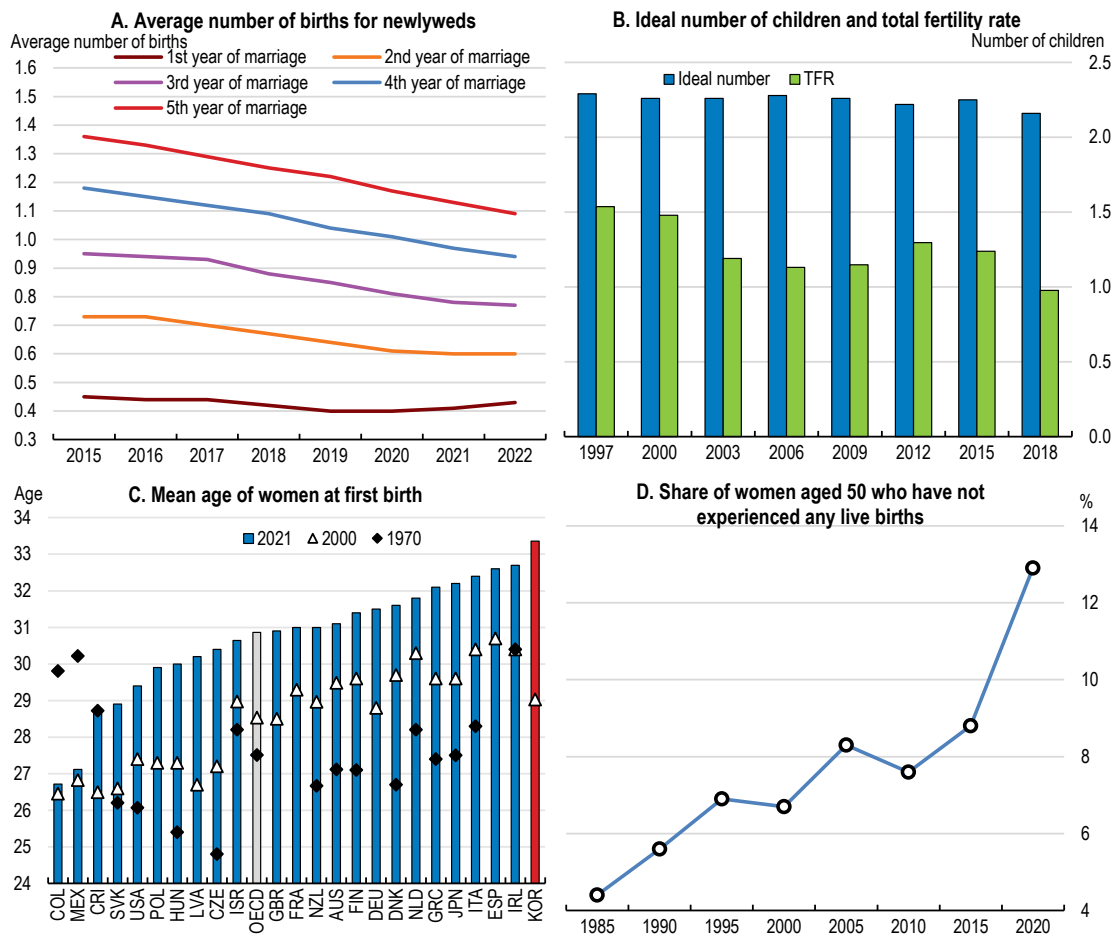
Figure 5.4. The declining marriage rate partly explains the declining fertility rate



Note: The marriage rate is calculated as the annual number of marriages divided by the resident population at the beginning of the year. Source: Statistics Korea; OECD Family Database. For the 20-34 marriage rate, the number of marriages where both husband and wife are between 20 and 34 years old has been divided by the population aged 20 to 34.

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Figure 5.5. The disparity between the actual and desired number of children is widening

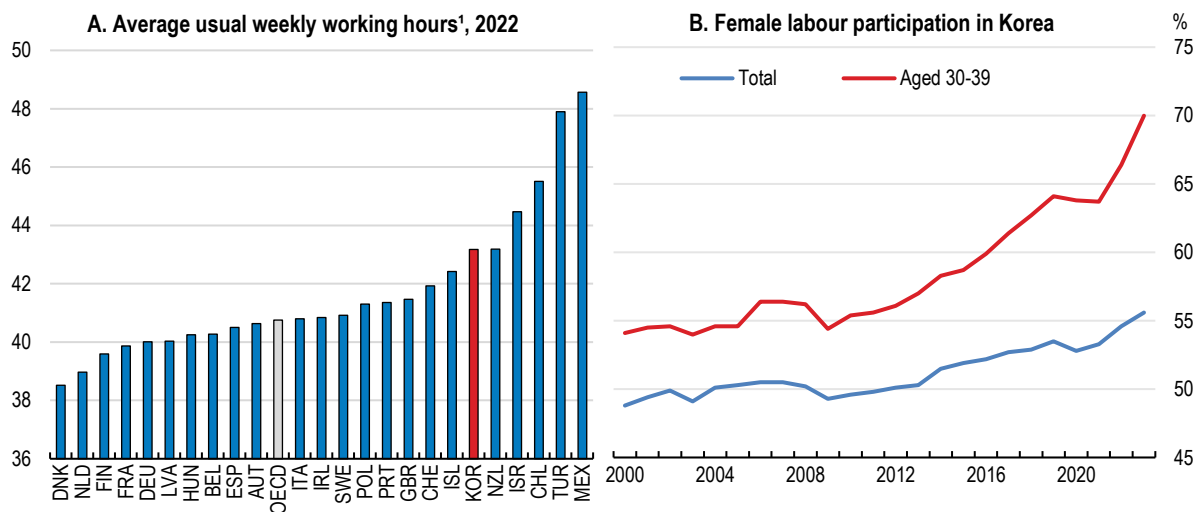


Source: Statistics Korea; OECD Family Database; KIHASA, National Survey on Fertility and Family Health and Welfare; Korean Women's Development Institute.


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The marriage and fertility trends are closely linked to a number of complex problems rooted in the rapid industrialisation that catapulted Korea into the ranks of developed economies in an exceptionally short period. First, the relentless pursuit of efficiency and export-led economic growth was on many accounts very successful, but social well-being has not improved commensurately. Gender norms have placed the responsibility of taking care of children on women while men are expected to work long hours and make a number of sacrifices to build their careers and provide for their families. Economic development and increased access to education gave women the opportunity to pursue increasingly rewarding careers (Figure 5.6), which many would need to sacrifice if they chose motherhood. Indeed, rigid working norms and long working hours continue to make it challenging to combine work and family, notwithstanding recent progress. Second, the stark divide between good jobs in the often export-oriented large firms and precarious jobs has contributed to the challenges young individuals face in establishing stable careers. Third, this labour market dualism and the ensuing wide inequalities in wages, social protection and job stability, have intensified competition from a young age to secure good grades and a foothold in top universities, often involving significant investments in private education. Fourth, the concentration of quality education and work opportunities in the Seoul Metropolitan area has drawn youth there while elevating housing costs, which now pose a significant financial barrier to family formation.

Figure 5.6. Women increasingly participate in the labour market, where hours are long



1. Average usual weekly hours worked on the main job for full-time employed.
Source: Statistics Korea; and OECD Labour Force Statistics database.

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No silver bullet exists to solve these multifaceted challenges and change societal perceptions of child-rearing from burden to source of joy, calling for a comprehensive approach. A top priority is to enhance policies supporting work-family balance. International experience as well as empirical analyses suggest that these policies are key to reverse trends of declining fertility in high-income countries (Box 5.1). A government survey indicates that 43% of respondents cited policies supporting work-family balance (i.e., parental leave, flexible working arrangements, and childcare) as the most needed measures to boost fertility (PCASPP, 2023). Policies that mitigate the trade-offs between fertility and female employment will not only help boost fertility but also female employment – a dual necessity in addressing Korea's current workforce decline and ageing issue. Beyond work-life balance policies, the government should also enhance policies that directly alleviate financial barriers associated with family formation or childbirth. These policies include improving the economic position of youth notably through addressing labour market dualism and alleviating high housing cost burdens, as well as reducing private education expenses for parents.

Box 5.1. Fertility and the work-motherhood trade-off

Several fundamental statistical patterns related to fertility outcomes in the past have diminished or completely vanished in recent decades. Until the 1990s, many advanced economies grappled with declining fertility rates alongside increasing incomes. This phenomenon is often explained by two factors. First is the quantity-quality trade-off. From the onset of the industrial revolution, new technologies became increasingly skill-intensive, while education has a cost both directly and in terms of lost income from child labour. Parents therefore respond by reducing the number of children while investing more in the human capital of each of them. Second is the work-motherhood trade-off. Historically low until the mid-20th century, women's engagement in the labour market surged after World War II, accompanied by substantial reductions in gender wage gaps. This elevated the opportunity cost of childrearing in terms of foregone family income from women's employment, resulting in a negative association between female labour force participation and motherhood. However, by around the 1980s, the negative cross-country correlation between fertility and female labour force participation, as well as between fertility and national income, had reversed in some high-income countries. High-participation countries like Sweden, Norway, Denmark, and the United States experienced an increase in fertility rates post-1980, while low-participation countries such as Italy and Spain witnessed sharp declines between the 1970s and 1990s. This shift persisted, with high-participation countries maintaining higher fertility rates than their low-participation counterparts after 1990.

A number of factors have mitigated the trade-offs mentioned, but the key determinant is improved compatibility of family and career. In settings where the two are easy to combine, many women successfully manage both a career and multiple children, resulting in high fertility and high female labour force participation. A pivotal element facilitating this balance is the availability of quality public childcare. Public childcare reduces the financial burden of having children, and liberates mothers' time, facilitating female labour supply. Another impactful policy is parental leave benefits, limiting the income loss and enabling continued careers after a period of absence for childbirth and childrearing. Additionally, supportive social norms favouring working mothers and flexible labour markets play a crucial role in this paradigm shift. Gender-equal norms leads couples to share the time and career cost of childrearing more equally. This has become increasingly important over time as individuals place greater weight on self-realisation. Empirical research shows that if one partner in a couple wants fewer children than the other, this partners' preferences tend to determine the fertility outcome. The number of children born to a couple will therefore decrease if a disproportionate career cost falls on one partner. Finally, these mechanisms are interdependent. Expanding childcare will for example not necessarily have much effect on fertility if caregiving and household work is gender-unequal, if working life is incompatible with family in general, or if the direct costs of childrearing are high.

Source: Yang et al.(2024); Doepke et al.(2022); Delventhal et al.(2021); Galor (2021).

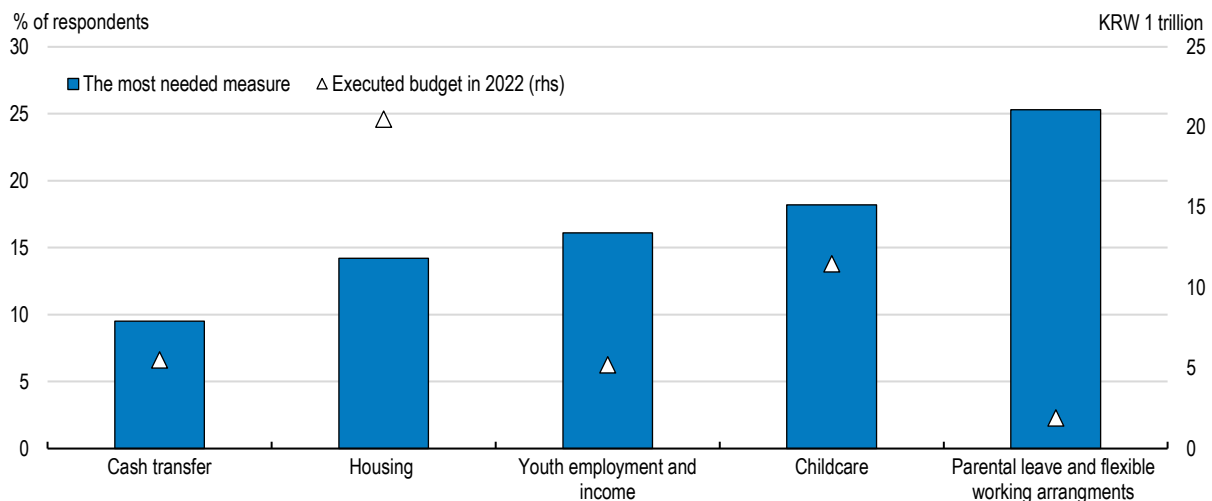
Improving work-life balance to reconcile female employment and fertility

Family policies, including childcare, paid parental leave, and flexible working arrangements, can increase the compatibility of women's careers and family and reduce the direct cost of having children as well as forgone earnings. Korea has introduced a number of policies to raise the low fertility rate and the employment rate of women. In particular, higher public investment in preschool childcare and paid parental leave from 2001 have pushed up the enrolment rate in childcare facilities over the past decades (Yang et al., 2024). However, notable gaps persist. Usage rates of paid parental leave are the third lowest in the OECD, after Ireland and Japan. Some gaps exist between the level of service parents need from childcare and what is actually given, and there is room to further increase quality to converge to high-performing OECD peers.

Research findings suggest that these gaps in family policies, working culture and gender norms are mutually reinforcing the difficulties of combining career and family in Korea (Choi and Ham, 2024; Seo and Kim, 2016; Yang et al., 2021). For instance, parents who take parental leave struggle to balance their work and childcare responsibilities after returning to work due to lack of quality childcare, while access to quality public childcare has only a limited positive impact on female employment when parental working hours are long and inflexible (Choi and Ham, 2024). While government spending on family support increased from 1.1% of GDP in 2013 to 1.5% of GDP in 2020, it still falls short of the 2.1% OECD average.

There remains ample room to enhance government spending aiming at addressing these gaps while refining the targeting to maximise overall impact. Since 2005, successive Korean governments have made efforts to boost the fertility rate through allocating “low fertility budgets”, which surged from KRW 2.1 trillion (0.3% of GDP) in 2006 to KRW 51.7 trillion in 2022 (2.4% of GDP). Despite this remarkable eight-fold increase as a percentage of GDP, the total fertility rate has continued to decline, indicating a potential misalignment between public spending and actual needs (Figure 5.7). The smallest portion of the budget was directed towards parental leave policies, despite survey results and research underscoring their importance in addressing the low fertility rate. Moreover, the share of the budget allocated to overall policies aimed at enhancing work-life balance has declined in recent years (NABO, 2023a). There is room to increase spending on family policies, for example by shifting parts of the generous subsidies handed out to SMEs (Chapter 3) or considering increased taxation or social security contributions to invest in future taxpayers, in light of the pressing need to boost fertility and Korea’s relatively small government. According to a government survey, 77% of respondents answered that there is a need to expand the low fertility budget (PCASPP, 2023).

Figure 5.7. There is a possible mismatch between public spending and needs to boost fertility



Note: Bars represent the result of the government's survey on the most needed measures to boost the fertility rate. The survey targeted 1,200 citizens aged 18 to 79 residing nationwide in Korea. The triangles represent the executed budget to boost fertility in 2022.

Source: NABO (2023a) and PCASPP (2023).

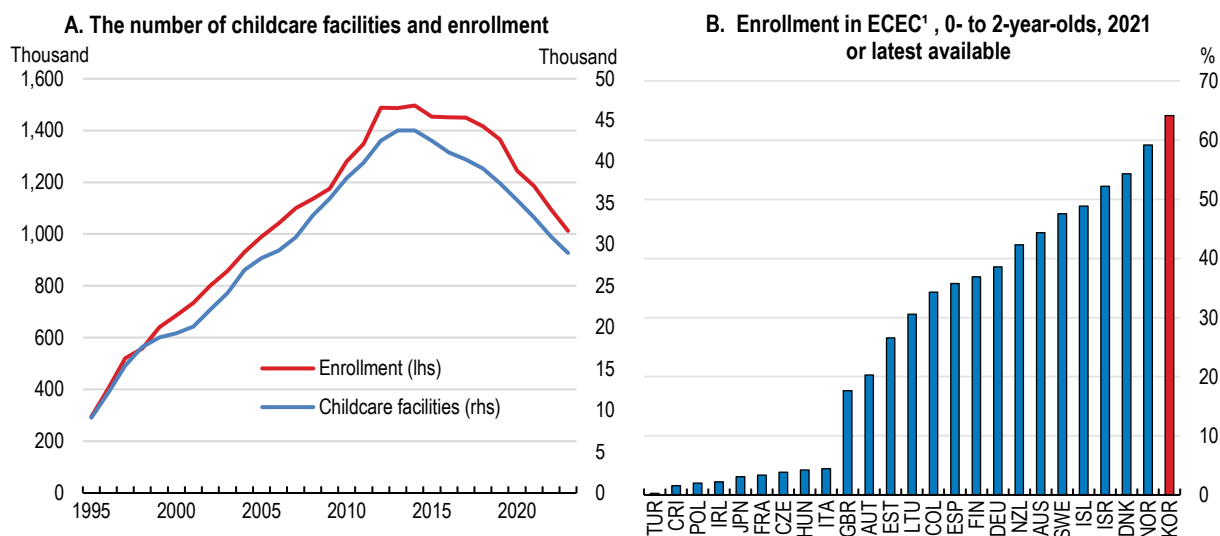
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Early childhood education and care

Public expenditure to improve quality and quantity of early childhood education and care (ECEC) has a greater positive impact on fertility rates than child cash allowances by making career and family commitments more compatible (Greulich et al., 2016; Deopke et al., 2022, Yang et al., 2024). Korea’s spending on ECEC as a share of GDP has significantly increased from around 0.1% of GDP in 2000 to 0.9% in 2019, just above the 0.8% OECD average. Despite a decline in headcount enrollment and the number of childcare facilities reflecting decreasing fertility (Figure 5.8, Panel A), Korea has the largest

share of children enrolled in childcare among OECD countries (Panel B). However, the current childcare system falls short of meeting the needs of working parents, with approximately 30% of mothers citing a lack of suitable childcare options as a reason for career interruption (MOHW, 2022). This reflects the low quality of private childcare, scarcity of public childcare, and short opening hours not in line with parents' working hours.

Figure 5.8. Childcare enrolment rates are relatively high



1. Early childhood education and care services (ISCED 0 and other registered ECEC services) for 0- to 2-year-olds.

Source: OECD Family Database; and the Ministry of Health and Welfare Childcare Statistics.

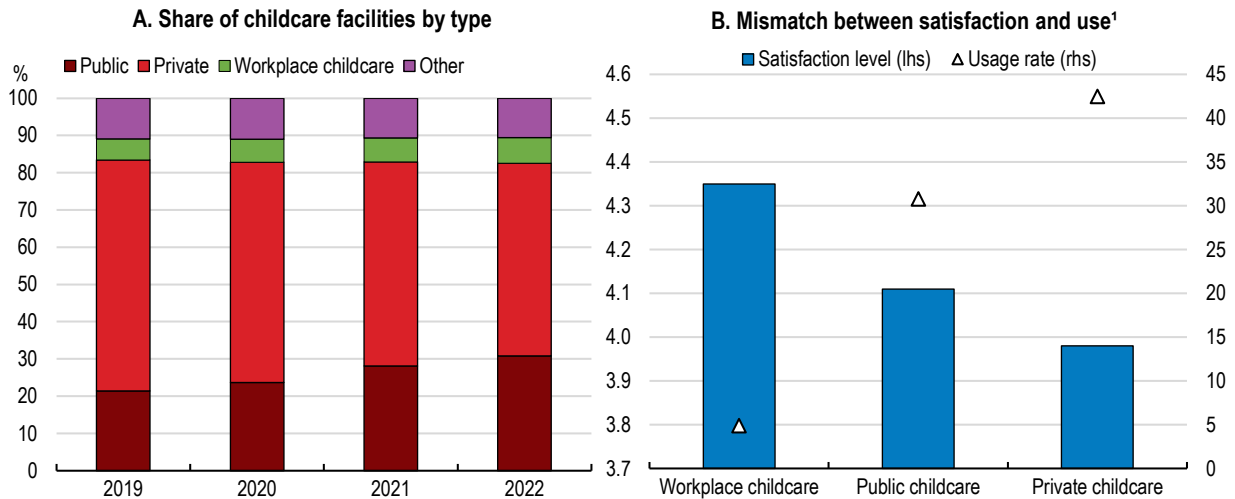
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Most childcare facilities are still private (Figure 5.9, Panel A). In 2012-13, the government abolished the income threshold for childcare subsidies paid to parents and started paying the tuition for all children, including in private childcare centres. This led to a surge in demand for childcare. In response, the government encouraged the private sector to supply childcare through subsidies and deregulation (KIHASA, 2013). The rapid expansion of private childcare facilities through easing criteria has raised concerns about a potential decline in quality. Indeed, private facilities exhibit the lowest parental satisfaction among all childcare facilities (Panel B). From June 2019, the Assessment and Accreditation system has been mandatory and applied to all day-care centres. However, few poor-quality childcare facilities are actually forced out of the market, due to a lack of enforcement measures (KICCE, 2019; KIHASA, 2013).

Monitoring and enforcement measures for private childcare centers should be improved. Korea has a split early childcare and education system where private childcare centres lie under the Ministry of Health and Welfare and private kindergartens under the Ministry of Education, and there is no nationally unified or integrated monitoring and enforcement system. Kindergartens are subject to stricter criteria than childcare, including the requirement for teachers to hold tertiary education degrees (Kim et al., 2019). According to a survey, more than 90% of parents are satisfied with private kindergartens (KICCE, 2018). The government is planning to unify the management bodies of childcare centres and kindergartens under the Ministry of Education, which is a positive step and should be implemented as planned. Adopting standardised quality assessment tools and an integrated monitoring system for early childhood education and care would help improve the quality of childcare facilities, as seen in many OECD countries such as Italy, Germany and Finland (OECD, 2016a). Higher entry barriers for kindergartens also extend to debt limits. Private childcare facilities are allowed to have debt up to 50% of total investments, whereas private kindergartens are required to have zero debt. According to a government survey, most childcare experts believe that the


50% debt ratio in childcare facilities is high, leading to lower quality of services, as it may force facilities to prioritise revenue generation for debt servicing, resulting in cost-cutting measures such as staffing, resources, and maintenance (MOHW, 2017). Regulation and governance of childcare and kindergartens should be unified, and standards for childcare raised to the level currently applicable to kindergartens.

Figure 5.9. Public and workplace childcare facilities show higher satisfaction levels but are in short supply



1. Compiled from an interview survey of 1,000 households with infants and toddlers attending childcare centers. The satisfaction level for each type of childcare center ranges from 0 to 5.

Source: Ministry of Health and Welfare Childcare Statistics; and Ministry of Health and Welfare (2022), Childcare User Satisfaction Survey.

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This is important not only for the quality of overall early childhood and care facilities but also the quality of private long-term care institutions. Both childcare and elderly care facilities fall under the same category in the Building Act. This allows for a relatively simple process of facility conversion without the need for complex legal procedures. A number of childcare centers, facing difficulties due to low fertility rates, have thus been transformed into long-term care facilities. While the number of childcare centers decreased by more than 20% between 2018 and 2022, the number of nursing homes increased by over 25%. There is already an excess supply of poor quality private long-term care institutions (OECD, 2022a). The government should ensure that low-quality ECEC facilities are not simply converted to long-term care institutions without a quality upgrade.

The government should also continue to improve the accessibility of public childcare. Public childcare facilities have longer waiting lists for admission than private childcare facilities, especially in bigger cities (KICCE, 2018). Interregional differences in the supply of childcare centers and kindergartens are key factors explaining the limited success of the 2012-13 childcare subsidy expansion in terms of labour force participation among mothers (Min and Lee, 2020). Moreover, some empirical analyses suggest that greater availability of public childcare correlates with higher fertility rates (Lee, 2022; Min and Lee, 2020). Expanding public childcare in regions and localities with a current shortage of quality childcare should be considered.

Standard childcare opening hours are not compatible with a full-time working week in Korea. The standard opening hours are from 9:00 AM to 4:00 PM. Extended childcare teachers provide services from 4:00 PM to 7:30 PM, with the flexibility to adjust hours in agreement with parents or the operating committee. However, these extended hours are not widely offered as the usual practice for parents is to pick up their children from childcare at 4:00 PM. Working parents, who are not a majority among parents, often

experience feelings of guilt when they deviate from this norm, and are concerned about their children being alone in the facilities because there are not enough children for the after-hours programmes (KICCE, 2022). Consequently, many working parents resort to alternative out-of-school arrangements, such as relying on parents, relatives or private babysitters (Yang et al., 2024). For instance, in France, where working hours are comparatively shorter, centre-based ECEC facilities typically operate between 8:00 AM and 7:00 PM (EC, 2023). The government plans to extend basic childcare hours to 5:00 PM. Further progress in this direction would make it easier to combine family with full-time employment. This would also send a signal to parents, shaping their perceptions and norms regarding pick-up times.

Encouraging the supply of workplace childcare services should also be considered given high demand and user satisfaction (Figure 5.9, Panel B). Working parents appreciate workplace childcare for a number of reasons, including opening hours adapted to work hours, easy access for parents especially in case of an emergency, less time lost in dropping and picking up children, and the possibility to breastfeed for those who want to continue to do so after their return to work (World Bank, 2019; Kim, Chae and Hong, 2023). These reasons are particularly appreciated by working parents in Korea, where telework is not common. The workplace childcare services are beneficial to employers too, as they decrease stress among workers, improve loyalty and commitment, and help attract and retain talent (Hein and Cassirer, 2010; World Bank, 2019).

Since 2012, the establishment of workplace childcare facilities has been mandatory for large companies with over 500 full-time employees or 300 female full-time workers. As a result, most large companies (91.5%) have workplace childcare facilities. However, the large firms account for only 0.2% of total employers with more than five employees. As a share of employees, approximately 89% of employees are not covered by the mandate (KEIS, 2023). As a result, the share of workplace childcare has been persistently low at less than 5% of total childcare facilities. A few OECD countries make workplace childcare facilities mandatory with a lower threshold. For instance, it is mandatory for companies with more than 50 full-time employees in Chile and for companies with more than 150 women workers in Turkey (World Bank, 2019; Turkish Labor law, 2017). However, financing and providing childcare should at the outset not be the responsibility of private sector firms who happen to have parents among their employees, regardless of firm size. Larger firms may be able to shoulder this burden, but lowering the threshold for mandatory workplace childcare facilities may inadvertently burden smaller businesses, resulting in unintended consequences such as reduced employment opportunities for female workers.

Addressing obstacles faced by firms when establishing childcare would help expand workplace childcare services. The key challenges hindering firms from establishing such facilities include space, cost, and low enrollment (Ministry of Employment and Labour, 2020). Currently, workplace childcare centres must meet all installation standards set forth in the Infant Care Act, such as establishing them on the first floor (up to fifth floor under certain conditions). This can be particularly problematic in Seoul where leasing costs for lower floors are high. Indeed, some firms in Seoul gave up setting up childcare for this reason (Asia Economy Daily, 2017). The requirements should be carefully reviewed, and streamlining the process or introducing a fast-track approval system should be considered. Government support focusses on installation costs (up to 60% for large enterprises and 90% for SMEs) (MOEL, 2024). Employers are required to pay at least 50% of total operating costs. Currently, the burden of operating costs prevents many employers from establishing workplace childcare (KICCE, 2023). Greater support for operating costs, particularly when employers collaboratively establish childcare facilities, could help address concerns about low enrolment as well as cost burdens.

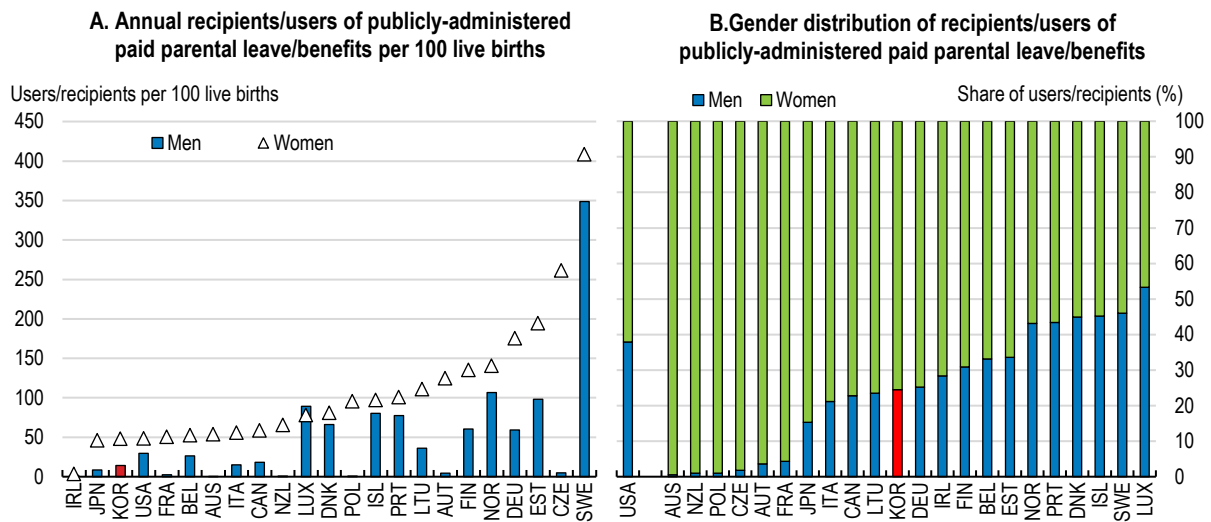
Increasing the utilisation of parental leave

Paid parental leave supports fertility by allowing parents to care for their young children without ending their employment contract. Empirical analysis in Korea suggests that the fertility rate is higher for couples who have good access to parental leave (Bae and Jeon, 2018). Korea offers 119 weeks of paid parental

leave in total, the fourth longest duration in the OECD, in the form of an individual, non-transferable benefit for each parent. Despite individual leave rights for mothers and fathers, Korean parents, especially fathers, vastly underutilise paid parental leave compared to other OECD countries (Figure 5.10). At the same time, being able to take parental leave is important to prospective Korean parents, 25% of which cite paid parental leave as the most needed measure to boost the fertility rate as mentioned above (Figure 5.7).

Figure 5.10. Korean parents, especially fathers, underutilise paid parental leave

2021 or latest



Note: For Panel A, paid parental leave recipient rates exceeding 100 reflects both high take-up and the ability of parents to take leave over several years and/or in multiple blocks.

Source: OECD Family Database and OECD calculations based on information from national ministries and statistical offices.

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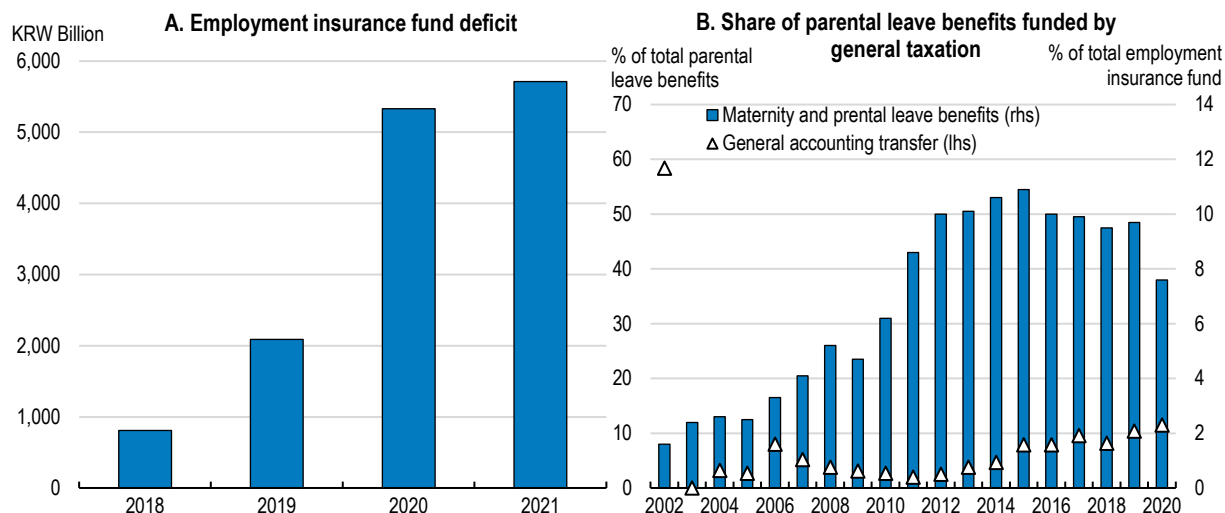
Paid parental leave entitlement is mostly tied to employment insurance which covers only around half of the total workforce (or 77% of wage earners). Employment insurance in Korea funds parental leave benefits as well as unemployment benefits. Employment insurance is not compulsory for self-employed and some platform workers. Some workers choose not to subscribe to employment insurance despite a legal obligation to do so. This leaves many non-regular workers, characterised by inherent job instability and vulnerability, ineligible for parental leave. A provision allowing employers to deny parental leave to workers with less than six months of continuous service creates an additional barrier that disproportionately affects non-regular workers who tend to have shorter periods of continuous employment.

Expanding paid parental leave coverage to the entire workforce is a priority to address the current disparity. One viable approach involves extending employment insurance coverage to all workers, as recommended in the *2022 Economic Survey of Korea*. This not only eliminates the discrepancies in paid parental leave entitlements but also ensures uniform access to unemployment benefits, a key policy instrument to prevent hardship, facilitate structural reform and achieve macroeconomic stabilisation.

However, increasing parental leave payments would require additional funding, given the escalating deficits in the employment insurance fund (Figure 5.11, Panel A). When the parental leave benefit system was introduced in 2001, it was decided to fund it primarily through employment insurance, with any financial gaps being covered by general taxation through annual budget allocations. Since 2001, however, only a fraction of the total parental leave benefit payouts has been covered by general taxation (Panel B). With an upward trend in both take-up rates and benefit levels, the share of parental leave benefit payouts in the employment insurance fund has grown. Without additional funding, this would jeopardise the primary role

of employment insurance in safeguarding those who are unemployed (NABO, 2023a). An estimate suggests that expanding parental leave entitlements to the entire workforce would require an additional 22% of the current total parental leave benefits expenditure under existing parameters (KIHASA, 2022a). Given the national urgency to boost the fertility rate, and the low share of the total fertility budget allocated to parental leave (Figure 5.7), it is reasonable to consider additional funding.

Figure 5.11. Only a small share of parental leave payments are funded by general taxation



Source: Ministry of Employment and Labour.

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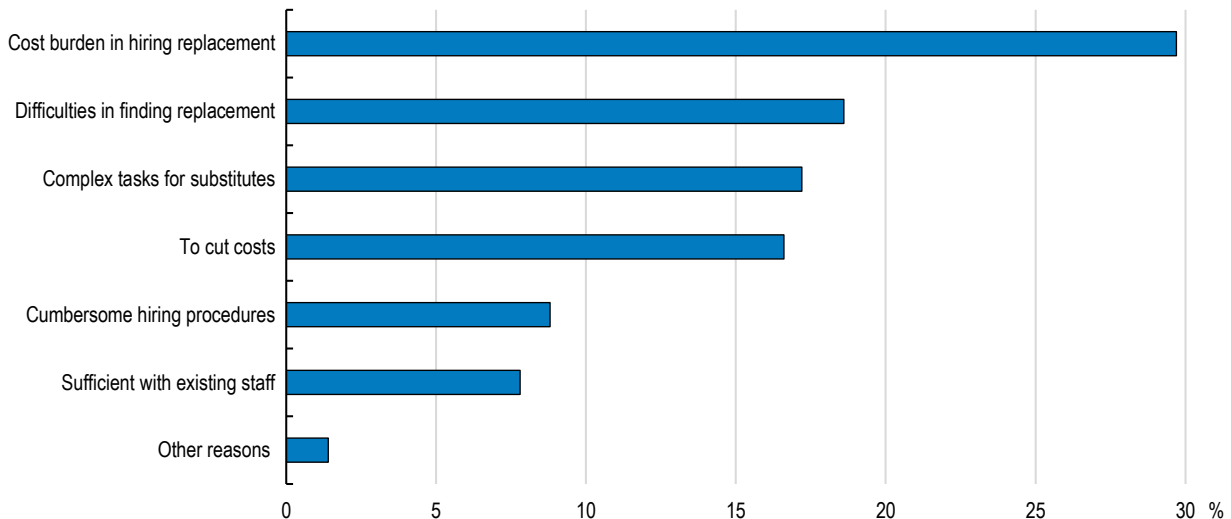
Another approach could be shifting from the current membership-based approach to a rules-based approach for parental leave eligibility. In contrast to the current system in Korea where entitlements are tied to employment insurance, countries like Finland, Sweden, Denmark, Germany, Norway, and Estonia have established rules-based systems where most of the workforce is entitled to paid parental leave regardless of their enrolment in social insurance (Yang et al., 2024; Koslowski et al., 2022; and EIGE, 2019). In these countries, only basic conditions are imposed such as working in the country. There may be a social insurance fund making the payments or it may be financed pay-as-you-go by taxation, but payments are ultimately guaranteed by taxation. This may simplify the process and it ensures that all eligible individuals, irrespective of prior enrollment, have access to essential benefits. Estonia transitioned from a social security-funded parental leave system to a rule-based, fully tax-supported model in the early 2000s to boost fertility rates and female employment. This shift, together with increasing the parental leave benefit, resulted in a notable increase in parental leave uptake, contributing to a rise in the total fertility rate from 1.37 in 2003 to 1.61 in 2021, and a concurrent increase in the female employment rate from 60% to 72% during the same period (Yang et al., 2024).

Besides stringent eligibility criteria, take-up rates are also low among those who are eligible. Only around three out of ten eligible parents exercised their paid parental leave right in 2022, although most of them were aware of the system, according to Statistics Korea. The utilisation rates are especially low among men and in small businesses (fewer than 50 employees). In 2021, the usage rate of parental leave during the year of the child's birth in small businesses (5-49 employees) was 54.1% for women and only 2.3% for men. In the same year, the corresponding rate in larger companies (over 300 employees) was 76% for women and 6% for men.

A government survey identified "an unfavourable workplace atmosphere or culture toward parental leave users" (31.8%) and "increased workload on colleagues" (25.2%) as the main reasons for underutilisation (MOEL, 2022). This social pressure to avoid taking up parental leave reflects that employers often do not

hire replacements (BGLI, 2016). The cost burden on employers is a primary deterrent (Figure 5.12). The absence of replacement workers generally leads to an increased workload for those who remain. In a survey asking how to cope with the gap left by parental leave, approximately half of the respondents indicated that the remaining employees bear the additional workload (MOEL, 2022). Like in other OECD countries, the situation is especially serious for small and medium-sized enterprises (SMEs) because these firms have a lower number of employees who can share the workload (KIHASA, 2022b). In Korea, SMEs account for more than 85% of domestic employment, surpassing the OECD average of 69% (OECD, 2023a).

Figure 5.12. Cost burdens hinder employers from hiring replacements for staff on parental leave



Note: Results of an online survey conducted among 506 member companies, each with exports of over \$500,000 and employing more than five regular workers. The survey asked, "If your company does not hire substitute workers during an employee's parental leave, what are the reasons?".

Source: KITA (2024).

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Korean employers bear a higher share of the cost of maternity, paternity and parental leave than in most OECD countries. For the first 60 days of maternity leave, employers in companies with over 500 employees are obliged to pay 100% of the ordinary earnings of leave takers (Table 5.1). If the employer hires a replacement, the employer thus has to pay two salaries for one position. For SMEs, the government offers maternity leave benefits for the first 60 days, but the maximum monthly amount is KRW 2.1 million which is only slightly above the monthly minimum wage (KRW 2.06 million or EUR 1 417), and employers are required to cover the gap. In addition, employers, regardless of firm size, have to continue to pay health insurance premia for parental leave takers throughout the leave period, amounting to 3.5% of gross salaries, while other social security contributions can be exempted during parental leave. The government provides financial support for replacement personnel up to KRW 800 thousand (EUR 557) to SME employers, with an increased level of support of KRW 1.2 million per month during the take-over period (up to two months). However, this was deemed insufficient to alleviate the financial burden. For instance, when replacing employees on the minimum wage taking maternity leave for 30 days, the additional costs for SME employers were estimated at around KRW 2.01 million (EUR 1 394) per month (NABO, 2023a), not including the time and expenses associated with recruiting new staff and providing necessary training. SME employers now can receive a monthly allowance of KRW 2 million (EUR 1 376) for the first three months and KRW 300 thousand (EUR 209) thereafter when granting parental leave for 30 days or more, but this allowance is no longer contingent on hiring replacement staff.

Table 5.1. Major supports for paid parental leave in 2024

	Paid maternity leave	Paid paternity leave	Paid childcare leave
Eligibility	Mothers eligible for employment insurance	Fathers eligible for employment insurance	Parents eligible for employment insurance
Length	90 days	10 days	12 months for each parent
Benefit level and funding source	<ul style="list-style-type: none"> Large companies First 60 days: 100% of previous earnings, paid by employers Remaining 30 days: The Employment Insurance funds, with a maximum monthly payment of KRW 2.1 million. Employers are not required to supplement. SMEs First 60 days: The Employment Insurance funds maternity leave benefits, with a maximum monthly payment of KRW 2.1 million. Employers are required to pay the difference between the regular salary and KRW 2.1 million. Remaining 30 days: The Employment Insurance funds maternity leave benefits, with a maximum monthly payment of KRW 2.1 million. Employers are not required to supplement. 	<ul style="list-style-type: none"> Large companies 100% of previous earnings, paid by employers SMEs Employment insurance funds a max of KRW 401 910; employers should cover the gap with regular salary. 	80% of previous earnings, paid by the Employment Insurance Fund. (Ceilings: KRW 1.5 million.) If both parents use parental leaves: 100% of previous earnings for the first 6 months, paid by the Employment Insurance Fund. Ceilings:KRW 2 million – 4.5 million (First month: KRW 2 million Second month: KRW 2.5 million Third month: KRW 3 million Fourth month: KRW 3.5 million Fifth month: KRW 4 million Sixth month: KRW 4.5 million)

Note: SMEs are companies with 500 permanent employees or fewer for manufacturing industries, 300 or fewer for mining, construction, transport and warehousing, telecommunications, business facilities management, business support and rental services, professional, scientific and technical services and health and social work services, 100 or fewer for other industries, and SMEs under the SMEs Framework Act.

Source: Ministry of Employment and Labour; Ministry of Health and Welfare.

The burden of financing maternity, paternity and parental leave benefits and associated costs should in general be shared between parents and the government. Employers should be shielded from this cost, as they will tend to respond by discriminating in hiring and discouraging leave taking. Measures are also needed to alleviate the financial burden on employers of hiring replacements. One effective approach would be to almost fully compensate maternity leave benefits using public sources, as is the case in many OECD countries, including Denmark and the United Kingdom (Government of the United Kingdom, 2023; Strang et al., 2016), or to compensate for the additional costs of hiring replacements during maternity leave as is the case in Italy (Clauwaert et al., 2000). In the United Kingdom, larger businesses can reclaim 92% of the maternity leave payments, and small employers 103% (Government of the United Kingdom, 2023). In France, employers with fewer than 50 employees receive financial support for temporary replacements during parental leave, covering up to 50% of the monthly minimum wage for each replacement (Tissot, 2023).

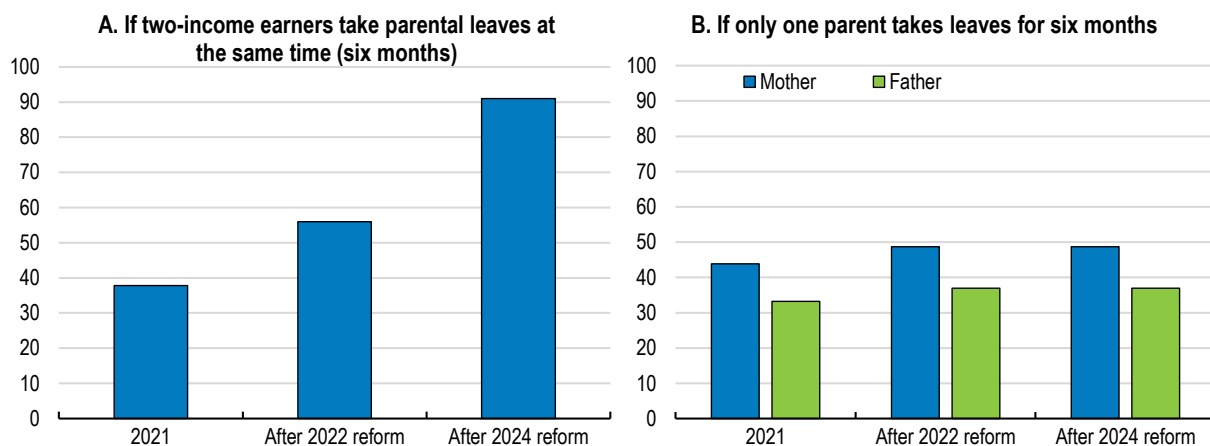
Enhancing workforce planning and ensuring more effective hiring of replacements can be achieved by extending the advance notice requirement for parental leave. Currently, employees seeking childcare leave must submit their application at least 30 days before the scheduled start date in Korea. This is a shorter notice period than in many OECD countries. In Sweden, for example, employees are required to give notice at least two months prior to the intended start date of childcare leave (Forsäkringskassan, 2023). Luxembourg mandates the notice no later than two months before the start of maternity leave (Government of Luxembourg, 2023).

Another challenge for workers taking parental leave is the low benefit level. Parental leave benefits are relatively low in international comparison due to a low benefit ceiling, leading to a relatively large reduction in household income. The parental leave benefits are set at 80% of previous earnings, similar to Sweden, Norway, and Iceland, but they are capped at around 40% of the average wage (at KRW 1.5 million or EUR 1 043 per month), much lower than countries such as Sweden (95% of the average wage), Norway (124%) and France (82%) (Koslowski et al., 2022).

The government doubled the ceiling for dual income parents in 2022 to encourage fathers to take parental leave. This increase only applied if both parents chose to take parental leave. After this reform, take-up rates among fathers increased by approximately 30% compared to the previous year (NABO, 2023a). Given the positive outcomes, the government further increased the maximum by 1.5 times in January 2024 (e.g., to KRW 4.5 million or 130% of the average wage) (Table 5.1). As a result, the economic disadvantages of dual-income couples due to parental leave have been greatly reduced. For instance, if both parents, each earning an average income, take parental leave for six months at the same time, the household income reduction compared to previous earnings is now approximately 10%, a substantial improvement compared to the 60% decline in 2021 (Figure 5.13, Panel A).

Figure 5.13. Household income is reduced when taking parental leaves

Share of previous income, average earners



Note: For Panel A, the analysis assumes a scenario where each parent in a dual-income family earns the average salary and they concurrently take parental leave for six months. In contrast, Panel B assumes that only one parent in a single-income household takes a six-month parental leave. In both panels, the average salary for mothers and fathers is set as the average income of individuals aged 30-34 and 35-40, respectively. This choice reflects the average age at the time of childbirth, which was 33.5 for mothers and 36 for fathers in 2022.

Share of the previous household income for Panel A, and share of the previous individual income for Panel B.

Source: OECD calculations based on data from Ministry of Employment and Labour, "Labour Survey by Employment Type".

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The government should also increase the general ceiling applicable when only one parent takes parental leave, which has seen minimal change over time (Figure 5.13, Panel B). This is an obstacle to the broader adoption of parental leave, particularly among sole leave takers. Assuming that a single-income father earns the average wage, six months of parental leave will still result in a decrease in household income of more than 60% (Panel B). The government plans to raise the ceiling from KRW 1.5 million to KRW 2.5 million for the initial months. This is a considerable improvement, but still represents only around 70% of the average wage and remains below the ceiling applied to some dual-income earners mentioned above. In most OECD countries, one ceiling around the average wage applies across all types of households and scenarios (Koslowski et al., 2022). For instance, whether both parents take parental leave or only one does, the applied ceiling for each income is the same. Empirical analysis suggests that higher parental leave benefits increase fertility in Korea (Kwak, 2022; Choi and Ham, 2024).

Higher replacement rates for parental leave will lead to higher direct costs under the existing setting. Korea can limit the extra fiscal burden by giving parents the flexibility to shorten parental leaves at higher replacement rates, such as in Austria and the Czech Republic. The introduction of such flexibility would also help increase fathers' uptake. For example, when the Austrian government allowed shorter leave options with a higher replacement rate to parents in 2008, fathers' leave taking increased by 23% (Ziegler

and Bamieh, 2023). Starting this year, the Korean government extended the maximum period of parental leave per parent by another six months. The government plans to make it flexible by offering a higher benefit for the first few months and then providing support at lower levels of benefits for subsequent periods without reducing the overall duration of leave. This is a positive step. An alternative could be to allow parents to set the length freely from six to 18 months, while the overall envelope remains the same so that the replacement rate ceiling for a six-month leave (or less) becomes approximately 120% of the average wage, while it remains 40% for those who choose 18 months. These options would make the parental leave more responsive to parents' needs while incentivising timely return to work. Overly long parental leaves tend to lead to skill deterioration, to make the return to work difficult, and to increase the gender pay gap. This is especially relevant to Korea where wages rise relatively rapidly with seniority.

Promoting flexible working arrangements

In Korea, like in many other OECD countries, parents with children aged eight or younger have the right to flexible working arrangements, including flexible or reduced working hours and teleworking. For instance, parents can reduce weekly working hours to a range between 15 and 35 hours for up to two years per parent, with partial subsidies covering the initial five reduced hours. The parents have the right to return to full-time work afterwards. However, in countries characterised by long working hours and a rigid working culture, such as Korea, employees may hesitate to use these arrangements due to concerns about potential negative impacts on their income or career evaluations (Sobotka et al., 2019). Indeed, only 16% of eligible employees utilised these options in 2022, well below the OECD average of 28% in 2015 (MOEL, 2023; KWCS, 2015). The government plans to extend the flexible working arrangement further to three years and expand eligibility to parents with children aged 12 or younger, with subsidies covering the initial ten reduced hours. This is a positive step, but more could be done.

Over the past decade, the average usual weekly hours of full-time workers decreased by 8.2 hours, reaching 43.2 in 2022 (Figure 5.6). This reduction marks the fastest pace among OECD countries, where the average decline over the same period stands at 1.5 hours, but typically from a lower starting point. Despite this progress, relatively long working hours still present significant obstacles for parents or prospective parents. Korea reduced the statutory maximum weekly working hours from 68 to 52 hours in 2018, which has improved work-life balance, but this is still above 48 hours, the statutory limit most commonly observed in OECD countries. The current law mandates that overtime cannot exceed 12 hours per week, on top of a 40-hour regular workweek, capping total hours at 52 per week. The government is considering increasing flexibility by allowing workers to accumulate overtime for extended breaks. However, even now, many employees are unable to fully utilise their legal annual leave (15 days), with an average annual leave utilisation rate of 76%, due to a number of reasons such as the preference for monetary compensation in exchange for unused annual leave, lack of replacement workers and worries about burdening colleagues (MCST, 2023), raising concerns that the flexibility gained would be one-sided. Flexibility can help parents combine work and family if it is balanced between employers and employees, but can have the opposite effects if it is unbalanced in favour of employers.

Increased teleworking would also improve work-life balance, given that Korean workers spend an average of one hour commuting (in each direction), the longest in the OECD. Teleworking is much more prevalent in large companies at 51% compared to only 27% in those with 5-30 workers (KIHASA, 2022c). Contributing factors to this disparity are career disadvantages for those who utilise the teleworking option and the lack of a teleworking system (KIHASA, 2022c). In support of teleworking adoption, the government offers consulting services, subsidies and refunds for infrastructure investment costs to SMEs. In addition to this, efforts are needed to reduce workplace disadvantages for those who use flexible working arrangements (see below). Some instances in private companies suggest that proactive implementation of flexible working arrangements has boosted productivity and market valuation (Box 5.2).

Box 5.2. Proactive work-family balance policies in the public sector and some private companies

The public sector has implemented some proactive family-friendly policies. Since 2010, efforts to facilitate the utilisation of replacement workers have been intensified. For instance, amendments to civil servant laws now mandate the swift recruitment of replacement staff when a civil servant takes parental leave, even for periods shorter than six months. This initiative has resulted in a replacement worker utilisation rate of 94% currently. In 2015, the parental leave duration was extended to three years. In 2018, the period of recognised career experience for promotion was also extended. Previously, even if the parental leave period for the first child exceeded one year, only up to one year was recognised for promotion. Starting from 2018, this recognition was extended to three years in line with the full parental leave period, when both parents take parental leave for more than six months each for their first child. There is a lack of data that directly compares the overall parental leave utilisation rate between civil servants and private sector employees, but an empirical analysis suggests that those who worked in the public sector are around four times more likely to perceive parental leave as being accessible (Kim et al., 2021). Furthermore, in 2021, the share of male government officials who used parental leave reached 41.5%, more than doubling from 19% in 2016.

Some private companies have implemented proactive work-family balance policies beyond government requirements, leading to increased productivity and market valuation. A prime example is POSCO, one of the world's largest steel manufacturers, which has introduced a range of policies. For example, POSCO introduced a "working-from-home for parenting" system, allowing employees with young children to work remotely for either full or half days. In addition to facilitating flexible work arrangements, POSCO provides generous maternity benefits, offering a one-time payment of KRW 2 million (approximately EUR 1 400) for the firstborn and KRW 5 million (approximately EUR 3 500) for the second child on top of the mandatory benefit. After maternity leave, parental leave automatically begins for up to three years without the need for a separate application process or approval from a supervisor. According to POSCO's own surveys and analysis, these policies have increased employee satisfaction levels and the company's market valuation. These policies make the company attractive to young talent, especially in a situation where there is a shortage of such talent in the Korean labour market.

Another example is THEVOO Engineering, an SME engineering company. THEVOO Engineering actively promotes flexible work hours and telecommuting for all employees, and currently over half of the workforce is making use thereof. It introduced a 'Selective Time Work System' which allows employees to freely choose working hours. Employees are required to work a minimum of six hours and 30 minutes per day, with the standard workday being eight hours. If they do not fulfil the full eight-hour workday, they have up to three months to make up for the remaining hours. THEVOO put in place software that records all data generated within the company, including PC usage status and activity, as a performance management programme. Since the introduction of the system, the company's revenue has nearly doubled despite a decrease in the number of staff. The company goes to great lengths to facilitate work for parents, for example by allowing parents to bring their children to work when needed and providing a space where they can study or watch videos. The CEO has ambitions to establish workplace childcare, but the company does not have the necessary scale to realise this ambition on its own.

Tackling discrimination

To enable employees to freely utilise their parental leave or flexible working time rights, they need assurance that doing so will not lead to repercussions, such as slower career progression (OECD, 2019a). In a survey carried out in 2018, 70% of those who utilised parental leave reported facing various disadvantages on their return, notably concerning promotions, exclusion from significant tasks, and

discrimination in bonus allocation (KWDI, 2018). This is despite legal prohibitions against discrimination related to pregnancy, childbirth, and parental leave.

Korea has the largest gender wage gap in the OECD, despite a decline from 37.2% in 2015 to 31.2% in 2022. Observable factors like the increase in the proportion of women with higher education in high-wage industries and occupations more than fully accounted for the decline, even as the practice of paying women less than men in similar conditions widened the wage gap (Choi and Ham, 2024). Korea has the highest educational attainment for women in the OECD, but one of the lowest shares of women managers, and the highest gender pay and employment gaps in the OECD (OECD, 2023b). According to a survey, one in four women reported feeling discriminated against during job recruitment (24.4%) and in terms of pay (25.1%) (KLI, 2023). In contrast, only 7.6% of men reported similar experiences of discrimination in these areas. A number of empirical analyses confirm the presence of discrimination during job recruitment (Choi and Ham, 2024). For instance, Kim and Oh (2019) found that women earn 17.4% less than men in entry-level jobs, despite having identical resumes. Such a gender wage gap likely contributes to gendered role separation among couples during childbearing years, as couples will minimise income loss if the women work fewer hours or leave the labour force altogether. This may in turn perpetuate employer expectations that women are less likely to work during their childrearing years.

Gender discrimination reflects a number of factors, including a lack of legal enforcement and weak sanctions (OECD, 2019a). In Korea, women who have been discriminated against face difficulties in making a case. When a complaint is filed, many cases have been dismissed due to a lack of supporting evidence or resolved only through corrective measures without imposing penalties (KWDI, 2021; Edaily, 2024). These gaps can result in a climate where workers feel compelled to endure disadvantages, believing that raising concerns may not yield tangible resolutions or protection. Indeed, according to a survey, three out of four workers tolerate gender discrimination mainly due to perceived ineffectiveness in addressing concerns (Human Rights Commission, 2018).

Significant efforts have been made recently. While about 55 000 women workers were estimated to have exited their jobs during pregnancy, only 535 workplaces were inspected in 2016 (Kim, 2017). To improve the situation, since 2016, Korea has conducted “Smart Labour Inspections” in workplaces with staff who are pregnant or have given birth, using relevant information from the National Health Insurance Service and Employment Insurance. The number of labour inspectors nearly doubled from 1 538 in 2016 to 3 058 in 2023. The number of inspected workplaces also increased to 1 028 in 2023. The number of reported discrimination cases related to maternity leave increased from 49 in 2016 to 91 in 2023. In 2022, Korea permitted the existing National Labour Relations Commission, comprised of members representing workers, employers, and public interests, to issue corrective orders to employers. These orders include ceasing discriminatory acts or paying appropriate compensation after investigation and interrogation when affected workers apply for remedy. Failure to comply with a corrective order without justifiable grounds may lead to an administrative fine of up to KRW 100 million (EUR 74 000).

To tackle the persistent gender discrimination, Korea should strengthen compliance and enforcement measures further. Despite increases, labour inspectors are struggling with chronic manpower shortages (KLI, 2023b), resulting in inadequate supervision of many workplaces (KLI, 2024). Increasing the number of labour inspectors further to cover more workplaces should be considered. This is also important to increase employment insurance enrolment, tackle labour market duality, and ensure general compliance with labour law (OECD, 2022a). At the same time, strengthening sanctions on employers who are found to have discriminated will help increase voluntary compliance from employers. In Korea, employers face fines up to KRW 5 million (EUR 3 470) when found guilty of gender discrimination in hiring, and up to KRW 30 million (EUR 20 800) with up to five years in prison for gender discrimination in promotions. The fine is lower than in some other OECD countries. For instance, the fine is up to EUR 450 000 in the Netherlands or EUR 300 000 in Germany for gender discrimination cases (OECD, 2019a). In Ireland, in cases of discrimination, employees can seek reinstatement to their previous position and claim financial compensation for the preceding six years without any ceiling for any damages suffered due to the

discrimination under the Employment Equality Act (IHREC, 2024). Gender discrimination in the workplace may lead to imprisonment in Belgium, for one month to one year (Baker McKenzie, 2023). In France, the fine can be up to EUR 225 000, along with imprisonment for up to three years. The Finnish Penal Code prohibits discrimination at work based on sex and several other grounds with penalties varying from a fine to a maximum of two years imprisonment (ILO, 2023). The government's efforts to strengthen the corrective measures mentioned above should be accompanied by increasing the fines imposed on employers in the first place, acting as a deterrent against potential violations.

Korea should strengthen pay transparency measures. Pay transparency helps close the gender wage gap, by requiring employers to disclose information about pay structures and salaries. This not only holds firms accountable for gender disparities but also empowers workers to challenge inequities and generates public pressure for change, prompting employers to take corrective action. Since 2020, businesses have been required to disclose gender wage data through online systems such as Alio and Clean Eye. Korea mandates gender pay reporting, but firms are not requested to provide detailed information necessary for meaningful analysis and action. Among the 21 OECD countries that mandate gender pay reporting in the private sector, Korea and the United Kingdom are the only ones that request only an aggregate, company-level estimate of the wage gap (OECD, 2023g). In all other countries, more granular information, such as by job category, parental status or seniority, is required for reporting. Furthermore, Korea mandates reporting only for large firms (with a minimum of 500 employees, or 300 or more full-time employees for companies obligated to provide disclosure under Article 14 of the Monopoly Regulation and Fair Trade Act). Moreover, the absence of mandatory equal pay auditing processes further hinders progress in addressing inequalities (OECD, 2023g). To reduce the large gender wage gap, the government should consider expanding reporting requirement to smaller firms, demanding more granular pay statistics to identify and address specific barriers faced by women, and mandating equal pay auditing processes, as practiced in many other OECD countries, including Canada, Finland, France and Sweden (OECD, 2023g; Cowper-Coles et al., 2021).

Table 5.2. Past recommendations to improve work-life balance

Main recent OECD recommendations	Actions taken
Move towards greater public financing of maternal, paternal, and parental leave.	Paternity leave benefit support from Employment Insurance will increase from five to ten days of income from mid-2024.
Regularly publish a national-level analysis of wage difference determinants to promote fairer wages across genders.	The "gender work disclosure system", which requires companies to publicly disclose the proportion of men and women at all stages of recruitment, work and retirement, was introduced in the public sector in 2023 and is to be extended to the private sector.
Encourage the take-up of parental leave by extending coverage to groups of workers hitherto not covered and introducing options to take parental leave for shorter periods at higher payment rates.	The "6+6" parental leave system, which increases benefits for the first six months when dual income earners take parental leave together, was introduced in 2023.
Raise qualification standards for teachers in early childhood education and care.	No action taken.
Help potential female entrepreneurs to balance work and family and obtain financing to reduce the large gender gap in entrepreneurship rates.	No action taken.

Policies to reduce the direct costs of family formation

Among unmarried individuals aged 19 to 34, 41% of men and 26% of women identify financial constraints as their primary deterrent to getting married. As discussed above, childcare is largely free, but subpar quality, limited accessibility, and short opening hours lead many working parents to spend extra money on babysitting. Furthermore, housing, education and tutoring are expensive despite various types of financial transfers to families with young children (Box 5.3). More than half of young people (51.2%) think that they have to own a house to get married, especially in big cities (KRIHS, 2023). However, the housing price-to-income ratio in Metropolitan areas increased from 6.7 in 2012 to 10.1 in 2021 (KOSIS, 2023), making home

ownership challenging to achieve for young people. High private education costs are another factor reducing fertility rates. Korea's private tutoring participation rates are very high, largely reflecting fierce competition to enter prestigious universities. Many parents therefore allocate a significant portion of their income to private tutoring. Meanwhile, the income of young adults has decreased compared to other age groups over the past 10 years, while their debt has increased (Figure 5.14).

Box 5.3. Financial transfers to families with young children

Korea provides cash allowances and tax breaks to parents (Table 5.3). The transfers mostly target parents with young children up to the age of eight. The combined amount is around 3% of GDP, among the lowest in the OECD. Such transfers can play a role in boosting fertility rates by reducing financial costs. Starting in 2023, the central government introduced a cash handout for parents, offering KRW 700 000 per month (USD 525) for households with newborns. This amount was increased to KRW 1 million (USD 750) in 2024. Local governments also provide additional cash benefits to support childbirth. A study found that childcare allowances from the provincial government of Gangwon helped slow the decline in the fertility rate (Lee and Lee, 2022; Choi and Ham, 2024).

Table 5.3. Major financial family supports in 2024

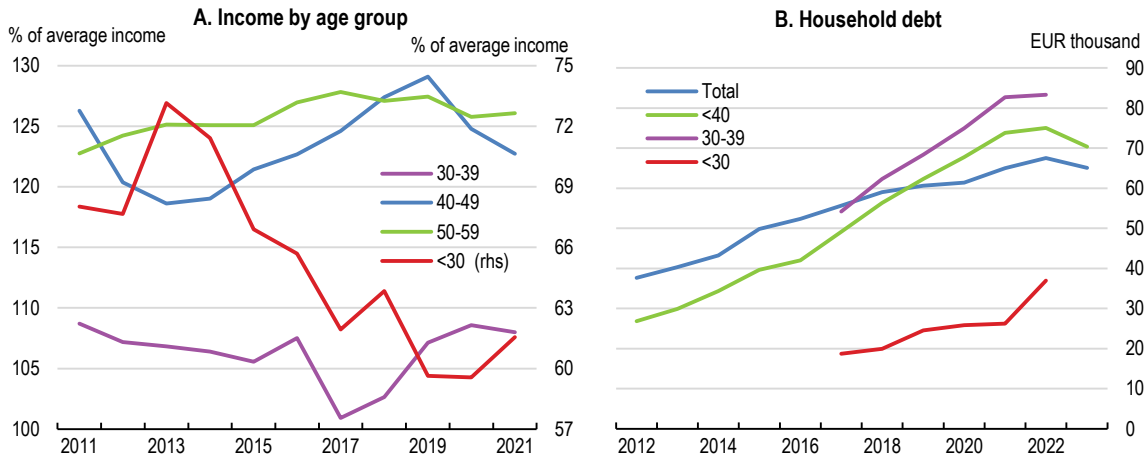
	Cash allowance			Tax breaks		
	<i>Maternity support</i> ("First meeting Voucher")	<i>Childcare allowance</i> Parental allowance	<i>Child allowance</i>	<i>Home care allowance</i>	<i>Income tax deduction</i>	<i>Tax credit</i>
Eligibility	Children under 1 year old	Children under 2 years old	Children under 8 years old	Children not using childcare centre and not receiving parental allowance	Children under 20 years old (taxable income under KRW 1 million, but under KRW 5 million in case of only earned income)	Children 8 to 20 years old
Duration	One-off	23 months	95 months	85 months	20 years	12 years
Benefit level	For the first child: KRW 2 million From the second child: KRW 3 million	Children 0 to 11 months old: KRW 1 million per month Children 12 to 23 months old: KRW 500 thousand	Children 0 to 95 months old: KRW 100 thousand per month	Children 24 to 85 months old: KRW 100 thousand	1.5 million per year	For one child: KRW 150 thousand per year For two children: KRW 350 thousand For three or more children: KRW 350 thousand + KRW 300 thousand from the third child

Source: Ministry of Health and Welfare; Ministry of Economy and Finance; NABO.

Several evaluations suggest that public supports aimed at helping women balance career and family have a greater positive effect on childbirth than direct financial support to parents, because cash transfers need to be very generous to cover more than a small portion of the direct and indirect costs associated with having children (Doepke et al., 2017; Colombo et al., 2011). There is room to increase financial transfers further, given that the costs to raise children mostly increase during school age in Korea while current


support is skewed towards young children, but reforms to optimise early childhood education and care and parental leave outlined above should take priority to direct financial support to parents. Likewise, targeted financial support to parents to shoulder housing costs may be helpful, but structural reform to correct the underlying causes for high housing costs and improve youths' job prospects would be more effective.

Figure 5.14. Financial insecurity among young people has increased



Note: Panel A represents a four-quarter moving average for three age groups. Panel B shows debt for individuals under age 40 and for the total population.

Source: Statistics Korea; Bank of Korea; Financial Supervisory Service.

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Reducing labour market duality

Many young people either postpone their careers to land high-quality jobs in large firms, or start at smaller companies with non-regular contracts. Over 40% of the employed 20-29 year-olds were non-regular workers in 2023 (Statistics Korea, 2023). Raising youth employment while increasing their job security and labour market income would give young people the confidence in the future they need to form families and have children, and it would help ease the consequences of ageing. Empirical analysis suggests that regular employees have a 1.65 times higher probability of marriage and an approximately 2 times higher probability of childbirth than non-regular employees, controlling for individual characteristics like education level, residential area and industry (FKI, 2022). The employment rate of youth (aged 15-24) was 29% in 2022, well below the OECD average of 43%. The share of university graduates among youth is the highest in the OECD, as highly-educated youth race for credentials to secure attractive careers on regular contracts in large companies, while many of the available jobs are in SMEs, on non-regular contracts and require less human capital. Large differences in pay, social insurance coverage, job security and job quality between regular and non-regular workers, largely reflecting differences in productivity between SMEs and large companies (Chapter 3), encourage young people to queue for jobs in large firms to avoid low-wage precarious jobs, as documented in the *2022 Economic Survey of Korea* (OECD, 2022a).

Despite efforts to break down labour market dualism, the share of non-regular workers increased from 32% in 2014 to 37% in 2023 according to Statistics Korea. According to an OECD survey, 61% of 25-54 year-olds reported that the risk of losing their job or income was among their top-three worries, as against a 51% OECD average (OECD, 2024c). Policies to reduce productivity gaps between SMEs and large companies (Chapter 3) and reforming low-skilled immigration policies (see below) would help, but direct measures to weaken firms' incentives to hire non-regular workers are also needed, accompanied by a strengthened social safety net. Relaxing employment protection for regular workers would reduce the cost and uncertainty of dismissal, while income replacement for the unemployed could be strengthened by raising the ceiling of employment insurance while lowering the floor (*2022 OECD Economic Survey*). A survey of 70 employers reports that they hire non-regular workers to ensure labour market flexibility to

respond to market fluctuations, thereby avoiding the expenses associated with laying off regular workers (Saram-in, 2021). Employment protection for regular workers is relatively high compared to other OECD countries, ranking as the 13th strictest in 2019. Regular workers are strongly protected from dismissal by laws and labour unions, and delays before final court rulings are excessive. Dismissals for economic reasons are strongly regulated, with many procedural hurdles for firms. There must be “an urgent managerial necessity”, a criterion that is not well-defined and difficult to prove in court. Consequently, unpredictable layoff costs, compounded by lengthy legal processes, drive up incentives for hiring non-regular workers (2022 OECD Economic Survey). Simplifying and accelerating the remedial procedure for unfair dismissals, clarifying criteria such as providing more explicit guidance on what constitutes “urgent managerial necessity”, together with increasing the representativeness of unions as discussed below, could improve the situation.

Labour unions are relatively strong but unrepresentative of the majority of workers. Only 3% of non-regular workers are labour union members, in contrast to the 20% membership rate among regular workers (Statistics Korea, 2023). The labour unions' predominant focus on the interests of regular employees, especially those in large companies and the public sector, has contributed to the gap in employment protection compared to non-regular workers. The low unionisation rate is also an issue in general, as fragmented and poorly representative social partners are likely to be less inclusive and increase the level of strife (OECD, 2017a). Korean unions received grant funding from the central government until 2023. Union fees could also be deducted from income taxes, but were pooled with other deductions and subject to a cap on total deductions. In order to increase the representativeness of unions, public funding should increasingly incentivise membership, for example by applying a separate ceiling for tax deductions of union fees, but could also incentivise the membership of non-regular workers more directly. The current government abolished union funding partly due to the lack of transparency on the use of public funds in 2024. If union funding is reinstated along with improved transparency, the aforementioned measure could be considered to enhance the representation of the unions.

Another reason for hiring non-regular workers is their low labour costs, stemming partly from their low enrolment rate in social insurance. Hiring workers who are not enrolled in social insurance schemes (i.e., national pension, health and employment insurance) lowers employers' labour costs by about 8-9%. Increasing the enrolment rate, notably through a stronger monitoring system and labour inspectorate, and integrating social contributions and tax collection, should be considered. In 2020, Korea outlined a roadmap to achieve full employment insurance coverage by 2025. The original plan was to increase enrollment to 17 million in 2022 and 21 million in 2025. However, as of December 2023, enrollment stood at only around 15.83 million despite some efforts such as expanding employment insurance to platform workers and several occupations such as agency drivers in 2021-22, and easing requirements for employment insurance enrollment in small agriculture and fisheries businesses in 2023. The government plans to integrate social contributions and tax collection as recommended in the 2022 Economic Survey of Korea, which would help increase compliance. Increasing social insurance enrolment rates of non-regular workers is a key step to reduce duality and protect those workers most in need of protection. As part of such reform, parental leave benefits should increasingly be funded by general taxation, while employment insurance contribution rates should be adapted to overall expected liabilities.

Table 5.4. Past recommendations to reduce labour market dualism

Recommendations from past Surveys	Actions taken
Break down labour market dualism by relaxing employment protection for regular workers and making it more transparent, while expanding social insurance enrolment and training for non-regular workers.	Requirements for employment insurance enrollment in small agriculture and fisheries businesses was eased in 2023.
Include the self-employed in compulsory employment insurance, accompanied by more effective enforcement measures.	In 2023, the government extended support for employment insurance premiums from single-person self-employed businesses to small business owners with fewer than 10 employees, and the share of the premium covered increased from 20-50% to 50-80% in 2024.

Containing housing expenses

Enhancing the labour market outcomes of young people would improve their ability to afford housing, but the role of housing policies should not be overlooked. An empirical study showed that the doubling of housing prices between 2013 and 2019 reduced the likelihood of people getting married by between 4 and 5.7% (Kang, 2022). An empirical study in OECD countries also found that increases in household expenditure on housing had a significant and negative effect on fertility rates (Fluchtmann et al., 2023).

Seoul is one of the most densely populated cities in the OECD (OECD, 2021b). In particular, many parents flock to popular areas such as Gangnam and Seocho, where good schools and high-quality private education providers are concentrated (Jones, 2020). This, along with the increase in single-person households over the past 20 years, has increased demand for housing in Seoul. However, supply has not followed suit, resulting in rising prices (BOK, 2021). The housing supply rate in Seoul (the ratio of the total number of housing units to the total number of households) has decreased since 2016, and stood at 93.7% in 2022 (Statistics Korea, 2023). According to Statistics Korea, the total number of households nationwide is expected to increase until 2039 despite the population decline, due to increasing numbers of single-person households. This means that the supply of housing to meet new demand must steadily increase at least for the next 15 years to improve the balance between supply and demand.

The government's strategy to boost the supply of housing includes providing 2.7 million homes nationwide and 1.58 million homes in the Seoul metropolitan area from 2023 to 2027, a 32% increase compared to the addition to housing supply from 2018 to 2022. In contrast to the prior administration, the plan aims to invigorate private housing supply by simplifying regulations and procedures. Notably, the government lifted presale price caps in most areas of Seoul, a longstanding practice in Korea aimed at stabilising housing prices for privately-built new apartments. Additionally, some reconstruction regulations were eased. However, due to the recent real estate downturn (Chapter 2) and escalating construction costs, housing starts decreased by 37% nationwide and 56% in Seoul in 2023 compared to the previous year. Given the two to three-year construction timeline, this implies a 37% reduction in new units available for occupancy in 2025, potentially exerting upward pressure on market prices going forward.

To further stimulate housing supply, the government should consider further relaxing regulations that hinder private sector involvement with a particular focus on reconstruction (e.g., rebuilding or repurposing), which is crucial for addressing housing shortages in densely populated Seoul (OECD, 2019b). Since 2006, the Korean government has been collecting 'excess' profits expected from apartment reconstructions. Under the current law, if the average profit per apartment cooperative member of a reconstruction exceeds a certain limit (currently KRW 80 million), the government collects up to 50% of the profit in advance. This practice causes financial strain among cooperative members, reducing incentives for residential construction. The government should consider raising the limit further or abolishing it. While the original intent was to promote housing price stability and social equity by reclaiming excess profits, this practice unintentionally hampers reconstructions and could lead to double taxation, as homeowners are already subject to capital gains tax upon selling the property. Furthermore, the government should also consider lifting presale price caps in the districts where they remain including Gangnam and Seocho, as the shortage of housing supply in these areas is a driving factor behind escalating housing prices, as mentioned above. The presale price caps, which diminish housing project profitability, keep down both the quantity and quality of housing supply. While they temporarily slow housing prices in the short run, they likely raise them over the long run (Jones, 2020; Yun and Kim, 2014; KDI, 2009).

Social housing policies should also be reviewed, as social housing is an important source of affordable housing for young people. With increases over the past few years, social housing represents around 8% of the total housing stock, slightly higher than the OECD average (Cournède et al., 2022). However, a significant share is vacant. From 2009 to 2019, on average, 17 000 public housing units were supplied to newlyweds annually, but only 51% were occupied because the quality, location, and size did not match the needs of newlywed couples (Board of Audit and Inspection, 2021). Despite efforts to enhance the

quality and aesthetics of public housing in Korea over the years, these units still generally lag behind private housing, resulting in a persistent stigma attached to public rental housing residents (Woo et al., 2021). This potentially deters some newlyweds from considering these housing options. Additionally, public housing units targeted at newlyweds have predominantly been less than 50m², potentially falling short of the desired size. Indeed, smaller-sized public housing has shown a higher non-occupancy rate compared to larger units.

Since 2016, public housing support has been part of the low fertility rate budget, and its budget has grown nearly fivefold, now comprising the largest portion of the current low fertility rate budget (Figure 5.7). Starting from March this year, the government plans to provide public housing to 70 000 households with newborns. Details are not yet available, but the quality of the new housing units should be enhanced to optimise outcomes. For instance, aligning design guidelines for public housing with those of neighboring housing developments should be considered to ensure physical consistency and reduce gaps in the overall design quality of housing. Furthermore, the government should consider increasing the supply of larger-sized public housing to better meet demand.

Extending family support to cohabiting couples

De facto families where couples live together but are not married are legally recognised in most OECD countries, including Korea. These couples often have weaker rights than married couples in cases such as inheritance and parental leave (Yang et al., 2024). Civil or registered partnerships exist in two thirds of OECD countries, typically giving the same legal rights as those married couples enjoy, although such rights are reserved for same-sex couples in a number of these countries. According to a survey, 28.3% of respondents in cohabitation or de facto marriage in Korea reported experiencing limitations in receiving government support benefits such as housing policies and health insurance (MOEL, 2022). Although cohabiting couples can legally apply for parental leave, obtaining it can be challenging in practice, and they may be categorised as single parents once they have a child. In addition, cohabiting couples do not have inheritance rights. Consequently, the surviving partner of a cohabiting couple risks abruptly losing her or his place of residence if the partner dies. The share of the population aged 13 and above who find cohabitation without marriage acceptable has increased, reaching 65% in 2022, with the share for young people (aged 19-34) at 81% (Statistics Korea, 2022). Based on this social consensus, taking further steps towards equal treatment of alternative family constellations could give couples an opportunity to form a family in incremental steps without incurring the immediate costs and expectations attached to marriage (Yang et al., 2024). Cohabiting can also provide at least a short-term financial relief for a couples' housing burden (KWDI, 2021).

Supporting infertility treatment

Assisted Reproductive Techniques (ARTs) are increasingly important in addressing fertility challenges across the OECD, given that the average age of first-time mothers has increased, and fertility declines as women age. Studies suggest that the coverage of fertility treatment supports is positively correlated with the fertility rate (Grant, 2006; OECD, 2016b). Some OECD countries with high fertility rates provide fertility treatments to all citizens. For instance, France, Sweden and Denmark offer universal and free fertility treatments under tax-funded national health insurance. In such countries, there are twice as many fertility treatment cycles per million compared to countries like Italy and Portugal, where only heterosexual married couples are eligible for coverage (Silva et al., 2012; OECD, 2016b).

Korea has enhanced public support for fertility treatments to married couples. In 2017, national health insurance began covering ARTs including In vitro fertilisation, intrauterine insemination and other fertility treatments (up to 70% of total costs depending on the treatment). Additionally, local governments provide subsidies to finance ART costs not covered by national health insurance, such as progesterone medications. In 2019, the age limit for support eligibility was lifted. According to a study, these policies

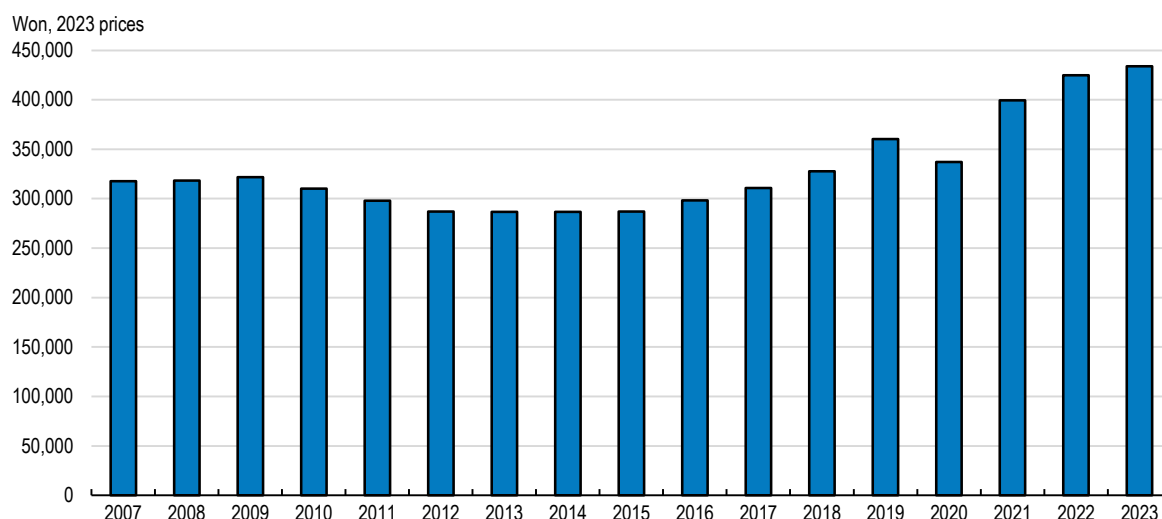
have contributed to higher use of ARTs and better pregnancy outcomes (Cha et al., 2023). The number of individuals undergoing fertility treatment in Korea has grown from 227 922 in 2018 to 238 601 in 2022. Babies born to mothers receiving support for fertility treatment currently make up 8% of total births. However, in 2022, funding for ART subsidies was shifted to local governments, resulting in regional disparities (NABO, 2023b). For instance, Seoul offers relatively high support (e.g., up to KRW 1 million for fresh embryo transfer treatment in Gangnam-gu) without an income threshold for eligibility, while most other regions offer lower support (e.g., KRW 0.5 million for fresh embryo transfer treatment in Suncheon-si) with an income threshold for subsidies standing at 180% of median income in most regions (NABO, 2023b). The government is planning to eliminate the income threshold for all regions and increase subsidies to reduce out-of-pocket costs, which is a positive step. Furthermore, the government should consider expanding coverage to all citizens going forward.

Reducing education costs

Many Korean parents allocate a sizeable portion of their income to private tutoring, making education expenditure another major hurdle to have children. In 2023, 78.5% of Korean primary and secondary school students took private tutoring (Ministry of Education, 2024). Monthly average expenditure for private tutoring per student has increased since 2015, reaching KRW 434 thousand, roughly 10% of average household disposable income in 2023 (Figure 5.15). Empirical analysis suggests that prevalence of private tutoring is negatively associated with a country's total fertility rate (Anderson, 2018). Indeed, 49.2% of Korean parents think the cost of private tutoring is very burdensome (KEDI, 2022), and 27% point to the burden of their children's education and childcare as one of the main reasons for the falling fertility rate (PCASPP, 2023).

Figure 5.15. Private education expenditure has increased in recent years

Monthly private education expenditure per student, at constant prices



Note: Private education expenditure has been deflated using CPI.

Source: Korean Statistical Information Service.

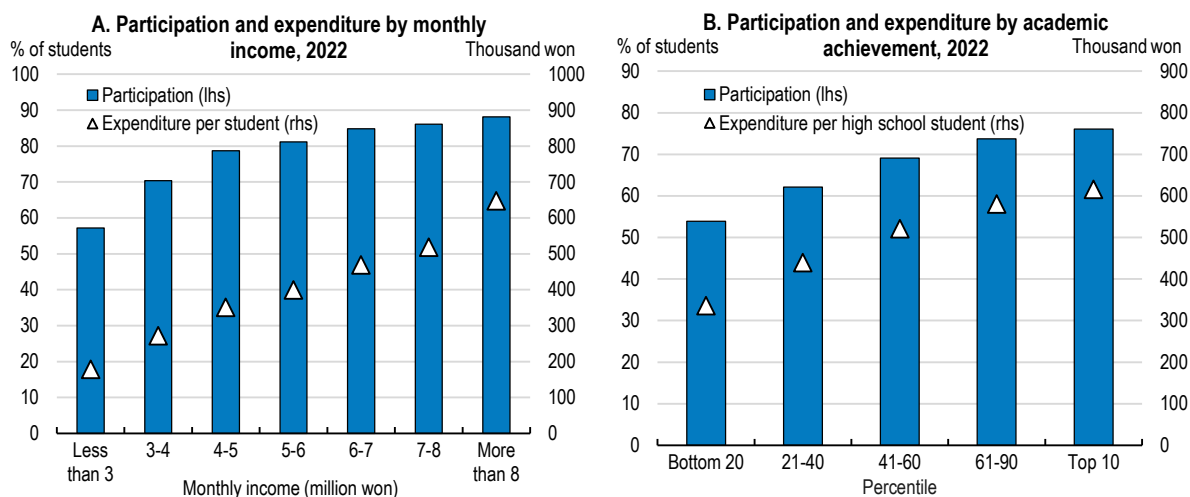
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The excessive investment in private education is largely due to a strong preference to enter top universities. In Korea, there is an implicit but well-known ranking of the most prestigious universities. Given the dual labour market and a scarcity of quality jobs, graduates from top universities are much more likely to obtain a high salary. Lee and Koh (2023) found that graduates from top-tier universities earn 24.6% more than graduates from bottom-tier universities at the time of labour market entry in Korea, and the wage gap peaks


at 50.5% between the ages of 40 and 44. The intense competition to gain admission to these prestigious universities, dubbed “the golden ticket syndrome”, leads many students to prioritise the name of the institution over choosing a field of study according to their interests and skills (OECD, 2022a). According to a government survey on factors influencing university choice, 24% of respondents considered university prestige most important, while 32% prioritised aptitude and interest (MOE and KRIVET, 2023). It further suggests that over the past three years, more have prioritised prestige, while fewer have prioritised aptitude and interest. There is also significant competition to enter medical schools. Doctor pay is high compared to other OECD countries, especially for specialists (OECD, 2023c), and doctors can remain in their career until they reach old age, unlike many other professionals who are typically forced out around the age of 50 (see below).

This situation where almost all students participate in inefficient competition from which only a few emerge as winners is a huge waste for the country. Intensive tutoring has a detrimental effect on adolescent mental health (Xu and Lee, 2023), and Korean youth report low life satisfaction relative to other OECD countries (OECD, 2023f). More than 80% of Korean college students perceive high school as a “life-or-death battlefield”, a significantly higher proportion than in the United States (40.4%), China (41.8%) and Japan (13.8%), countries with relatively comparable entrance exam systems (Kim, 2017). Furthermore, the situation has implications for social inequality. Spending on private tutoring increases with parents' income (Figure 5.16, Panel A), and participation in private education is positively correlated with academic achievement (Panel B).

Figure 5.16. Private education spending is positively correlated with parents' income and academic achievement



Source: Ministry of Education.

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Efforts to reduce private tutoring have ranged from enhancing the quality of public education to directly regulating private tutoring institutions. Investment in public education has increased to the OECD average, and the number of students per teacher is relatively low (Minea-Pic, 2023). The university entrance exam, the College Scholastic Ability Test (CSAT), has also been reformed to reduce the burden on students, such as removing off-curriculum “killer questions” from the university entrance exam as of 2023. The government has also directly regulated tutoring centres (*hagwons*) by recommending them not to offer tutoring ahead of the curriculum from 2014, and banning classes after 10 PM from 2008. Such reforms were unsuccessful, as they did not address the core issues of elite universities and labour market dualism (see above). Many OECD countries have university entrance systems with low levels of competition and hence little private tutoring. More than half of OECD countries adopt open admissions systems for tertiary

education, meaning that there are no restrictions on the number of students accepted into Bachelor's or Master's programmes at universities in general. In Germany, for instance, where public universities are free and unranked, all upper secondary graduates who passed the university entrance exam are secured a seat in the university and the major of their choice except for some popular majors (Box 5.4). Introducing a credit transfer system which allows credits taken at one university to be counted towards a qualification studied for at another, and facilitating joint degrees as in most European universities (EC, 2024) could help students pursue their academic interests at various institutions, reducing the emphasis on a few prestigious universities. Raising investment in higher education, which is low compared to the OECD, should be considered, particularly in selected universities outside of the Seoul metropolitan area to reduce the preference for Seoul-based universities. The government has programmes to support local universities, such as the Regional Innovation System and Education (RISE), which encourages municipalities to make necessary investments in local universities, and the Glocal College 30 Project, a targeted investment in key local universities for the development of success models, but these need to be accelerated.

Box 5.4. Open admissions systems for tertiary education

The use of open admissions or unselective enrolment is fairly common among both public and private tertiary institutions in OECD countries. Over half of the OECD countries, for which data is available, employ open admissions systems, wherein all applicants meeting the minimum qualification level are admitted to some public and/or private institutions. Access to specific fields of education and/or institutions in these countries may still be subject to certain selection criteria.

Germany is an example. For most of the 20th century, access to universities in Germany was based on the principle that every student who passes the university entrance qualification Abitur is guaranteed a seat at the university and major of her choice. Public universities in Germany are free and unranked. However, due to physical space constraints, the clearing house called ZVS (*Zentralstelle für die Vergabe von Studienplätzen*) allocates seats for majors that receive more applicants than the total number of seats available nationwide, such as several medical school-related majors (medicine, dentistry, pharmacy and veterinary medicine). A share of study places is allocated to those with the best grades and a share to those who have been out of school for a long time. The rest is allocated based on applicant preference and the university's own criteria. Germany has low private tutoring rates in primary schooling. According to TIMSS 2015, two-thirds of Korean fourth graders versus only one tenth of German fourth graders attended private tutoring in mathematics in the last 12 months before data collection.

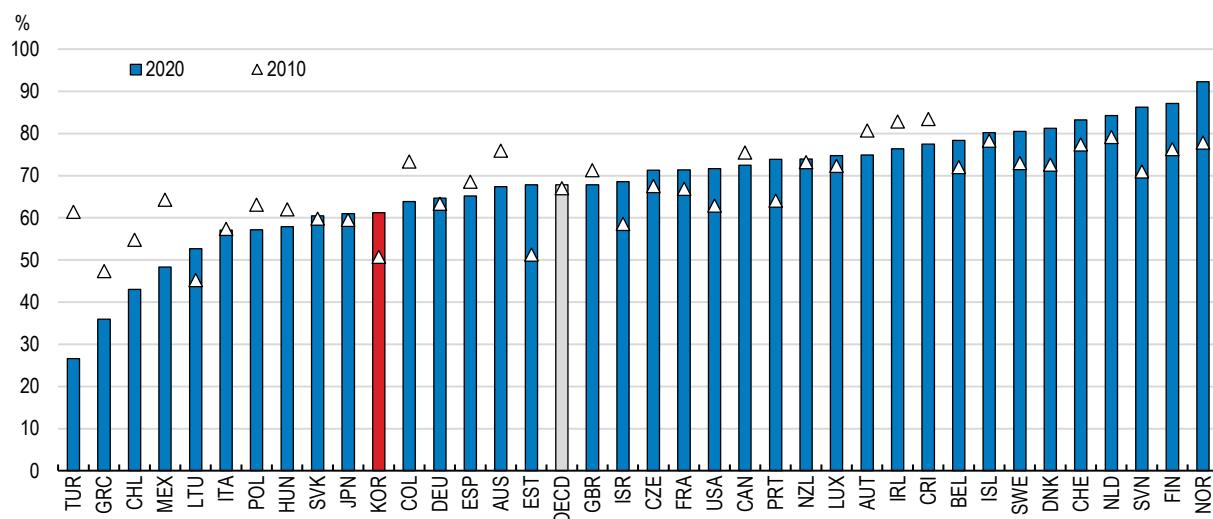
Source: OECD, 2019c; Guill and Lintorf, 2019; Guill and Wendt, 2016.

Increasing the number of university places in popular majors would also help reduce the intense competition for a few spots. At the same time, relocating some prestigious universities or certain popular departments outside the Seoul metropolitan area could also be considered, to contribute to a balanced development of the country. In line with the recommendation of the 2022 *Economic Survey of Korea*, the Korean government allowed universities to adjust student enrolment across majors from the 2024 school year (Ministry of Education, 2022). The government also plans to increase the medical school enrollment quota to address doctor shortages, which is expected to reduce the intensity of competition to enter medical schools. Korea has one of the lowest concentrations of doctors, with 2.5 doctors per 1000 people (2021, OECD average 3.7). On top of that, allowing universities more flexibility to decide their total enrolment would encourage them to be more responsive to student demand and technological change, reducing competition for prestigious universities. In the mid-1990s, places at universities located in non-Seoul metropolitan areas increased due to deregulation, while caps on universities in the Seoul metropolitan area were maintained. Since then, competition for admission to universities in the Seoul metropolitan area has grown. Han (2022) found that regulated universities within the Seoul metropolitan area tend to be less responsive to student demand. Moreover, the deregulation of student enrolment in non-Seoul metropolitan

areas led to a 9 to 10% decrease in participation in private tutoring in those regions (Park et al., 2018). As noted in the *2022 Economic Survey of Korea*, caps on student enrolment in the Seoul metropolitan area need to be gradually relaxed to allow increased enrollment in majors of upcoming fields such as AI and semiconductors, alongside increased investment in universities outside the Seoul metropolitan area.

Despite continuous investments in public education, a significant number of Korean parents express dissatisfaction with the current school system (Figure 5.17), leading them to enroll their children in private tutoring. The dissatisfaction extends to the quality of regular and extracurricular classes. School ends before 2 PM in the lower primary grades, and a lack of quality daycare services for young school-age children pushes one in five parents with a primary school child to use private tutoring (Statistics Korea, 2023). Furthermore, it compels mothers to exit employment or take parental leave (Choi et al., 2022). Currently, extracurricular classes are open until 5 PM for first and second-grade students in primary school, shorter than full-time normal working hours for parents. The government plans to extend extracurricular class hours further to 8 PM (“Neulbom School” programmes) for first-grade primary school students in 2024, second-graders in 2025 and all primary school students in 2026, to support working parents. To ensure its success, the reform should be implemented with a keen eye on quality. The after-school participation rate for primary school students was 56% in 2023, much lower than the 86% participation rate in private tutoring, suggesting it fails to meet students’ needs (Ministry of Education, 2024). As in many OECD countries, after-school classes could be better linked to regular classes and offer classes tailored to students’ learning levels (OECD, 2024b). For example, the new all-day secondary school in Germany, which provided students with personalised learning, showed that students who received quality individual support were less likely to engage in private tutoring (Guill et al., 2020). In the United Kingdom, the government has introduced the National Tutoring Programme, which provides schools with a certain amount of money per pupil to use external, certified mentors and tutors, or to teach in school themselves, to address inequalities in learning (Minea-Pic, 2023).

Figure 5.17. Citizen satisfaction with the education system and schools, 2010 and 2020



Note: Data for Estonia are for 2011 instead of 2010. Data for Iceland, Norway, and Switzerland are for 2012 instead of 2010. Data for Czechia are for 2018 instead of 2020. Data for Costa Rica, Hungary, Israel, Korea, Lithuania and Luxembourg are for 2019 instead of 2020.

Source: OECD, Government at a Glance (2021).

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Strengthening the quality of regular lessons would also help reduce private education costs. In a recent survey, 50% of parents answered that their children take private tutoring to supplement regular school classes (Statistics Korea, 2023). Measures are needed to provide public education that satisfies the learning needs of students. According to an analysis in Germany, students who received quality

individualised and personalised learning during regular classes were less likely to engage in private education (Guill et al., 2020). Similarly, in Scandinavian countries, which seem to have been least affected by the rise of private tutoring, both slow learners and high achievers receive education tailored to their needs within the framework of public education (Bray, 2021). Increasing the time teachers spend on preparation and teaching could help teachers to better cater for students' individual learning needs. Korean teachers' preparation and statutory teaching time per class is low compared to the OECD average, while they spend a higher proportion of their working time on administrative tasks, which may contribute to the lower quality of education (OECD, 2024b).

Digital technologies, including artificial intelligence (AI), could improve the quality of education by personalising education, making it more inclusive and enhancing cost-effectiveness. For example, in the classroom, AI applications can directly support students' learning through adaptive learning systems which provide each student with a tailored curriculum or task based on their knowledge level (OECD, 2023d). These learning tools can be used for after-school or home supplementary learning, reducing the demand for private tutoring to some extent. Further integrating digital technology in schooling may warrant additional investments in facilities, teacher training, and curriculum development. High-quality tutoring lessons delivered digitally for free to students would help ease the inequality that private tutoring creates. For example, Seoul Metropolitan City runs the "Seoul-Learn" platform, which provides online learning contents from private tutoring institutions to students in vulnerable households.

Table 5.5. Past recommendations on education

Main recent OECD recommendations	Actions taken
Allow students more scope to develop their individual interests and talents, notably by reducing the emphasis on the standardised university entrance exam.	The National Curriculum for schools was revised in late 2022 to introduce the "Free Semester System" for elementary and middle schools, allowing schools to tailor their programmes to students' needs, and the "High School Credit System" for high schools, enabling students to choose subjects based on their career interests and aptitudes, and earn credits.
Phase out the total enrolment caps imposed on universities in the Seoul metropolitan area to incentivise universities to eliminate their student enrolment limits by major to promote competition, quality improvement and labour market relevance.	From the 2024 academic year, the number of seats for majors in high-tech fields such as bio and semiconductors has been increased above the enrolment cap in the Seoul metropolitan area.
Expand the designation of Meister schools and the Work-Learning Dual System, and revitalise school-industry links to foster talent meeting various industry demands and encouraging successful labour market entry.	The number of Meister schools will increase from 54 in 2022 to 65 by 2027.
Improve the quality of regular vocational high schools by incorporating elements of Meister schools, notably their strong connection with the business sector.	New "Agreement-based specialised high schools" have been introduced to train local talents in cooperation with local governments, companies, and vocational high schools, and 35 schools will be designated by 2027.
Further expand and improve career counselling in secondary schools to shift students' focus on gaining admission to prestigious universities to developing a career path based on their talents and interests.	The Ministry of Education announced the "Plan to Revitalise Career Education for 2023-2027", which includes upgrading the career information network "Career Net" to support personalised career counselling based on big data for high-school students.

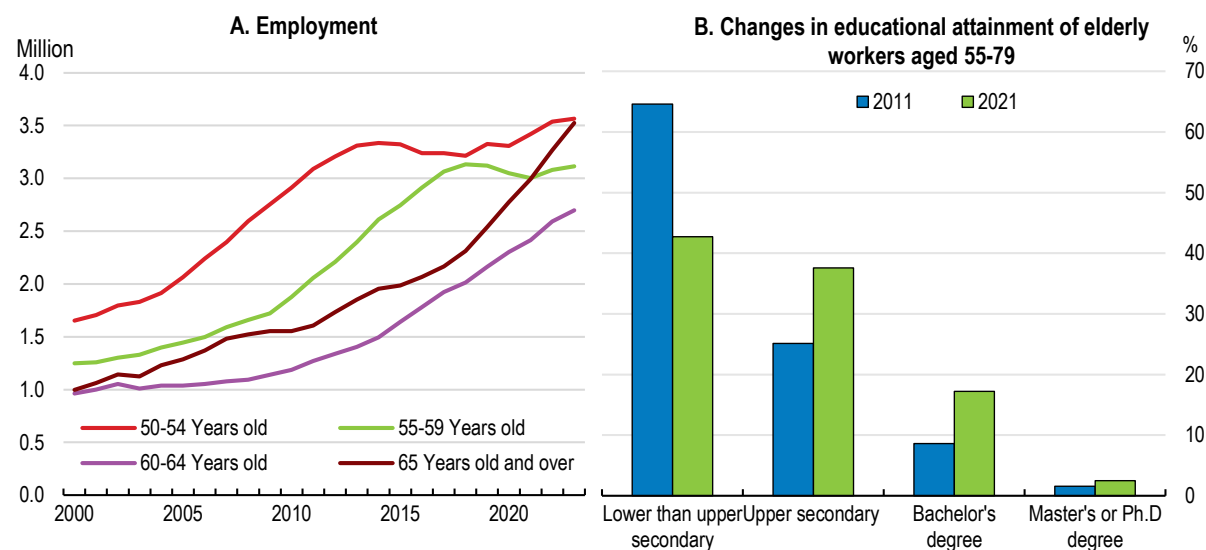
Adapting to inevitable ageing

As discussed in the introduction, ageing is inevitable, and the share of the population in working age will shrink. Immigration can help remedy labour shortages going forward, if well implemented. However, relying solely on increased immigration would not be enough. Increasing participation and employment across the board and mobilising underutilised labour resources, notably of women and youth as discussed above, as well as lengthening working lives, and policies to promote productivity (Chapter 3) are also necessary to address population ageing challenges in the longer term.


Lengthening working lives

Encouraging elderly individuals to remain in or re-enter the workforce is increasingly important in boosting overall employment. About half of Korea's population is aged 50 or above, with 20% surpassing 65, and the share will grow further. With the proportion of elderly individuals in the total population increasing, the employment of seniors has rapidly increased, driving a positive trend in Korea's employment rate over the past 20 years (Figure 5.18, Panel A). This trend partly reflects enhanced education and increased wage-earning experience since the baby boomers entered old age (Panel B).

Figure 5.18. The quantity and quality of the elderly workforce has increased



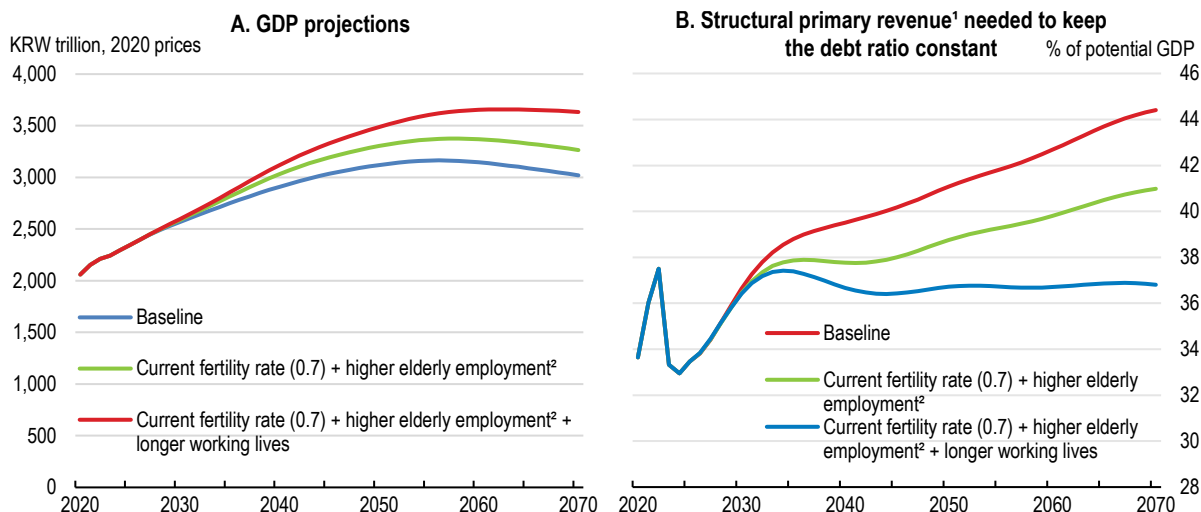
Source: KOSIS; and Statistics Korea Supplementary Surveys on the Economically Active Elderly Population in 2011 and 2021.

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Many workers in Korea express a desire for prolonged employment. According to a 2023 government survey querying individuals aged 55-79 about their future work intentions, approximately 70% indicated a preference to continue working. For those aged 55-64, the desired retirement age was around 70, well above the pensionable age of 63 (Statistics Korea, 2023a). The primary motivation cited for wanting to work is "to support their living expenses", with 56% of respondents mentioning this reason. The potential for extended employment is further facilitated by the good health conditions prevalent among the elderly. Notably, Korea's life expectancy has experienced a significant and rapid increase to around 83, making it the second-highest in the OECD after Japan (OECD Health Status database). Additionally, healthy life expectancy, reflecting disability-free years, has grown by 5.1 years over the past two decades, reaching 72.5 in 2021.

According to OECD simulations, if the employment rates for the 55-59, 60-64, and 65+ cohorts were to increase by one-third of the difference with the previous age group by 2040, total employment would be 8% higher in 2070 compared to the no-reform baseline scenario. This, in turn, would lead to a corresponding 8% higher level of GDP in 2070 (Figure 5.19, Panel A). Furthermore, if the pensionable age is increased beyond current plans and eventually linked to life expectancy, total employment in 2070 would be 14% higher compared to the scenario with higher elderly employment, resulting in a 12% higher level of GDP in 2070 (Panel A). The combined effect of higher elderly employment and longer working lives would significantly alleviate fiscal burdens, with the structural primary revenue required to stabilise debt decreasing by 7.8 percentage points of potential GDP by 2070 compared to the no-reform baseline scenario (Panel B).

Figure 5.19. Extending working lives and boosting elderly employment would considerably improve GDP and fiscal outcomes



1. The revenue that must be raised to keep the government debt ratio stable over time.

2. Higher elderly employment scenario assumes increasing elderly employment by one third of the difference with the previous age group by 2040 (e.g., the rate for the 60-64 group would rise to one third of the 2022 rate for the 55-59 age group). Longer working lives scenario assumes increasing the legal retirement age to 68 by 2035, and raising it by two thirds of life expectancy gains thereafter.

Source: OECD calculations based on the OECD Long-term model; Guillemette and Château (2023).

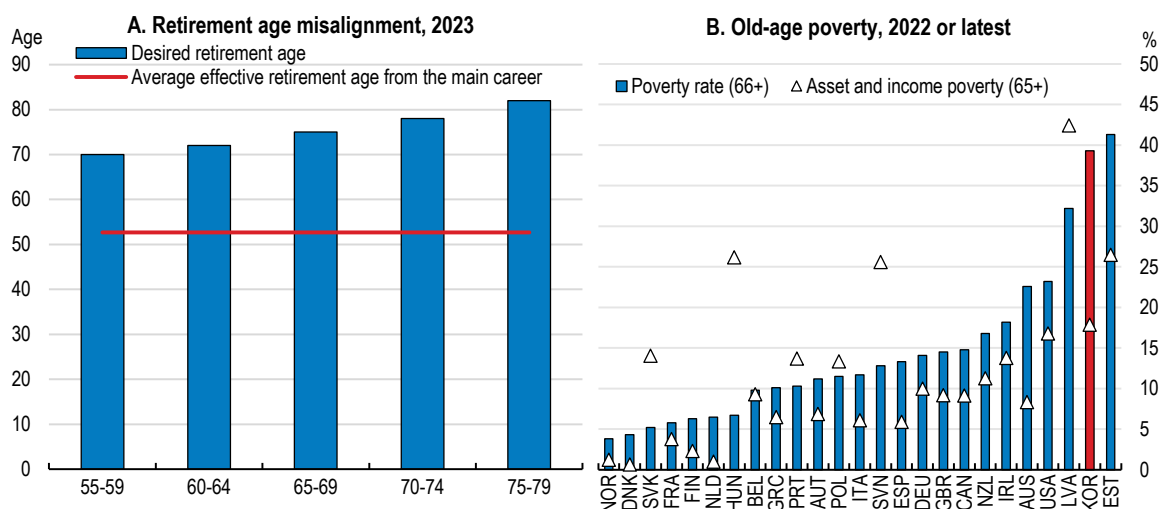
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To increase elderly employment and extend working lives, fundamental labour market reforms are required. Extending the careers of older individuals can be achieved through: i) reducing the significance of seniority in determining wages; ii) phasing out the right of companies to set a (mandatory) retirement age below the pension eligibility age; iii) raising the pension eligibility age beyond 65, the current target by 2033; and iv) abolishing the gap between the contribution age and pensionable age. These reforms would not only boost overall employment, but also enhance pension income for the elderly, lowering their relatively high poverty rate.

Korea, together with Japan, is unique in allowing firms to have the authority to determine a mandatory retirement age, which may be lower than the legal pension age (OECD, 2024a). The process of establishing these mandatory retirement policies varies, with some employers unilaterally deciding, while others engage in collective bargaining. These policies automatically terminate the employment contract of any worker reaching a specified age limit. In 2013, the law was amended to prohibit employers from setting the retirement below the age of 60. Beyond the formal mandatory retirement, it is common for employers to encourage older employees to voluntarily leave their job before reaching the mandatory retirement age through a mutual agreement known as honorary retirement, often accompanied by substantial compensation.

The mandatory retirement age and honorary retirement practices lead many workers in Korea to exit their main job early. The average retirement age from the main career was 52.7 in 2023 (54.8 for men and 50.9 for women) for respondents aged 55 to 79, significantly lower than their desired retirement age (Figure 5.20, Panel A). After early retirement from their main job, around one-third were not employed again. The remaining two thirds found new employment, mostly poor quality, insecure and low-paid jobs with limited pension contributions (FKI, 2023). Due to short contributory histories and relatively low replacement rates, average pensions are below the poverty line (OECD, 2022a). Although individuals tend to work until very old ages in Korea, the total disposable income of the elderly relative to the population as a whole is much lower than in other OECD countries, leading to relatively high poverty rates (Panel B).

Figure 5.20. Many workers in Korea quit their main job relatively early, contributing to relatively high old-age poverty



Note: The poverty rate is the share of the number of people (in a given age group) whose income falls below the poverty line (half the median household income of the total population). Individuals whose income and wealth both fall below the poverty line are defined as “asset and income poor”. More details can be found at <https://search.oecd.org/statistics/data-collection/OECD-Guidelines-WDD.pdf>.

Source: Statistics Korea, 2023 Supplementary Surveys on the Economically Active Elderly Population; OECD Wealth Distribution Database.

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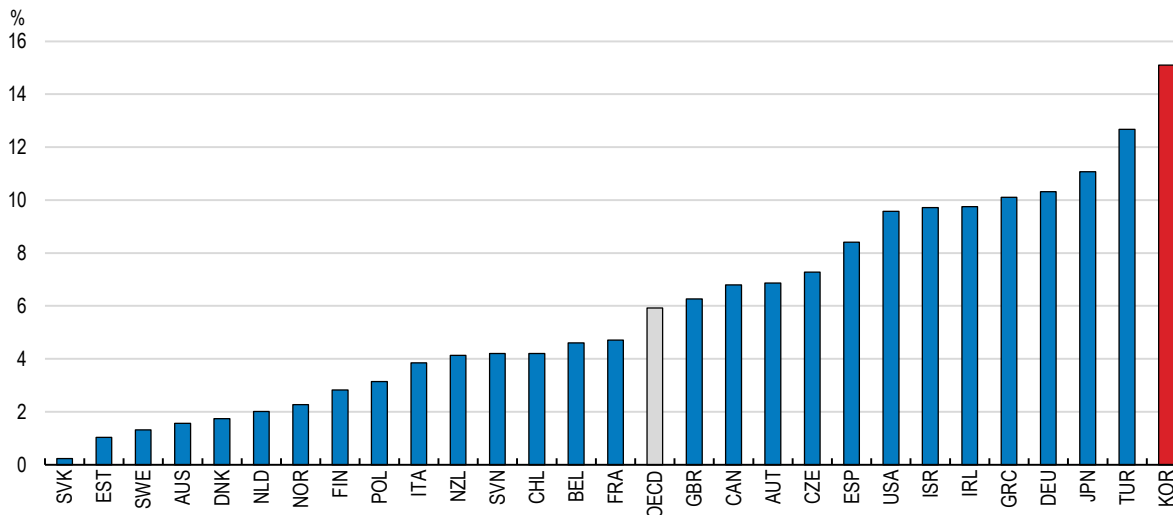
The main reason why employers force or encourage early retirement is the seniority-based wage system, in which wages automatically increase based on seniority. While the significance of seniority in wage-setting has declined in many OECD countries over time, Korea continues to rely predominantly on seniority-based wage-setting practices, with the impact of seniority on wages being the highest among OECD countries (Figure 5.21). Seniority-based wages render older workers less appealing to firms when their productivity falls below the corresponding seniority-based wage. According to a survey of 300 companies of various sizes, the most frequently cited challenge in managing middle-aged and older employees was “high labour costs”, accounting for 48% of responses. This was followed by concerns about the “burden of new recruitment” (26%) and the “increase in low performers” (24%) (Korea Chamber of Commerce and Industry, 2023). Also, 56% of respondents perceived the work ability and productivity of middle-aged and older workers as similar to that of the younger generation. Consequently, due to the seniority-based system, companies face a strong incentive to encourage the departure of middle-aged workers, who receive higher salaries than their productivity warrants, in favour of hiring younger workers with lower wages but comparable productivity. The seniority-based wage system also contributes to low income among youth, given that seniority-based wages encourage lifetime commitment by workers to their firm by setting wages below marginal productivity for younger workers and above it for those with long tenures (OECD, 2022a).

To extend working lives, Korea has primarily utilised wage subsidies for older workers, with the government significantly increasing the subsidies from KRW 22.6 billion in 2022 to KRW 26.8 billion in 2023 and KRW 35 billion in 2024, citing positive employment outcomes. The subsidies are provided to SMEs when they i) re-employ workers who have retired because of the mandatory retirement age, ii) raise the retirement age above 60 (i.e., the mandatory retirement age), or iii) abolish the mandatory retirement age. The wage subsidies for older workers primarily focus on retaining existing employees, rather than creating new job opportunities (KDI, 2016). While subsidies can be helpful, there is a risk of SMEs becoming overly dependent on government support, as discussed in Chapter 3. Rather than the costly subsidies approach, a more fundamental solution is abolishing the mandatory retirement age combined with reducing the

significance of seniority wage (see below). Upskilling and re-skilling policies are also important to maximise productivity and employability of the elderly workforce (Chapter 3).

Figure 5.21. The impact of seniority on wages in Korea is the highest in the OECD

Estimated wage increase moving from 10 to 20 years of job tenure for individuals aged 50, 2011/12 or 2014/15



Note: Estimates were obtained from a cross-sectional regression of wages on tenure, squared tenure and controls for: gender, experience, years of education, literacy and numeracy skills, occupation, skill use at work, and educational status of the parents.

Source: OECD (2022), OECD Reviews of Pension Systems: Korea.

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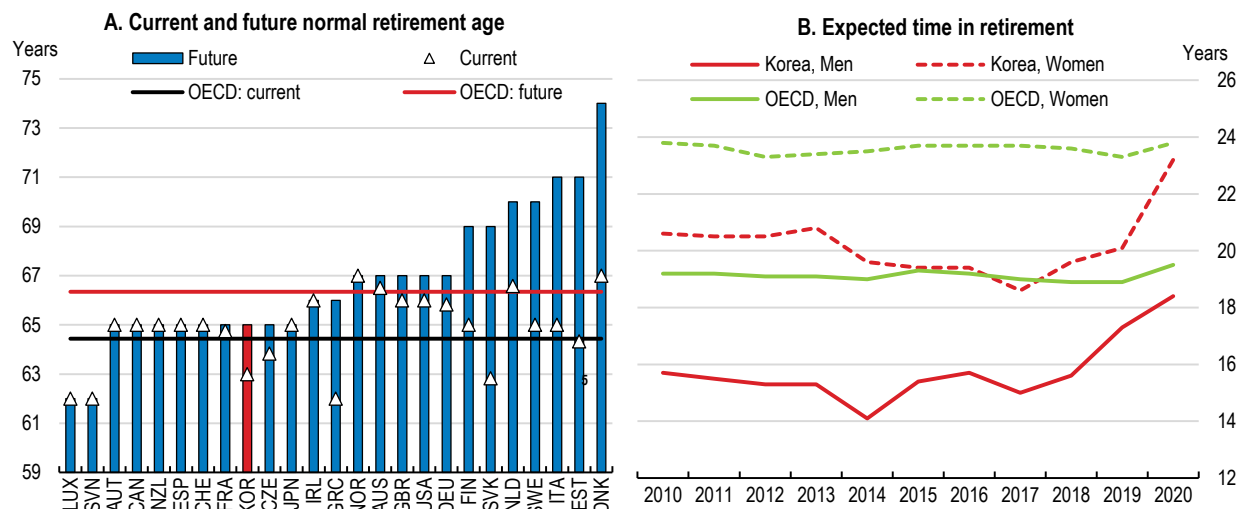
Employers should not be allowed to set the mandatory retirement age below the legal pension age. This not only shortens working lives, but also contributes to the relatively high elderly poverty rate, as the contribution-based National Pension Service only begins paying out at age 63. Most OECD countries do not allow firms to set the mandatory retirement age (OECD, 2021d). Among the OECD countries that allow it, Korea and Japan are the only ones where the mandatory retirement age applies to private-sector workers at 60, while in nine other countries it applies only from age 65 or higher (OECD, 2021d).

Abolishing the mandatory retirement age should be accompanied by reducing the significance of seniority in the wage setting. Abolishing the mandatory retirement age without reforming the seniority-based system will only increase the gap between workers' wage and labour productivity further, and increase firms' incentives to encourage honorary retirement. Indeed, following the 2017 reform, which established the mandatory retirement age floor at 60, there has been an increase in the likelihood of early retirement through honorary retirement after controlling for worker and job characteristics (Lee and Cho, 2022). In an effort to reform the seniority-based system, Korea expanded the "wage peak system" in 2013, wherein wages are reduced in exchange for an extension of the retirement age. However, this one-size-fits-all approach would inadvertently foster age discrimination in cases when the reduced wage level fell below the actual productivity of individual senior workers. In 2022, the Supreme Court ruled against an employer introducing the wage peak system for this reason. Korea should promote a flexible wage system based on performance. This entails tying wages to job performance, job content, and skill requirements irrespective of age, as recommended by the *2022 OECD Economic Survey of Korea*. This would also enable younger workers to receive higher wages.

The government should also consider increasing the statutory pensionable age. Empirical analysis suggests that the statutory pensionable age influences retirement decisions in Korea (Park, 2018). The pensionable age is currently 63, one of the lowest in the OECD (Figure 5.22, Panel A). The pensionable age is set to gradually increase to 65 by 2033, but this is still low in international comparison. The relatively slow increase of the pensionable age, combined with a rapid rise of life expectancy, has led to the sharp

increase in the difference between life expectancy and pensionable age (Panel B). Raising the pension eligibility age further than currently legislated by 2035 and linking it to life expectancy thereafter as in many other OECD countries, including Finland, Denmark and Italy, should be considered. This should be accompanied by abolishing the gap between the contribution age and the pensionable age. Mandatory contributions currently stop at age 60, three years before the pensionable age. Since no mandatory contributions are made during this period, no pension entitlements accrue unless voluntary contributions are made. Such a situation is unique amongst OECD countries (OECD, 2022d), and should be eliminated, ensuring that pension entitlements continue to accrue until at least the statutory retirement age.

Figure 5.22. The pensionable age will remain low in OECD comparison despite reform



Note: For Panel A, current and future normal retirement ages for a man with a full career from age 22. Current and future refer to retiring 2020 and entering the labour market in 2020, respectively. Normal retirement age refers to the age at which employees are eligible to start receiving full retirement benefits.

Source: OECD Pensions at a Glance (2023); and OECD Social Protection and Well-being database.

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Further measures are needed to enhance the financial sustainability of the pension system while improving pension adequacy. In the face of rapidly changing demographics, the National Pension Fund (NPF) would be depleted by 2055 under the existing setup, according to government estimates released in 2023. At the same time, the pension levels are relatively low (Box 5.5). The previous Survey as well as the 2022 OECD Pension Review recommended various strategies to address both challenges. The aforementioned measures to extend working lives are central to achieving a system which is both financially sound and provides adequate pension income. Additional measures include considerably increasing the pension contribution rate, which currently is among the lowest in the OECD, while raising relatively low pension replacement rates in a financially sustainable way (OECD, 2022a; OECD, 2022d). The National Assembly recently failed to reach an agreement on proposals to raise the contribution rate and replacement rates. The government is currently planning broad pension reforms, although details are not yet available. These recommendations should be considered in the context of these impending reforms.

Box 5.5 Korea's pension system

The Korean public pension system consists of four main components:

- The tax-based (Pillar 0) Basic Pension provides a KRW 334 810 maximum monthly benefit per person (or KRW 535 680 for a married couple) to individuals aged 65+ below an income threshold. The Basic Pension is the main social welfare programme supporting today's elderly.

Around 70% of the elderly receive the Basic Pension, and the benefit level is less than 10% of gross average earnings. The Basic Pension was introduced in 2008.

- The (Pillar 1) National Pension Service (NPS) is a partially funded system with contributions from workers and employees. The pension benefit consists of two parts that are equally weighted: i) benefits based on individual earnings; and ii) benefits based on average earnings of the insured population as a whole. The net replacement rate for individuals having served a full career is 36% of pre-retirement earnings, against the 61% OECD average, while the contribution rate to the NPS is, at 9%, half of the OECD average. The contributory period was 19.2 years on average for new pensioners in 2022. The NPS was introduced in 1988.
- The (Pillar 2) private corporate pension scheme gives employers the choice to convert the mandatory lump-sum severance payment (also called the retirement allowance), which requires employers to pay one month of wages for each year of employment to departing employees, to a tax-advantaged defined benefit or defined contribution pension plan with the consent of employees. This scheme introduced a portable individual retirement account for workers who change jobs in 2005.
- The (Pillar 3) personal pensions are voluntary, savings-based supplementary private pension schemes.

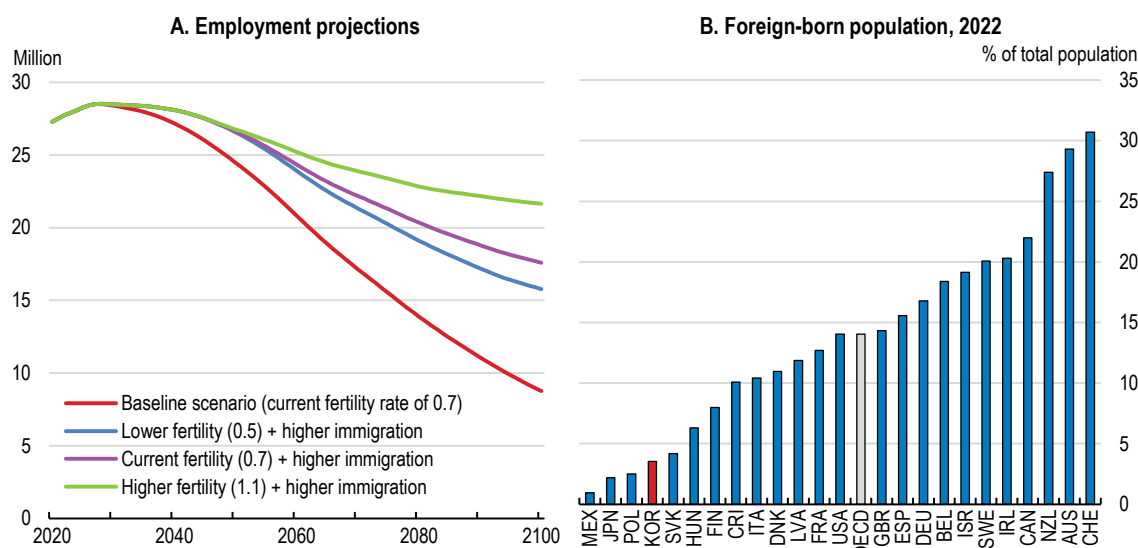
Table 5.6. Past recommendations to lengthen working lives

Main recent OECD recommendations	Actions taken
Raise the pension eligibility age further than currently legislated by 2035 and link it to life expectancy thereafter, and align the maximum contribution age to the pensionable age.	No action taken.
Restrict forced retirement and introduce a flexible wage system based on performance, job content and skills requirements.	No action taken.
Encourage participation in training and strengthen second-career guidance for mid-career and older workers.	The 'Employer Support Package' project was established in 2023 to provide integrated support for employers who want to hire the elderly. The support includes training programmes for the elderly workforce along with recruitment support for employers. Government support for providing reemployment training to involuntary leavers from SMEs was established in 2023.

Expanding the supply of foreign workers

Immigration can help remedy labour shortages, if well managed. According to calculations based on the OECD long-term model, a more than eightfold increase in net immigration inflows by 2040 could enable Korea to maintain employment close to current levels until 2050 (Figure 5.23, Panel A), and contribute to a decline in the dependency ratio compared to a no-reform baseline. Additionally, immigrants can make positive financial contributions over their lifetimes (OECD, 2013). Currently, foreign-born residents in Korea account for only 4% of the population, one of the lowest shares among OECD countries in 2022 (Panel B). The government plans to expand the inflow of foreign workers notably through expanding visa quotas (see below) as well as centralising immigration policies, and strengthening cooperation with local governments, among other measures, as part of comprehensive immigration policies.

To maximise the positive impacts when expanding immigration, certain conditions are required. Immigration policies should promote integration, given that inclusive immigration policies unlock the full advantages of cultural and skills diversity, paving the way for sustained prosperity and development. At the same time, skilled immigration should be expanded, given that it has a bigger positive impact on the economy by boosting both fiscal (with higher wages) and productivity performance, as evidenced by empirical analyses highlighting the significant role of skilled immigration in fostering innovation and patenting activity (OECD, 2013; Bernstein et al., 2022; Mayda, Orefice and Santoni, 2022).

Figure 5.23. Utilisation of foreign labour has been very limited

Note: For Panel A, the higher immigration scenario assumes a gradual increase in the net annual immigration inflow from the current 30 thousand to 250 thousand by 2040. The overall number of migrants is allocated to 5-year age/sex groups according to the recent age/sex distribution of migrants. Upon arrival in the country, they are assigned the same employment rates as their respective cohort, which are based on average outcomes for both natives and migrants. For Panel B, data refer to 2022 or the most recent available year. The OECD average is a simple average based on rates presented on the figure. For Japan and Korea, the data refer to the foreign population rather than the foreign-born population. The foreign-born population covers all persons who have ever migrated from their country of birth to their current country of residence. The foreign population consists of persons who still have the nationality of their home country.

Source: OECD calculations based on the OECD Long-term model; Guillemette and Château (2023); OECD International Migration Database; Eurostat; UNDESA.

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Korea's immigration policies have not fully met the aforementioned conditions, despite improvements. The share of undocumented foreign workers has fallen sharply, from 51% in 2003 to 19.6% in 2022. This decline can be attributed to the introduction of the Employment Permit System (EPS) in 2004, which enhanced transparency in the inflow of low-skilled foreign workers and mandated equal treatment for both migrant workers and Korean nationals in principle (see below). Considerable efforts have been made, such as strengthening guidance and inspection in EPS workplaces, but low-skilled temporary immigrants may still face poorer working conditions (see below). Furthermore, the share of skilled foreign workers in total foreign residents is among the lowest in Korea within the OECD despite recent increases. Korean immigration policies should be improved. For low-skilled immigration, efforts are needed to prevent the deepening of social segregation and eliminate discriminatory practices against low-skilled immigrants. For skilled immigration, the government must proactively remove any barriers hindering the entry of qualified foreign talents and actively work towards attracting them.

Building a sustainable future for low-skilled immigration

The share of immigrants in Korea's employment has more than doubled over the past decade, mainly driven by temporary low-skilled labour migration (OECD, 2021). This reflects a growing labour shortage in low-skilled jobs in Korea since the 1990s, due to the rising educational attainment of young individuals. The preference for higher-skilled jobs among educated youth has created a vacuum in low-skilled sectors, leading to increased demand for labour from immigrants who are willing to take on such roles as craft jobs, machine operation and assembly. According to a 2023 survey of 1 000 small and medium-sized businesses, 90.6% stated that they hired foreign workers because they were unable to hire domestic workers (KBIZ, 2023).

Temporary low-skilled labour migration has taken place through the EPS, which Korean employers must use to recruit foreign low-skilled workers (Box 5.6). The Foreign Workforce Policy Committee under the Prime Minister's Office annually sets a quota across industries. Most EPS workers receive the E-9 visa (non-professional employment) which allows them to stay temporarily in Korea for an initial period of almost five years, potentially renewable for a second spell of almost five years. Eligible nationalities are other Asian countries with which bilateral agreements have been signed and where wage levels are generally lower than Korea.

Box 5.6. Framework for low-skilled immigration: Korea's Employment Permit System (EPS)

Introduced in 2004, the Employment Permit System (EPS) is a temporary labour migration scheme for low-skilled workers from 16 countries with which Korea has signed a Memorandum of Understanding (MOU). The EPS provides the E-9 visa type for low-skilled foreign workers.

Why: The EPS is designed with the goal of supplying workers to SMEs in sectors of the economy that grapple with labour shortages, while protecting domestic workers.

Eligibility of employers: Only firms with fewer than 300 employees are eligible. Employers have to make efforts to hire domestic workers before hiring foreign workers.

Eligibility of EPS workers: The age of EPS workers should be between 19 and 39. They should not have any criminal history in their home country. The applicant must no records of illegal stay or deportation from Korea, and has to pass a basic Korean language exam developed specifically for the EPS. Upon arriving in Korea, EPS workers undergo a 20-hour mandatory training that includes workers' rights and obligations, and information on Korean culture. No formal qualifications are needed in terms of educational attainment.

Restrictions on EPS workers: EPS workers are expected to remain with their initial employer, except in cases of illegal employment practices or firm closure. They can request up to three voluntary changes of employer with the employer's consent. Employers may hesitate to release workers due to the substantial initial investment in the programme and training, as well as labour shortages. There are no restrictions on changing workplaces in cases of employment contract violations, such as employer breaches of working conditions or unfair treatment. However, few EPS workers actually changed workplaces for these reasons (e.g., 13.6% of EPS workers in the manufacturing sector due to injury or unfair treatment in 2018). In principle, EPS workers are not allowed to stay in Korea more than 4 years and 10 months or bring families. To stay longer, they have two options: reapplying for another 4 years and 10 months stay after leaving Korea for six months (one month in some special cases); or applying for the E-7-4 visa (transition visa to skilled employment). To get the E-7-4 visa, the worker should have worked at the same workplace for more than one year.

Quotas: Quotas on the number of EPS workers are in place to protect domestic workers and ensure their orderly entry and management. The Foreign Workforce Policy Committee (FWPC) under the Prime Minister's office, an interministerial working group, sets ceilings for the inflows of low-skilled foreign workers, including with respect to the total number, the sector of employment and the country of origin every year depending on domestic labour market conditions. The quota applies to different categories: EPS; the transition from EPS to E-7-4; and seasonal workers. Annual EPS quotas have largely favoured the manufacturing sector. In 2022, manufacturing's quota was 51 847 out of the total 69 000. In 2023, it increased to 80 500 out of 120 000. For 2024, total quotas were announced at a record 165 000.

Firm-level cap: The maximum number of E-9 workers for a specific firm is capped according to firm size and sector; firms with fewer than ten employees can be almost fully staffed by E-9 workers, while the share declines for larger firms.

Current status: Close to 13% of EPS workers are employed in small enterprises with fewer than five employees and another 20% work in enterprises with five to nine workers. The majority of EPS workers are young men with an average age of 26 years. The share of female workers is less than 10%. Over 80% of EPS workers are employed in manufacturing. Most EPS workers are from neighboring Asian countries. As of December 2022, Nepalese accounted for 17.5%, Cambodians for 13.5%, Vietnamese for 9.9%, Indonesians for 11.2% and Thai for 8.4%. The reason for choosing Korea as an overseas employment destination is primarily the higher wage (72.2%).

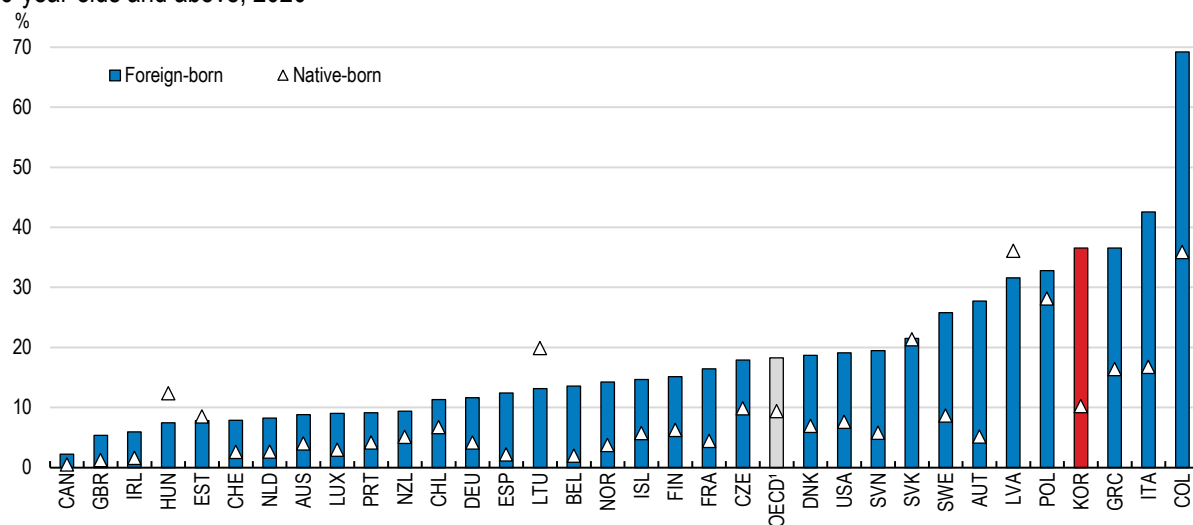
Source: Cho et al. (2018); Statistics Korea (2023b); OECD (2019d); Ministry of Employment and Labour.

While the EPS system has eased immediate labour shortages of low-skilled workers, it has contributed to social segregation. The system allows for the provision of workers at low wages to specific types of firms in certain sectors of the economy which suffer from low productivity and low quality jobs (OECD, 2019d). The EPS quota applies to the industry as a whole. Within individual firms, small enterprises have almost no limit on the number of workers they can employ (Box 5.6). As a result, EPS allows small low-productivity firms to become heavily reliant on employing EPS migrant workers on low wages to fulfil their non-professional labour needs. This has delayed the restructuring of low-productivity marginal enterprises (OECD, 2019d). In manufacturing, the growing influx of EPS foreign workers into businesses with fewer than 300 regular workers has contributed to the widening gap in wages and productivity between SMEs and larger corporations (Jeon, 2018). EPS workers' job mobility is limited compared to domestic workers' (see below), limiting their wage bargaining power (OECD, 2019d).

Furthermore, the EPS system has contributed to social segregation. More than 35% of all foreign-born residents live in overcrowded housing, one of the highest rates among OECD countries and the largest gap to native residents in the OECD (Figure 5.24). More than 60% of migrant workers in the agriculture and fishery sectors reside in substandard accommodations such as shipping containers and panel structures (Human Rights Commission, 2022).

Figure 5.24. Overcrowding rates are high among migrant workers in Korea

16-year-olds and above, 2020



1. Average of the OECD-countries in this chart.

Source: OECD/European Commission (2023), Indicators of Immigrant Integration 2023: Settling In.

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Theoretically the EPS system entitles the low-skilled migrant workers to protections, rights, and benefits afforded to Korean workers under national labour laws and regulations. In reality, however, there have

been a few exceptions. The Ministry of Employment and Labour directives allow Korean employers to deduct a portion of migrant workers' wages in exchange for room and board (upon prior consent by workers). Additionally, visa renewal is in principle contingent on continuous employment at the same workplace throughout the EPS period (or for more than one year with the last employer if they changed workplaces for the reasons mentioned in Box 5.5), intensifying the power imbalance and limiting workers' ability to seek better conditions elsewhere. This hierarchical dynamic creates a fertile ground for employers to manipulate working and living conditions to their advantage.

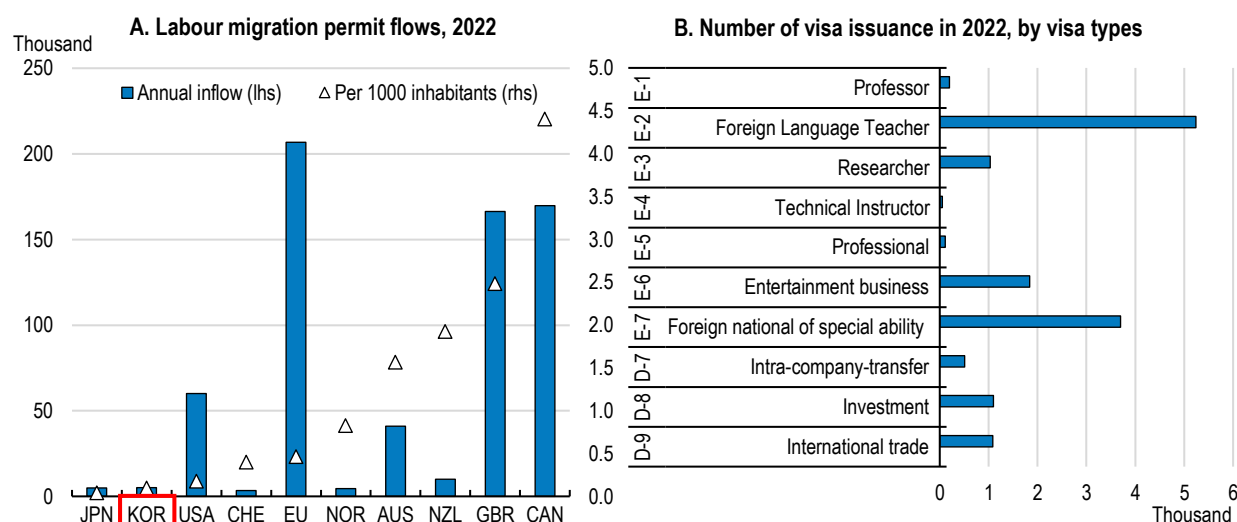
The government is significantly expanding the inflow of foreign workers under the EPS system to address the low-skilled labour shortage. The annual quota was long maintained at 50 000 to 60 000. The government raised it to 110 000 in 2023, and then 160 000 in 2024. This is expected to relieve the immediate labour shortages faced by SMEs, in part caused by fewer entries during the travel restrictions in 2020-21, but complementary measures are needed to avoid exacerbating labour market inequality and social costs.

Firstly, lowering the firm-level cap especially for smaller firms with few exceptions would exert pressure on firms that survive mostly by using temporary foreign workers. This would also align better with the overarching goal of protecting domestic workers, by preventing a race to the bottom in terms of working conditions. Korea is unusual among OECD countries for setting sector-specific quotas with a higher firm-level cap for smaller firms (OECD, 2019d). Canada, for instance, allows up to 20% of low-wage positions in a firm be filled by temporary foreign labour in general, and Ireland allows up to 50% (OECD, 2019d). At the same time, specifying exceptional cases could be considered. Ethnic restaurants, for example, often have unique requirements for migrant workers with specific cultural or language competencies related to the cuisine they specialise in. Canada, for instance, applies higher caps for certain occupations (e.g., food services) or imposes no cap for specific positions (e.g., truly temporary positions with a duration of employment of 120 calendar days).

Secondly, migrants' strong dependence on their employers needs to be reduced by relaxing the restrictions on changing jobs. Temporary work programmes in OECD countries generally grant free job mobility (OECD, 2019d). This would empower workers to report workplace violations without fear of severe consequences, fostering a safer working environment. It would also help increase worker productivity, given that restricting job changes prevents effective matching. In September 2023, the government decided to further restrict the right to change workplaces to within the regional area (three to four metropolitan municipality jurisdictions per area) where their previous workplace was located, given increasing labour shortages, particularly in rural regions.

Enhancing skilled immigration inflow and retention

The inflow of skilled foreign workers to Korea is significantly lagging behind other OECD countries, both in absolute terms and in relation to the population (Figure 5.25, Panel A) (Box 5.7). The total number of foreigners on permits for highly qualified workers accounts for only 2.6% of total foreign residents (or 12% of foreign nationals holding work visas). Among them, a large share are foreign language teachers (Panel B). Furthermore, skilled migrants do not stay in Korea for a long time. According to a survey, only half of skilled migrants stayed for more than five years (Statistics Korea and Ministry of Justice, 2022). For comparison, in New Zealand the share of skilled migrants entering on a work visa still residing in the country five years after taking up permanent residence is 80% (OECD, 2014a).

Figure 5.25. Korea has very low levels of skilled immigration

Note: For the United States, Canada and Australia, primary applicants approved under permanent economic migration channels. For other countries, qualified migrants with temporary permits allowing indefinite renewal and change to permanent status. For Korea, E-1, E-3-5 and E-7 visas.

Source: National immigration authorities; Ministry of Justice.

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Box 5.7. Framework for skilled labour migration

The framework for skilled migrants comprises a number of different visa categories. There is no labour market test for any of the visas, in the traditional sense of a mandatory job advertisement period or a requirement that employers seek resident workers prior to recruitment from abroad.

The main category is the E-7 visa for Specially Designated Activities, for skilled work in a number of authorised occupations determined by the Minister of Justice. The E-7 visa is divided into four categories, ranging from professional to skilled trades. The E-7 visa requires proof of qualifications, either through a master-level degree, a bachelor-level degree with one year work experience, or five years' experience in the relevant field for those with no tertiary degree. The E-7 visa is subject to a firm-level restriction that no more than 20% of all employees of the firm are foreign nationals, and firms with fewer than five employees (registered with the National Insurance Scheme) may not request an E-7 visa (although exceptions apply).

Korea offers fast-track permanent residence for qualifying high-skilled foreigners. Under a points-based system, it evaluates professionals who have been living in Korea for at least a year under a different permit. Points are given according to academic qualifications, Korean language proficiency, income and age. Those eligible are entitled to residence status (F-2), which allows full labour market access as well as residence permits for family members. Permanent residence status is allowed after three years of having F-2 status, rather than five years as would normally be required.

Source: Ministry of Justice; OECD (2019a).

Despite the absence of a quota in the case of skilled workers, stringent visa regulations slow down or complicate entry and residence procedures for skilled workers, fostering a perception that Korea may not be genuinely welcoming or interested in retaining their talents. The most efficient way to increase skilled immigration in Korea in the short term is to remove these obstacles.

Foreign students have to go through a complex visa journey to work in Korea after graduation. Most foreign students in tertiary education hold a D-2 visa for a maximum stay of two years (with a possibility of renewal

under certain conditions), comparatively shorter than in many other OECD countries. In around half of the OECD countries, international students are typically granted study visas for the entire duration of their academic programme which is usually four years (OECD, 2022b). The current law allows undergraduate (graduate) students on a D-2 visa to work up to 25 hours (35 hours) a week during semester time, with further restrictions if their Korean proficiency is not sufficient (10 hours if their TOPIK level is lower than level 2). This is relatively low when compared to some OECD countries such as Sweden or Estonia, where international students are permitted to work full-time as long as it does not interfere with their study progress (OECD, 2022b). A more significant hurdle for international students in Korea is the restriction on job types. Part-time job options are mostly restricted to basic skill roles like food service or office assistance. For instance, students from English-speaking countries are not allowed to work as English tutors due to these restrictions. This is relatively strict in international comparison. To transition into a career in Korea after completing their studies, these students are required to change their visa status to a D-10 visa, also known as the job-seeker visa, permitting job-seeking activities or paid internships for six months, which can be extended up to two years. Once they secure qualifying employment offers, they must undergo yet another visa change, applying for an E-7 or another relevant work visa. The E-7 visa, specific to a predefined list of professions, is granted for up to three years initially and can be extended under certain conditions, but with shorter durations being the norm. A lack of correspondence between the field of study and the field of employment can be a ground for refusal of the employment visa. This is the case in Germany and France too, but unusual in most OECD countries (OECD, 2019d).

Korea is a relatively attractive destination for tertiary education students (OECD, 2023e), and the number of foreign students in Korea has increased significantly. Korea's high education standards, and affordable tuition fees, together with the rising popularity of Korean culture across the world, are likely drivers. According to a survey, 41% of foreign students wanted to stay in Korea after graduation (Statistics Korea, 2017). However, less than 5.8% of foreign students found full-time employment after graduation, reflecting significant hurdles to finally get the employment visa for foreign students in Korea. This is low compared to European OECD countries, for example, where three out of four of those who arrived for education purposes and stayed at least five years in the country are in employment (OECD, 2022b).

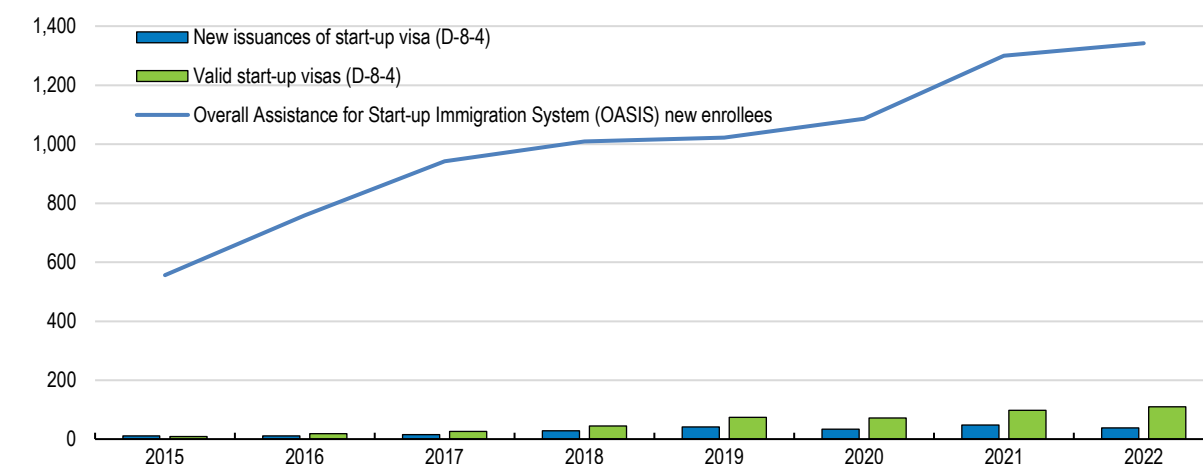
To maximize the benefits of having international students as a potential source of skilled labour, Korea should streamline visa processes, specifically by expanding the part-time job options. Studying abroad can be financially burdensome, with tuition fees and living expenses accumulating rapidly. Indeed, according to the government's survey, more than one out of five foreign students reported experiencing financial difficulties (Statistics Korea, 2023b). The limited legal job options offering low wages may incentivise some to work without proper documentation to alleviate this strain. Acknowledging these challenges, the government recently decided to permit internships for international students during university holidays, specifically in their respective fields of study. Further expansion of the range of job options where international students are allowed to work should be considered. The requirement for the correspondence between the field of study and the field of employment for their employment visa should also be reconsidered. Although this is to promote a match between their skills and the job they are hired for, restricting visa opportunities based solely on the direct correlation between formal education and formal job content might limit the economic contributions of highly skilled foreign workers. Some individuals could bring fresh perspectives and diverse skill sets that can benefit companies and the local economy in ways that are not immediately obvious from their degrees. Korea should actively encourage and facilitate longer-term stays and employment for international students. Compared to other migrant groups, international students have distinct advantages in accessing labour migration channels in host countries, given that they are pre-integrated into the host-country society and often have established connections with the local labour market through part-time jobs or internships.

Another example of strict entry regulations can be found in start-up entrepreneur visas (D-8-4, the Technology Startup Visa). The start-up visa allows foreign start-up entrepreneurs to stay in Korea for two years and run their businesses. A foreigner seeking to apply for a D-8-4 visa must have obtained a

bachelor's degree or higher and achieve over 80 points from the government's Overall Assistance for Start-up Immigration System out of the total 448. The point-based system highly favours patent holders and those who won a prize at invention and start-up exhibitions. Furthermore, for each renewal, the entrepreneur must demonstrate business performance such as sales.

The number of those who obtained the start-up visa has been persistently low, despite a growing interest among foreign entrepreneurs over the past decade. Seoul has a relatively good start-up business environment, being selected as the 10th best startup city in the world with an abundance of IT talent and the potential for collaboration with smartphone manufacturers like Samsung (Startup Genome, 2023). Since the introduction of the Startup Immigration Comprehensive Support System (OASIS) programme in 2015, the number of foreigners completing it has steadily increased, reaching 1342 individuals in November 2022 (Figure 5.26). However, the actual number of successful visa recipients was around 40, only 3%. Furthermore, of the about 230 visas issued from 2015 to 2022, only 110 are currently valid, reflecting the difficulties to renew the visa.

Figure 5.26. The number of those who obtain the start-up visa is low despite a growing interest



Note: Ministry of Justice.

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Korea should streamline visa requirements for entrepreneurs (D-8-4). Educational criteria should be reconsidered, given that ground-breaking ideas, rather than formal education, can lead to the establishment of unicorn startups. About half of OECD countries have introduced visas for start-up founders in recent years, and most of them, including the French Tech Visa, do not impose human capital requirements on applicants (OECD, 2022c). Most of them assess the innovation and viability of the startup but do not have bureaucratic prerequisites such as intellectual property certificates. In Estonia, for instance, the e-residency programme was launched in 2014 to provide entrepreneurs beyond its borders with access to Estonian digital business services, allowing them to establish and run a company online (OECD, 2019e; Government of Estonia, 2023). The requirement to demonstrate business performance every year for visa renewal can be a burden for foreign entrepreneurs, considering that entrepreneurs often face a lack of revenue in the initial stages compared to other types of businesses.

Obtaining permanent residency (F-5-1 visa) is difficult. Only 9.9% of foreign nationals (excluding short-term stays) do. This is low even compared to Japan's rate of 37% (MOJ, 2023), partly reflecting a stringent income criterion, namely an annual income exceeding twice the national gross national income (GNI) per capita in the previous year. With Korea's per capita GNI standing at approximately KRW 47.2 million, this means that one must earn over KRW 94.4 million (USD 68 thousand) annually to qualify for general permanent residency. Only certain exceptional cases, such as big investors, real estate investors and their spouses or unmarried children, and individuals of special merit, may face lower income criteria or be

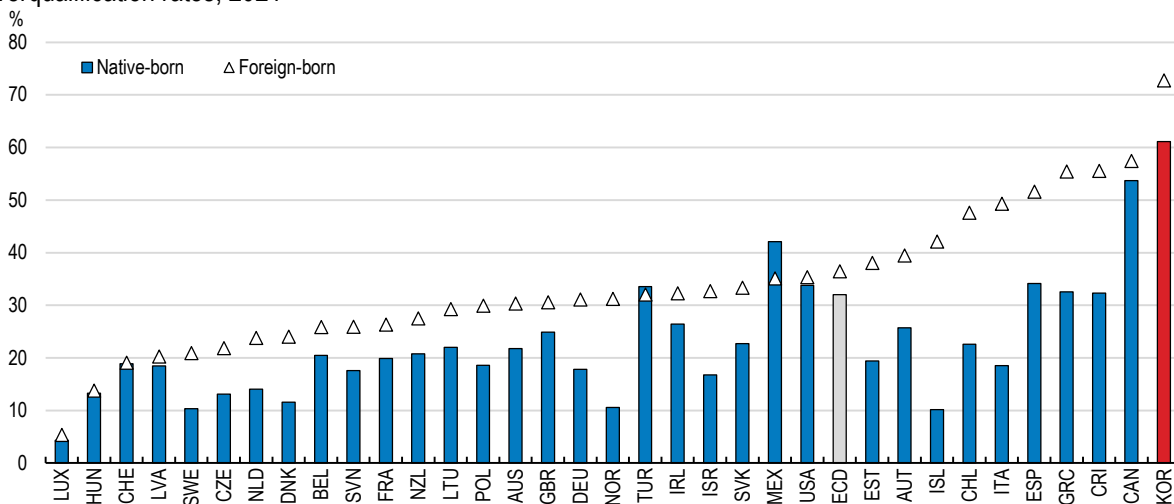
exempt from the income test. The high income threshold generally poses a considerable hurdle to especially younger workers, given that currently less than 2% (9%) earn at least KRW 79 million per year among Koreans in their 20s (30s) (NABO, 2023a). The eligibility for family members to obtain permanent residency in Korea is also limited, creating challenges for foreigners living in the country. Only spouses and children under 19 qualify for permanent residency, excluding parents, adult children, siblings, and other family members from living in Korea as permanent residents alongside the primary visa holder.

Allowing more foreigners to stay permanently should be considered, for instance by relaxing the income criteria for obtaining permanent residency. Given the substantial language investment required by highly qualified immigrants interested in moving to countries like Korea, immigration may need to be approached from a settlement perspective (Chaloff and Lemaître, 2009). This will also help improve Korea's attractiveness (see below). In many OECD countries, there are no such strict income criteria. Relaxing regulations on permanent residency for accompanying family members could also be considered.

Korea should streamline the transition from temporary unskilled foreign worker status to skilled foreign worker status. While unskilled workers holding E-9 visa (or under the Employment Permission System) who have worked legally in Korea more than four years can apply for the E-7-4 skilled worker visa under specific conditions, until 2023 it was subject to a low annual limit and only around 0.5% of EPS workers have achieved this. The E-7-4 is a point-based visa which allows workers to stay and bring family for the duration of their employment contract. Many migrant workers under the Employment Permit System already possess higher education. Over 70% of all highly educated immigrants are employed in low or medium-skilled jobs, the highest overqualification gap in the OECD (ISCO Levels 4-9) (Figure 5.27). According to Statistics Korea's survey on immigrant residency and employment (Statistics Korea, 2023), 30% of resident foreigners hold a university degree, but only about 3% have a visa for skilled workers. This misalignment often results in skilled workers occupying positions that do not align with their qualifications. The government's plan to ease the EPS-to-E-7-4 visa transition by relaxing requirements, including the mandated work period, is a positive step. Additionally, the current age limit and Korean language proficiency requirement should be reconsidered.

Figure 5.27. Skills of foreign workers are underutilised in the Korean job market

Overqualification rates, 2021



Note: The over-qualification rate is the share of the highly educated, i.e. educated to ISCED Levels 5-8, who work in a job that is ISCO-classified as low- or medium-skilled, i.e. ISCO Levels 4-9. For people 15-64 years old.

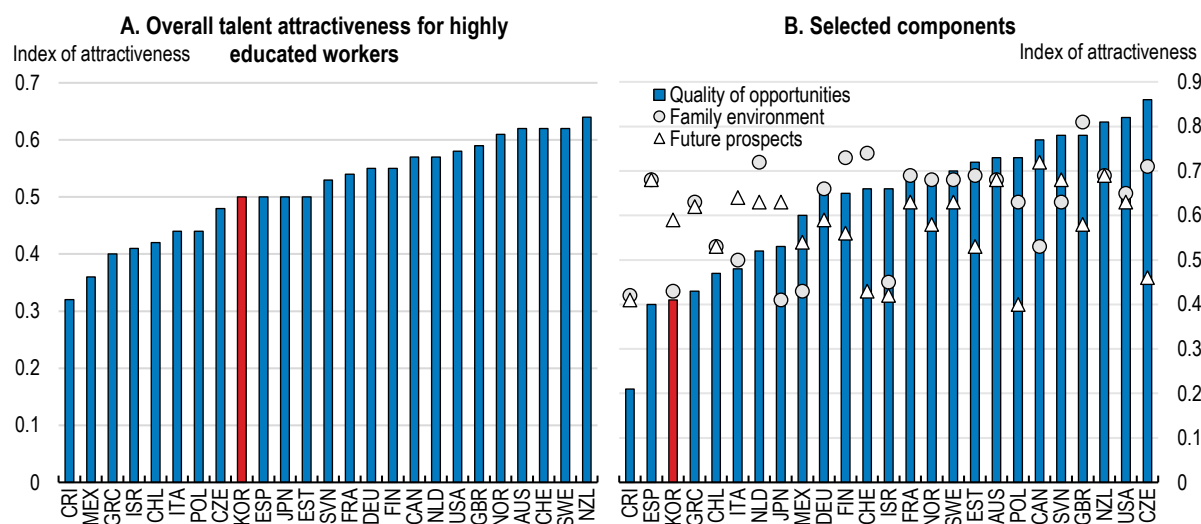
Source: Indicators of Immigrant Integration 2023.

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Simply removing visa hurdles is not enough to ensure a sustainable inflow of skilled immigrants. Countries with their own unique language, like Korea, cannot become internationally competitive only by lowering administrative barriers (Chaloff and Lemaître, 2009). Global competition for skilled professionals and international students in higher education is increasing. In addition to traditionally attractive countries like the United States, Canada, and Australia, new competitors have emerged, such as Japan and Germany, actively working to attract and integrate talent (OECD, 2024a).


The OECD indicator of Talent Attractiveness shows that Korea is not among the most attractive destinations for skilled foreign workers (Figure 5.28, Panel A). This is mainly due to the poor quality of opportunities available, family environment and future prospects (Panel B). Addressing these challenges requires a multifaceted approach. Firstly, the subpar quality of opportunities for highly educated workers partly reflects the high overqualification gap mentioned above and strong employment protection (see previous section). Secondly, establishing affordable international schools and housing, providing integration services, and actively supporting spouse employment can significantly enhance the family environment and long-term immigration prospects (Kang, 2018). Korea should put more efforts into improving these conditions. Norway, which also has high housing costs and language barriers, has successfully addressed challenges for foreign skilled workers in some rural regions (e.g., Møre and Romsdal) by establishing affordable international schools, providing integration services, notably language courses, actively supporting spouse employment and housing mediation, contributing to higher retention rates (OECD, 2014b).

Figure 5.28. Korea is not a particularly attractive destination for skilled foreign workers



Note: The OECD Index of Talent Attractiveness includes seven composite indicators which explain a country's attractiveness to foreign talent: quality of opportunities, income and tax, future prospects, family environment, skills environment, inclusiveness and quality of life. For more information, see <https://www.oecd.org/migration/talent-attractiveness>.

Source: OECD Indicators of Talent Attractiveness 2023.

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Korea should explore strategies to alleviate the language barriers faced by skilled immigrants. The language barrier has been identified as a factor discouraging foreign talents from working and settling in Korea (Shin et al., 2021). Since May 2023, the government has been offering on-site Korean language courses to foreign workers in the shipbuilding industry, predominantly situated in remote areas. The programme allows foreign workers to learn the Korean language, society and culture during their non-working hours at their workplaces. The government should consider expanding this initiative to all sectors and promoting on-the-job language programmes customised by employers, given that employers better understand the needed language competency and can, in turn, develop tailored programmes (Box 5.8).

Box 5.8. Enhancing labour market integration: strategies for on-the-job language training

Proficiency in the host-country language is widely recognised as one of the most crucial factors in successful labour market integration (OECD, 2021c). Among various approaches, on-the-job language training stands out as particularly effective. This is because employers have a clearer grasp of the required language skills and can actively contribute to tailoring language programmes to meet specific workplace needs.

Despite its efficacy, on-the-job language training remains relatively uncommon across OECD countries. This scarcity can be attributed to the administrative and financial challenges it poses for employers, as well as the limited availability of employees due to time constraints (OECD, 2021c). Several OECD countries have implemented policies to overcome these barriers. In Finland and Norway, for instance, when employers provide language training to foreign workers, training costs can be covered by public resources (up to 70% in Finland and 100% in Norway) (OECD, 2021c). Similarly, Australia's Adult Migrant English Programme incorporates the Settlement Language Pathways to Employment and Training, covering costs up to 200 hours of vocation-specific language courses. In Luxembourg, foreign employees are entitled to up to 200 hours of paid leave to attend language training, and the employer is reimbursed 50% of the compensatory benefit by the state. The Canadian province of Quebec has established partnerships with employers and communities to streamline administrative processes and reduce burdens on employers.

Main findings and recommendations

FINDINGS (Main ones in bold)	RECOMMENDATIONS (Key ones in bold)
Support young women and men to have the number of children they desire	
Enhancing work-life balance	
Workplace childcare and public childcare are preferred but in short supply, while there is excess supply of low-quality private childcare, and formal childcare hours do not align with full-time workweeks.	Tighten and enforce quality criteria for private childcare, improve the accessibility of public childcare, encourage workplace childcare, and extend formal childcare hours to accommodate working parents' needs.
A considerable share of the workforce is not eligible for paid parental leave due to strict eligibility criteria.	Expand parental leave coverage to the entire workforce.
The government recently raised the parental leave benefit ceiling in cases when both parents take the leave, while lengthening the maximum duration of the leave.	Increase the parental leave ceiling for all leave takers, while introducing the option to take shorter leave at a higher replacement rate, bridging potential funding gaps.
Employers carry a considerable share of parental leave costs and co-workers often end up working extra when leave is taken, leading relatively few parents to use their paid parental leave rights compared to other OECD countries.	Finance maternity, paternity and parental leave benefits and associated charges with public resources, eliminating the direct costs to employers. Consider providing public support to cover indirect additional costs incurred by hiring replacements for personnel on childcare leave.
Sanctions for workplace discrimination are weak and legal enforcement is patchy.	Strengthen sanctions for workplace discrimination and the capacity of the labour inspectorate to follow up.
Reducing the direct costs of family formation	
Many young people either postpone their careers to land high-quality jobs in large firms, or start at smaller companies with non-regular contracts.	Break down labour market dualism by relaxing employment protection for regular workers, while expanding social insurance enrolment.
The housing supply shortage, particularly in Seoul, drives escalating prices, partly hindered by stringent regulations limiting private sector involvement.	Consider further relaxing regulations on reconstruction and presale price caps, as they undermine the profitability of private housing projects, thereby restricting housing supply.
Social housing comprises 8% of the total stock, slightly above the OECD average, but a significant portion is unoccupied.	Address the mismatch of public housing by adapting quality and location of housing supplied to demand.
The strong preference for top universities fuels private tutoring and increases education costs.	Introduce a credit transfer system and joint degrees to help students pursue their academic interests at various institutions, reducing the emphasis on a few prestigious universities. Increase investments in selected universities in rural areas to reduce the preference for universities in the Seoul Metropolitan area.
A lack of quality after-school services for young school-age children and the need to supplement regular classes push many parents to use private tutoring.	Improve the quality of regular lessons and after-school services, for instance raising teaching time and expanding student-tailored teaching.
Digital technologies, including AI, could improve the quality and personalisation of education, making it more inclusive and enhancing cost-effectiveness.	Increase investment in facilities, teacher training, and curriculum development to facilitate increased integration of digital technologies in learning. Introduce free and high-quality digital tutoring lessons to students to reduce tutoring inequality.
Adapting to inevitable ageing	
Lengthening working lives	
Many workers are forced to retire early, mainly due to the practice of honorary retirements, company-specific mandatory retirement ages, and the seniority wage system.	Introduce a flexible wage system tying wages to job characteristics and performance, irrespective of age and restrict honorary retirement. In this context, consider phasing out company-specific mandatory retirement ages.
The pensionable age is currently 63, one of the lowest in the OECD, and set to increase more slowly than in other OECD countries.	Raise the pension eligibility age further than currently legislated by 2035 and link it to life expectancy thereafter.
Expanding the supply of foreign workers	
The EPS system allows some low-productivity firms to become reliant on low-skilled migrant workers, while restrictions on changing jobs make immigrants dependent on their employers, contributing to undercutting wages and labour standards.	Lower the firm-level cap, especially for smaller firms, with few exceptions and allow low-skilled time-limited work migrants to change jobs with few restrictions.
The inflow of skilled migrant workers significantly lags behind other OECD destinations, partly reflecting stringent visa regulations.	Relax strict visa eligibility requirements for skilled migrants.

Many international students want to stay in Korea after graduation, but only a few find full time employment, reflecting significant visa hurdles, while many international students experience financial difficulties.	Reconsider the requirement for the correspondence between the field of study and the field of employment when granting employment visas to international students, and expand their legal part-time job options.
The number of start-up visas has been persistently low, despite growing interest. The requirement to demonstrate business performance every year is unnecessary and excessive.	Streamline visa requirements for entrepreneurs (D-8-4), notably by relaxing the educational criterion and requirements to demonstrate business performance every year for the renewal of visa.
Obtaining permanent residency is significantly hindered by the requirement of an annual income exceeding twice the gross national income per capita.	Relax the income criteria for obtaining permanent residency (F-5-1 visa).
Many migrant workers with a visa for low-skilled time-limited work already possess the education sought by employers for higher-skilled jobs.	Streamline the transition from temporary low-skilled status to skilled trade worker status.

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KOREA

GDP growth in Korea has recovered, supported by strong exports. Employment remains stable at a high level, while unemployment is low. Interest rates have likely peaked and housing prices have stabilised, all of which should support consumption going forward. Household debt remains high, and construction-related project finance has become a financial stability concern. Reforms to ensure fair competition in the domestic market would increase productivity in the SME sector. Reducing greenhouse gas emissions in line with the 2030 target requires tightening the emissions trading scheme and reforming energy markets to incentivise clean electricity supply and energy savings. The Korean fertility rate has fallen to the lowest in the world, which will put labour supply and public finances under pressure. A large career cost for women who become mothers holds back female employment and fertility, and underpins the widest gender pay gap in the OECD. Improving the work-life balance for both genders, closing remaining gaps in family policies, addressing high housing and education costs, and tackling labour market dualism are key to reverse the trend. Such reforms, combined with increasing the legal retirement age, reducing the high significance of seniority in determining wages, and a more welcoming regime for work immigration, would also boost labour supply and tax revenue.

SPECIAL FEATURES: PRODUCTIVITY, CLIMATE POLICY, BOOSTING FERTILITY AND RESPONDING TO AGEING

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