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This Survey is published on the responsibility of the Economic and Development Review Committee (EDRC) 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 14 March 2018. 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 24 May 2018.

The Secretariat's draft report was prepared for the Committee by Randall S. Jones, Jae Wan Lee and Haruki Seitani under the supervision of Vincent Koen. Research assistance was provided by Lutécia Daniel. Secretarial assistance was provided by Sisse Nielsen and Mercedes Burgos.

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BASIC STATISTICS OF KOREA, 2016

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	50.8		Population density per km^2	515.2	(37.2)
Under 15 (%)	13.6	(17.9)	Life expectancy (years, 2015)	82.1	(80.5)
Over 65 (%)	13.5	(16.6)	Men	79.0	(77.9)
Foreign (%, 2015)	2.3		Women	85.2	(83.1)
Latest 5-year average growth (%)	0.5	(0.6)	Latest general election	April 2016	

ECONOMY

Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	1 415		Primary sector	2.1	(2.5)
In current prices (trillion KRW)	1 642		Industry including construction	38.7	(26.6)
Latest 5-year average real growth (%)	2.8	(1.9)	Services	59.2	(70.9)
Per capita (000 USD PPP)	36.6	(42.2)			

GENERAL GOVERNMENT
Per cent of GDP

Expenditure	32.3	(40.6)	Gross financial debt	45.1	(110.2)
Revenue	34.7	(37.7)			

EXTERNAL ACCOUNTS

Exchange rate (KRW per USD)	1 160		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	875		Machinery and transport equipment	58.7	
In per cent of GDP			Manufactured goods	13.1	
Exports of goods and services	42.3	(53.6)	Chemicals and related products, not elsewhere specified	12.0	
Imports of goods and services	35.4	(49.3)	Main imports (% of total merchandise imports)		
Current account balance	7.0	(0.2)	Machinery and transport equipment	35.1	
Net international investment position	19.6		Mineral fuels, lubricants and related materials	20.1	
			Manufactured goods	11.7	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate for 15-64 year-olds (%)	66.1	(66.9)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	3.7	(6.3)
Men	75.9	(74.7)	Youth (age 15-24, %)	10.7	(13.0)
Women	56.1	(59.3)	Long-term unemployed (1 year and over, %)	0.03	(2.0)
Participation rate for 15-64 year-olds (%)	68.7	(71.7)	Tertiary educational attainment 25-64 year-olds (%)	46.9	(35.7)
Average hours worked per year	2 069	(1 763)	Gross domestic expenditure on R&D (% of GDP, 2015)	4.2	(2.4)

ENVIRONMENT

Total primary energy supply per capita (toe, 2015)	5.5	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2015)	11.6	(9.2)
Renewables (%, 2015)	1.5	(9.6)	Water abstractions per capita (1 000 m³, 2014)	0.5	
Exposure to air pollution (more than 10 μg/m³ of $PM_{2.5}$, % of population, 2015)	99.8	(75.2)	Municipal waste per capita (tonnes, 2015)	0.4	(0.5)

SOCIETY

Income inequality (Gini coefficient, 2015[a])	0.295	(0.311)	Education outcomes (PISA score, 2015)		
Relative poverty rate (%, 2015[a])	13.8	(11.3)	Reading	517	(493)
Median disposable household income (000 USD PPP, 2015[a])	21.1	(23.0)	Mathematics	524	(490)
Public and private spending (% of GDP)			Science	516	(493)
Health care	7.7	(9.0)	Share of women in parliament (%)	17.0	(28.7)
Pensions (2014[b])	3.2	(9.1)	Net official development assistance (% of GNI)	0.16	(0.39)
Education (primary, secondary, post sec. non tertiary, 2014)	4.0	(3.7)			

Better life index: *www.oecdbetterlifeindex.org*

* Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 29 member countries.

a) 2014 data for the OECD.

b) 2013 data for the OECD.

Source: Calculations based on data extracted from the databases of the following organisations: OECD, International Energy Agency, World Bank, International Monetary Fund and Inter-Parliamentary Union.

Executive summary

- *Short-term economic prospects are good…*
- *… but Korea faces risks, including high household debt…*
- *… reflecting weaknesses in the large business groups and SMEs*
- *Korea faces well-being challenges*

Short-term economic prospects are good…

The economy rebounded in 2017 after several years of subpar growth (Figure A). The upturn was led by business investment and a continuing boom in construction driven by housing investment. An uptick in world trade and surging demand for semiconductors boosted Korean exports. A supplementary budget in mid-2017 also supported growth. However, high household debt and labour market slack continued to limit private consumption. Higher oil prices pushed inflation toward the 2% inflation target and the current account surplus remains large.

Figure A. **The economy is projected to grow around 3% a year in 2018 and 2019**

	2017	2018	2019
Gross domestic product	3.1	3.0	3.0
Private consumption	2.6	2.9	2.7
Gross fixed capital formation	8.6	4.0	2.3
Exports	1.9	3.5	4.3
Imports	7.0	5.5	3.7
Unemployment rate	3.7	3.8	3.7
Consumer price index	1.9	1.6	2.0
Current account (% of GDP)	5.1	4.0	4.5

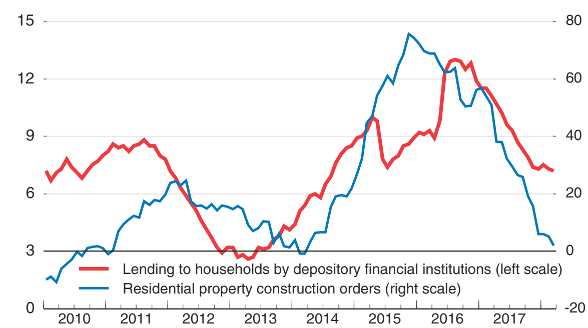
Source: OECD Economic Outlook: Statistics and Projections (database).

The government aims to achieve "income-led growth" driven by job creation. Public employment is to be boosted by around 34% from a low base over five years. Government spending is to rise in line with output growth, but the composition will shift. The share of outlays on social welfare and public employment will increase while that on investment in infrastructure and R&D falls. The government plan to raise the minimum wage to KRW 10 000 – implying a cumulative increase of 54% from 2017 – would also boost household income.

Output growth will remain close to Korea's 3% potential growth rate in 2018 and 2019. Sustained growth of world trade will boost Korean exports, offsetting some slowing in domestic demand due to construction investment. The tightening of loan-to-value and debt-to-income ratios applied to mortgage lending has slowed the growth of residential property orders (Figure B). However, the income-led growth strategy will support household income and private consumption. Given its projection of steady domestic demand growth, the Bank of Korea raised its policy interest rate in November 2017 from a record low to stabilise inflation at its 2% target level over a medium-term horizon.

Figure B. **Lending to households and residential property construction orders are slowing**

Year-on-year percentage change



Source: Financial Supervisory Commission; Bank of Korea.

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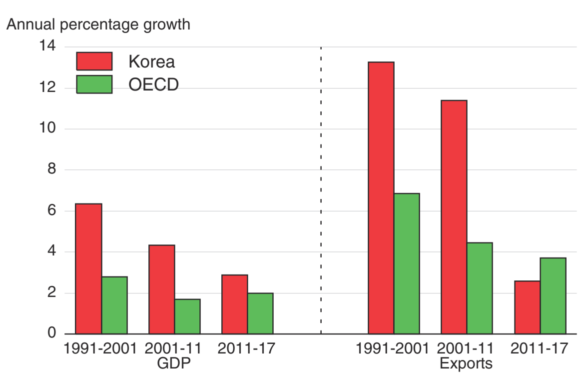
… but Korea faces risks, including high household debt…

Korea is vulnerable to shocks, given its dependence on construction and a few key industries, notably semiconductors. The government's plan to promote innovation could lead to a broader-based recovery and faster growth. A rapid rise in wage costs could weaken competitiveness if productivity gains fail to keep pace. Protectionist pressures would affect exports and business investment.

Household debt has risen to 180% of household disposable income, far above the OECD average, in part due to structural factors. The government launched a comprehensive strategy in late 2017 to address household debt, focusing on new regulations on mortgage lending. It seeks to reduce household debt growth to 8.2% per year, which would still imply a further rise in household debt relative to GDP. On the other hand, the numerous housing-related measures during the past year might turn the slowdown in housing investment into a decline. The risk to the financial sector is limited, however, as the delinquency rate on household loans is low and the capital adequacy ratio for banks is high. Moreover, 70% of household debt is held by the top 40% of income earners and household debt is backed by a rise in assets (housing). Still, low-income households may be vulnerable in a context of rising interest rates.

Korea's traditional model of growth led by exports produced by large business groups, known as *chaebols*, is losing steam. Real GDP growth is slowing toward the OECD average (Figure C), while Korea's real per capita income is one-third below the top half of OECD countries (Figure D). The large income gap reflects low labour productivity, which is 46% below the top half in the OECD.

Figure C. **Korea's output and export growth have slowed**



Source: OECD Economic Outlook: Statistics and Projections (database).

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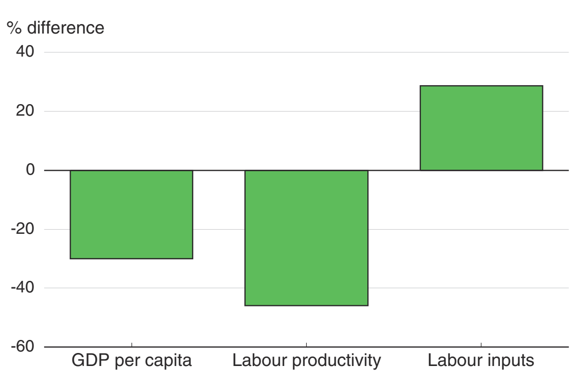
Figure D. **Labour productivity is low in Korea and labour inputs are high**

Korea relative to the top half of OECD countries in 2016



Source: OECD Economic Outlook: Statistics and Projections (database).

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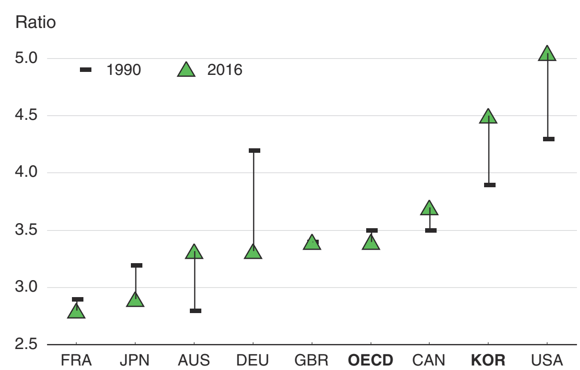
Unbalanced growth driven by exports and manufacturing has led to economic and social polarisation. Productivity in small and medium-sized enterprises (SMEs) in manufacturing has fallen to less than one-third of that in large firms. SMEs are concentrated in services, where productivity is less than half of that in manufacturing. Large productivity gaps are reflected in wide wage dispersion. Workers in the bottom 10% of the income distribution have seen virtually no wage growth during the past two decades. Consequently, wage inequality is high and increasing in Korea (Figure E).

Figure E. **Wage inequality is high and increasing in Korea**

Ratio of the 90th percentile to the 10th percentile



Source: OECD Earnings Distribution (database).

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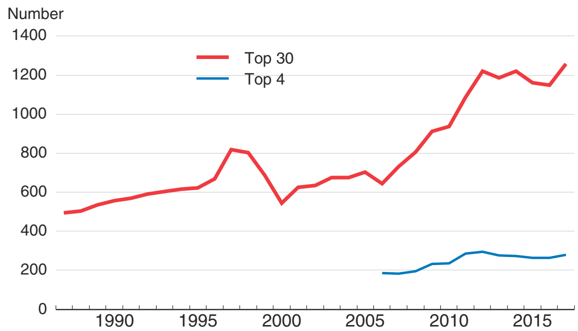
... reflecting weaknesses in the large business groups and SMEs

The government has placed reform of the business groups near the top of its agenda. The groups have played a key role in Korea's rapid development, though the slowdown in Korea's export growth since 2011 (Figure C) raises concern. The groups remain leading players, with the top 30 accounting for about two-thirds of shipments in manufacturing and a quarter of sales in services. The groups continue to diversify, increasing the number of affiliated firms since 2000 (Figure F).

The concentration of economic power appears to stifle entrepreneurship and firm creation. Group-affiliated firms rank first in business lines accounting for more than two-thirds of manufacturing sales. In addition to the impact on

Figure F. **The number of firms affiliated with the large business groups is still rising**



Source: Korea Fair Trade Commission.

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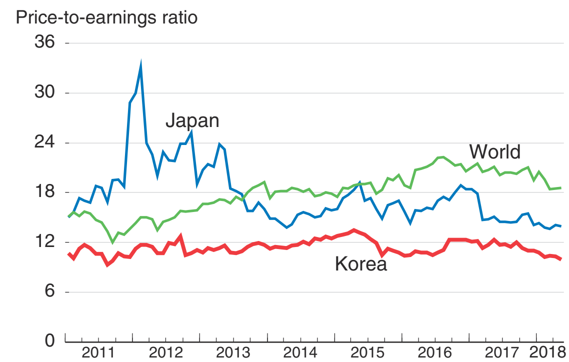
Figure G. **The price-to-earnings ratio of Korean firms is relatively low**



Source: Bloomberg.

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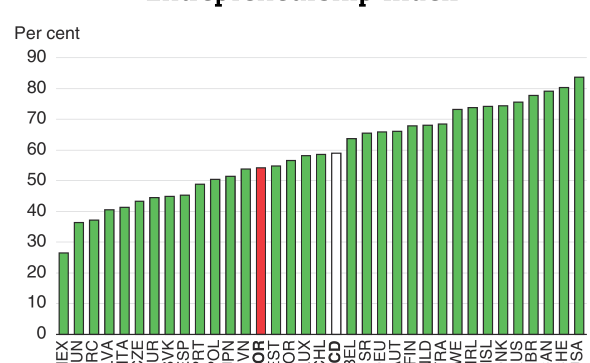
competition, ties between the groups and politicians have been a source of corruption. Since the 1980s, the groups have been subject to special regulations. For example, cross-shareholding between firms in the same business group is prohibited and there are regulations on intra-group trading. Nevertheless, the regulations have failed to resolve the key concerns related to the groups.

The groups are controlled by their founding family, even though their ownership share has fallen to an average of only 2% in the four largest groups. The families maintain control through shareholding among the groups' affiliates, allowing them to override the interests of the affiliated firms' shareholders, in the context of weak corporate governance. Outside directors are mandatory, but dissenting votes at board meetings are rare. The lack of transparency contributes to the low price-earnings ratio for Korean firms – the so-called "Korea discount" (Figure G).

The government aims to make SMEs a driver of innovation. The trickle-down effects from large firms have weakened as they have become more internationalised and focused on capital and technology-intensive products. Enhancing the dynamism of the SME sector, which accounts for the largest share of employment among OECD countries, is essential for economic inclusiveness and poverty reduction.

Productivity in SMEs is held back by a number of factors. *First*, product market regulation in Korea, which was the fourth-most stringent in the OECD in 2013, is concentrated in services. SMEs account for around 90% of employment in services. Moreover, the uncertainty, complexity and inconsistency of regulation burden smaller firms more. *Second*, SMEs' R&D is low and the share that participates in global innovation networks is the second lowest in the OECD. *Third*, the share of small firms that participate in global value chains is the lowest in the OECD. *Fourth*, Korea ranks low in terms of entrepreneurship (Figure H), which does not have a very positive image in Korea. Entrepreneurship opportunities are especially limited for women. *Fifth*, the creation and growth of small firms is also constrained by a lack of market-based financing.

Figure H. **Korea ranks low on the Global Entrepreneurship Index**



Source: Global Entrepreneurship Index (2018).

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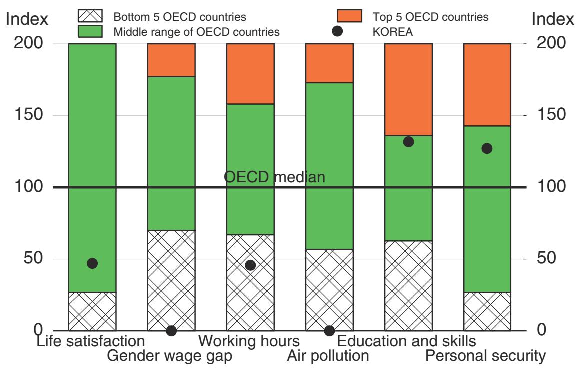
Korea faces well-being challenges

Korea ranks below the OECD average on subjective well-being, despite high scores on personal security and education and skills (Figure I). Korea scores low on the gender-wage gap, working hours and air pollution.

Figure I. **Well-being is low in a number of areas**



Note: Korea's performance relative to the median values in the OECD area. The index median = 100.
Source: OECD Better Life Index, *www.oecdbetterlifeindex.org.*
StatLink http://dx.doi.org/10.1787/888933740136

The large gender wage gap and long working hours inhibit female employment (Figure J). Other factors are weak enforcement of the right to maternity leave and women's concentration in low-paid non-regular jobs, despite their relatively high level of education. Non-regular workers earn a third less than regular workers, face precarious employment, and receive less firm-based training and social insurance coverage. Labour market dualism, along with labour market mismatch, keeps the youth employment rate well below the OECD average. Removing obstacles to employment would help cope with population ageing (Figure K).

Older persons face a number of challenges. Workers are forced out of firms at around age 50, given their relatively low skills and seniority-based wages. Those who remain in the labour market generally end up in self-employment or temporary jobs. The early departure from career jobs, combined with the decline in family support and the weakness of other private and public sources of income leads to poverty among the elderly. Indeed, the relative poverty rate of those over age 65 is 45.7%, far above the 12.9% OECD average.

Figure J. **Korea's employment rate was below the OECD average in 2016**

	Korea	OECD
Total[1]	66.1	67.0
Women[1]	56.1	59.4
Youth (15 to 29)	41.7	51.4
Adults (30 to 54)	77.2	76.9
Older persons (55 to 64)	66.2	59.2

1. As a percentage of the working-age population.
Source: OECD Employment and Labour Market Statistics (database).

Average air quality in Korea is the worst in the OECD and deteriorating. Korea has the OECD's second-highest growth of greenhouse gas emissions since 2000. In per capita terms, they now exceed the OECD average. Low electricity prices hamper efforts to reduce energy demand and act as a barrier to renewables, whose share of primary energy supply is the lowest in the OECD. In addition, fossil fuels remain heavily subsidised. In the absence of policy measures, the number of premature deaths due to outdoor air pollution is projected to almost triple by 2060, placing Korea among the worst affected countries. Air pollution reflects Korea's energy-intensive economy and is exacerbated by dust blown in from abroad, particularly China. The government has recently launched a five-year plan against fine dust.

Figure K. **Korea faces the most rapid population ageing in the OECD**

Note: Population aged 65 and over as a per cent of the population aged 15 to 64.
Source: OECD Demography and Population (database).

MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic and financial policies to promote growth	
The Bank of Korea raised its policy interest rate from a record low, as headline inflation rose to 1.9% in 2017.	• Gradually reduce the degree of monetary accommodation by raising the policy interest rate.
Government spending is to increase in line with GDP growth, maintaining a stable budget surplus. Outlays are to be reallocated from economic activities to social welfare. Social spending related to the elderly is projected to rise rapidly over the long run. The current account surplus remains large.	• Control spending in line with the Fiscal Management Plan to help ensure a sustainable fiscal balance in the long run. • Allow public spending as a share of GDP to increase in the face of population ageing in the long run. • Use taxes that are relatively less harmful to economic growth, notably the VAT, to finance rising social spending. • Re-allocate public spending to social welfare as planned.
Household debt has risen to 180% of household disposable income. The growth of bank lending to households has fallen to around 7%, as mortgage lending has slowed.	• Consider further tightening loan-to-value and debt-to-income regulations on mortgage lending depending on the impact of the recent changes.
Reforming the large business groups	
Among firms affiliated with business groups, the gap between the cash flow rights and voting rights of the owner family – which allows them to use their influence for their private benefit – is smaller for those operating in competitive markets, as it discourages rent-seeking.	• Strengthen product market competition by relaxing barriers to imports and inward foreign direct investment and liberalising product market regulation.
Since 2001, outside directors must account for more than half of the board of directors in firms with assets of more than KRW 2 trillion. However, dissenting votes are rare, especially when directors have social links to the firm's management.	• Reinforce the role of outside directors by enhancing the criteria for independence, reducing the role of management in nominating outside directors and requiring that outside directors comprise more than half of the boards in all listed firms.
In the top four business groups, the owner-family's share has fallen to 2.0%, but they maintain control through shareholding among affiliated firms.	• Phase out existing circular shareholding by firms belonging to the same business group.
Cumulative voting was introduced in 1999, but most firms changed their charters to prohibit it. Electronic voting, launched in 2010, is used by over a third of listed firms.	• Make cumulative voting (which would allow minority shareholders to elect directors) and electronic voting (which would help minority shareholders to vote their shares) mandatory.
The concentration of power and wealth in the business groups has led to corruption based on their links to political leaders.	• Follow through on the government's pledge to not grant presidential pardons to business executives convicted of corruption.
Enhancing dynamism in SMEs to achieve higher productivity and inclusive growth	
Product market regulation in Korea was the fourth-most stringent in the OECD in 2013. The uncertainty, complexity and inconsistency of regulation burden smaller firms more.	• Introduce a comprehensive negative-list regulatory system and allow firms in new technologies and new industries to test their products and business models without being subject to all existing legal requirements (i.e. a regulatory sandbox).
The creation and growth of small firms is also constrained by financing. SMEs are dependent on lending and loan guarantees from public financial institutions.	• Increase lending based on firms' technology by expanding public institutions that provide technological analysis to private lending institutions.
Studies by public sector research institutes show that SMEs receiving government support have lower productivity but higher survival rates.	• Ensure that support provided to SMEs improves their productivity by carefully monitoring their performance and introducing a graduation system.
Over 80% of SMEs report labour shortages. The share of high school students in vocational high schools has fallen to 19%.	• Increase the quality and availability of vocational education to reduce labour market mismatch and labour shortages in SMEs.
Addressing key challenges to well-being	
The female employment rate remains below the OECD average as women tend to withdraw from the labour force once they have children, in part due to shortages of high quality early childhood education and care institutions.	• Upgrade accreditation standards in early childhood education and care and make them mandatory. • Raise qualification standards for teachers. • Relax fee ceilings on private childcare institutions and entry barriers.
Non-regular workers earn only about two-thirds as much as regular workers per hour, although their skill levels are reported to be broadly similar on average.	• Break down dualism by relaxing employment protection for regular workers and making it more transparent, while expanding social insurance coverage and training for non-regular workers.
The minimum wage is to rise to KRW 10 000 – a cumulative increase of 54% from the 2017 level.	• Assess the impact of the 16.4% hike in the minimum wage in 2018 before raising it further.
The relative poverty rate among the elderly is the highest in the OECD at 45.7%, far above the 12.9% OECD average. The government provides a Basic Pension, amounting to KRW 200 000 (USD 185 per month to 70% of the elderly.	• Further increase the Basic Pension and focus it on the elderly in absolute poverty.
Korea's per capita greenhouse gas emissions have risen above the OECD average. It aims to cut total emissions by 37% from a business-as-usual baseline by 2030, in part through its emissions trading system. Average air quality is the worst in the OECD and deteriorating.	• Steadily increase the share of permits auctioned and the stringency of the total emission cap in the emissions trading system. • Raise environmentally-related taxes, in part to close the gap between diesel and petrol taxes, and boost electricity prices.

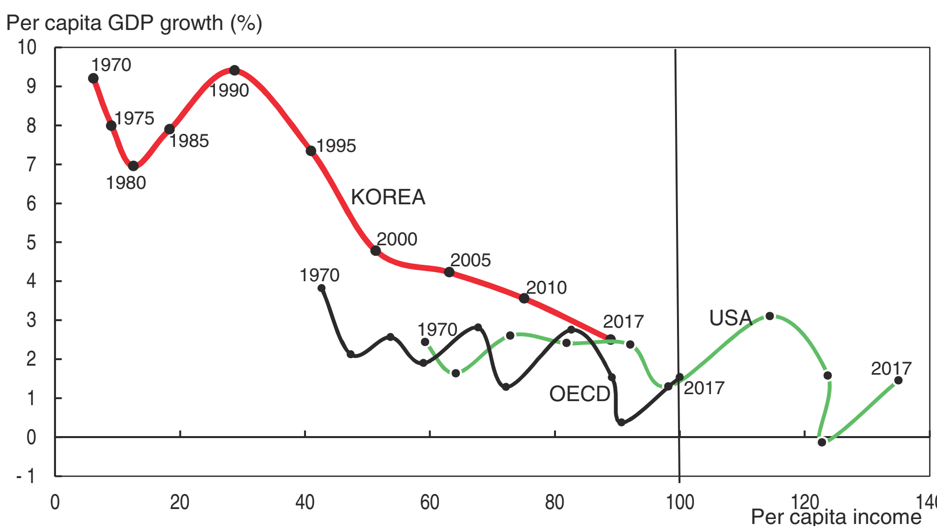
Key policy insights

- *Recent macroeconomic developments and short-term prospects*
- *Fiscal and financial policies to promote stability and well-being*
- *Addressing longer-run challenges to well-being*
- *Assessment of the government's economic strategy*

Korea's transformation from one of the poorest countries in the world in the 1950s to a major industrial power and member of the OECD was exceptionally rapid, reflecting good policies, notably sound fiscal and monetary policy, high levels of investment in human and physical capital and an outward orientation that increased its share of world trade. Per capita income increased from 6% of the OECD average in 1970 to 89% in 2017 (Figure 1). Rapid development has been export-led, with large business groups, known as *chaebols*, making Korea the world's sixth-largest exporter. However, the traditional growth model seems to be losing effectiveness, as income growth has slowed toward the OECD average. Korea's low level of labour productivity, at 46% below the top half of OECD countries, suggests scope for continued convergence. Low labour productivity is offset by very long working hours, at the expense of well-being and female employment. The decline in the working-age population beginning in 2017 year will put downward pressure on per capita income growth.

Figure 1. **Korea's per capita income is converging to the most advanced countries**[1]

OECD area's per capita income in 2017 = 100



1. The figure shows per capita income (at 2017 purchasing power exchange rates) as a share of the OECD average in 2017, which is set at 100, for Korea, the United States and the OECD. Data are shown at five-year intervals from 1970 to 2010 and in 2017.

Source: OECD Economic Outlook: Statistics and Projections (database).

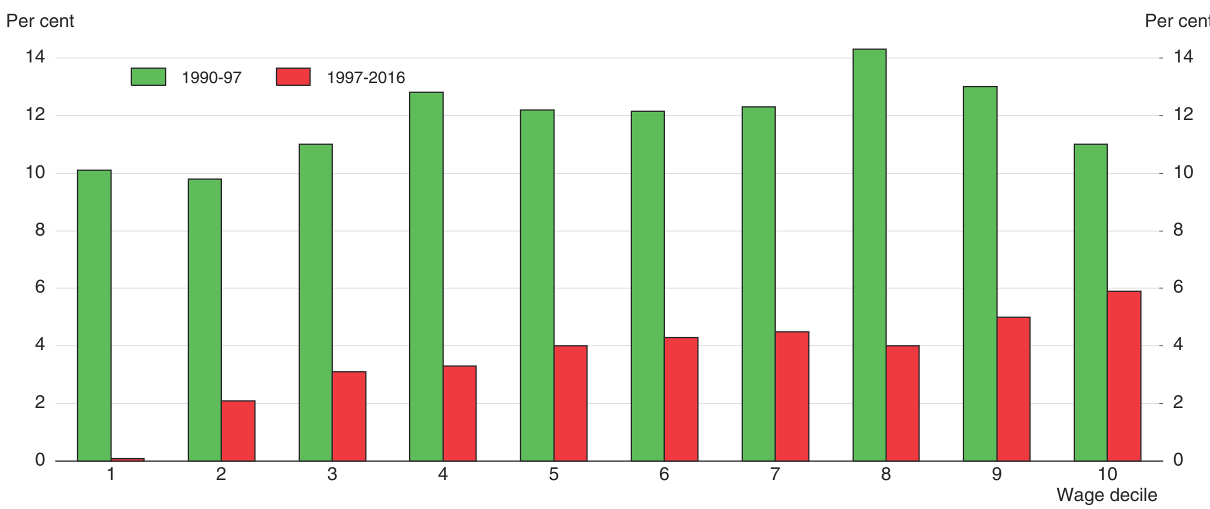
StatLink http://dx.doi.org/10.1787/888933738540

While growth typically decelerates during economic development, the rapidity of the slowdown calls into question the viability of Korea's traditional model. Export volume growth has declined from an annual rate of 11.4% over 2001-11 to 2.6% over 2011-17, lagging behind global trade. Moreover, the spillover effect from exports to domestic demand and employment has weakened, as large firms have become increasingly internationalised and are focusing on more capital and technology-intensive products. The traditional model has also led to polarisation between large companies and small and medium-sized enterprises (SMEs) and between the manufacturing and service sectors. Indeed, labour productivity in SMEs in manufacturing has fallen to only a third of that in large companies, despite extensive government assistance to small firms. Korea's emphasis on manufacturing has also contributed to rising greenhouse gas emissions and high levels of pollution. Indeed, air pollution is a major health concern (OECD, 2017e).

The polarisation has resulted in rising relative poverty and income inequality in Korea, which stood out for its low degree of inequality during its high growth era from 1961 to 1996 (OECD, 2013a). Workers in the bottom 10% of the wage distribution have experienced virtually no wage growth during the past 20 years (Figure 2). While similar trends are seen in some other OECD countries, it was exacerbated by rising labour market dualism and stagnant productivity in SMEs. By 2015, the income share of the top 10% was 4.4 times higher than that of the bottom 10%, the 12th highest ratio in the OECD area.

Figure 2. **Wage inequality has increased during the past two decades**

Nominal wage growth per year by decile



Source: Byeon et al. (2017).

StatLink http://dx.doi.org/10.1787/888933738559

The government aims to achieve "income-led growth" driven by job creation: "We need an economic paradigm shift from the idea that jobs are created as the result of growth to the idea that growth occurs when jobs increase" (Korea.net, 2017). In order to get quick results, "the public sector needs to make the first move". In addition to expanding public employment, household income is to be boosted by a sharp rise in the minimum wage and increased social spending. The President has placed reform of the large business groups at the forefront of his agenda to create a "fair economy". The government also aims to make SMEs a driver of innovation by promoting the fourth industrial revolution and nurturing innovative start-ups. Achieving the government's objective of maintaining output growth at around its current pace of 3% requires boosting productivity growth. Korea's large investments in education and R&D, which is the second highest in the OECD area as a share of GDP, suggest significant potential for higher productivity.

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

- Korea needs to shift from its traditional growth model to a more balanced approach that promotes inclusive growth through reforms to raise productivity in both the large business groups and SMEs.
- Labour market reforms to raise the employment of women, youth and older persons and to break down labour market dualism are key to enhancing well-being and social inclusion, while mitigating the impact of rapid population ageing.
- Addressing environmental problems and promoting green growth is essential to improve health and well-being, as well as to ensure the sustainability of growth.

Recent macroeconomic developments and short-term prospects

Korea has experienced slow and unbalanced growth during the past few years

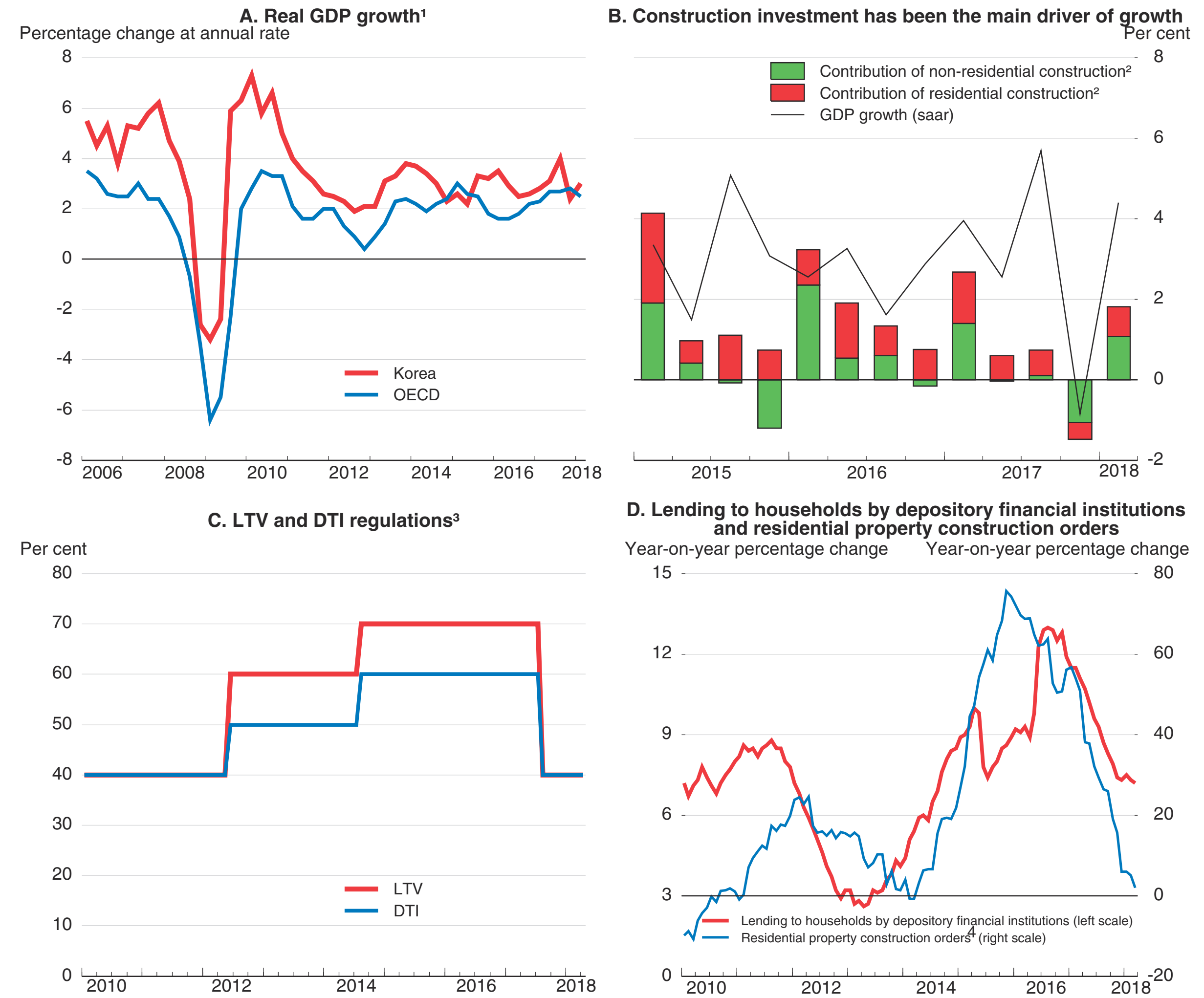
Between the final quarter of 2014 and mid-2017, annualised GDP growth was 3.0% (Figure 3), with construction investment accounting for more than half of output gains (Panel B). Construction was driven by residential investment, which soared at a 23% annualised rate over that period, fuelled by the easing of regulations on mortgage lending (Panel C). Rising lending to households (Panel D) boosted household debt, which reached 180% of household disposable income in 2016 (see below). The household saving rate climbed from less than 4% of household income in 2012 to around 9% in 2015-16, as consumers coped with higher debt levels and the need to prepare for retirement. The rising saving rate has constrained private consumption, which has lagged output growth each year since 2006.

Exports, which account for about half of GDP, were also sluggish between the final quarter of 2014 and mid-2017, expanding at a rate of only 1.0% (Figure 4). Korea's export performance (in volume terms) has deteriorated since its peak in 2012 (Panel B). Sluggish exports reflect a 2.2% drop (USD value terms) over 2014-17 in shipments to China, Korea's largest trading partner. China's decision in 2016 to cut imports of Korean products and to ban Chinese tour groups from visiting Korea in retaliation for Korea's decision to deploy a missile defence system contributed to the fall in China's share of Korean exports from its 2015 peak (Table 1). Meanwhile, the export shares of Vietnam and Hong Kong, China increased.

Output growth rebounded in mid-2017, aided by the pick-up in global trade, and fiscal stimulus. The rebound in world sales of semiconductors (Figure 4, Panel C) played a key role, as Korea held 58% of the global memory market in 2016. In 2017, Korea's semiconductor exports jumped 57% (year-on-year, customs basis), representing 17.1% of total exports (Table 1, Panel B). The semiconductor industry accounted for one-third of operating profits in manufacturing and over three-quarters of total business investment during the first eight months of 2017 (Figure 4, Panel D). However, the export boom in this highly automated industry had a limited impact on employment, accounting for only 1% of job creation during the first half of 2017. Other products that increased their share of Korean exports in 2017 include petroleum products and ships (Table 1, Panel B). However, cars and car parts and wireless communication equipment saw significant declines. The booming semiconductor industry is masking weakness in other areas of the economy. Indeed, the manufacturing operation ratio fell from 74.5% in 2015 to 71.9% in 2017, well below its historical average of 80%.

In July 2017, the government introduced a KRW 11 trillion (0.6% of annual GDP) supplementary budget that was nearly as large as the one in 2016. The budget focused on social welfare. Around 70% of the budget was spent in the third quarter of 2017, boosting output growth to 5.7% at a seasonally-adjusted annual rate, the fastest since 2010, in that quarter.

Figure 3. **Output growth has been led by the construction sector**



1. Three-quarter moving average.
2. Contribution to GDP growth in percentage points.
3. The loan-to-value (*LTV*) *ratio* restricts the size of a housing loan to a certain percentage of the value of the property securing the loan. The debt-to-income (DTI) ratio shows borrowers' monthly *debt* burden relative to monthly pay. An increase in the LTV and DTI ratios encourages mortgage lending. The ratios in the figure are those applied to bank loans for properties in the Seoul region, including "speculative districts".
4. A 24-month moving average.

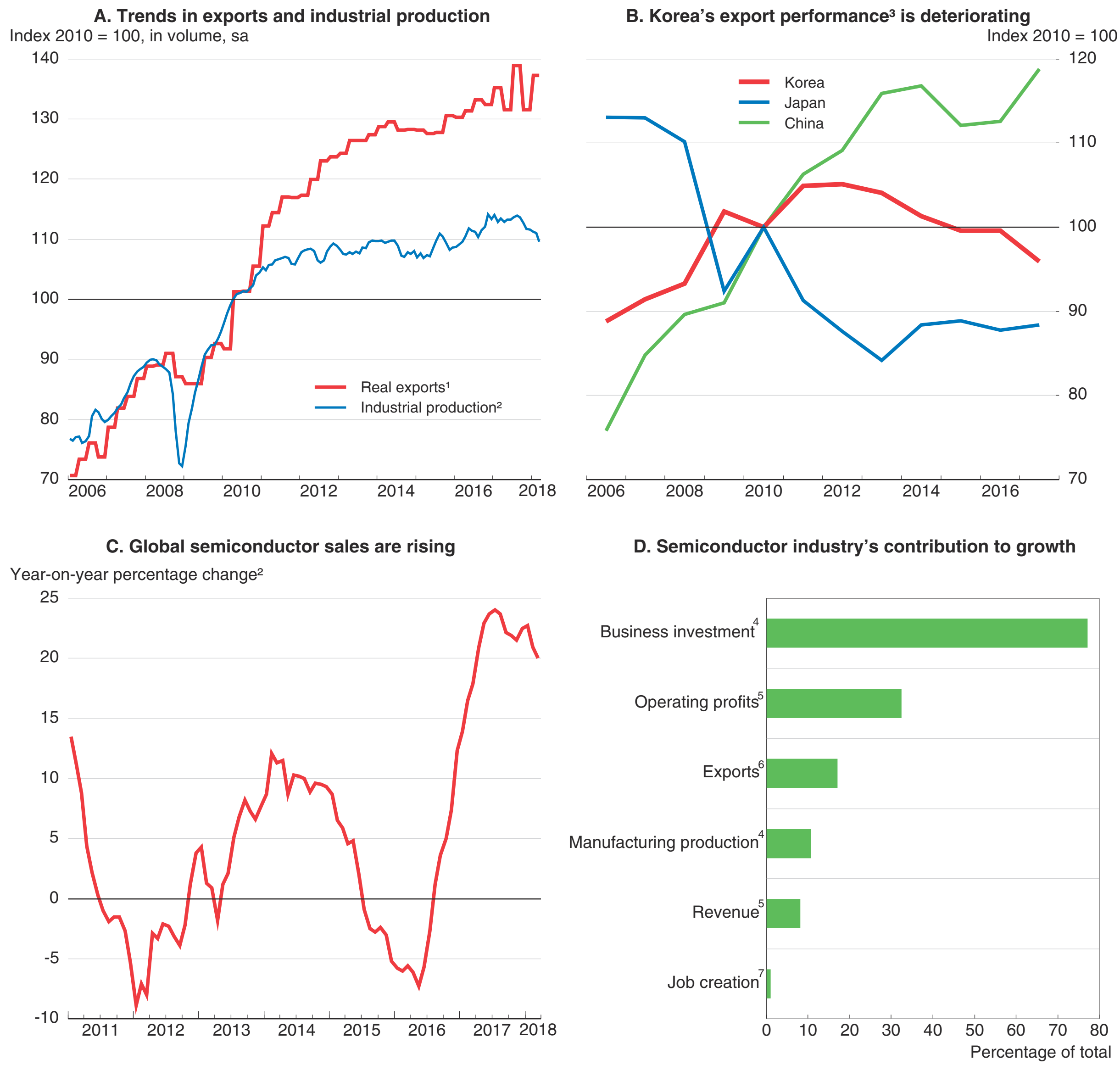
Source: OECD Economic Outlook: Statistics and Projections (database); Financial Supervisory Commission; Bank of Korea.

StatLink http://dx.doi.org/10.1787/888933738578

Consumer price inflation has picked up from less than 1% in 2015 and most of 2016 to 1.9% in 2017, close to the Bank of Korea's 2% inflation target (Figure 5). Inflation was underpinned by higher oil prices and double-digit increases in the price of agricultural products in the summer of 2017 due to weather conditions. Core inflation, which excludes food and energy, remains well below 2%. Housing prices are rising slowly, at less than a 1% annual rate (adjusted for inflation) since the end of 2013, in contrast to sizeable increases elsewhere in the OECD area, including the United States and the euro area (Panel B).

Korea's current account surplus, at USD 78 billion in 2017, is one of the largest in the world. It jumped from 1.6% of GDP in 2011 to 7.7% in 2015 (Figure 6), before narrowing to

Figure 4. **Export growth is led by key industries, notably semiconductors**



1. Goods and services on a national accounts basis in volume terms.
2. Three-month moving average.
3. Growth in exports relative to the growth of the country's export market, which is calculated as the weighted average of import growth in Korea's 53 major trading partners. Export performance improves if Korea's export growth exceeds import growth in its 53 trading partners.
4. January to August 2017.
5. In the manufacturing sector in the first half of 2017.
6. Share of exports in USD value in 2017.
7. In the first half of 2017.

Source: Statistics Korea; Bank of Korea; OECD Economic Outlook: Statistics and Projections (database); World Semi-Conductor Statistics; Nomura Global Economics.

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5.1% in 2017. Although large surpluses are less concerning than deficits, they generate large exposures to credit, currency and interest-rate risk (OECD, 2017d).

The rise in Korea's current account surplus from less than 2% of GDP on average over 2001-11 to 6.0% over 2012-17 reflects several factors. *First*, the saving-investment balance

Table 1. **Korea's top export markets and products**

A. Percentage of total exports of goods by country

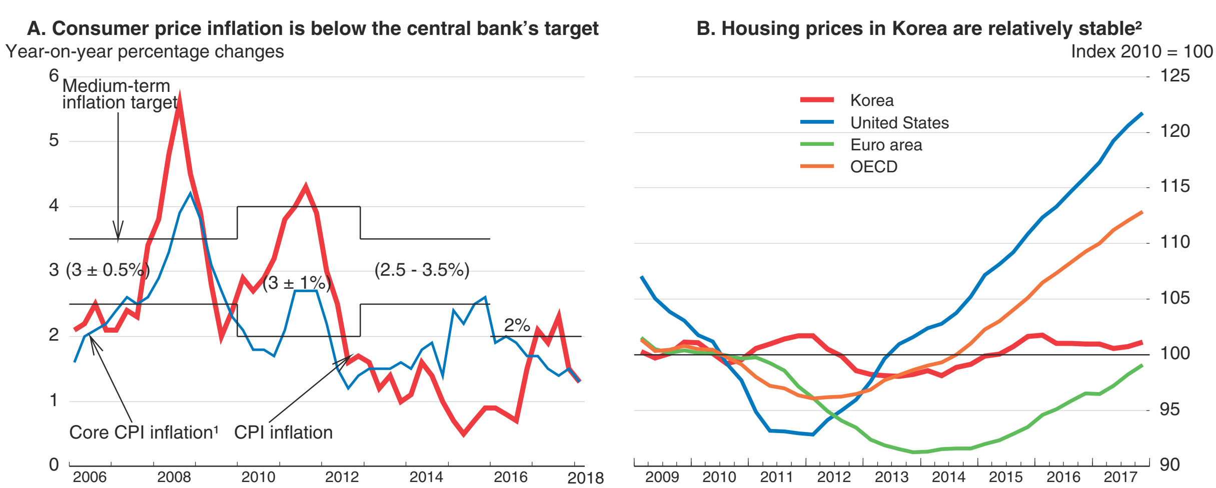
	2014 on a value-added basis	2014	2015	2016	2017	Change since 2014
China	21.7	25.4	26.0	25.1	24.8	-0.6
United States	16.7	12.3	13.3	13.4	12.0	-0.3
Vietnam	1.6	3.9	5.3	6.6	8.3	4.4
Hong Kong, China	0.9	4.8	5.8	6.6	6.8	2.0
Japan	6.7	5.6	4.9	4.9	4.7	-0.9
Australia	1.7	1.8	2.1	1.5	3.5	1.7
India	2.7	2.2	2.3	2.3	2.6	0.4
Chinese Taipei	1.6	2.6	2.3	2.5	2.6	0.0
Singapore	0.6	4.1	2.8	2.5	2.0	-2.1
Mexico	1.5	1.9	2.1	2.0	1.9	0.0
Total	**56.8**	**64.6**	**66.7**	**67.4**	**69.2**	**4.6**

B. Percentage of total exports of goods by product

	2014	2015	2016	2017	Change since 2014
Semiconductors	10.9	11.9	12.6	17.1	6.2
Ships	7.0	7.6	6.9	7.4	0.4
Cars	8.5	8.6	8.1	7.3	-1.2
Petroleum products	8.9	6.1	5.3	6.1	-2.8
Flat displays and sensors	5.8	5.7	5.1	4.8	-1.0
Car parts	4.9	5.1	5.2	4.0	-0.9
Wireless communication equipment	5.2	6.2	6.0	3.9	-1.3
Synthetic resin	3.8	3.5	3.5	3.6	-0.2
Flat-rolled steel products	3.3	3.1	3.1	3.2	-0.2
Computers	1.3	1.5	1.7	1.6	0.3
Total	**59.6**	**59.4**	**57.5**	**58.9**	**-0.7**

Source: Korea International Trade Association; OECD calculations.

Figure 5. **Consumer price inflation has picked up while housing prices are relatively steady**



1. Excludes food and energy. The central bank target is for CPI inflation.
2. Adjusted for consumer price inflation.

Source: OECD Economic Outlook: Statistics and Projections (database).

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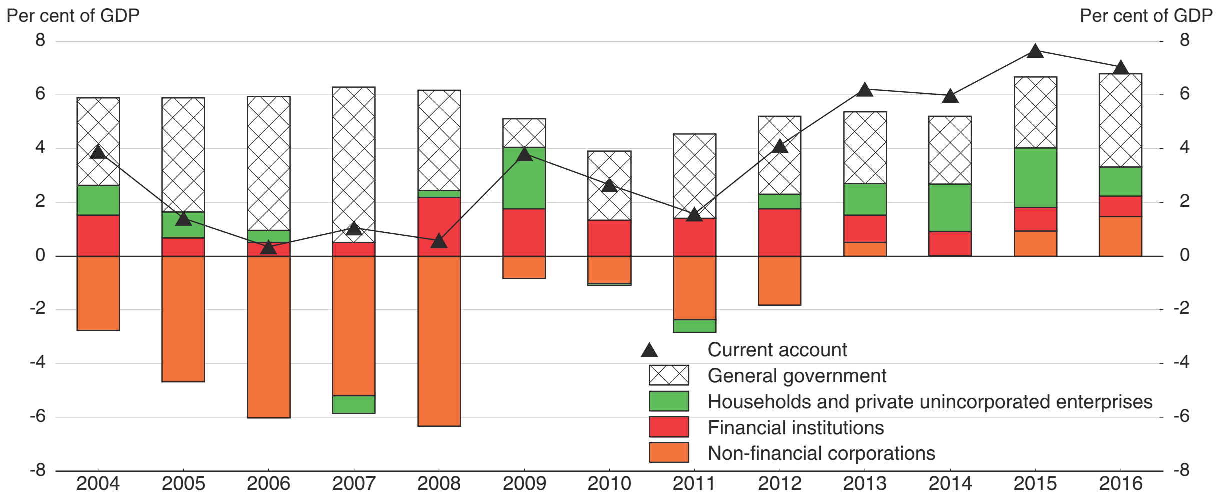
Figure 6. **Korea's current account surplus is explained by trends in the saving-investment balance**



Source: Bank of Korea.

StatLink http://dx.doi.org/10.1787/888933738635

shifted from a deficit to a surplus in the non-financial corporate sector, reflecting a drop in domestic investment as firms have become more cautious. Nevertheless, business investment in Korea as a share of GDP remains one of the highest in the OECD. *Second*, the saving-investment balance in the household sector has increased, as the large share of the population in their prime saving years prepare for retirement. High household debt is also contributing on this score. Another factor affecting private-sector saving is the drop in oil prices, which contributed to the fall in the oil import bill from 7% of GDP in 2012 to 2.9% in 2016. The rise in oil prices in 2017 contributed to a fall in the current account surplus. *Third*, the national savings-investment balance is also due to a government surplus – averaging 1.7% of GDP over 2012-17 – reflecting preparation for an aged society and the potential cost of reunification with North Korea (Annex A1).

Korea's large and persistent current account surplus equals the saving-investment imbalance (Han and Shin, 2016). Policies that boost domestic demand through macroeconomic stimulus and structural reforms would tend to reduce the surplus. In particular, strengthening the social safety net would decrease precautionary saving by households. Such measures would have positive spillovers on the world economy and help reduce global imbalances.

Prospects and risks

Despite the fall in output in the final quarter of 2017, economic growth is projected to remain near 3%, in line with Korea's potential rate, over 2018-19 (Table 2), as sustained growth of world trade boosts exports. Domestic demand will be slowed by a decline in construction investment, as construction orders have been shrinking (year-on-year) since mid-2017. The sharp drop in housing starts in 2017 and the decline in the provision of land by public institutions for housing implies a marked slowdown in residential construction in 2018-19 (J. Oh, 2017). In addition, loan-to-value and debt-to-income ratios were tightened in August 2017 (Figure 3, Panel C). However, the planned increase in public employment and social welfare spending (see below), as well as achieving the government's target of

Table 2. **Macroeconomic indicators and projections**

Annual percentage change unless specified otherwise, volumes at 2010 prices

	Per cent of 2014 GDP in current prices	2015	2016	2017	2018	2019
GDP	100.0	2.8	2.9	3.1	3.0	3.0
Private consumption	50.3	2.2	2.5	2.6	2.9	2.7
Government consumption	15.1	3.0	4.5	3.4	6.0	3.9
Gross fixed capital formation	29.2	5.1	5.6	8.6	4.0	2.3
Housing	4.2	18.9	20.3	14.9	4.0	0.6
Business	20.6	2.4	1.9	7.7	1.7	2.7
Government	4.3	4.3	7.3	5.6	3.4	2.3
Final domestic demand	94.6	3.2	3.8	4.7	3.8	2.7
Stockbuilding[1]	0.1	0.7	0.0	0.4	0.2	0.0
Total domestic demand	94.7	3.9	3.8	5.1	3.9	2.7
Exports of goods and services	50.3	-0.1	2.6	1.9	3.5	4.3
Imports of goods and services	45.0	2.1	4.7	7.0	5.5	3.7
Net exports[1]	5.3	-1.0	-0.7	-1.7	-0.6	0.4
Nominal GDP growth		5.3	5.0	5.4	4.0	5.4
Potential GDP		3.3	3.2	3.2	3.2	3.1
Output gap[2]		-1.1	-1.4	-1.5	-1.7	-1.7
Employment		1.3	1.1	1.2	0.9	1.0
Unemployment rate[3]		3.6	3.7	3.7	3.8	3.7
GDP deflator		2.4	2.0	2.3	1.0	2.3
Consumer price index (CPI)		0.7	1.0	1.9	1.6	2.0
Core CPI[4]		2.4	1.9	1.5	1.5	2.0
Household saving rate[5]		9.3	8.7	8.9	8.9	8.9
Export performance		-1.6	0.0	-3.7	-1.6	-0.5
Current account balance[6]		7.7	7.0	5.1	4.0	4.5
Central government budget balance[6,7,8]		-3.0	-2.4	-1.7	-1.6	-1.8
Central government spending growth[8]		8.1	3.6	2.9	4.6	5.7
General government fiscal balance[6]		1.3	2.4	2.8	2.1	1.9
General government underlying fiscal balance[2,6]		1.7	2.9	3.4	2.8	2.6
Underlying government primary balance[2,6]		1.7	2.6	3.0	2.2	2.1
General government gross debt[6]		45.7	45.1	44.5	44.2	44.5
Three-month money market rate		1.8	1.5	1.4	1.7	2.0
Ten-year government bond yield		2.3	1.7	2.3	2.8	3.1

1. Contributions to changes in real GDP (percentage of real GDP in previous year).
2. As a percentage of potential GDP.
3. As a percentage of the labour force.
4. Excludes food and energy. The central bank target is for CPI inflation.
5. As a percentage of disposable income.
6. As a percentage of GDP.
7. Consolidated central government budget, excluding the social security surplus, on a GFS basis.
8. Including supplementary budgets. Figures for 2017-19 are the targets in the government's Medium-term Fiscal Management Plan for 2017-21.

Source: OECD (2018), *OECD Economic Outlook*, (May), OECD Publishing, Paris.

raising the minimum wage by 54% by 2022 are expected to support household income and private consumption, offsetting the deceleration in construction investment.

Korea, the world's fifth largest oil importer, is affected by the price of oil, which is assumed to rise from USD 54 (Brent) in 2017 to around USD 70 in 2018-19. However, Korea is less vulnerable than in the past thanks to its increased energy efficiency. Indeed, energy intensity (the ratio of energy consumption to real GDP) has fallen by nearly a quarter since 1997. Still, the higher oil price in 2018 could boost consumer price inflation by 0.4 percentage points, though the negative impact on output will be limited by increased demand for Korean exports in oil-exporting countries.

External risks are greater than domestic risks. The dependence on growth in semiconductors and a few other key industries makes the economy vulnerable to shocks. In addition, slower demand from China, Korea's major trading partner, in the context of China's on-shoring strategy, could have a negative impact. A broader-based export recovery that extends beyond key industries would reduce the risks to growth. Positive results from government measures to promote innovation would lead to faster output growth. However, a rise in wage costs driven by hikes in the minimum wage, to the extent that they are enforced, could weaken Korea's competitiveness if not accompanied by productivity gains. Compliance with the minimum wage in Korea has been weak, given lax enforcement and a lack of penalties for violations (OECD, 2016). However, Korea has been strengthening the inspection of firms since 2015 to ensure compliance with the minimum wage. In 2016, the government estimated that 1.1 million employees (7.3% of the total) were paid less than the minimum wage.

Another downside risk is sluggish business investment following the hike in corporate taxes (see below), higher wages that weaken the profitability of smaller firms and the uncertainty created by the government's pledge to reform the large conglomerates that play a key economic role. The numerous housing-related measures could turn the deceleration of housing investment into a decline. In addition to these risks, Korea's exposure to large potential shocks remains high (Table 3).

Table 3. **Possible shocks to the Korean economy**

Vulnerability	Possible outcome
A further run-up in household debt	Rising household debt in the context of rising interest rates could sharply boost the number of delinquent borrowers, with negative effects on banks' balance sheets.
Rise in protectionism	With exports accounting for half of GDP and Korea increasingly prominent in global value chains, increased trade barriers would undermine Korea's leading industries.
Intensified geo-political tension in the Korean peninsula	Increasingly stringent sanctions could prompt political unrest in North Korea. Financial market turbulence in South Korea and capital outflows could cause a sharp depreciation of the won and declines in world equity markets.

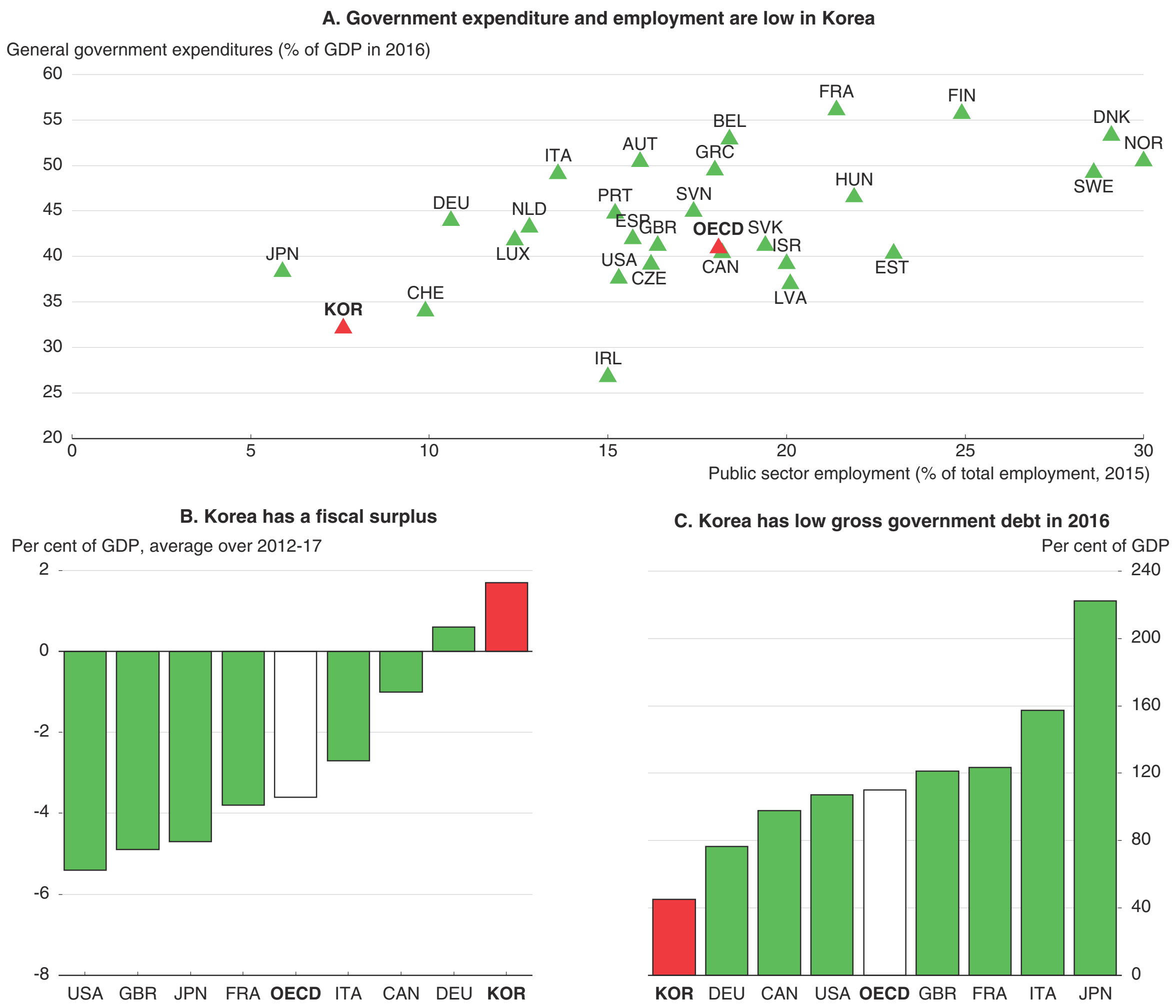
Fiscal and financial policies to promote stability and well-being

Fiscal policy has scope to play a bigger role, while preparing for future challenges

Korea's fiscal situation stands out in a number of ways, reflecting its adherence to balanced government budgets since the 1980s:

- *Government expenditure and employment are low and stable*: general government spending was 32.4% of GDP in 2016, the same as in 2011 and well below the 40% in the OECD area (Figure 7). Public employment was the second lowest in the OECD at 8% of total employment in 2015.
- *Korea's fiscal balance is consistently in surplus*: the general government budget has averaged a surplus of 1.7% of GDP since 2012, compared to a 3.6% deficit in the OECD area (Panel B).
- *Gross government debt is low*: at 45.1% of GDP in 2016, Korea's gross debt was less than half of the 110% average in the OECD (Panel C).
- *The government is a net creditor*: Korea is one of seven OECD countries in which the government holds more assets than liabilities, reflecting the reserves of the National Pension Service (NPS), which have reached 30% of GDP. NPS pension payments amount to only 1% of GDP, given Korea's young population and the relatively recent establishment of the NPS in 1988.

Figure 7. **Government spending, employment and debt are low in Korea**



Source: OECD (2017b); OECD Economic Outlook: Statistics and Projections (database).

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The composition of Korea's government spending also differs from OECD averages. The share devoted to investment in 2016 was 16%, the highest in the OECD. Budgets have favoured economic activities, which accounted for 16.2% of government expenditures in 2015, compared to 9.3% in the OECD area (Table 4). The high share reflects the government's active role in industrial policy. While Korea's spending on education is relatively high, outlays for social protection (20.1% of total spending) are far below the OECD area (32.5%). In addition, health spending is low, reflecting Korea's young population.

Public social spending has risen at an 11% annual rate (adjusted for inflation) since 1990, the fastest in the OECD area (Figure 8). Still, its share of GDP (10.4%) in 2016 was only half the OECD average (Panel B), in part due to Korea's relatively young population. Given the low level of social spending, the redistributive impact of the tax and transfer system on income inequality (Panel C) and relative poverty (Panel D) is one of the weakest in the OECD, although it has increased in recent years. Moreover, the progressivity of the tax and benefit system is weak, as a relatively large share of benefits go to middle and high-income households (OECD, 2016).

Table 4. **Government spending in Korea is relatively large in economic affairs**

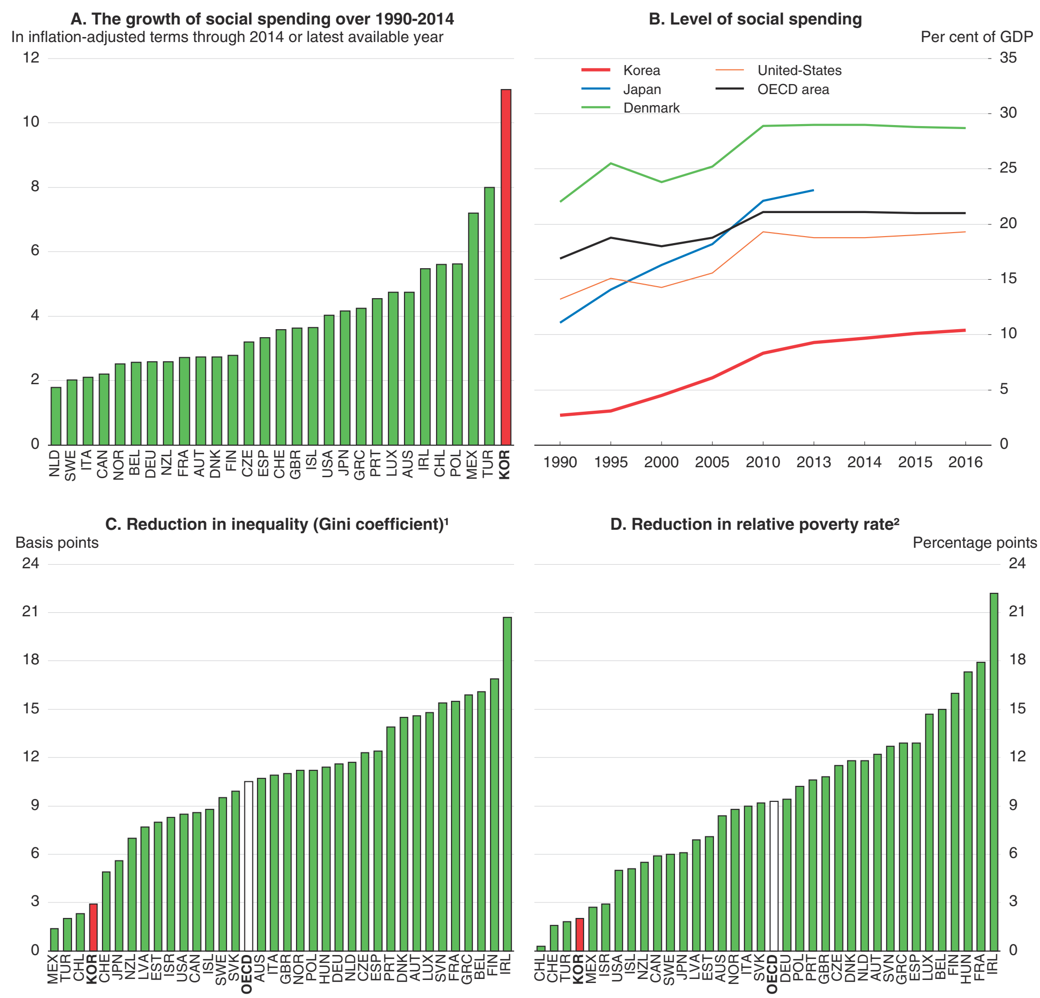
The ten first-level categories under the International Classification of the Functions of Government in 2015

	Social protection	Health	General public services	Education	Economic actvities[1]	Defence	Public order and safety	Housing and community amenities	Recreation, culture and religion	Environmental protection
France	43.1	14.3	11.0	9.6	10.0	3.1	2.9	1.9	2.3	1.8
Germany	43.1	16.3	13.5	9.6	7.1	2.3	3.6	0.9	2.3	1.4
Italy	42.5	14.1	16.6	7.9	8.1	2.4	3.7	1.2	1.5	1.9
Japan	40.7	19.4	10.4	7.9	9.5	2.3	3.2	1.7	0.9	2.5
Korea	**20.1**	**12.8**	**15.8**	**16.2**	**16.2**	**7.6**	**4.1**	**2.5**	**2.3**	**2.4**
United Kingdom	38.4	17.8	10.6	12.0	7.1	5.0	4.7	1.1	1.5	1.8
United States	20.8	24.2	13.8	16.2	8.7	8.8	5.4	1.4	0.7	0.0
OECD	32.5	18.7	13.2	12.6	9.3	5.1	4.3	1.4	1.5	1.3

1. Includes R&D, general economic, commercial and labour affairs and specific sectors, such as agriculture, forestry, fishing and hunting; fuel and energy; mining, manufacturing, construction, transport and communications.

Source: OECD (2017b).

Figure 8. **Public social spending in Korea is rising rapidly from a low base**



1. The change in the Gini coefficient after taxes and transfers in 2015 or latest year. The Gini coefficient can range from 0 (perfect equality) to 1 (perfect inequality).
2. The change in the relative poverty rate after taxes and transfers in 2015 or latest year. The relative poverty rate is the percentage of households whose income is less than half of the median income.

Source: OECD *Income Distribution and Poverty* (database); OECD Social Expenditure Statistics (database).

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The 2017-21 Fiscal Management Plan

The government implemented supplementary budgets in 2016 and 2017 to support economic growth (Table 5). In early 2018, it launched another supplementary budget that increases subsidies for SMEs that hire young workers (under age 34) and provides more personal income tax deductions for youths employed by SMEs. The 2017-21 Fiscal Management Plan (Table 6) announced in August 2017 sets spending growth at an annual rate of 5.1% over the five-year period (including the 2017 supplementary budget), compared to a projected annual rise in nominal GDP of 5½ per cent over 2017-19 (Table 2). Allowing government spending to rise as a share of GDP would be appropriate given the upward pressure on spending from population ageing over the medium and long term.

Table 5. **Past recommendations on fiscal policy**

Main recent OECD recommendations	Action taken since the 2016 *Survey* or planned
Use fiscal policy to sustain growth in 2016-17, while setting policy in a framework that ensures Korea's long-run fiscal sustainability.	Supplementary budgets were implemented in 2016, 2017 and 2018. The 2017-21 Fiscal Management Plan raised spending growth to an average annual rate of 5.1%.

Table 6. **The 2017-21 Fiscal Management Plan**

A. Government revenues and expenditures (KRW trillion)

	2017	2018	2019	2020	2021	Annual average growth rate, 2017-21 (%)
Revenues[1]	423.1	447.1	471.4	492.0	513.5	5.0
Expenditures[1]	410.1	429.0	453.3	476.7	500.9	5.1

B. Government fiscal balance and gross debt (as a percentage of GDP)

	2017	2018	2019	2020	2021
Total consolidated fiscal balance[2]	0.8	1.0	1.0	0.8	0.6
Social security surplus	2.5	2.6	2.8	2.8	2.7
Consolidated fiscal balance,[2] excluding social security surplus	-1.7	-1.6	-1.8	-2.0	-2.1
Gross government debt	39.7	39.6	39.9	40.3	40.4

1. The years 2017 and 2018 are based on budgets passed by the National Assembly (including the supplementary budget). If the 2017 supplementary budget were excluded, the annual growth rates of revenue and spending over 2017-21 would be 5.5% and 5.8%, respectively.
2. Central government. OECD projections, which are on a general government basis, are shown in Table 2.

Source: Ministry of Strategy and Finance.

Korea's fiscal policy has long aimed to balance the consolidated central government budget excluding the social security surplus. The new Plan falls short of that objective, as it projects that the deficit by that measure will edge up from 1.7% of GDP in 2017 to 2.1% in 2021 (Table 6). However, the overall consolidated central government budget would remain in surplus and gross government debt would remain steady relative to GDP. On a general government basis, the OECD projects that the fiscal surplus will remain around 2% of GDP through 2019 (Table 2). Allowing some narrowing of the surplus by allowing somewhat faster spending growth would help sustain output growth in the face of any shocks.

The new Fiscal Management Plan also shifts spending priorities from economic activities to social welfare. The government has launched four major initiatives that are estimated to cost 178 trillion won (around 2% of annual GDP) over its five-year term, including the plan to increase public employment and social spending (Table 7). Social

Table 7. **Spending priorities are shifting from economic affairs to social welfare**

A. Spending on major government initiatives (trillion won and per cent)[1]

Initiatives: to be carried out through 100 policy tasks	Spending over 2018-22	Average per year	Per cent of 2017 GDP
An economy pursuing co-prosperity: Increase in public employment (810 000 jobs); support subsistence-type businesses; fourth Industrial Revolution; R&D in SMEs	42.3	8.5	0.5
A nation taking responsibility for individual lives: Introduce a child allowance and raise the Basic Pension; improve education; resolve the non-regular worker issue	77.4	15.5	0.9
Well-balanced development across every region: Greater local government autonomy; a system for balanced regional development; stabilise rice price	7.0	1.4	0.1
A Korean peninsula of peace and prosperity: Ability to respond to threats such as North Korea's nuclear weapons; create new economic map of Korean peninsula	8.4	1.7	0.1
Funding transferred to local government and future projects.	42.9	8.5	0.5
Total	178.0	35.6	2.1

B. Share of spending by category and average annual growth rate of nominal expenditures, 2017-21

	2017	2018	2019	2020	2021	Annual average growth rate over 2017-21 (%)
Social welfare	25.1	26.0	27.0	27.7	28.7	9.3
Employment	4.6	5.5	5.6	5.9	6.3	14.5
Health	2.6	2.5	2.6	2.6	2.6	5.8
Education	14.3	14.3	14.3	14.3	14.3	7.0
Culture, sports and tourism	1.7	1.5	1.4	1.4	1.3	-1.0
R&D	4.9	4.6	4.3	4.2	4.0	0.7
Industry, SMEs and energy	4.0	3.7	3.5	3.2	3.0	-1.5
Infrastructure investment	5.5	4.1	3.8	3.5	3.2	-7.5
Agriculture, forestry, fishery and food	4.9	4.6	4.3	4.1	3.8	-0.5
Environment	1.7	1.6	1.5	1.4	1.3	-1.6
National defence	10.1	10.0	10.0	10.0	10.1	5.8
Diplomacy and reunification	1.1	1.1	1.1	1.0	1.0	2.3
Social order and safety	4.5	4.4	4.2	4.0	3.9	1.9
Public administration and local government	15.8	16.2	16.4	16.3	16.2	6.5
Total expenditure	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**5.1**

1. Spending on these initiatives totalled KRW 81.2 trillion (4.7% of GDP) in 2017. The additional KRW 35.6 trillion spending on average over 2018-22 will be in addition to the base of KRW 81.2 trillion.

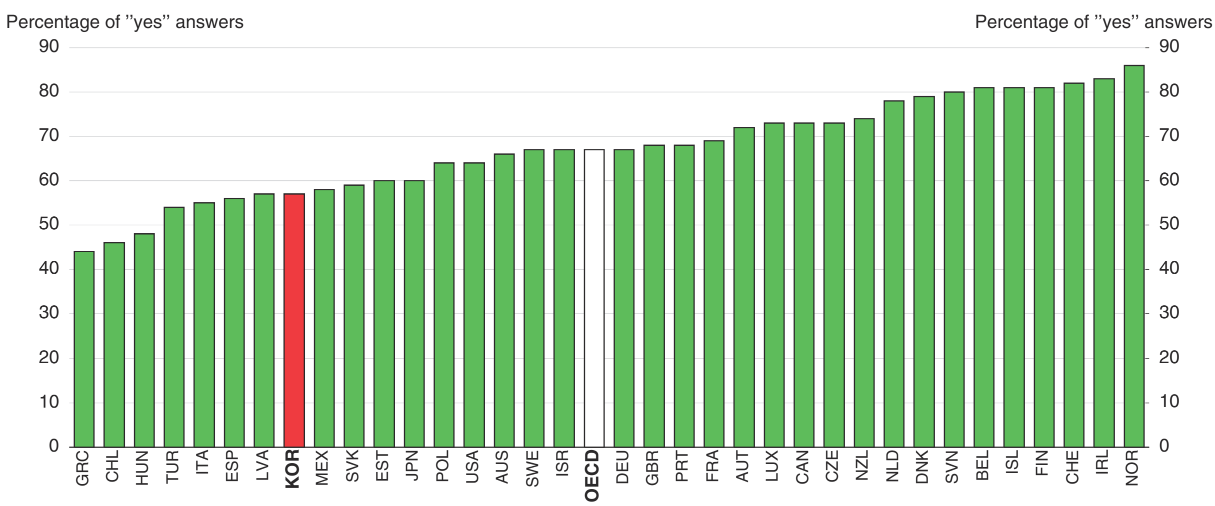
Source: Ministry of Strategy and Finance.

welfare spending is set to rise at a 9.3% annual rate over 2017-21, boosting its share of total spending to 28.7% (Panel B). Social spending will be boosted in part by new subsidies, such as KRW 100 000 (USD 93) per month for parents with a child up to age five and KRW 300 000 per month for unemployed young people. Expenditures on employment are set to rise at a 14.5% annual rate over 2017-21. Expanding the social safety net would facilitate increased labour market flexibility (see below). In contrast, spending on economic activities will fall. In particular, infrastructure investment is set to drop from 5.5% of total spending to 3.2% over 2017-21 while R&D outlays will decline from 4.9% to 4.0%. While greater social spending is needed to promote inclusive growth, it is important not to neglect spending programmes that support Korea's growth potential.

Increasing public employment

The new government has set a target of creating 814 000 public-sector jobs by 2021, which would increase public employment by about 34% over four years. Around 340 000 of the jobs are to be in social services, thus supporting the government's emphasis on social welfare spending. Another 300 000 jobs will be created by shortening working hours in the public sector and direct employment of indirectly hired workers. In addition to new jobs, the government plans to convert 205 000 non-regular workers in the public sector to permanent status. Additional employment should focus on areas where public services fall short of citizen expectations. For example, the share of the public that expressed satisfaction with the education system in 2016 in Korea was the seventh lowest in the OECD area (Figure 9), despite the country's outstanding performance on the OECD's PISA test of 15-year-olds. While this reflects some dissatisfaction with standardised teaching methods focusing on rote learning, smaller class sizes could allow a more creative approach tailored to individual student needs. Indeed, average class size at the lower secondary level in Korea in 2015 was the fourth highest in the OECD at 30, well above the OECD average of 23 (OECD, 2017a).

Figure 9. **Citizen satisfaction with the education system and the schools is relatively low in Korea**



Note: Data refer to the percentage of "yes" answers to the question: "In the city or area where you live, are you satisfied with the educational system or the schools?" in 2016.
Source: OECD (2017b).

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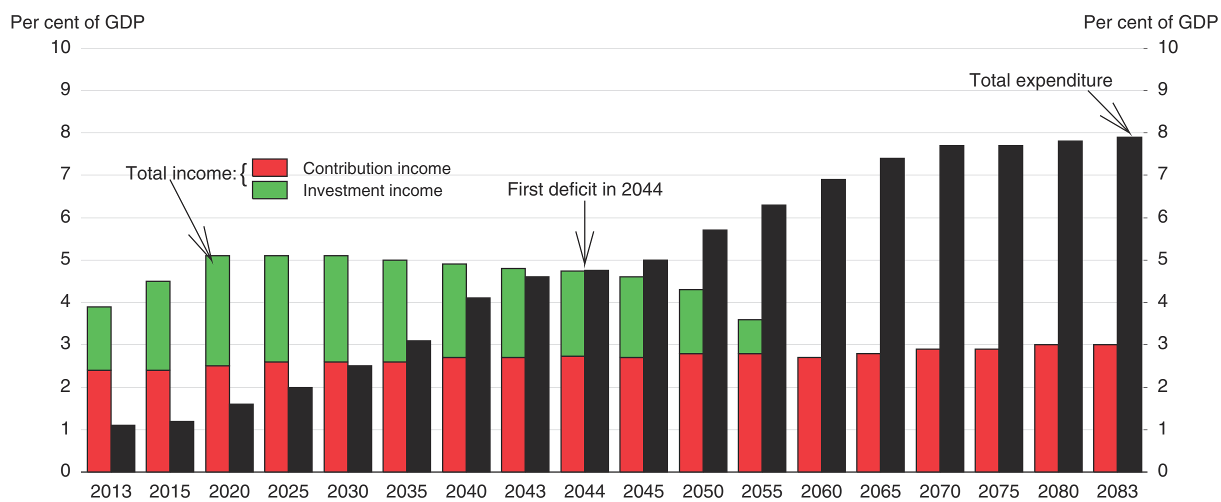
Another government objective is to create jobs for young people, as they face greater risk of unemployment. During the second half of 2017, the unemployment rate for the 15 to 24 age group was around 9%, compared to a national rate of 3.4%. In 2016, young people (18-34) accounted for 9% of central government employment, half of the 18% OECD average (OECD, 2017b).

While public employment in Korea is exceptionally low compared to other OECD countries, job creation in the public sector should respond to clearly defined needs. The benefits of the planned 34% increase in public employment should be weighed against the long-term cost. Such an increase could have negative implications for labour shortages, in the context of Korea's falling working-age population, and wage pressures. The permanent increase in public employment will tend to ratchet up government spending and make it harder to cope with the costs of population ageing. Moreover, expanded public employment should be accompanied by measures to facilitate job creation in the private sector, in part to reduce the serious labour shortages in SMEs (Chapter 2). Addressing the labour market mismatch problem is one priority in this regard (2016 *OECD Economic Survey of Korea*).

The government projects that under the current framework public social spending will reach 25.8% of GDP by 2060, exceeding the current OECD average of 21% (Figure 8, Panel B). In particular, pension outlays by the NPS are expected to rise by nearly 7% of GDP by 2060 under its current parameters (Figure 10). The large surplus generated by the NPS, currently around 3½ per cent of GDP on a general government basis, is keeping the budget in surplus and building up government assets. The shift in the NPS balance to a deficit of around 4% of GDP by 2060 will have serious implications for fiscal sustainability in Korea. In the absence of revenue increases, rising spending on pensions and health and long-term care would eliminate the government's net asset surplus, currently around 42% of GDP, by 2040. Government net financial liabilities would rise to close to 200% of GDP by 2060 (Annex A2).

Figure 10. **Spending by the public pension system is projected to rise rapidly**



Source: National Pension Research Institute (2013).

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Given the long-term fiscal challenges facing Korea, maintaining a sound fiscal position is a priority, which implies raising government revenue in line with expenditures. One way to finance rising spending is to raise the NPS contribution rate, which has remained at 9% since 1998, well below the 20% OECD average. A rate of 14.1% would be sufficient to keep the NPS in balance through 2083, assuming the replacement rate is cut to 40% as planned and the pension eligibility age is hiked from 61 to 65 by 2033. While there is no scope to further reduce the already low replacement rate, the eligibility age could be raised above 65, as in a number of OECD countries. Other revenue sources are needed to finance rising expenditure, notably health and long-term care.

How to finance the growth in public spending

To help finance its four major national agendas, which will cost around 2% of annual GDP over 2018-21, the government announced higher tax rates in August 2017:

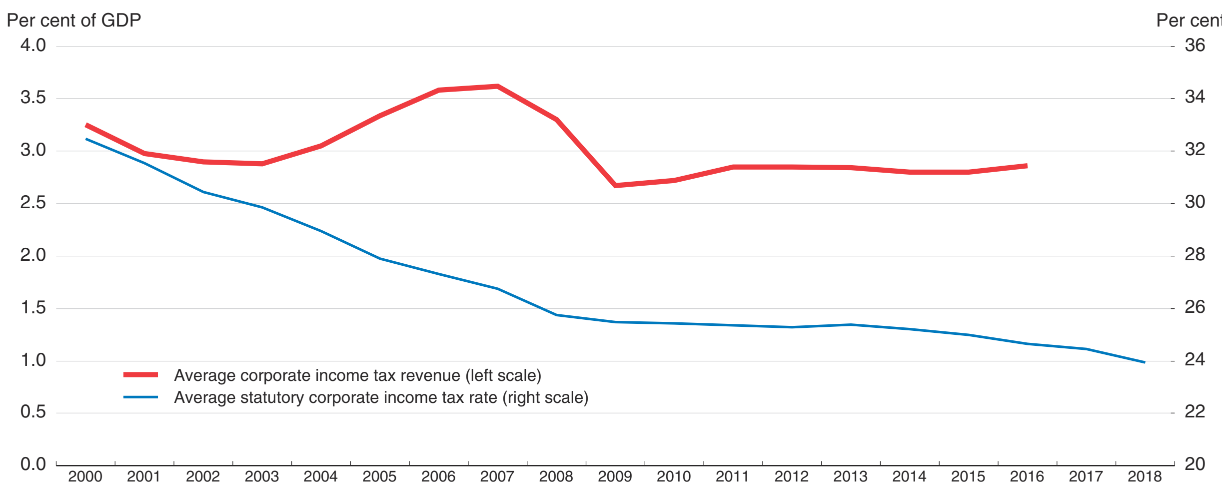
- The personal income tax rate for those with taxable income exceeding KRW 500 million (USD 463 000) was raised from 40% to 42%, with those in the new bracket of KRW 300-500 million subject to a 40% rate. This change is expected to generate KRW 1.0 trillion (0.06% of GDP) each year.

- The corporate income tax (CIT) rate for firms with taxable income above KRW 300 billion (USD 278 million) was raised slightly to 25%. This is expected to generate KRW 2.3 trillion (0.1% of GDP) of revenue each year. Rates for firms earning less are unchanged: 22% on earnings of KRW 20-300 billion, 20% on earnings of KRW 200 million to KRW 20 billion and 10% up to KRW 200 million (USD 185 000).

Given the limited revenue gains from the higher tax rates, the macroeconomic impact will be limited and most of the increased spending will be financed by cutting other expenditures, as noted above.

In 2016, Korea's CIT generated revenue of 3.6% of GDP, exceeding the OECD average of 2.9% (Figure 11). Korea's CIT tax increase, which seeks to promote more inclusive growth, comes at a time of intensified international competition to lower corporate tax rates. Six OECD countries cut their standard CIT rate in 2016, followed by seven countries in both 2017 and 2018. This continues the downward trend in the average CIT rate in the OECD from 32.5% in 2000 to 23.9% in 2018.

Figure 11. **Corporate income tax rates in the OECD area are falling while revenue has stabilised**



Source: OECD (2017g); OECD Tax Statistics (database).

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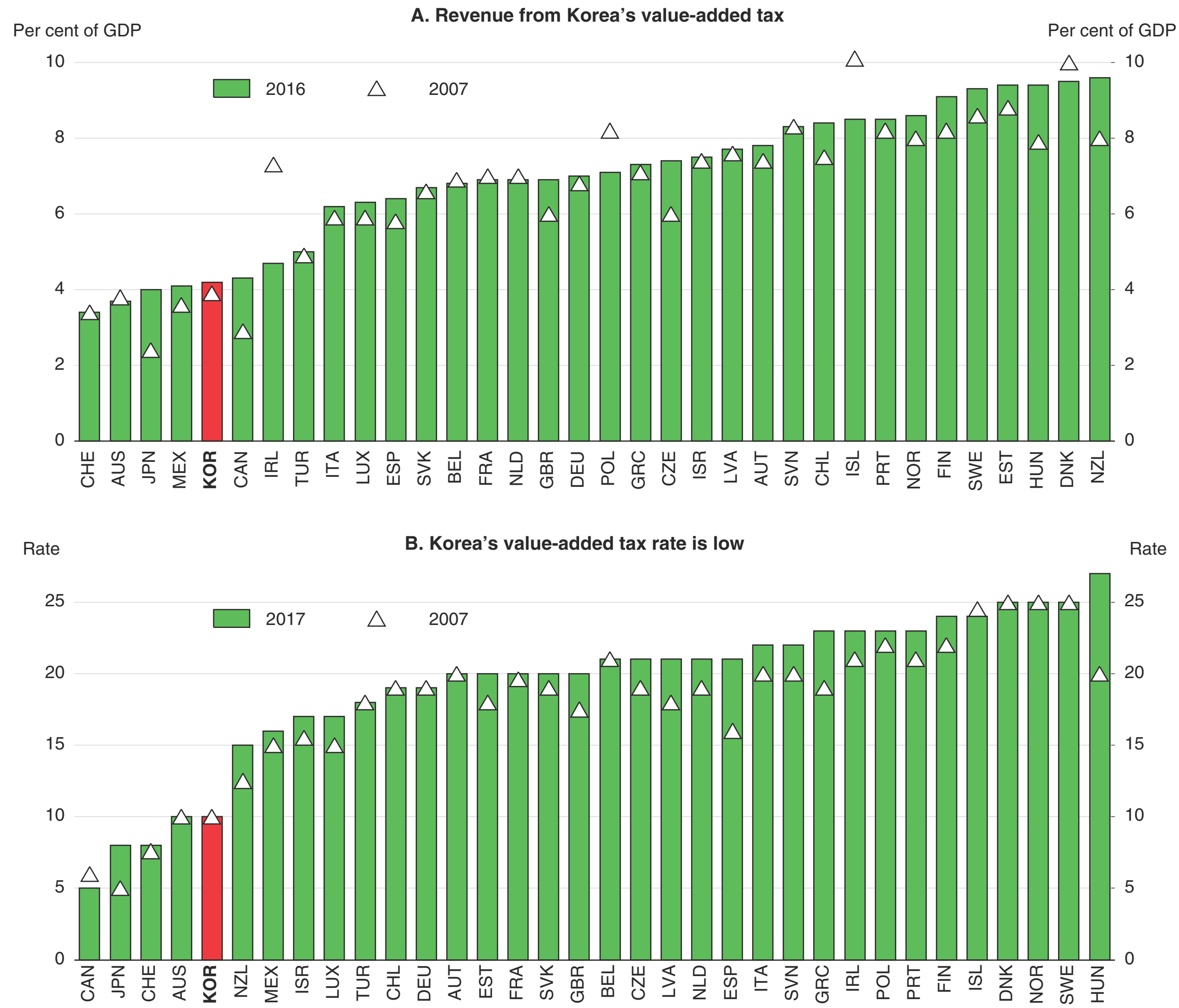
The international trend of falling CIT rates is a response to weak investment, which also depends on a wide range of other factors (OECD, 2017g). While 25% is close to the OECD average, it is above other Asian economies such as Hong Kong, China (16.5%) and Singapore and Chinese Taipei (both 17.0%). High CIT rates tend to discourage business investment, FDI inflows and firm creation (Brys et al., 2016). An OECD study of 34 member countries over 1980-2014 found that cutting the CIT rate and lowering the tax wedge on personal income boosted output per capita (Akgun et al., 2017). Another OECD study ranked CIT as the most damaging to economic growth compared to taxes on property, goods and services, such as the value-added tax (VAT) (Figure 12), and personal income (OECD, 2010).

The impact of the increase in Korea's CIT is limited by the fact that it applies only to the largest 77 companies. Nevertheless, they accounted for 30.5% of net profits and 39.0% of CIT paid in 2016. Moreover, it will impact other firms, notably the subcontractors of firms subject to the higher tax, given their generally weak bargaining power relative to large

Figure 12. **The value-added tax in Korea generates relatively little revenue, reflecting its low rate**



Source: OECD (2017g).

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firms (Chang and Woo, 2015). The CIT increase is accompanied by a cut in R&D investment tax credits for large firms. In addition, the tax scheme to encourage large firms to invest and increase wage and dividend payments has been modified. Under an "investment and mutual growth promotion tax system" that took effect in 2018, large firms that do not meet certain thresholds for investment, wage payments and spending aimed at promoting mutual growth with SMEs are subject to a 20% tax on their earnings.

A more efficient way to raise revenue is to increase indirect taxes, notably the VAT (Jones, 2009). While Korea's CIT revenue is above the OECD average, its VAT revenue was 4% of GDP in 2016, the fifth lowest in the OECD (Figure 12). The average VAT rate in the OECD surpassed 19% in 2017, while Korea's has remained at 10% since its introduction in 1977, leaving it the fourth lowest in the OECD (Panel B). Countries are increasingly relying on the VAT to make their tax mix more growth friendly and foster job creation.

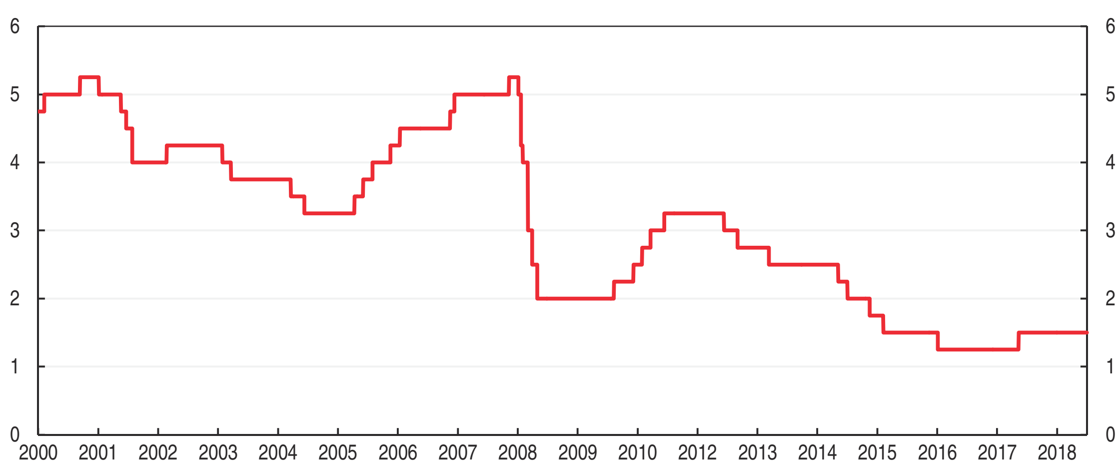
Although the VAT is often viewed as regressive, this is only true if VAT payments are measured relative to current income. Regressivity may be small if VAT payments are measured relative to lifetime income, as individuals tend to smooth consumption over their lifetime, resulting in a large share of VAT payment when they are young and old and earn less income (OECD/Korea Institute of Public Finance, 2014). Moreover, as noted, the VAT is less detrimental to growth than direct taxes, so the output gains from relying more on a VAT can be used to compensate losers so as to avoid negative distributional effects through targeted measures, including an expanded earned income tax credit. It is important, though, to maintain one standard VAT rate. The VAT is also a stable revenue source and spreads the tax burden across generations.

Monetary and exchange rate policy

The Bank of Korea's easing cycle, which began in July 2012, ended in November 2017 when it raised its policy interest rate from a record low 1¼ per cent to 1½ per cent (Figure 13). The hike was based on the view that the global economic recovery is continuing and the domestic economy shows solid growth. In its November statement, the central bank promised to continue to support the recovery of economic growth and to stabilise inflation at the target level over the medium term (Bank of Korea, 2017). Consumer price inflation is running below the 2% inflation target (Figure 5), suggesting that monetary policy accommodation can be withdrawn gradually. As the central bank states, monetary decisions need to take into account risks to financial stability, including those stemming from household debt and capital flows. This also suggests a gradual withdrawal of monetary accommodation to slow the rise in mortgage lending and household debt (see below) and limit interest rate differentials as US monetary policy tightens. The central bank should also take account of the uptick in global inflation pressures and the impact of the large hike in the minimum wage.

Figure 13. **Korea's cycle of monetary easing has ended**

The Bank of Korea's policy interest rate



Source: Bank of Korea.

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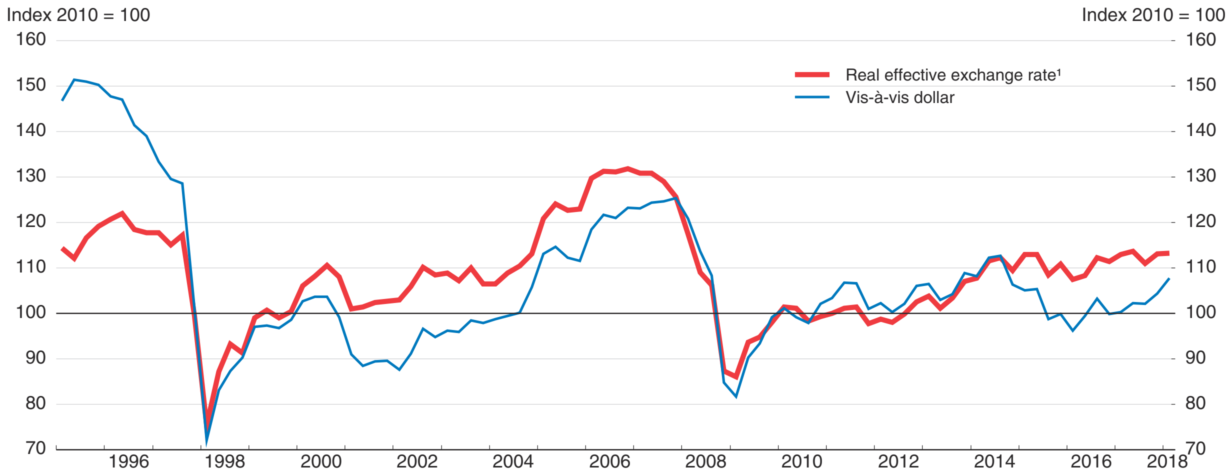
Monetary policy also needs to take into account exchange rate developments. During the past two years, the won has appreciated by 12% relative to the dollar and 5% in real effective terms (Figure 14). Korea's foreign exchange policy, which focuses on smoothing excessive volatility, has been classified as "floating" since 2009 by the IMF. Maintaining a flexible exchange rate is essential as a buffer against external shocks.

Figure 14. **The won has been relatively stable during the past few years**



1. Trade-weighted, vis-à-vis 53 trading partners, calculated using consumer prices.
Source: OECD Economic Outlook: Statistics and Projections (database); Bank of Korea.

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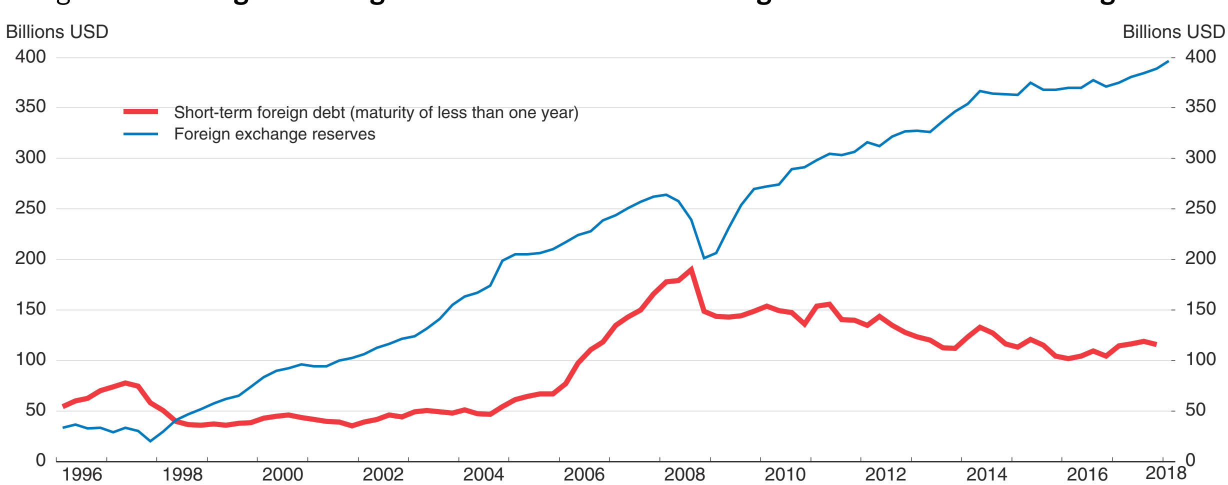
Korea is sensitive to external shocks, which caused capital flight and rapid currency depreciation in 1997 and 2008. However, Korea now appears much more resilient as its short-term foreign debt fell from USD 190 billion in September 2008 to USD 116 billion at end-2017 (Figure 15). Meanwhile, foreign exchange reserves rose from USD 240 billion to USD 397 billion in March 2018, equivalent to 24% of annual GDP, the ninth largest in the world and more than three times short-term foreign debt. This helps protect Korea against future crises and reduces the cost of foreign borrowing. However, reserves also have significant fiscal costs and entail foreign exchange risk. Swap agreements, which played a key role in resolving Korea's foreign-exchange shortage in 2008, can supplement foreign exchange reserves. Korea maintains swap agreements with a number of countries, including China, Canada, Australia and Switzerland.

Figure 15. **Foreign exchange reserves are three times higher than short-term foreign debt**



Note: The government's share of short-term debt was 2.4% in 2016.
Source: Bank of Korea.

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Household debt and financial stability

While government and corporate debt are low by international standards, household debt rose from 124% of net household disposable income in 2002 to 180% in 2016 (Figure 16) and increased further in 2017. The level is well above the 132% OECD average (Panel B), which increased more modestly from 105% in 2002. Faster growth of household debt is associated with a greater probability of banking crises (OECD, 2017c). In Korea, though, the risks are mitigated by a number of factors:

- The delinquency rate for household loans by banks fell from 0.8% in 2012 to 0.25% in 2017. With a capital adequacy ratio of 15.4% in September 2017, banks have capacity to absorb an increase in the delinquency rate.
- With mortgage debt accounting for 53.2% of household debt in June 2017 (Panel C), rising debt has been accompanied by an increase in household assets.
- Around 70% of household debt is held by the top 40% of income earners (Ministry of Strategy and Finance, 2017).
- The soundness of mortgage debt has improved with the rise in the share of fixed-rate loans and amortised loans (rather than interest-only loans) to nearly half (Panel D).
- Non-banks, accounting for 35.7% of household debt at end-2017, have been subjected to strengthened regulation (e.g. higher capital adequacy requirements for savings banks and provisioning requirements for several categories of institutions).
- However, a possible weakening of the debt repayment capacities of some vulnerable borrowers and valuation losses on asset holdings during the phase of rising interest rates is a concern.

The government classifies 54% of household debt as safe (group A in Panel F of Figure 16), as it is held by households with a debt-to-asset ratio of less than 100% and debt service payments of less than 40% of income. For this group, the median debt service payment is 10.3% of income. Around 7% of household debt is held by group C, whose debt-to-asset ratio surpasses 100% and debt service payments exceed 40% of income. Households in group C, with a median debt service payment of 68.6% of their income, are at a high risk of default. Moreover, nearly three-quarters of them have more than one debt. Between these two extremes is group B; households whose debt-to-asset ratio or debt service ratio points to a risk of default. The median debt service payment of group B, which holds the remaining 39% of household debt, is high at 58%. Their financial situation is also precarious in the face of the expected upward trend in interest rates. Achieving the government's dual objectives of slowing mortgage lending and avoiding a contraction in residential investment is a challenge.

The measures to tighten mortgage lending (Figure 3, Panel C) have helped slow the growth of lending to households by depository institutions (banks, mutual credit co-operatives, savings banks, etc.) from 11.9% at end-2016 to 7.3% at end-2017 (Panel D). In October 2017, the government announced a comprehensive strategy to address household debt. The objective is to slow household debt growth over the next five years to below the 8.2% average over 2005-14. Given that nominal GDP growth is projected to stay around 5%, the government target implies that the ratio of household debt to income will continue to rise.

To achieve its target, the government recently tightened rules on lending to owners of more than one home by changing the debt-to-income rule to include the principal paid on mortgages of existing homes, making it more difficult for owners of multiple homes to receive mortgages. In addition to slowing the growth of household debt, this would further

Figure 16. **High household debt is a concern in Korea**

1. In 2016.
2. End-June 2017.
3. Instalment loans gradually reduce the principal outstanding. Most mortgages have been interest only, with the principal paid at maturity.
4. The government classification of households by risk factors related to household debt.
5. Total debt payments (interest and principle) as a share of gross income.

Source: OECD Economic Outlook: Statistics and Projections (database); Ministry of Strategy and Finance; Nomura Global Economics.

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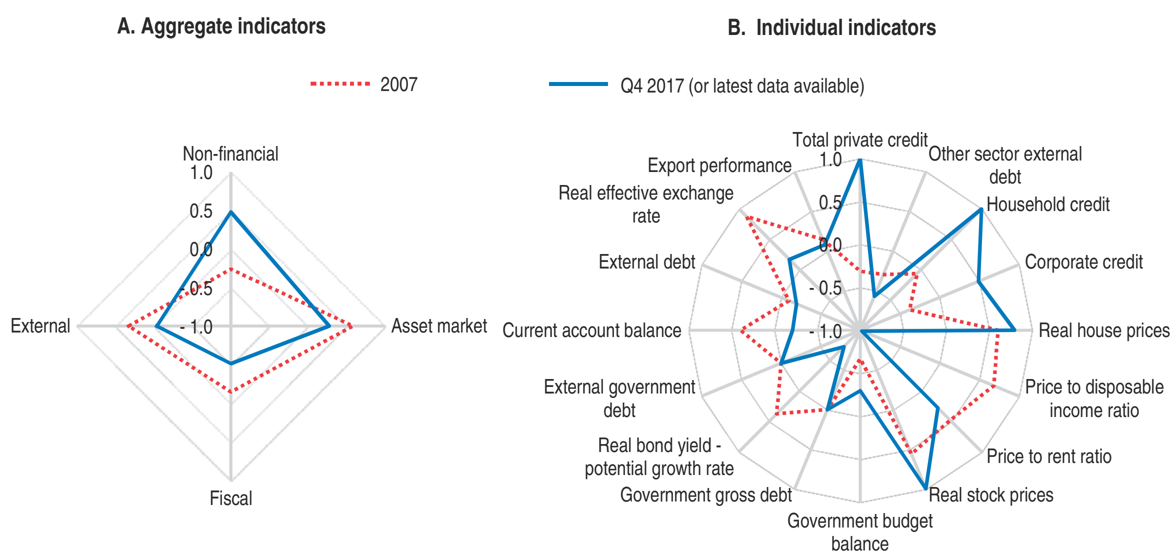
the government goal of preventing house price increases in "speculation areas". In addition, the government will introduce a new regulation, the "debt-service ratio", which caps borrowers' overall debt burden from all of their loans to their income. This regulation will apply to banks beginning in the final quarter of 2018 and be gradually extended to the non-banking sector. Finally, the government expects that its policies to raise household income (see above) will improve households' ability to repay debt (Ministry of Strategy and Finance, 2017).

Addressing the household debt problem is also critical for social cohesion in Korea, as it excludes a large number of persons from access to credit, making it difficult for them to improve their economic condition (Jones and Kim, 2014). The government strategy includes tailored assistance for households facing debt problems: i) borrowers who pay their debt on schedule but feel financially distressed can apply to have their loans pre-emptively restructured to reduce their debt repayment; ii) the statutory limit on interest rates on overdue interest payments will be reduced to ease the burden on delinquent borrowers and support the recovery of their credit ratings; and iii) for borrowers with no repayment ability, the government will focus on writing off small and long-overdue debt and helping them file for personal rehabilitation or bankruptcy. The measures to assist households that are delinquent in repaying debt will promote more inclusive growth by restoring their access to financial markets. It is important to encourage the take-up of these measures, as some delinquent borrowers prefer to remain delinquent. At the same time, debt restructuring carries a risk of moral hazard.

The increase in credit to the household sector that has fuelled the run-up in household debt is the most serious macro-financial vulnerability in Korea, while credit growth to the corporate sector has been less buoyant (Figure 17). Trends in asset markets are diverging: while price-to-income and price-to-rent ratios for housing have fallen, real stock prices have risen to record highs. Fiscal and external macro-financial vulnerabilities are very low.

Figure 17. **Evolution of macro-financial vulnerabilities**

Index scale of -1 to 1 from lowest to greatest potential vulnerability, where 0 refers to long-term average, calculated for the period since 2000; the red line is for 2007 and the blue line for 2017Q4



Note: Each aggregate macro-financial vulnerability dimension is calculated by aggregating (simple average) four normalised individual indicators from the OECD Resilience Database. Individual indicators are normalised to range between -1 and 1, where -1 to 0 represents deviations with the observation being below long-term average [positive deviation=>less vulnerability], 0 refers to long-term average and 0 to 1 refers to deviations where the observation is above long-term average [negative deviation=>more vulnerability]. Non-financial dimensions include: total private credit (% of gross national income [GNI]), other sector external debt (% of GNI), household credit (% of GNI), and corporate credit (% of GNI). Asset market dimensions include: real house prices, price-to-income ratio, price-to-rent ratio and real stock prices. Fiscal dimensions include: government budget balance (% of GNI) (inverted), government gross debt (% of GNI), real bond yield – potential growth rate, and external government debt. External dimensions include: current account balance (inverted), external bank debt (% of GNI), real effective exchange rate, and export performance.
Source: Calculations based on OECD Resilience Database.

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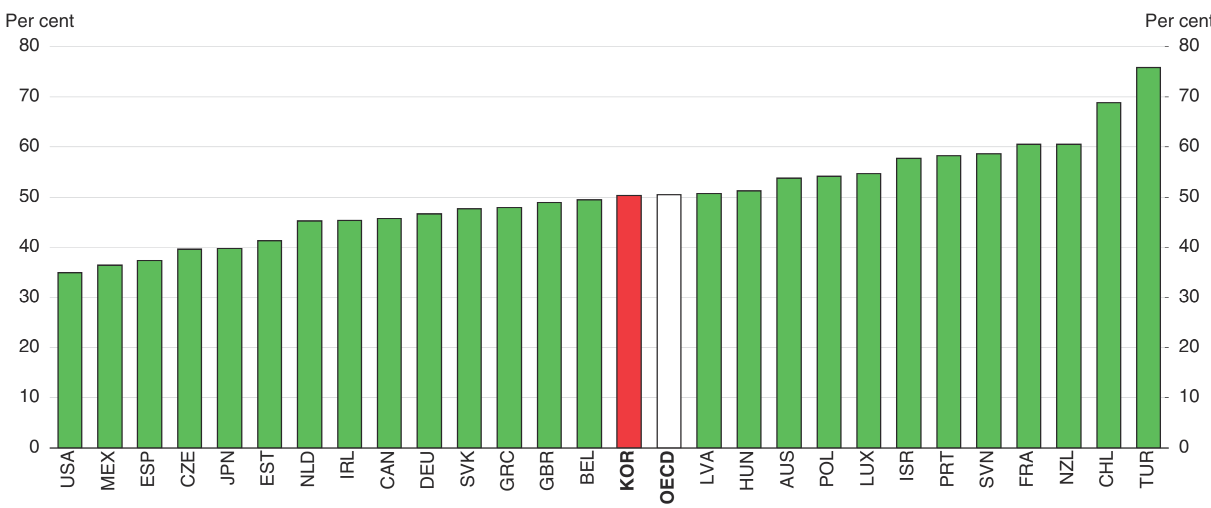
The hike in the minimum wage

One factor that will influence household income is the hike in the minimum wage, which is set each year by the Minimum Wage Council composed of representatives of workers, employers and the public interest. Korea raised its minimum wage from 29% of the median wage in 2000 to 50%, in 2016, matching the OECD average (Figure 18). In mid-2017, the Council decided to raise it by 16.4% in 2018. If the minimum wage is raised further to KRW 10 000 (USD 9.26), as originally envisaged by the new government, the cumulative increase from its 2017 level would amount to 54%. The increase in the minimum wage is aimed at addressing worsening income inequality, guaranteeing a decent living for low-income workers and realising income-led growth. The government will provide compensation to firms with less than 30 workers by covering the difference between the 2018 minimum wage hike and the average rise in the minimum wage growth rate over the past five years (7.4%), and subsidising social insurance premiums. In addition, it will provide cuts in credit card fees and reduce the burden of the VAT for small firms to cushion the impact of the minimum wage hike. Companies with 30 or more workers will also be provided with "job stability funds" if they employ certain types of employees, such as security guards or janitors. Overall, the government has prepared 76 compensation measures to cushion the impact of the minimum wage hike. Close monitoring will be required to assess their full effect.

Figure 18. **Minimum wage as a percentage of the median wage in 2016**



Source: OECD Earnings Distribution (database).

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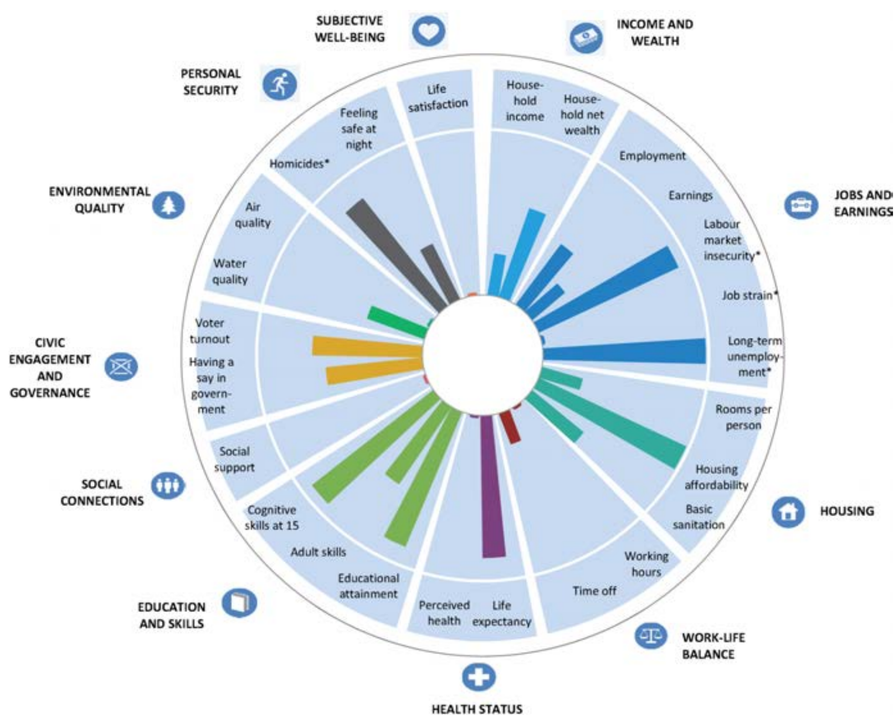
There is some concern that the rapid increase in the minimum wage may be particularly detrimental to weak firms and reduce employment for low-skilled workers. At this point, it is difficult to judge the impact of the minimum wage hike. One study found that a minimum wage hike does not affect overall employment significantly (Lee, 2008). However, a recent study of Korea's labour market estimated that a 1% increase in the minimum wage would result in a 0.14 percentage-point reduction in the employment rate (Lee and Hwang, 2016).

The increase in the minimum wage is also intended to reduce inequality. A public research institute found that a minimum wage hike was correlated with a decrease in the number of working poor (Yun et al., 2015) and two other studies suggest that a minimum wage hike reduces wage inequality among workers in the middle and low-wage categories, thereby reducing income inequality (Sung, 2014; S. Oh, 2017). However, research by another public research institute shows that measures that target low-income households, such as the earned income tax credit, are more effective in reducing poverty than policies that target low-income workers, such as the minimum wage (Yun, 2016a).

Addressing longer-run challenges to well-being

Korea scores highly on a number of well-being indicators, including education and skills, housing affordability and long-term unemployment, but subjective well-being is well below the OECD average (Figure 19). Moreover, Korea ranks poorly in the categories of income, employment, work-life balance, job stress and perceived health. Well-being could be improved through reforms to remove obstacles to labour participation by women and to break down labour market dualism, which is discussed below. In addition, the high rate of relative poverty among older persons should be addressed. Korea also ranks below the OECD average for environmental quality, which is discussed in the final section.

Figure 19. **Well-being indicators suggest room for improvement in Korea**



Note: This chart shows Korea's relative strengths and weaknesses in well-being when compared with other OECD countries. For both positive and negative indicators (such as homicides, marked with an "*"), longer bars always indicate better outcomes (i.e. higher well-being), whereas shorter bars always indicate worse outcomes (i.e. lower well-being).

Source: OECD Better Life Index, *www.oecdbetterlifeindex.org.*

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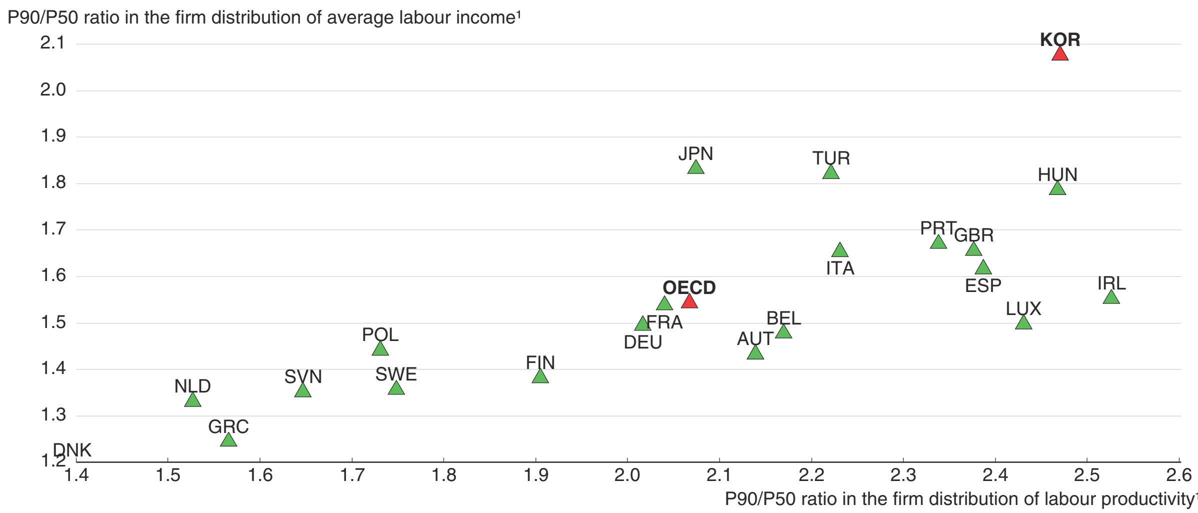
In addition to improving well-being, achieving inclusive growth requires reducing the large productivity gaps between large firms and SMEs and between the manufacturing and service sectors. Indeed, the dispersion between productivity in firms at the 90th and 50th percentiles in the OECD area is positively correlated with the dispersion in average wage income (Figure 20). The dispersion of productivity in Korea is the second highest in the OECD and the dispersion of wage income is the highest, boosted as well by labour market dualism.

Figure 20. **Labour income inequality is positively correlated with productivity disparities between firms**



1. This figure compares the labour productivity and labour income at a firm at the 90th percentile to one at the 50th percentile.
Source: OECD (2016).

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Expanding employment opportunities for women

Korea's employment rate rose from 64.6% in 2013 to 66.6% in 2017, approaching the OECD average, though falling short of the 70% target set in 2013 (Table 8). Low employment rates for women and youth are offset by high rates for adults (30-54) and older persons. However, close to a third of older workers are forced to accept involuntary early retirement prior to reaching the statutory retirement age and are thus pushed into self-employment. The employment rate of women in 2016 was 20 percentage points below the employment rate of Korean men, the fourth-largest gap in the OECD, reflecting the large share of women who leave the labour force when they have children. Further advancing gender equality is an important priority.

Table 8. **The employment rate in Korea is rising**[1]

	2000	2013	2015	2016	2017	2017 target	Gap	OECD average (2016)
Total[2]	61.5	64.6	65.9	66.1	66.6	**70.0**	-3.4	67.0
Women[2]	50.1	54.0	55.7	56.1	56.9	**61.3**	-4.4	59.4
Youth (15 to 29)	43.4	39.5	41.2	41.7	42.1	**46.6**	-4.5	51.4
Adults (30 to 54)	73.8	76.0	77.1	77.2	77.6	**81.2**	-3.6	76.9
Older persons (55 to 64)	57.9	64.3	66.0	66.2	67.5	**69.3**	-1.8	59.2

1. The roadmap to a 70% employment rate was set in 2013. Raising the employment rate is an important objective of the current government, though it no longer focuses on the 70% target.
2. For the working-age population (15-64).
Source: Government of Korea; OECD Employment and Labour Market Statistics (database).

Past *Korea Surveys* have stressed the importance of expanding maternity and parental leave (Table 9). All women are guaranteed 90 days of paid maternity leave, with all or part of the benefit paid by the Employment Insurance System (EIS). The number of women taking maternity leave edged up from 21% of the number of babies born in 2013 to 22% in 2016 (Figure 21), but remains low due to opposition from firms concerned about filling temporary

Table 9. **Past recommendations to increase labour force participation**

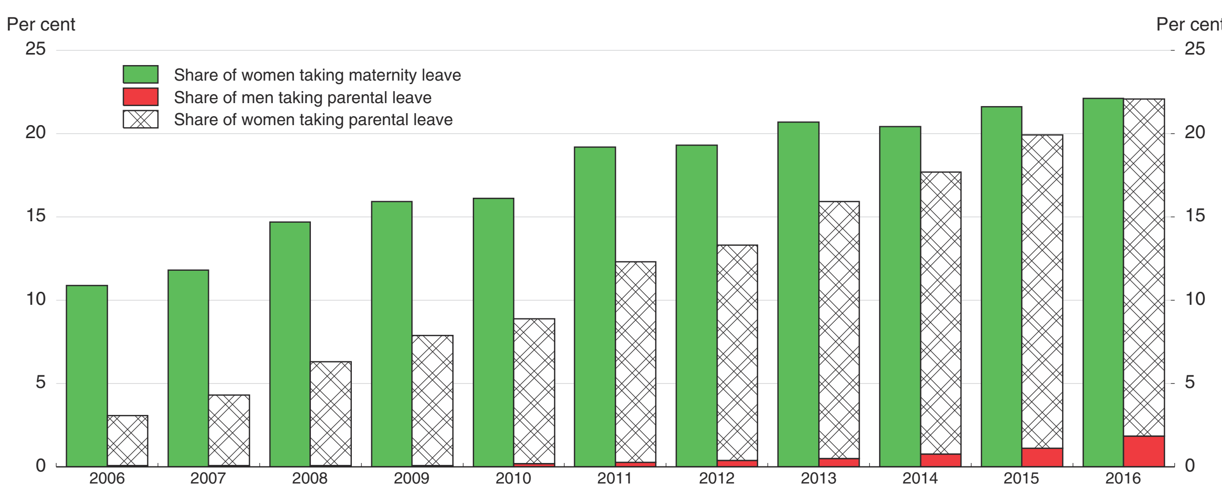
Main recent OECD recommendations	Action taken since the 2016 *Survey* or planned
Increase the take-up of maternity and parental leave systems by enforcing compliance and raising the benefit level for parental leave.	The government is linking data on health and employment insurance and investigating firms suspected of not allowing maternity leave. The "paternity leave bonus scheme" was extended in 2016 and the ceiling on support was raised for fathers with more than two children.
Enhance childcare quality by making accreditation mandatory and strengthening competition.	The government plans to raise the share of children enrolled in public childcare centres (12.1% in 2016) and on-site childcare centres (3.6%) to more than 40% by 2022. A bill to make the evaluation of childcare centres mandatory is pending.
Encourage better work-life balance, in part by expanding flexibility in working hours and reducing them.	The government aims to reduce annual working hours to 1 800 by cutting the statutory limit on weekly working hours from 68 to 52. Firms that cut working time without reducing wages will get special treatment in government contracts. The government will enact a law to require workers to leave work on schedule and ban weekend work.
Reduce labour market mismatch for young people by expanding Meister schools and the Work-Study Dual System, thereby enhancing links between schools and firms, and basing curriculum on the National Competency Standards (NCS).	The government aims to increase the share of high school students in vocational schools to 29% by 2022. Their curriculum has been modified to reflect NCS. The Meister School and Work-Study Dual Systems were expanded in 2016-17.
Extend the limit on fixed-term contracts from two years to four.	No action taken or planned.
Increase the coverage and the generosity of the Earned Income Tax Credit to reduce poverty and strengthen work incentives.	The ceiling on EITC payments has been raised from KRW 2.1 million per year to KRW 2.5 million (USD 2 240). Eligibility criteria were eased by allowing single persons in their 30s to receive the EITC and raising the limit on assets from KRW 140 million to KRW 200 million.

vacancies (Yoon, 2014). The number of new mothers taking maternity leave is below the share of new mothers who are employed at the time of giving birth (2016 *OECD Economic Survey of Korea*). Further efforts to ensure the right of all new mothers to take maternity leave, particularly those who are non-regular workers or employed in SMEs, through enhanced enforcement are thus a priority. Expanding the coverage of the EIS would also help.

Since 2011, parents in two-income households are each entitled to one year of leave or reduced working time. The share of parents taking the leave rose from 16% to 22% over

Figure 21. **Trends in maternity and parental leave**

As a per cent of the number of births each year



Note: Workers on maternity or childcare leave exclude public officials, teachers and other workers not belonging to the Employment Insurance System.

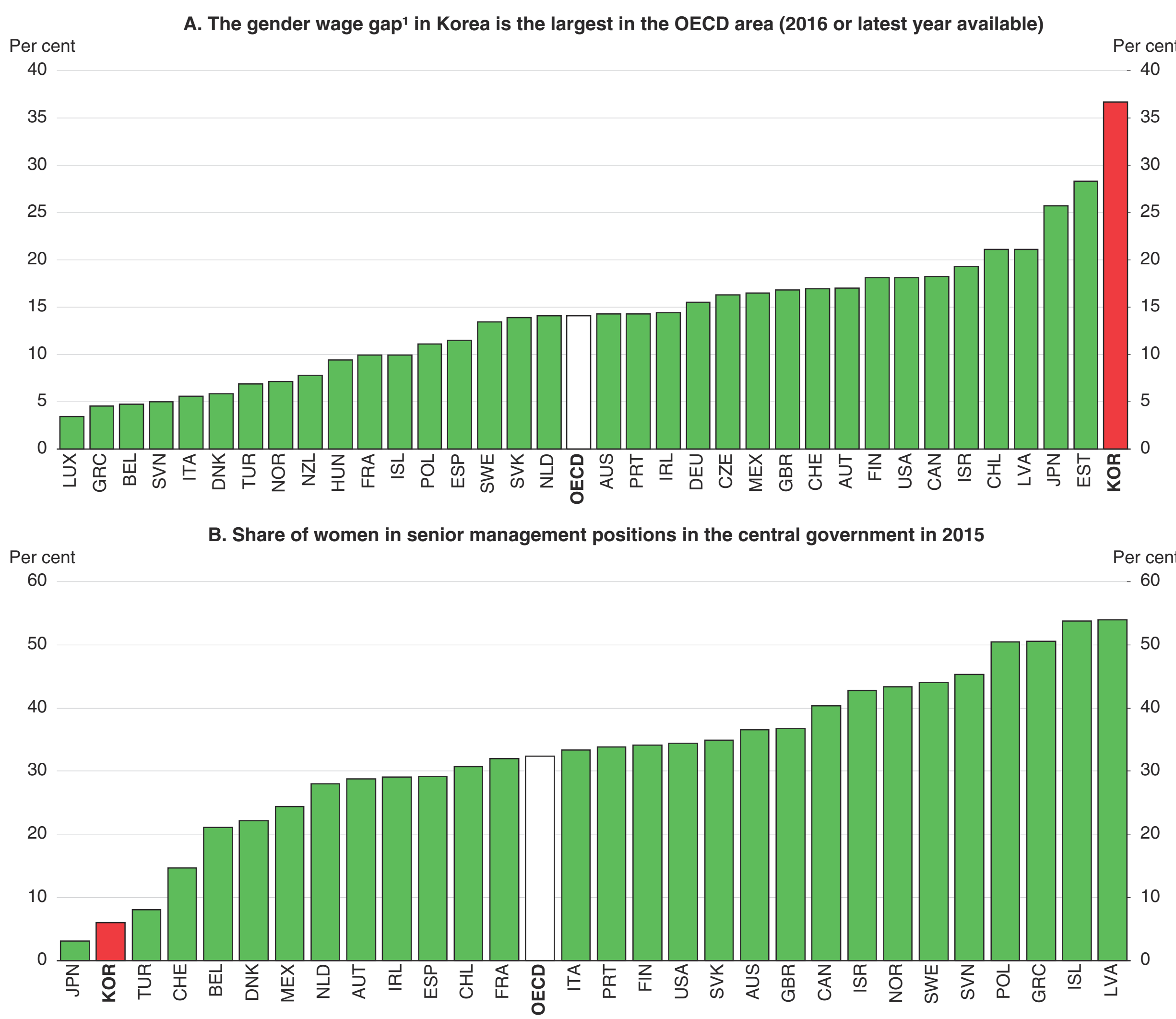
Source: Ministry of Employment and Labour; Statistics Korea.

StatLink http://dx.doi.org/10.1787/888933739718

2013-16. The increase was driven by fathers, who accounted for 8.5% of the total number of parents taking leave in 2016, compared to only 3.3% in 2013, reflecting the "paternity leave bonus scheme" introduced in 2014.

The withdrawal of women from the labour force following childbirth lasts about ten years on average (Hong and Lee, 2014). In 2016, the median female wage was 37% below the male median, a small improvement from 2000 when it was 40% below. Korea's gender wage gap, the largest in the OECD area, is far above the 14% OECD average (Figure 22). Given the close link between seniority and wages, any absence from the labour market has a strong impact on earnings. The gender wage gap for young women (aged 25-29) is close to the OECD average of around 10%, but reaches 42%, for the 40-44 age group, compared to the OECD average of 24%. The gap is also explained by women's concentration in low-paid non-regular jobs and under-representation in high-level positions. In the central government, women accounted for only 6% of senior management positions in 2015, far below the OECD average of 32% (Panel B).

Figure 22. **Korean women face low wages and hold few managerial positions**



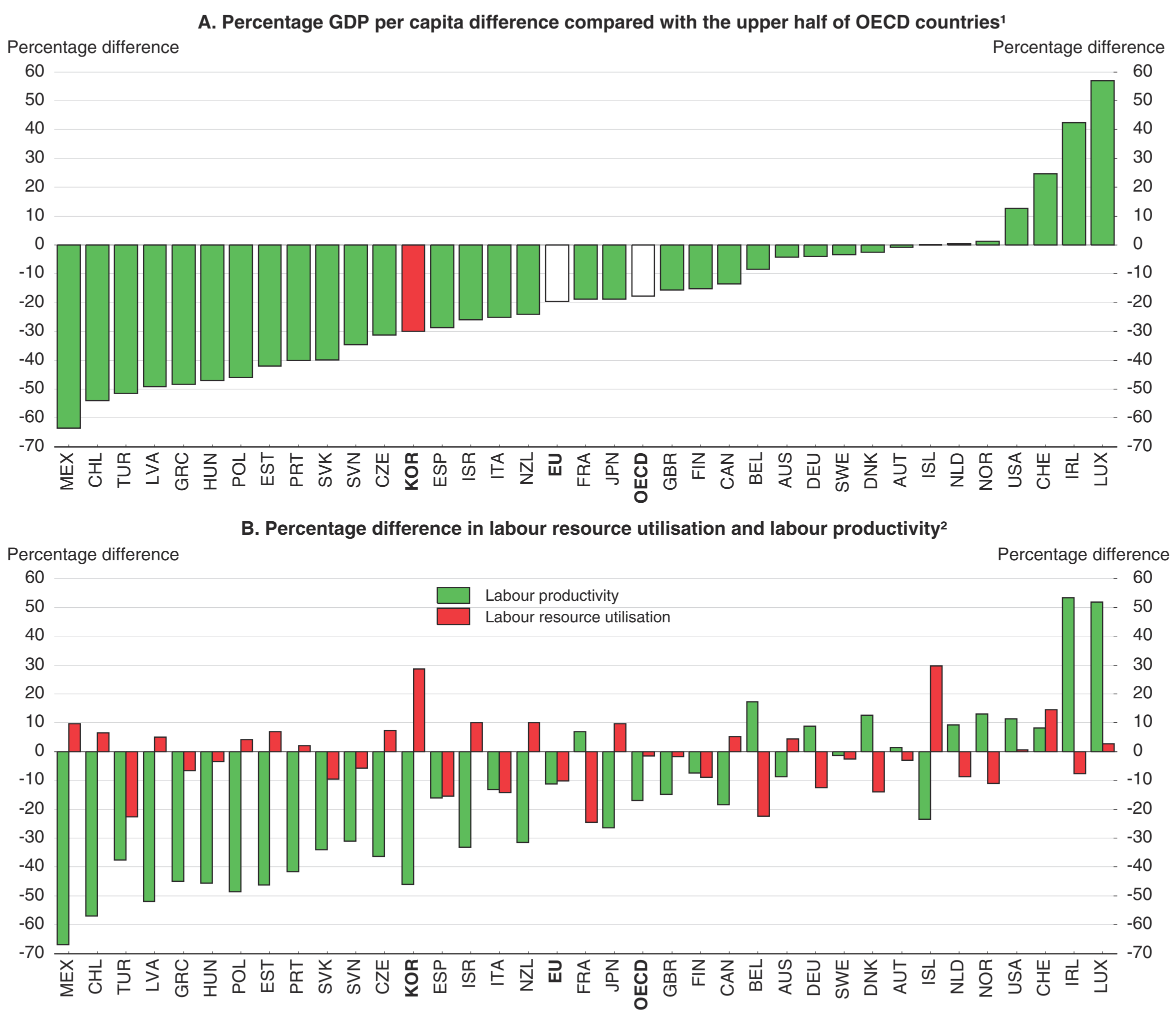
1. The difference between median earnings of men and women relative to median earnings of men, full-time employees.
Source: OECD Earnings Distribution (database).

StatLink http://dx.doi.org/10.1787/888933739737

The large gender wage gap discourages women, particularly those with higher education, from working. Indeed, the employment rate of women with a tertiary education is the lowest in the OECD, while the rate of those with less than a high school education is above the OECD average. Reforming the wage system to emphasise performance and job categories – rather than seniority – would narrow the gender wage gap.

Working time in Korea was the second longest in the OECD in 2016 at 2 052 hours per year, 20% above the OECD average, with adverse implications for labour participation, the quality of life, the fertility rate and productivity. Korea's labour inputs (relative to population) are the second highest in the OECD while labour productivity per hour of work is 46% below the top half of the OECD (Figure 23). The reduction in the standard workweek from 44 hours to 40 over 2004-11 was estimated to increase annual output per worker by 1.5% at manufacturing firms due to improved efficiency of production processes, implying that working hours were inefficiently long before the reduction (Park and Park, 2016).

Figure 23. **Korea has low productivity and high labour inputs**



1. In 2016. Compared to the weighted average using population weights of the 17 OECD countries with the highest GDP per capita based on purchasing power parities (PPPs).
2. In 2016. Labour resource utilisation is measured as the total number of hours worked per capita.

Source: OECD National Accounts Statistics (database); OECD Productivity Statistics (database); OECD Employment and Labour Market Statistics (database); OECD Economic Outlook: Statistics and Projections (database).

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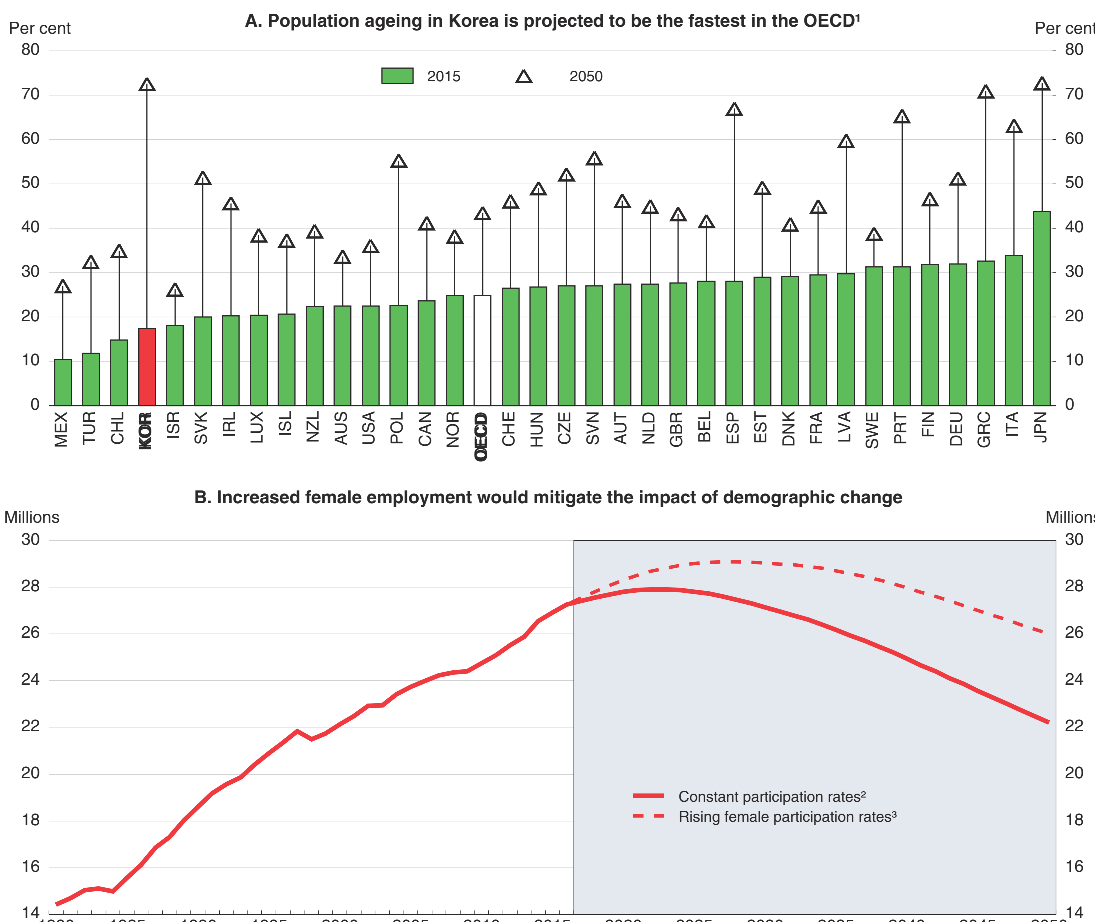
The government aims to reduce working time to around 1 800 hours per year by 2022, which requires addressing the underlying causes of long hours. *First*, firms prefer to meet increased demand through overtime and hiring non-regular employees to avoid the high costs of dismissing regular workers. *Second*, workers are attracted by the 50% wage premium for overtime. Reducing the premium would likely reduce working hours. Working time is longest in SMEs, which face labour shortages, making it important to resolve the labour mismatch problem (see below). In sum, the tradition of long working hours should be replaced by a productive work culture.

Reducing the gender-wage gap, reducing working hours and ensuring the rights of all women to take maternity leave and parents to take parental leave are essential for inclusive growth. Expanding female employment would also help offset the impact of population ageing, which is projected to be the fastest in the OECD (Figure 24), reflecting the extraordinarily low fertility rate and longer life expectancy. If participation rates were to remain at their current levels for each age group and gender, the labour force would peak

Figure 24. **Korea's population ageing will be the fastest in the OECD, leading to a shrinking labour force**



1. Population aged 65 and over as a per cent of the population aged 15 to 64.
2. The participation rates for men and women are assumed to remain at their current levels for each age group.
3. Female participation rates are assumed to reach current male rates in each age group by 2050.

Source: Statistics Korea, *Population Projection for Korea* (2015) and *Economically Active Population Survey;* OECD Demography and Population (database); OECD calculations.

StatLink http://dx.doi.org/10.1787/888933739775

at 27.9 million in 2022 and then fall by 20%, to around 22.2 million, by mid-century (Panel B). In contrast, if the female participation rate for each age cohort were to rise to the rate for men by 2050, the labour force would only fall to 26.0 million, 17% higher than in the case of unchanged participation rates. Greater labour force participation by women and older persons (see below) would help support growth potential.

Breaking down labour market dualism

Korea's labour market is segmented between regular workers and non-regular workers, such as fixed-term, part-time and dispatched workers, who account for one-third of employees (Table 10). Non-regular workers earn one-third less than regular workers on an hourly basis, even though the skills of temporary workers match those of permanent prime-age workers on average (OECD, 2016). Dualism has a number of negative consequences:

- It is a major source of income inequality and poverty. Wage dispersion in Korea is the second highest in the OECD and almost a quarter of full-time workers in 2016 earned less than two-thirds of the median wage (Figure 25).
- Dualism is an important cause of gender inequality, as 41.1% of female employees were non-regular in 2016 compared to only 26.4% for men (Figure 26).
- The income gap is further widened as non-regular workers have less access to social insurance and company-based benefits (Table 11).

Table 10. **Non-regular workers account for about a third of employees and earn much less**

A. Employed persons by status

Year	Wage workers	Non-regular workers		Of which[1]					
				Contingent (temporary) workers			Part-time workers	Atypical workers	
				Fixed-term workers		Open-ended contract workers[2]		Dispatched	Others
	Thousand	Thousand	%	Thousand	%	%	%	%	%
2007	15 882	5 703	35.9	2 531	44.4	17.8	21.1	3.1	35.7
2009	16 479	5 754	34.9	2 815	48.9	12.0	24.8	2.9	36.8
2011	17 510	5 995	34.2	2 668	44.5	12.9	28.4	3.3	37.2
2014	18 776	6 077	32.4	2 749	45.2	12.5	33.4	3.2	31.6
2016	19 627	6 444	32.8	2 930	45.5	11.3	38.5	3.1	31.4
2017	19 883	6 542	32.9	2 925	44.7	12.0	40.7	2.8	29.2

B. Hourly wages of non-regular workers relative to regular workers (regular workers = 100)

Year	Regular workers	Non-regular workers	Of which[1]				
			Contingent (temporary) workers		Part-time workers	Atypical workers	
			Fixed-term workers	Open-ended contract workers[2]		Dispatched	Others
2007	100.0	56.5	64.4	58.0	47.1	46.9	n.a.
2009	100.0	56.3	65.5	53.2	46.8	47.9	n.a.
2011	100.0	61.3	69.4	51.8	53.9	51.9	n.a.
2014	100.0	62.2	64.4	53.8	63.0	49.7	n.a.
2016	100.0	66.3	66.0	49.2	61.9	52.2	n.a.

1. The sum of the categories of non-regular workers exceeds 100% due to double-counting.
2. Workers whose employment contract term is not fixed but whose employment can continue through repeated renewals of the contract or is not expected to continue due to involuntary reasons.

Source: Statistics Korea; Ministry of Employment and Labour.

- Dualism increases temporary employment, thereby discouraging firm-based training. The share of temporary employees was 22% in 2016, the fifth highest in the OECD and more than double the OECD average. Non-regular workers, a third of employees, are offered only 1.8% of the training opportunities provided via employers (Yun, 2016b).
- The segmentation between regular and non-regular employment limits social mobility. Temporary and part-time workers in Korea are less likely to move to a regular job during the following year than unemployed people with similar characteristics (OECD, 2015a), reflecting the stigma of non-regular employment.
- Dualism has important equity implications for future generations, as spending on education in non-regular households is only about half of that of regular households (2016 *OECD Economic Survey of Korea*).

In addition to promoting social inclusion, enhancing labour market flexibility would boost economic growth by helping Korea achieve the fourth industrial revolution (Chapter 2). Moreover, employment protection reduces FDI inflows and the expansion of foreign firms in Korea (Cho, 2016). Relaxing employment protection has been found to result in greater job reallocation across sectors, which leads to higher productivity (Cournède et al., 2016).

The emphasis on protecting jobs has failed to deliver employment stability and income security for a large share of the labour force. Breaking down dualism requires reducing incentives that encourage firms to hire non-regular workers: i) enhancing employment flexibility and avoiding the cost of laying off regular workers; and ii) reducing labour costs. Hiring a non-regular worker cuts a firm's social contributions by 8-9% compared to a regular worker covered by the three major social insurance programmes. Past *Korea Surveys* have recommended a comprehensive strategy to break down dualism by relaxing employment protection for regular workers and making it more transparent and increasing social insurance coverage and training for non-regular workers (Table 12).

Figure 25. **Korea has wide wage dispersion and a high share of low-wage workers**

In 2016 or latest year available[1]

1. Includes only those countries for which both indicators are available.
2. The share of full-time workers earning less than two-thirds of median earnings, including bonuses.
3. The ratio of the upper bound value of the 9th decile to the upper bound value of the 1st decile for full-time workers.
4. Unweighted average of the countries shown above.

Source: OECD Earnings Distribution (database).

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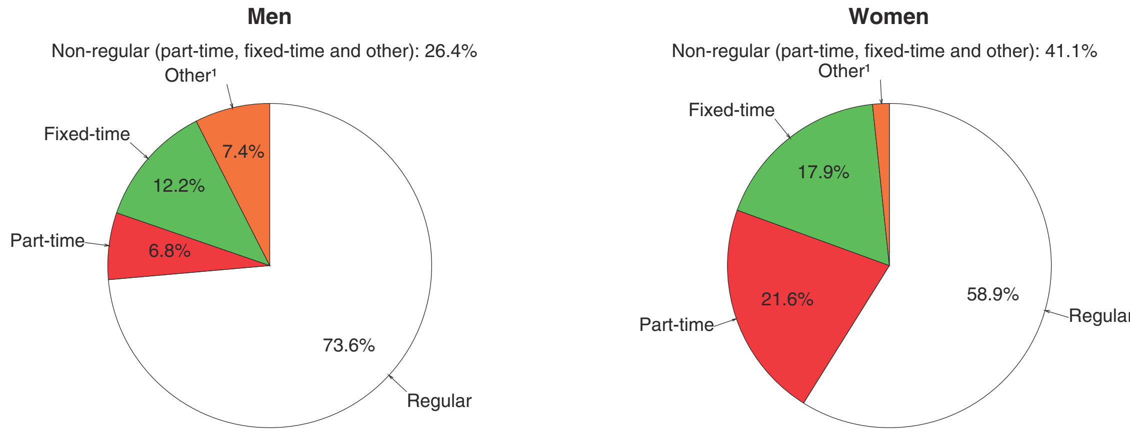
Figure 26. **Women are concentrated in low-paying non-regular jobs**

Employees by employment status as a percentage of total employment in 2017



1. Includes temporary employees and atypical workers (dispatched, daily on-call, in-house, independent contractors, etc.).

Source: Statistics Korea, *Economically Active Population Survey*, August 2017.

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Table 11. **Non-regular workers receive less social insurance and company-based benefits**

Employed persons by status in 2016

	National Pension Service	National Health Insurance	Employment Insurance System	Average for social insurance[1]	Bonus payments[2]	Retirement allowance[3]
Total	90.1	89.7	90.7	90.2	55.3	81.2
Regular	98.2	98.3	95.7	97.4	65.8	93.1
Non-regular	56.7	59.4	72.1	62.7	22.9	45.1
of which:						
Part-time	63.7	65.6	69.0	66.1	19.3	33.3
Atypical	32.7	37.3	67.4	45.8	8.8	33.6

1. The simple average for the National Pension Service, National Health Insurance and the Employment Insurance System.
2. Bonus payments, which are paid two or three times a year, amount to around a quarter of employee compensation.
3. In 2014. The law requires payment of at least one month of wages for each year worked for departing employees.

Source: Ministry of Employment and Labour, *Survey on Labour Conditions by Employment Type* (2016).

Table 12. **Past recommendations to break down labour market dualism**

Main recent OECD recommendations	Action taken since the 2016 *Survey* or planned
Break down dualism by relaxing employment protection for regular workers and making it more transparent and increasing social insurance coverage and training for non-regular workers.	• The government will transform the contracts of 205 000 non-regular public-sector workers to regular status. • The law will be revised to limit the number of conditions in which non-regular workers can be used. • The subsidy to firms that convert non-regular workers to regular status will be raised from KRW 600 000 per month to KRW 800 000 (USD 741). • Regulations on layoffs will be strengthened to protect jobs of middle-aged workers in their 40s and 50s. • The system to correct discrimination against non-regular workers will be reformed.

Breaking down dualism requires reducing employment protection for regular workers (OECD, 2013a). Regular workers receive high protection, particularly in large firms, as a result of labour laws, court decisions, business practices, social customs and labour unions

(Koh et al., 2010). Dismissals for economic reasons are strongly regulated, with many procedural hurdles for firms: consultations with workers, implementation of measures to avoid or minimise layoffs, and strict selection criteria for employees to be dismissed (Lee, 2015). In addition, there must be "urgent managerial reasons", a criterion that is not well-defined and difficult to prove in court. Courts take into account the company's financial situation, market conditions and competitiveness. Therefore, layoff costs, which are difficult to predict, can be very high due to long and complex court rulings, thus increasing the incentives to hire non-regular workers (OECD, 2016). In 2017, Korea was ranked at 106th in the world in labour market flexibility and 112th in the cost of redundancy by the Global Competitive Index (World Economic Forum, 2017).

Reforms that reduce employment protection have long been known to boost productivity, but that has not made them popular or easy to implement (Cournède et al., 2016). Several European countries have tried to move toward a single employment contract. Another option is to introduce reduced employment protection for new employees, while current employees retain their protection under a grandfather clause. Such an approach appears to have been successful in some southern European countries. Another approach, epitomised by Denmark, is "flexicurity", which combines employment flexibility, social welfare and active labour market policy. In any case, a shift from protecting jobs to protecting individuals requires strengthening the social safety net. As noted above, social spending in Korea is low and has a relatively weak impact on income inequality and relative poverty (Figure 8). The major programmes for the working-age population should be improved:

- *Employment insurance*: Only about a third of the unemployed receive benefits. The lower coverage of non-regular workers (72.1%) is problematic, given their precarious jobs (Table 11).
- *The earned income tax credit*: Coverage is limited to around 8% of households, in part due to eligibility criteria, and spending was 0.1% of GDP in 2015.
- *Basic Livelihood Security Programme*: This programme, the primary public assistance policy, targets the extremely poor. The maximum support was equivalent to 28% of the median income in 2015, putting it in the bottom third of OECD countries, while coverage is limited to around 3% of the population by strict eligibility criteria.

Addressing the problems of older workers and the elderly

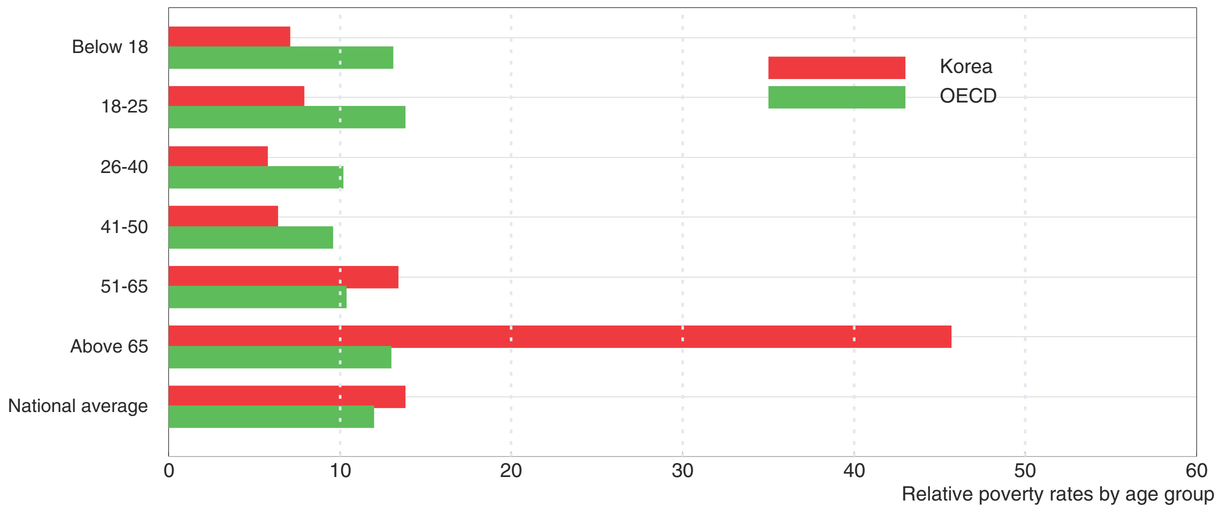
Extending the employment of older workers

The employment rate in Korea for the 55-64 age group was 67.5% in 2017, well above the OECD average of 59.2% (Table 8). Yet the poverty rate doubles from 6% for the 41-50 age group to 13% for the 51-65 age group, compared to an OECD average of 10% (Figure 27). The main problem, therefore, is the quality of jobs for older workers. Prior to 2016, the mandatory retirement age set by firms was 58 on average. It was much lower in practice, at an average of 46 for those who left their main job voluntarily and 53 for those who left involuntarily, according to a 2016 government survey of 6.9 million persons between the ages of 55 and 64. Low education and skills, combined with seniority-based pay, creates a significant gap between wages and productivity as workers age, leading to early retirement. Many become self-employed, contributing to low service-sector productivity. Those who find employment tend to have temporary contracts and low wages.

In 2016-17, the minimum mandatory retirement age that firms can set was raised to 60. However, some companies continue to force workers to leave before age 60 through

Figure 27. **Relative poverty rates for persons over 50 are very high in Korea**

In 2015[1]



1. Relative poverty is measured as those with an income below half of the national median, not taking into account household assets and liabilities.

Source: OECD Income Distribution and Poverty (database).

StatLink http://dx.doi.org/10.1787/888933739832

"honorary retirement". The government plans to take measures to prevent the abuse of voluntary retirement and other issues related to the termination of employment contracts.

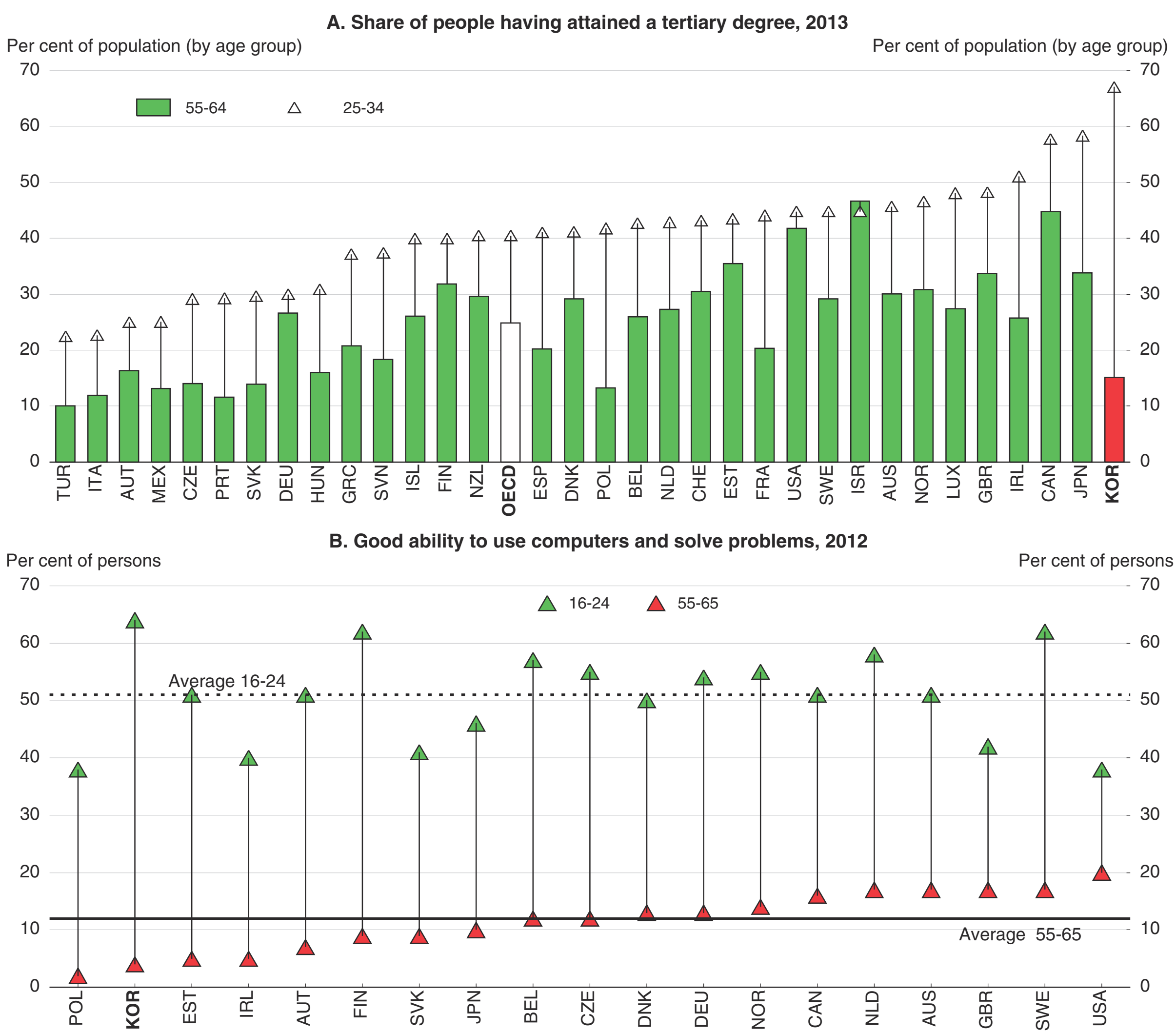
However, the higher retirement age will further widen the gap between productivity and wages. Resolving this problem will require enhancing wage flexibility by moving away from seniority-based wages. Past *Korea Surveys* have recommended the "wage peak" system, which freezes or gradually reduces wages during workers' last few years prior to the mandatory retirement age (Table 13). This is a win-win approach that reduces the burden on firms, while extending careers of workers. The share of firms with a wage peak system rose from 9% in 2009 to 17.5% in 2016 in the face of opposition by some workers who prefer seniority-based wages. The ultimate objective should be a flexible wage system based on performance and job category, while abolishing firms' right to set mandatory retirement ages.

Table 13. **Past recommendations to extend employment and reduce poverty among the elderly**

Main recent OECD recommendations	Action taken since the 2016 *Survey* or planned
Accelerate the adoption of the wage peak system and expand education for older persons with low skills to extend their careers at companies.	The government is expanding training programmes aimed at older workers. Subsidies for reduced working hours were expanded to cover education and training for older workers.
Focus the Basic Pension on the elderly with the lowest incomes to reduce the high rate of poverty among those over age 65.	The government plans to raise the Basic Pension from KRW 200 000 to KRW 300 000 (USD 278) per month, while keeping its broad coverage.
Expand the coverage of the National Pension Service (NPS) to reduce poverty in the long run.	The government: i) allowed insured persons who take a career break due to childbirth or childcare to make deferred NPS contributions; ii) introduced subsidies of 75% for NPS contributions paid by the unemployed; and iii) introduced a subsidy of 90% (80%) of NPS contributions for newly-insured employees at firms with less than five (five to nine) workers.
Expand company pensions and strengthen personal pension plans – the Individual Retirement Pension (IRP) – to create a strong multi-pillar system to ensure adequate income for the elderly.	Expanded the eligibility for IRP to include self-employed individuals and public officials. Capital gains tax on stock investment in IRP was exempted beginning in 2018. Property taxes for reverse mortgages were cut by 25%.

The concentration of older workers in low-quality jobs reflects their lack of education and skills compared to younger people (Figure 28). Increasing the human capital of older workers by investing in lifelong learning would help bring wages and productivity into line and reduce the incentives for firms to force early retirement. In Korea, only 21% of the 55-64 age group participated in formal or non-formal education or training related to their job in 2012, compared to the 30% OECD average (2016 *OECD Economic Survey of Korea*). The goal should be to create a virtuous circle between lifelong learning, productivity and earnings. In addition, it is essential to break down labour market dualism, which forces older workers into non-regular status, and to reduce working time to enable workers to continue their careers.

Figure 28. **The education and skill gap between younger and older workers is large in Korea**



Source: OECD Education Statistics (database); OECD (2013b).

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Reducing poverty among the elderly

Longer careers at their main jobs would reduce poverty among older persons, both while they are working and after retirement, in part by lengthening their pension contribution period. However, more needs to be done to reduce the elderly poverty rate, which was 45.7% in 2015 for the over-65 age group, 3.6-times higher than the OECD average of 12.6% (Figure 27). Their absolute poverty rate – the share with an income below the minimum cost of living – is around 30%. In addition to low incomes, the elderly are burdened by high debt. For the over 60 age group, household debt amounted to 73% of their financial assets, compared to the national ratio of 64% and a ratio of 20% in the United States (Kim, 2016). Poverty contributed to a high elderly suicide rate, which was 55 per 100 000 persons in 2014, far exceeding the OECD average of 22.

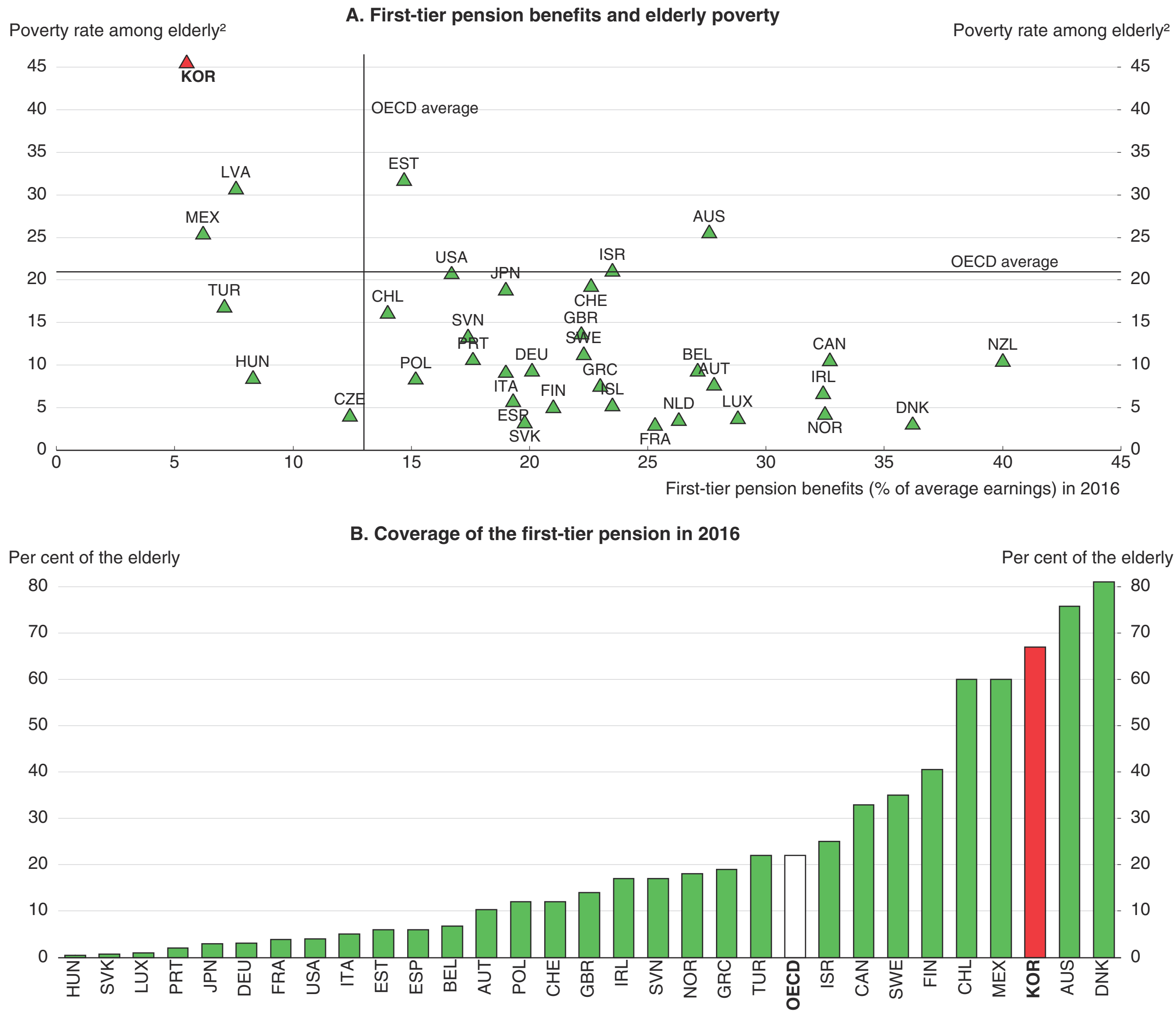
Many elderly had assumed that their children would provide for them, thus making it unnecessary to prepare financially. However, a quarter of the elderly are living alone. The high elderly poverty rate reflects both the decline in family support and the weakness of other private and public sources of support:

- The NPS provided old-age pension benefits to only 33.8% of the elderly in 2017. Moreover, pension benefits were low at 23.5% of the average wage.
- The Basic Pension, which was doubled to KRW 200 000 in 2014, amounted to 5.5% of the average wage in 2016, the lowest in the OECD (Figure 29). It is given to 67% of the elderly – a very high coverage compared to an average of 22% for safety-net pensions in the OECD (Panel B). It thus spreads resources very thinly over a large segment of the older population.
- The Basic Livelihood Security Programme provided benefits to only 6.7% of the elderly in 2015, reflecting the exclusion of older persons with the possibility of assistance from family members.
- The company pension system created in 2005 covers all employees with more than a year of continuous service, excluding daily workers and persons enrolled in public occupational pension schemes. By 2016, the number of persons enrolled in company pensions reached 5.4 million, about half of those eligible and about a quarter of all employees. The number of persons enrolled in company pensions is equivalent to about 15% of the working-age population (ages 15 to 64).

Countries with low safety-net pensions tend to have high elderly poverty rates. The Basic Pension is to rise to KRW 250 000 (USD 232) in September 2018 and to KRW 300 000 in 2021, while maintaining its coverage at around 70% of the elderly. The government projects that this will reduce the elderly poverty rate to 42.4% in 2021, still more than three times the OECD average. The Basic Pension has two key weaknesses: i) one-third of those who receive it are above the relative poverty line; and ii) the elderly in absolute poverty receive the same benefit as those above absolute poverty. The immediate priority is well-targeted social spending to ensure an adequate minimum level of income for all elderly. The government should focus the Basic Pension on the lowest-income elderly to ensure that they escape from absolute poverty (2016 *OECD Economic Survey of Korea*). It may be necessary to increase the total amount of spending on the Basic Pension to achieve this objective. A second option would be to further relax the eligibility criteria for the Basic Livelihood Security Programme to support the elderly. In addition, given that most of the elderly's assets are in real estate, helping them turn those into liquid assets – such as through reverse mortgages – would provide additional income (Jones and Urasawa, 2014).

A three-pronged approach is needed to make the NPS more effective in reducing poverty in the long run. *First,* a larger share of the population should contribute. In 2015, insured persons paying contributions to the NPS amounted to 54% of the population aged 18-59, well below other advanced countries. *Second,* the contribution period, which the NPS

Figure 29. **The first-tier pension benefit[1] in Korea is very low while the coverage is high**



1. The non-contributory, safety-net pension for the elderly. In Korea, this refers to the Basic Pension.
2. Share of the elderly in relative poverty – an income below 50% of the national median – in 2015 or latest year.

Source: (OECD, 2017f), *OECD Pensions at a Glance.*

StatLink http://dx.doi.org/10.1787/888933739870

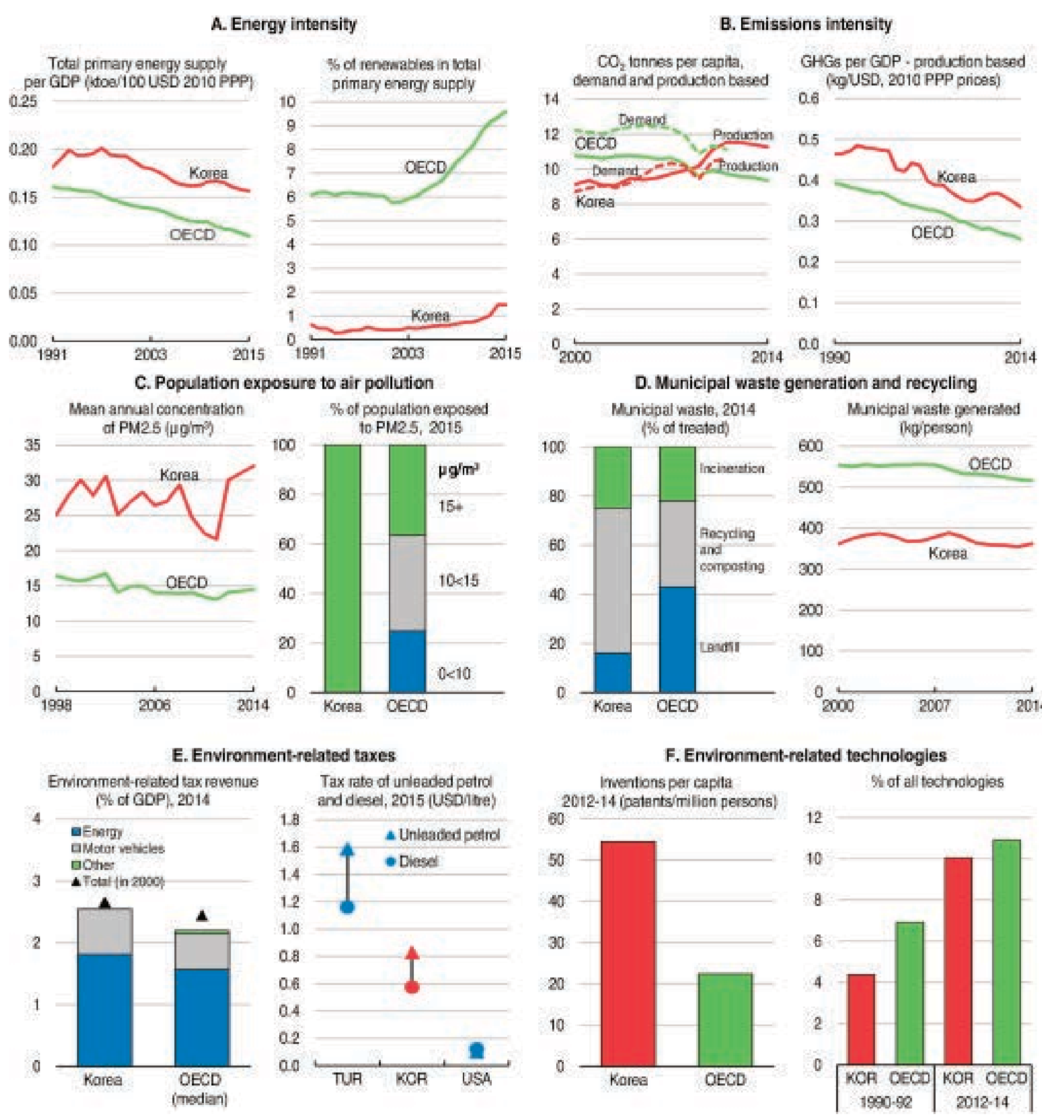
projects will average 20.6 years in 2040, should be lengthened to boost retirement income. *Third,* the targeted NPS replacement rate, should remain at its current 45% (excluding the Basic Pension, which has a replacement rate of 5.5%), rather than cut to 40% as planned. With an average of 20.6 years of contributions through 2040, the replacement rate in that case would only be around 20%.

Even with the cut in the replacement rate and the planned hike in the pension eligibility age from 61 to 65 in 2033, pension spending will overtake revenues by 2044 (Figure 10). It is necessary, therefore, to raise revenue, in part by boosting the contribution rate from its low level of 9%. The NPS should be part of a multi-pillar approach to old-age income that includes increased private savings by developing the company pension system and individual pension savings.

Greening growth and addressing environmental issues

Korea's energy intensity has been declining but remains one of the highest in the OECD (Figure 30, Panel A), reflecting its large manufacturing sector. Low, regulated electricity prices hamper efforts to reduce energy demand and act as a barrier to renewables. Renewable energy's share of primary energy supply is the lowest in the OECD. Moreover, Korea provides substantial subsidies to fossil fuels (OECD, 2017e). The industrial structure and energy mix make Korea a relatively carbon-intensive economy despite some decline during the past 20 years. Korea has the second-highest greenhouse gas (GHG) emissions growth since 2000 and per capita emissions have risen above the OECD average based on production (Panel B). Korea has a goal to reduce emissions by 37% from a business-as-usual baseline by 2030, which implies that emissions would fall by 22% from their 2015 level. Past *Korea Surveys* have stressed the importance of using economic instruments to achieve environmental objectives (Table 14).

Figure 30. **Green growth indicators: Korea**[1]



1. An explanation of these indicators is found at: *http://stats.oecd.org/wbos/fileview2.aspx?IDFile=7ad102dd-e16d-4da0-a20c-624582b9984e*.
Source: OECD Green Growth Indicators (database).

StatLink http://dx.doi.org/10.1787/888933739889

Table 14. **Past recommendations to promote green growth and improve the environment**

Main recent OECD recommendations	Action taken since the 2016 *Survey* or planned
Improve water pricing policies to increase efficiency by ensuring that prices cover water supply costs, as well as by developing water supply and improving demand management.	No action taken.
Air pollution should be reduced, in part, by co-operation with other countries in the region and through appropriate economic instruments.	Up to ten coal-fired power plants are to be closed and the construction of new plants is banned. The "Comprehensive Plan for Fine Dust Countermeasures" was introduced in 2017 with a goal to cut domestic emissions by 30% by 2022 through measures covering power generation, industry and transport. It will also strengthen co-operation with neighbouring countries to reduce pollution. The government aims to raise the share of renewables in electricity generation from 6% to 20% by 2030.

In 2015, Korea launched a GHG emissions trading scheme (ETS), which covers nearly 70% of total emissions. Prices have been rather low, though somewhat higher than in other cap-and-trade schemes in the United States and Europe. In the first phase through 2017, allowances were cut by 2% per year and issued free. Until 2025, 90% of the allowances will be issued free, but the size of the cuts in the allowances has not yet been determined.

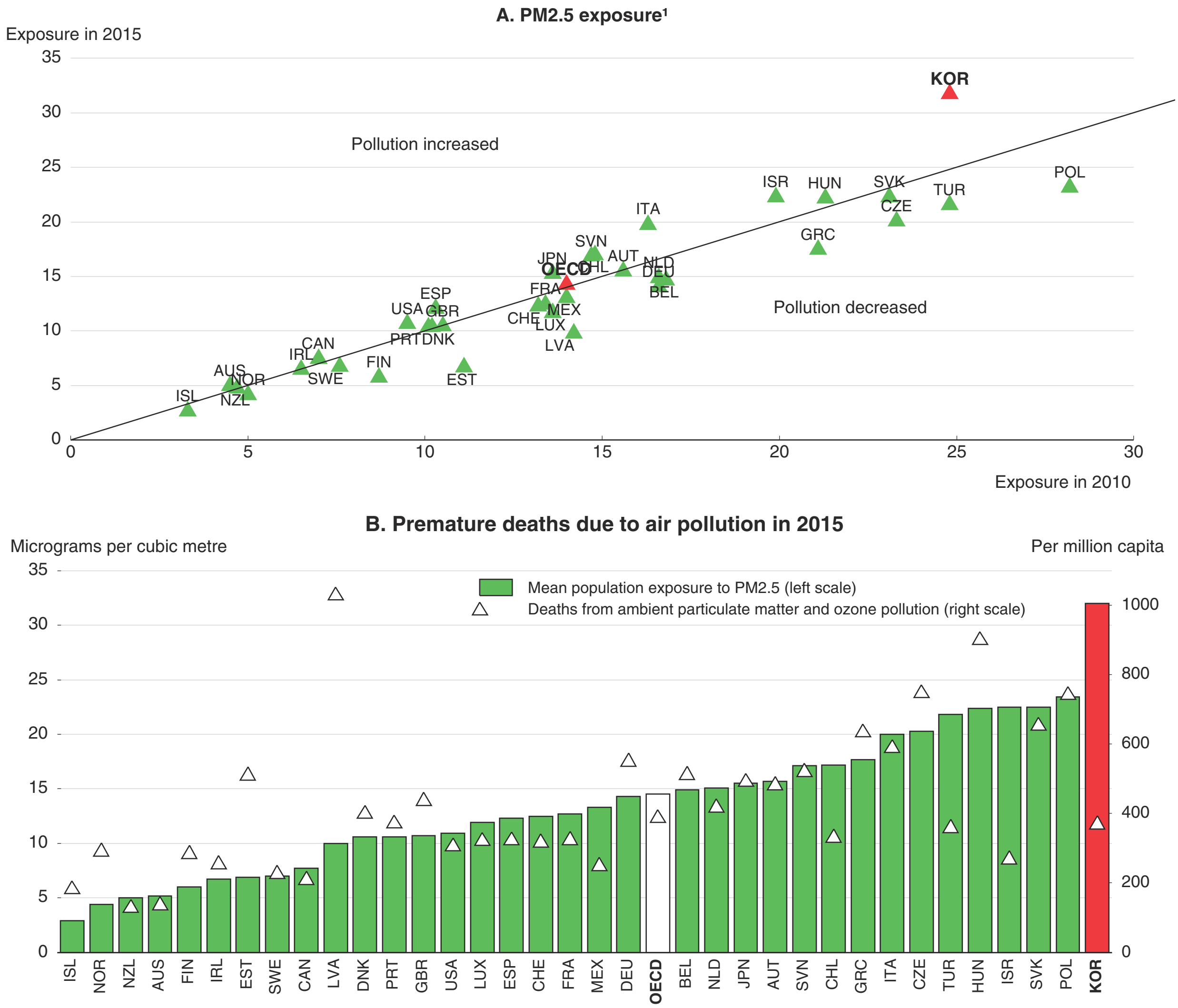
Achieving Korea's emission reduction target requires tightening the ETS and reforming energy taxation and electricity pricing, so that price signals are carried through to energy users. Korea aims to introduce progressive pricing for residential electricity and pricing based on the time of day and the season for industry and other sectors. In addition, it is essential to strengthen energy demand management and develop renewable energy sources. The government plans to raise the share of renewables from 6% to 20% by 2030. Korea is more vulnerable to climate change than many OECD countries. It needs to continue pursuing adaptation measures in parallel with GHG emission reductions to face challenges such as rising precipitation and sea levels, more frequent extreme weather and declining agricultural production.

Korea's efforts to tackle air pollution have borne fruit; since 2000, emissions of all major air pollutants but PM_{10} have fallen (OECD, 2017e). Nevertheless, average air quality in Korea is the worst in the OECD and deteriorating, as measured by exposure to $PM_{2.5}$ (very fine dust), which is a good proxy for other pollutants (Figure 31).

Around 90% of the population lives in areas with annual exposure of over 25 micrograms per cubic metre, compared to less than 10% in the OECD. Virtually no Koreans live in areas where average air quality is rated as "good" (annual exposure to $PM_{2.5}$ of less than 15 micrograms per cubic meter) (Figure 30, Panel C). Industrial processes and electricity generation, of which over 40% depends on coal, are key contributors to air pollution. It is exacerbated by dust blown in from abroad, particularly from China. Pollution from abroad may account for up to 70% of Korea's air pollution during pollution peaks. Premature mortality from respiratory and cardiovascular disease is much lower in Korea than in some other countries with high pollution (Figure 31, Panel B). However, without any actions to reduce pollution, the number of premature deaths is projected to almost triple by 2060, placing Korea among the countries most affected by outdoor air pollution (OECD, 2017e). The 2017 "Comprehensive Plan for Fine Dust Countermeasures", with a budget of KRW 7.2 trillion (0.4% of GDP), is an important move (Table 14).

Rainfall is abundant in Korea, but rapid runoff, high population density and a highly seasonal rainfall pattern lead to relatively high water stress. Although rapid progress in

Figure 31. **Air pollution is increasing in Korea**



1. Micrograms per cubic metre.
Source: OECD Green Growth Indicators (database).

StatLink http://dx.doi.org/10.1787/888933739908

expanding sewage treatment has reduced water pollution, high use of pesticides and chemical fertiliser makes Korea's irrigation-intensive agriculture sector a major contributor to water pollution. Improving water quality requires improving information on water resources, which is often fragmented or out of date. The government has launched a number of programmes to remedy this situation (OECD, 2017e).

Korea has a very good record in integrated waste management. Despite economic growth and intensifying urbanisation, Korea has kept per capita generation of municipal waste stable at a level well below the OECD average (Figure 30, Panel D). Recycling rates are relatively high at 80% of all waste generated. However, waste generation is still rising in line with GDP, underlining the need to further promote waste prevention (OECD, 2017e).

Revenue from environmentally-related taxes, at 2.6% of GDP in 2014, is above the OECD average (Figure 30, Panel E), with almost all generated by levies on energy and vehicles. Nevertheless, tax rates in real terms on motor fuel have fallen since 2009, as a partial realignment of tax on diesel with that on petrol was achieved by lowering the tax on petrol. Environmental tax and charge rates on air pollution, water pollution and use, and land development are too low to cover environmental and social externalities or to encourage pollution reduction and efficient resource use (OECD, 2017e).

Environment-related patents on a per capita basis are more than double the OECD average, (Figure 30, Panel F) reflecting Korea's exceptionally high level of R&D expenditure. The rise in patent applications in climate change-related technologies is particularly rapid, suggesting that policy rather than technology is the major constraint on dealing with climate change.

Assessment of the government's economic strategy

The new government is pushing a bold strategy in an effort to achieve a paradigm shift during its five-year term and create a "fair economy". The new paradigm includes reforms of the large business groups (Chapter 1) and achieving innovation led by SMEs and start-ups (Chapter 2). While it is difficult to estimate the impact of implementing this paradigm shift, it could be large. The success of the government's economic strategy in promoting inclusive growth will depend on its ability to raise productivity from its relatively low level while narrowing large productivity and wage gaps between large firms and SMEs and between manufacturing and services.

Some of the major initiatives discussed above – notably sharp increases in public employment and social spending, coupled with a hike in the corporate income tax rate – run counter to trends in the OECD area. An evaluation of such policies should take into account the current low level of public employment and social spending in Korea (Figure 8) and the importance of promoting inclusive growth. Still, the increases in public employment and social spending should carefully weigh the long-term costs of these initiatives, given that under Korea's current framework, social spending is projected to continue increasing rapidly. Raising corporate income tax rates has been shown to have a negative effect on output growth in OECD countries, although Korea's tax rate increase is limited. It would be better to make the tax system more conducive to inclusive growth, notably by increasing the VAT rate from its low level, with well-targeted measures to offset any regressive impact, and by moving to a greener tax mix.

The effect of the minimum wage hike is uncertain at this stage. According to a recent OECD study, "at reasonable levels, increases in the minimum wage are unlikely to cause substantial job loss" (OECD, 2015b). However, the planned 54% increase in the minimum wage during the President's five-year term is nearly unprecedented among OECD countries, making the impact difficult to predict. Adjusted for inflation, the minimum wage would rise around 45%. Unless this is matched by higher productivity, it could push inflation above its target and have a negative impact on Korea's international competitiveness. The minimum wage would rise significantly relative to the median wage (Figure 18). It would thus be best to assess the impact of the 16.4% hike in the minimum wage in 2018 before raising it further.

Recommendations to address key policy challenges

Key macroeconomic recommendations

- Gradually reduce the degree of monetary accommodation by raising the policy interest rate.
- Control spending in line with the Fiscal Management Plan to help ensure a sustainable fiscal balance in the long run.
- Allow public spending as a share of GDP to increase in the face of population ageing in the long run.
- Use taxes that are relatively less harmful to economic growth, notably the VAT, to finance rising social spending.
- Re-allocate public spending to social welfare as planned.
- Consider further tightening loan-to-value and debt-to-income regulations on mortgage lending depending on the impact of the recent changes.

Key recommendations to improve well-being

- Upgrade accreditation standards in early childhood education and care and make them mandatory.
- Raise qualification standards for early childhood education and care teachers.
- Relax fee ceilings on private childcare institutions and entry barriers.
- Break down dualism by relaxing employment protection for regular workers and making it more transparent, while expanding social insurance coverage and training for non-regular workers.
- Assess the impact of the 16.4% hike in the minimum wage in 2018 before raising it further.
- Further increase the Basic Pension and focus it on the elderly in absolute poverty.
- Steadily increase the share of permits auctioned and the stringency of the total emission cap in the emissions trading system.
- Raise environmentally-related taxes, in part to close the gap between diesel and petrol taxes, and boost electricity prices.

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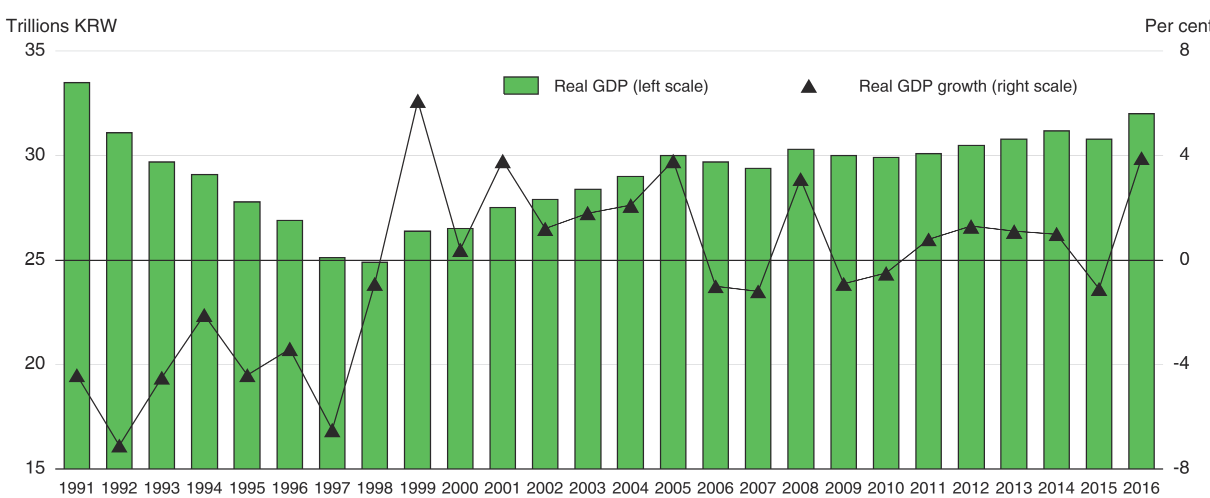
ANNEX A1

Economic co-operation with North Korea

After contracting in 2015, the North Korean economy grew 3.9% in 2016, the fastest rate since 1999, despite a further contraction in its foreign trade (Figure A1.1). Manufacturing and mining (58% of GDP) were supported by the "speed battle" campaign of mass mobilisation to speed up production. The campaign included output quotas at state-owned enterprises, which required the accelerated use of resources. Agriculture also recovered following the 2015 drought. Continued marketisation through the dollarisation of the North Korean economy has supported economic activity and helped stabilise the unofficial exchange rate and the rice price (Lee, 2017a). Faster growth in 2016 boosted real GDP to its highest level since 1991. Nevertheless, per capita gross national income in the South is 21.9 times higher than in the North (Table A1.1), raising concern about the potential cost of economic rapprochement. Production and investment growth appears to have declined on a year-on-year basis in the first half of 2017, reflecting renewed droughts, the payback from the "speed battle" campaign and the tightening of sanctions (Lee, 2017b).

Figure A1.1. **The North Korean economy grew rapidly in 2016, despite international sanctions**



Source: Bank of Korea (Seoul).

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Inter-Korean trade in 2016 was only one-tenth of that in 2015 as production at the Gaesung Industrial Complex was suspended in February 2016 (Figure A1.2). The Complex, which was created in 2002, was home to 125 South Korean SMEs employing 54 000 North

Table A1.1. **Comparison of North and South Korea in 2016**

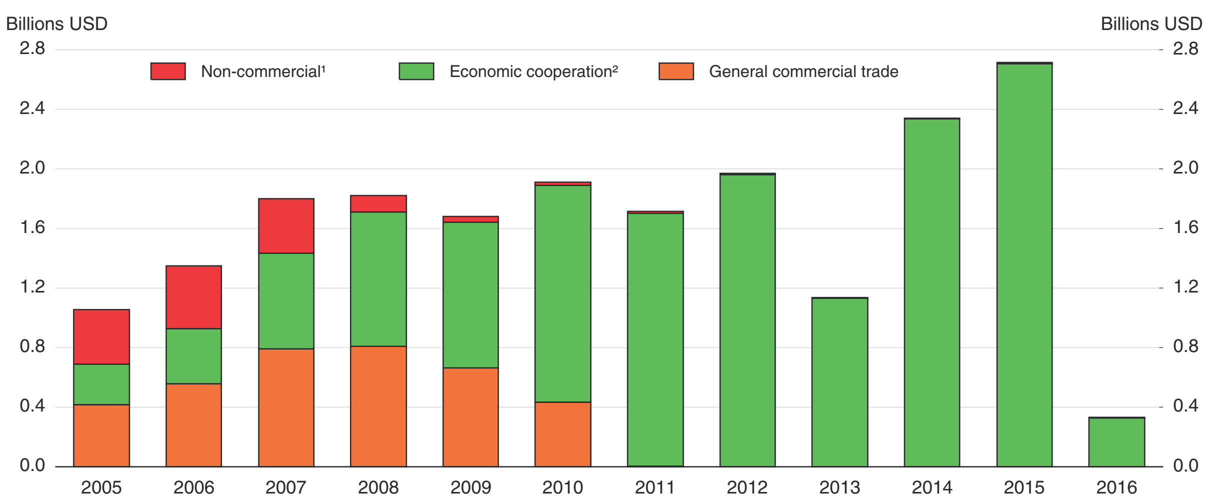
	(A) North Korea	(B) South Korea	Ratio (B/A)
Population (millions)	24.9	51.2	2.1
GNI (trillion KRW)	36.4	1 639.1	45.1
GNI per capita (million KRW)	1.5	32.0	21.9
Total trade (billion USD)	6.5	901.6	138.1
Exports	2.8	495.4	175.7
Imports	3.7	406.2	109.5
Of which: inter-Korean exports[1]	0.2	0.1	0.5
Industrial statistics (2014)			
Power generation (billion kWh)	23.9	540.4	22.6
Steel production (million tonnes)	1.2	68.6	56.3
Cement production (million tonnes)	7.1	56.7	8.0
Agricultural production (2014)			
Rice (million tonnes)	2.2	4.2	1.9
Fertiliser (million tonnes)	0.6	2.1	3.4

1. North Korean exports to the South in column Panel A, and South Korean exports to the North in column B.
Source: Statistics Korea (Daejeon); Bank of Korea (Seoul).

Korean workers. It was the last remaining symbol of inter-Korean reconciliation and the focus of inter-Korean trade. Its closure was in response to another nuclear test by the North and its launching of a long-range missile.

While North Korea's trade with the South plunged, its commerce with China edged up in 2016, despite international sanctions (Figure A1.3). China's recorded share of North Korean trade jumped from 64% in 2015 to 88% in 2016, while South Korea's share fell to less than 5%. Coal and iron ore accounted for half of North Korean exports to China, boosted by a rise in their prices. However, the November 2016 UN sanctions prohibiting imports from

Figure A1.2. **Inter-Korean trade fell sharply following the closure of the Gaesung Industrial Complex**



1. Primarily humanitarian aid.
2. Includes special projects, notably the Gaesung Industrial Complex and the Mount Geumgang resort. However, the resort was closed in 2008 and the industrial complex was suspended in February 2016.
Source: Statistics Korea (Daejeon).

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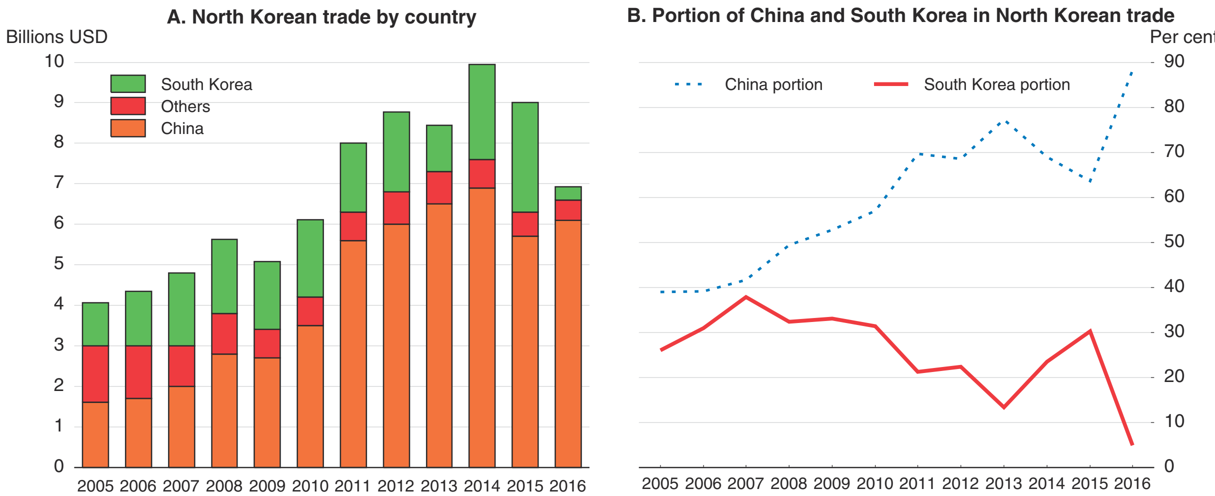
Figure A1.3. **Trends in North Korean trade**



Source: Statistics Korea (Daejeon).

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North Korea for private use negatively affected the North's trade with China in 2017. For example, Chinese refined oil exports to North Korea were down 54% (year-on-year) in September 2017, (Kim, 2017).

In July 2017, South Korea launched the Berlin Initiative, which aims at peaceful coexistence and common prosperity through "dialogue and co-operation", as well as "sanctions and pressure". It is based on three objectives: i) the establishment of permanent peace through the denuclearisation of North Korea; ii) the development of sustainable inter-Korean relations; and iii) the creation of a Korean Peninsula New Economy Community that includes an East Coast Belt, West Coast Belt and DMZ Belt. The government's goal is to "build a single market on the Korean Peninsula to create new growth engines and create an inter-Korean economic community of co-existence and co-prosperity" (Ministry of Unification, 2017). Nevertheless, inter-Korean economic co-operation did not resume as North Korea continued to develop its nuclear and missile programme, including the launch of an ICBM missile in July 2017. However, in early January 2018, the two sides held talks, their first in two years, to arrange North Korea's participation in the PyeongChang Winter Olympics. This was followed by a summit between the leaders of South and North Korea in April 2018 at which they agreed to the "Panmunjeom Declaration for Peace, Prosperity and Unification of the Korean Peninsula". The Declaration called for the "complete" denuclearisation of the Korean Peninsula, a peace treaty to replace the armistice in place since the end of the Korean War, steps to ease military tensions, expanded economic co-operation between South and North Korea and increased humanitarian exchanges.

Sanctions imposed by the international community reduced North Korea's trade by a third over 2014-16. In addition, North Korea is facing difficulties in earning foreign currency, as the dispatch of workers overseas and investment in the North's Economic Development Zones, such as Najin and Sonbong, are blocked by international sanctions. The effect of sanctions has become increasingly apparent since early 2017, squeezing the North's foreign currency earnings and making it difficult to import food and basic necessities (Lim and Choi, 2017). The sharp drop in oil imports has led to severe electricity shortages. North

Korea is trying to mitigate the impact of sanctions by allowing greater marketisation of its economy (Lee, 2016). Rather than suppressing the role of markets, North Korea is focusing on stabilising prices and exchange rates by institutionalising markets. Already by October 2016, local authorities had established 436 "comprehensive markets". Moreover, these markets are moving from the outskirts of urban areas to the centre and their size is increasing (Lim, 2017).

ANNEX A2

Fiscal sustainability in the face of rapid population ageing

Korea's population ageing, projected to be the fastest in the OECD, will have a significant fiscal impact due to increases in public pension benefits and expenditures on health and long-term care. This annex integrates long-term projections by the National Pension Research Institute (NPRI) and the National Assembly Budget Office (NABO) to illustrate the overall impact of population ageing on the general government financial balance. The conclusion is that government net debt would soar to nearly 200% of GDP by 2060 in the absence of other revenue increases.

NPRI published an actuarial analysis of the National Pension Service (NPS) in 2013 based on *Population Projections for Korea (2010-2060)* by Statistics Korea. NABO released a long-term fiscal projection that covers the central government and the NPS using the same demographic assumptions.

The baseline simulation below uses historical data through 2017 and OECD's projections until 2019 (OECD, 2017c). From 2020, the underlying macroeconomic assumptions (Table A2.1) follow the NPRI's 2013 analysis, which uses projections through 2060 made by the Long-term Financial Prediction Council of the Ministry of Strategy and Finance. The real economic growth rate is assumed to gradually slow as contributions of labour and capital fall. The real interest rate, which reflects the world interest rate, is stable around 2½ per cent while inflation converges to the Bank of Korea's 2% target. The rate of return on the National Pension Fund is set 1.1 times higher than the nominal interest rate, based on the realised returns over 2006-11.

As for fiscal policy, contributions to the NPS and its benefits paid follow NPRI (2013). Benefits paid by the Basic Old-age Pension, which is funded by the national budget, are calculated as a ratio of NPS benefits projected by NABO (2012) through 2060. Health and long-term care benefits, which correspond to total in-kind social security benefits, are assumed to grow in proportion to NABO's projected spending on health and long-term care insurance by the central government as a share of GDP. Direct taxes on households and other social security contributions are assumed to be proportional to NPS contributions, which remain at the current 9% throughout the simulation in the baseline. Other government expenditures and revenues remain fixed as a share of GDP over the simulation period. The simulation results are shown in Figure A2.1.

The general government is a net creditor; net financial assets are estimated at 42.0% of GDP in 2015, with the National Pension Fund holding a significant share (32.9% of GDP). However, Korea's strong public finance position will quickly worsen as social spending rises

Table A2.1. **Assumptions of the baseline projection**

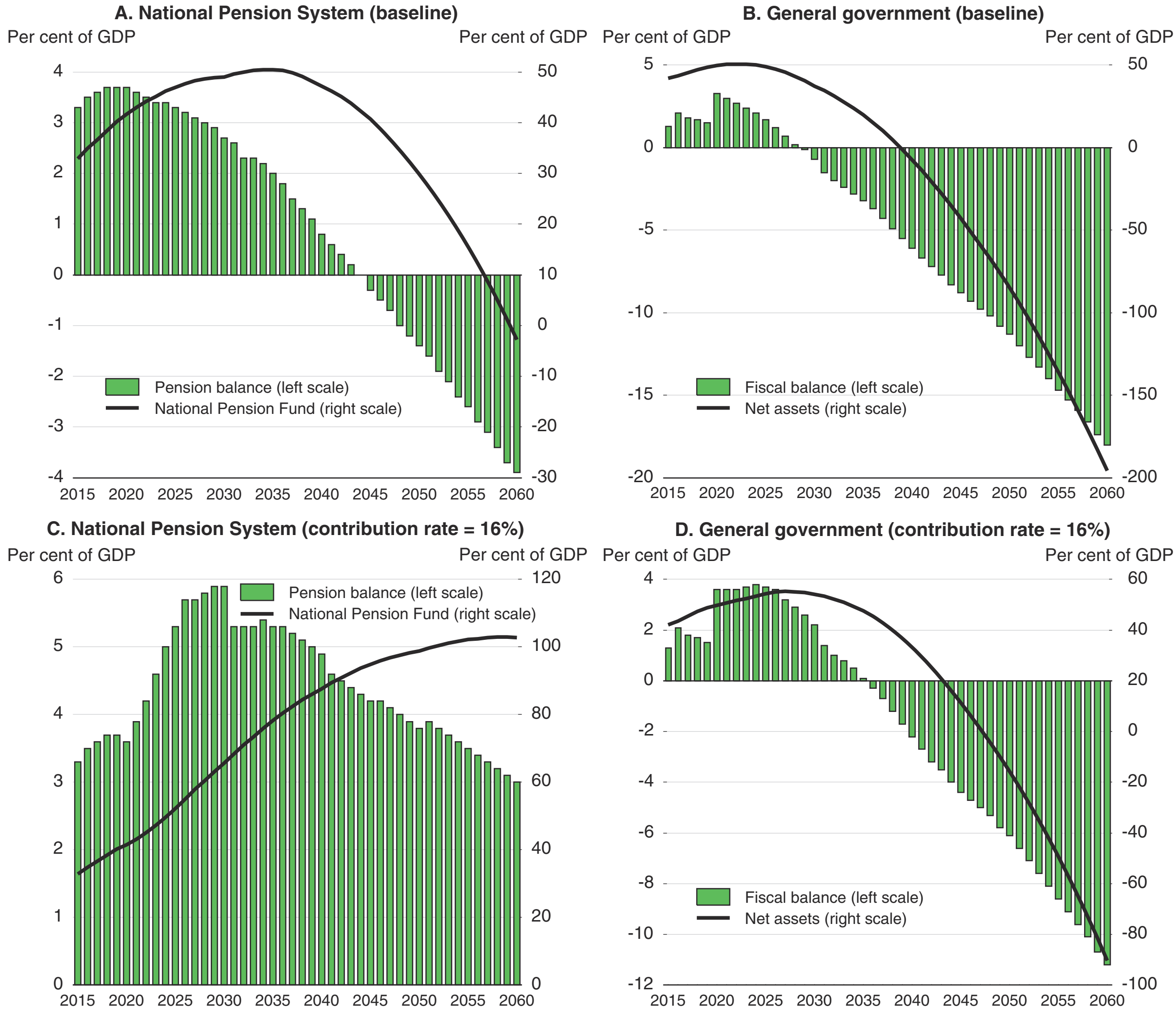
	2020-30	2031-40	2041-50	2051-60
Macroeconomic conditions				
Real economic growth (%)	2.9	1.9	1.4	1.1
Real interest rate (%)	2.7	2.5	2.4	2.5
Inflation rate (%)	2.8	2.2	2.0	2.0
Nominal return rate of the National Pension Fund (%)	6.1	5.1	4.8	4.9
Fiscal revenues				
Direct taxes on business; taxes on production and imports; capital taxes and transfer receipts; other current receipts (% of GDP)	18.7	18.7	18.7	18.7
Direct taxes on households; social security contributions less NPS contributions (% of GDP)	10.9	10.9	10.9	10.8
NPS contributions (% of GDP)	2.7	2.7	2.7	2.7
Fiscal outlays				
NPS benefits (% of GDP)	2.1	3.3	4.9	6.1
Basic Old-Age Pension benefits (% of GDP)	1.0	1.7	2.0	2.2
Health and long-term care (% of GDP)	5.3	6.9	7.7	8.0
Other expenditures (% of GDP)	25.2	25.2	25.2	25.2

and economic growth slows as a result of rapid population ageing. Under the existing NPS contribution rate of 9%, the National Pension Fund is projected to peak as a share of GDP in 2035. Its decline accelerates as the NPS balance moves into deficit in 2044 (Figure A2.1, Panel A). The deficit will reach 4% of GDP in 2060 when the National Pension Fund is exhausted. The government will incur budget deficits as early as 2029 (Panel B), given growing spending on the Basic Old-age Pension and health and long-term care. Growing deficits would make the government a net debtor by 2040, with net debt rising to 196% of GDP by 2060.

The 2013 NPRI study suggested several proposals to ensure the sustainability of the NPS. For example, one scenario proposed boosting the National Pension Fund to 100% of GDP and keeping it there until 2083, which would require a 16% contribution rate. Such a scenario is shown in Figure A2.1, Panel C; the NPS contribution rate rises by 1 percentage point every year from 2020 to 2026, boosting it from 9% to 16%. The gap in government net financial assets between the two scenarios (the baseline in Panel B and the 16% contribution rate scenario in Panel D) equals the National Pension Fund's assets. However, once the Fund is exhausted in 2060 in the baseline scenario, the gap would be expected to widen because the depletion of the National Pension Fund deprives the government of an opportunity for building up assets through the higher yield on investment.

Raising the NPS contribution rate alone thus will not suffice to stabilise Korea's debt dynamics. The government needs to find other financial sources to cope with the upward pressure on spending for the Basic Old-age Pension and health and long-term care. Moreover, this simulation assumes that the impact of ageing on other public pension plans (civil service, military, and private school teachers) will be dealt with through reforms that go beyond the 2015 changes in the civil service pension. Failure to implement such reforms would further worsen debt dynamics. The potential cost of reunification with North Korea (Annex A1) is another factor that could change Korea's debt dynamics. On the other hand, Korea may be able to reduce spending in some areas, such as education given the falling number of children. Given Korea's rapid population ageing, its prefunding approach – accumulating assets prior to the growth slowdown – is appropriate, but needs to be accelerated. Measures to boost revenues should not be delayed. The longer such measures are put off, the larger the revenue increase necessary to put public finance on a sustainable path.

Figure A2.1. **Population ageing rapidly erodes the government's net financial position**[1]



1. The initial net asset position is calculated as total financial assets less total financial liabilities held by the general government. Given that the authorities have not published data on government financial assets, they are estimated using flow of funds data. Financial liabilities are from the OECD Economic Outlook: Statistics and Projections (database).

Source: National Assembly Budget Office (2012); National Pension Research Institute (2013); Bank of Korea; OECD Economic Outlook: Statistics and Projections (database); OECD calculations.

StatLink *http://dx.doi.org/10.1787/888933739984*

ANNEX A3

Progress in structural reform

This Annex reviews actions taken on recommendations from the 2016 OECD Economic Survey of Korea that are not covered in tables within the main body of the Key Policy Insights chapter. Recommendations that are new in this Survey are listed in the Key Recommendations box and at the end of the thematic chapters.

Recommendations in the previous *Survey*	Action taken since May 2016
Use the new "cost-in, cost-out" system to reduce the regulatory burden based on accurate Regulatory Impact Assessment.	The government is running the "cost-in, cost-out" system, backed by scientific cost-benefit analysis by the Center for Regulatory Studies for improving cost prediction accuracy.
Phase out positive-list regulations.	The "first permission, ex-post regulation" system was announced by the Prime Minister in September 2017. The system allows new products and services to be launched first and regulated later, if necessary.
Focus venture capital on start-ups by facilitating early-stage IPOs in the KOSDAQ and KONEX markets.	The government took measures to revitalise the KOSDAQ market in January 2018, improve the KONEX market in April 2017 and to activate the intermediate recovery of unlisted SMEs and venture businesses in November 2017.
Take further steps to jumpstart the M&A market through regulatory reform.	The government expanded the size of the M&A component in the Growth Ladder Fund in 2017, and is supporting M&As of SMEs by designating investment banks specialised in mid-size companies. Strategic investors are now allowed to participate in special purpose companies established by private equity funds.
Relax barriers to trade and investment to help firms better connect to global innovation networks.	Foreign equity ownership limits in littoral fishing and other service activities incidental to air transport were removed in September 2016 and March 2017, respectively.
Strengthen R&D links between academia, business and government by promoting the mobility of researchers.	Since 2017, the results of university-industry co-operation have been reflected in the evaluation of professors and instructors at universities.
Lower the share of loans to SMEs that are guaranteed by the government and put time limits on their length.	The government is reducing guarantees for long-term SME loans.
Reduce the generosity of SME support to weaken the disincentives for small firms to grow into larger enterprises, thereby increasing their productivity through economies of scale.	The government integrated and eliminated 16 redundant SME programmers run by four ministries in 2016.
Improve the skills of older workers by expanding lifelong learning, focusing on those with weak skills, and base it on the National Competency Standards to ensure its relevance to the labour market.	The government has expanded training for older workers at public training institutes, with seven courses at four campuses in 2017, and will provide specialised courses in 2018.

Thematic chapters

Chapter 1

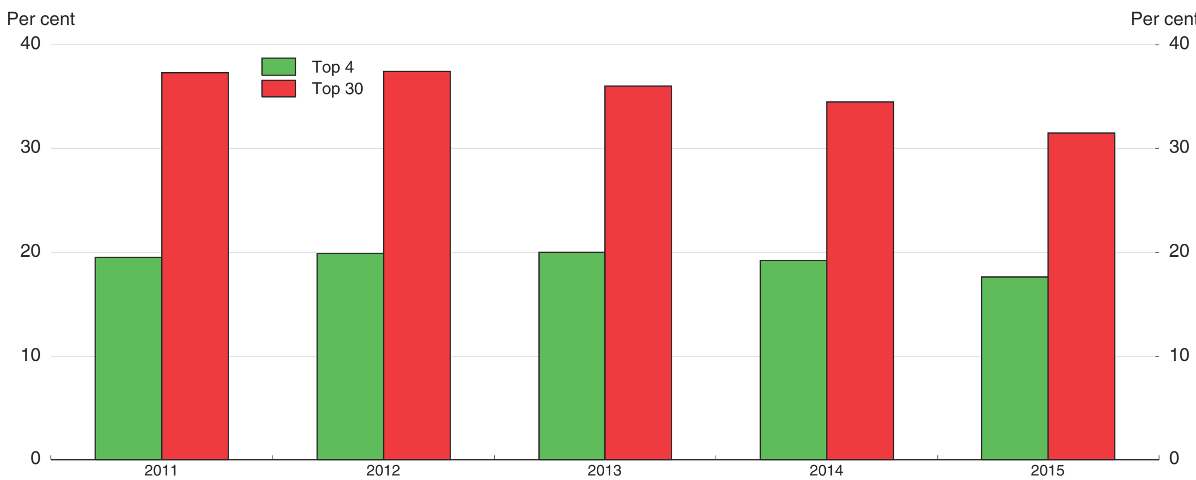
Reforming the large business groups to promote productivity and inclusion in Korea

Large business groups, which played a key role in Korea's economic development, are still dominant today, especially in exporting. The concentration of economic power creates a number of problems and risks. Ensuring a level-playing field between the business groups, also called chaebols, and SMEs and start-ups is essential to promote innovation and inclusive growth. While the business groups have long been subject to a number of special regulations, a comprehensive strategy is needed. The top priority is to improve corporate governance by strengthening the role of outside directors and protecting minority shareholders. A greater say for institutional investors and more active use of private remedies, such as class action suits, would also be beneficial. In addition, strengthening competition by reducing barriers to trade and FDI and activating a market for corporate control would lead to better performance by the groups. The ownership structure of the groups needs to be improved, notably by phasing out circular shareholding among their affiliates.

Korea's large business groups, often referred to as *chaebols*, have played a key role in the country's rapid economic development. They remain leading players, with the top 30 groups accounting for about two-thirds of shipments in Korea's manufacturing and mining sector and a quarter of sales in services. Their share of total national sales has edged down since 2011 as export growth slowed, but is still big at 32% (Figure 1.1). The groups consist of a large number of legally independent firms operating in a wide range of unrelated industries under the direction of owner families, whose control is cemented by equity holdings between the affiliated firms. The largest groups, Samsung, Hyundai Motor, SK and LG, had an average of 70 companies in 2017 and accounted for nearly half of stock market capitalisation.

Figure 1.1. **The share of the large business groups is edging down**

Sales by the large business groups as a share of total national sales



Source: Korea Fair Trade Commission.

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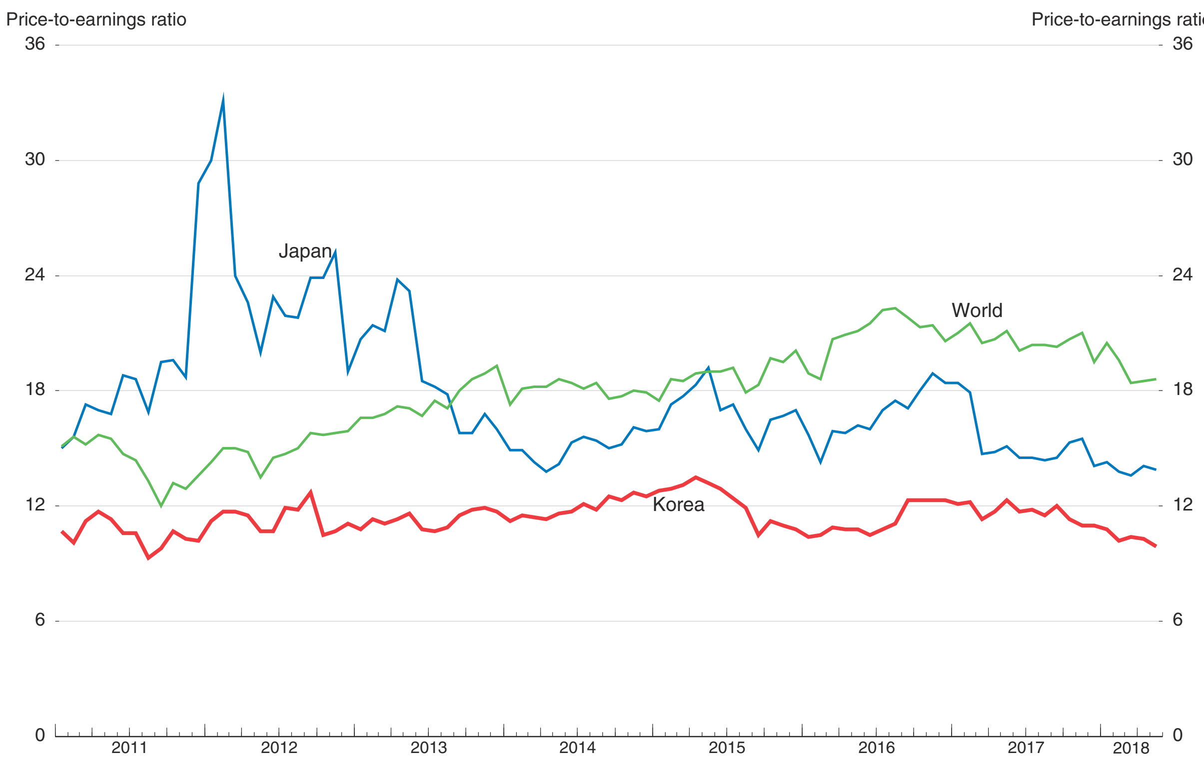
The large groups are leading the current upturn in exports. However, the "trickle-down effect" to the rest of the economy has weakened as they have become increasingly internationalised and have shifted their product mix to more capital and technology-intensive products. The top 30 business groups accounted for only 2.7% of employment in 2017.

Despite their important contributions to Korea's economic development, the powerful role of the large business groups raises a number of concerns. The concentration of economic power may stifle entrepreneurship and the creation of start-ups, and lead to unfair trade practices against independent small and medium-sized enterprises (SMEs). Moreover, the groups' subsidies to weak affiliated firms can hinder competition. The result is a misallocation of resources that has a negative effect on productivity for the national economy and on inclusiveness by reducing opportunities for other firms and potential entrepreneurs. Moreover, weak corporate governance and the concentration of power in the owner families of the groups allow them to manipulate intra-group transactions and financial flows to promote their own interests at the expense of affiliated companies and their shareholders, thereby worsening the distribution of income and wealth. Finally, the links between affiliated firms in the groups create a risk of chain bankruptcies and financial instability.

The problems related to the large business groups are reflected in the low price-earnings ratio of Korean companies in the stock market relative to their global peers (Figure 1.2) – the so-called "Korea discount". During the first half of 2018, the global price earnings ratio was nearly double that in Korea. If weak corporate governance allows owner families to favour their own interests over the profitability of some affiliated companies, it is rational for investors to pay less for their shares.

Figure 1.2. **The price-earnings ratio of Korean firms is relatively low**



Source: Bloomberg.

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The legacy of support and protection provided by past authoritarian governments has led to questions about the legitimacy of the business groups (Jwa, 2002). Much of the public criticism stems from openly egregious practices, such as tax avoidance and the use of presidential pardons to free executives convicted of corruption. The concentration of power and wealth has also led to corruption based on the long-standing ties between the business groups and political leaders, such as the scandal that played a role in the impeachment of Korea's previous president.

Given the problems associated with the large business groups and the traditional model of growth driven by exports by the large business groups, the government aims to shift Korea's economic paradigm to growth led by SMEs and start-ups (Chapter 2). Faced with such problems and risks, President Moon promised in May 2017 to "put chaebol reform at the forefront" of his agenda (The National Interest, 2017).

Unravelling the complex entanglements between firms belonging to the business groups and between government and business to create a new growth paradigm is a tremendous challenge that cannot be achieved quickly. Measures that weaken the competitiveness of the large groups could undermine economic growth in the medium term, making it important to carefully implement reforms. The objective should be to increase productivity and inclusive growth by levelling the playing field between the business groups and other firms, while avoiding policies that penalise success. This chapter begins with an overview of the contributions of the large business groups to Korea's economic development and their role in the 1997 financial crisis, followed by an analysis of their current situation. The problems and risks associated with the business groups are discussed in the third section. The fourth section explains the framework developed during the past 35 years to limit the power of the business groups and make them more efficient. The chapter concludes by proposing directions for reform. Specific recommendations are presented at the end of the chapter.

The historical context: the origins and contributions of the large business groups

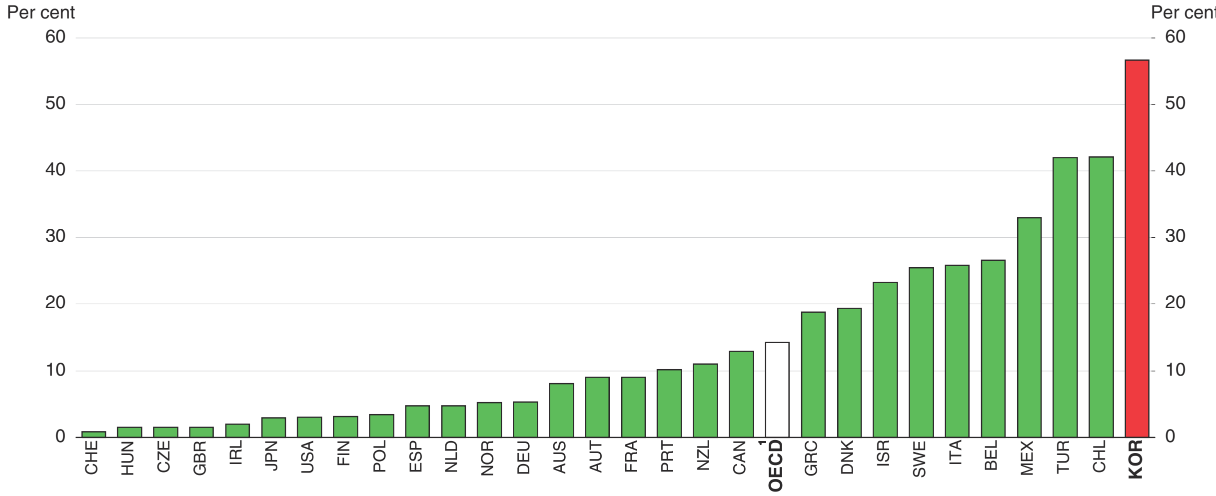
The large business groups played a key role in Korea's development

Business groups are often considered to be detrimental to economic efficiency in advanced economies. The so-called "conglomerate discount" has been found in a number of countries, including the United States and the United Kingdom (Berger and Ofek, 1995). However, in Korea and a number of developing countries, they played a positive role by reducing co-ordination failures and serving as institutional substitutes for imperfect markets for product, capital and labour (Lim and Morck, 2016). The groups' ability to share financial and human resources and technology across affiliated firms contributed to their success. Compared to other countries, the share of business groups in Korea is large: firms affiliated with the groups accounted for 57% of stock market capitalisation in 2010, compared to an average of 14% for 29 OECD countries in the study (Figure 1.3). Business groups also play a major role in Turkey, where they developed due to imperfect markets and government industrial policy (Güven, 2017). Business groups tend to be most prominent in emerging economies, notably in China, Hong Kong, China, India and Chinese Taipei (Bebchuk, 2012).

Korea's development has been described as a "*chaebol*-led industrialisation strategy" (Ahn, 2010). Many of the large business groups, which are often compared to *zaibatsu* and *keiretsu* in Japan (Box 1.1), began as small family enterprises prior to World War II (seven of the top 22 groups in 2000) and during the 1950s (11 groups). Many were led by outstanding entrepreneurs, such as Chung Ju-young (Hyundai) and Lee Byung-chul (Samsung). The government relied on this select group of business leaders to accelerate growth and exploit scale economies (Lim, 2010). In particular, during the Heavy and Chemical Industry drive in the 1970s, the government designated certain industries as priorities, as well as the companies to enter the targeted industries (Amsden, 1989). In addition, it ordered firms to merge or be acquired to implement its five-year development plans (Moon, 2016). Companies affiliated with the groups enjoyed advantages not available to independent firms. The chosen firms were protected from domestic and foreign competition and were

Figure 1.3. **International comparison of business groups' share of stock market capitalisation**

The combined share of firms affiliated with business groups in 2010



1. A simple average of the OECD countries shown in the figure.
Source: Masulis et al. (2011).

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Box 1.1. **A comparison of Korean and Japanese business groups**

Korean business groups are often compared to the pre-war *zaibatsu* in Japan. Indeed, *zaibatsu* is written using the same Chinese characters (財閥) as *chaebol*. As with *chaebols*, *zaibatsu* were characterised by centralised family control and a large number of affiliated companies operating in a wide range of industries. After World War II, the US occupation authorities made a partially successful attempt to disband the *zaibatsu* to promote competition. Shares owned by the parent companies were put up for sale, and individual companies in the *zaibatsu* were freed from the control of parent companies. However, co-operation among firms formerly belonging to the same *zaibatsu* continued.

The pre-war business groups gradually evolved into today's *keiretsu*, which maintain existing business ties between the *zaibatsu* firms. *Keiretsu* share some similarities with Korean business groups, notably interlocking equity ownership among group affiliates. However, the major difference is that while Korean business groups have a family-dominated pyramidal ownership structure, *keiretsu* are characterised by mutual ownership among friendly companies. The different structures emerged from differing financial environments between Korean business groups, which are not allowed to own banks, and the *keiretsu*, which are. Cross-country evidence suggests that family groups with pyramidal structures, which allow them to leverage their internal capital, developed in Korea and other countries as a response to restricted access to external capital (Masulis et al., 2011). Japanese firms, which do not face the same limitations on access to external capital, rely on *keiretsu* as a way to share risks. The structure of Korean business groups lies between the *zaibatsu* and the *keiretsu*.

The organisational differences between Korean and Japanese business groups led to different styles of business operations. *First*, the banks at the centre of *keiretsu* discourage the affiliated firms from diversifying into unrelated industries and instead stress mutual assistance, notably long-term customer-supplier connections (Whitley, 2014). Owning part of a supplier company promoted mutually beneficial relations. *Second*, in the absence of controlling families, *keiretsu* firms rely on professional management based on internal promotion.

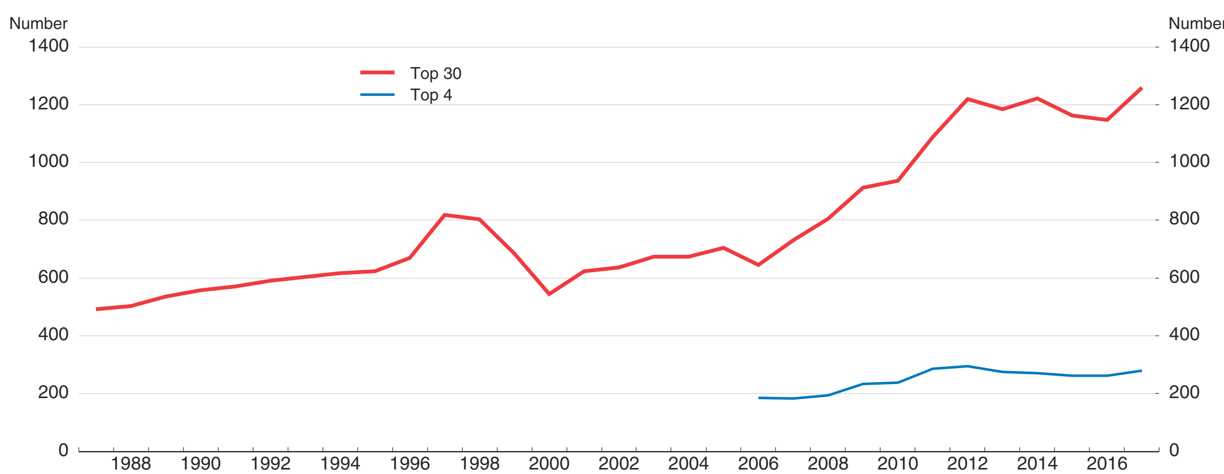
Box 1.1. **A comparison of Korean and Japanese business groups** *(cont.)*

Despite those differences, the business groups in both Japan and Korea rely on intra-group trading, rather than arm's length transactions. Outsiders criticise this approach for limiting competition and hurting minority shareholders. With the development of capital markets and increased international openness, the cost of arm's length transactions has fallen. Consequently, the disadvantages of business groups are beginning to outweigh the advantages. Indeed, there are signs that *keiretsu* are weakening in the face of cost-cutting pressures in a deflationary environment and the increasing openness of the Japanese economy. The changes are most apparent in globalised industries, such as cars.

provided loans at preferential interest rates through the commercial banks, which were state-owned (Kim et al., 2004). Government support and protection went hand-in-hand with government control and guidance.

Sales by the top 30 groups in Korea increased from 31% of GDP in 1975 to 100% in 1985 (Ministry of Strategy and Finance, 2013). The groups also led the export drive that boosted exports from 3% of Korea's GDP in 1960 to 37% in 1981. The number of firms affiliated with the top 30 business groups increased from 493 in 1987 (an average of 16 per group) to 819 (an average of 27) in 1997 (Figure 1.4). Over the period 1970-2000, 40% of the business groups' additional firms were in unrelated industries (Lim and Morck, 2016). The diversification of the groups may result in complex shareholding structures (Figure 1.5) and a sharp rise in economic concentration. However, expansion by business groups into the same markets led to fierce competition between them (Kim et al., 2004). In sum, the business groups were partners with the government in Korea's economic take-off.

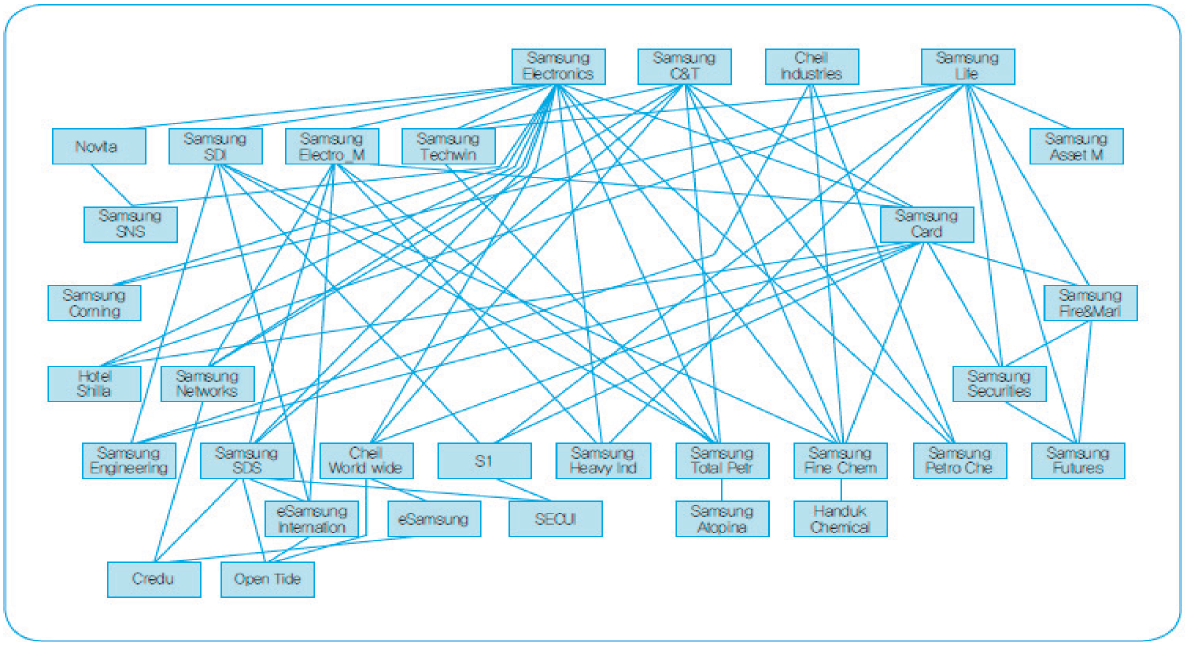
Figure 1.4. **The number of firms affiliated with the top 30 business groups has risen steadily**



Source: Korea Fair Trade Commission.

StatLink http://dx.doi.org/10.1787/888933738939

Figure 1.5. **Intra-group shareholding in the Samsung group in 1997**



Source: Ministry of Strategy and Finance (2013).

The role of the business groups in the 1997 financial crisis

The business groups were a key factor behind the 1997 financial crisis. During thirty years of fast growth, Korea had failed to adequately develop the rules and principles of a market economy (2000 *OECD Economic Survey of Korea*), including an effective corporate governance framework. The weakening of government control and guidance of the business groups, particularly after Korea's "democratisation" in 1987, and the "too big to fail" mentality was an explosive combination. It drove a corporate spending spree prior to the 1997 crisis, as business groups focused more on market share and size than on profitability, while failing to control risks, including those related to exchange rates and interest rates. The ownership structure and conflicts between shareholders contributed to their poor performance (Joh, 2003). By 1997, the average debt-to-equity ratio in the top 30 business groups was 518% while the return on assets was only 0.7%, below the cost of capital (Lim, 2003). Over 1992-96, three-quarters of Korean companies destroyed shareholder value (Kim and Kim, 2008).

The owner families of the large business groups tended to favour debt financing, which enabled them to maintain control. Financial liberalisation in the 1980s and 1990s increased their borrowing opportunities. When the commercial banks were privatised in 1982, the government imposed an 8% ceiling on business groups' ownership of banks to prevent them from becoming an easy source of in-house financing. However, the ownership regulation did not apply to local banks or non-bank financial institutions (NBFIs), such as insurance companies, securities companies, mutual savings and finance companies, and merchant banks. Most NBFIs were founded in the early 1980s, and a majority were under the control of the business groups by the mid-1980s. In particular, the business groups controlled all of the merchant banks and insurance companies and three-quarters of the investment and finance companies (Ministry of Strategy and Finance, 2013), providing "private vaults" that allowed the groups to build empires by taking over other companies or setting up new firms. Government supervision of NBFIs was lax; even basic prudential regulations, such as capital adequacy regulations, were absent prior to 1997. The opening of the capital account created new opportunities for the business groups to increase their leverage and size through overseas borrowing.

By end-1999, 14 of the 30 top business groups in 1997 had gone bankrupt or entered workout programmes. Debt guarantees between firms in the same group led to chain bankruptcies. The number of firms affiliated with the large groups declined by a third over 1997-2000 (Figure 1.4), as the groups closed, merged or sold affiliates to raise cash in the wake of the crisis. The government's decision to allow the collapse of Daewoo, the second-largest group, was intended to end "too big to fail" once and for all (Eichengreen et al., 2015). The crisis resulted in more government involvement in corporate affairs as the authorities organised workouts. Meanwhile, the liberalisation of barriers to imports and foreign direct investment increased competitive pressure on the business groups.

The current role and characteristics of the large business groups

The government has applied a number of rules to the largest business groups (see below). The threshold at which groups are subject to such regulations has varied over time. From 1993 to 2001, regulations were applied to the top 30 groups regardless of their size. Large business groups were officially defined in 2002 as those with total domestic assets of over KRW 2 trillion (USD 1.9 billion) (Table 1.1). The threshold was raised to KRW 5 trillion in 2009 and to KRW 10 trillion (USD 9.3 billion) in 2017. The number of large business groups increased by about half over 2002-16 (43 to 65), even though the threshold for being classified as a large group was 0.3% of GDP in both 2002 and 2016. This suggests that the corporate sector still finds the business group approach to be attractive despite the restrictions and rules imposed on them.

Table 1.1. **Number of large business groups**[1]

Year	Number of large business groups	Criterion: domestic assets (in trillion won)[1]	Domestic asset criterion as a per cent of GDP
2002	43	2.0	0.3
2003	49	2.0	0.2
2004	51	2.0	0.2
2005	55	2.0	0.2
2006	59	2.0	0.2
2007	62	2.0	0.2
2008	79	2.0	0.2
2009	48	5.0	0.4
2010	53	5.0	0.4
2011	55	5.0	0.4
2012	63	5.0	0.3
2013	62	5.0	0.3
2014	63	5.0	0.3
2015	61	5.0	0.3
2016	65	5.0	0.3
2017	31	10.0	0.6

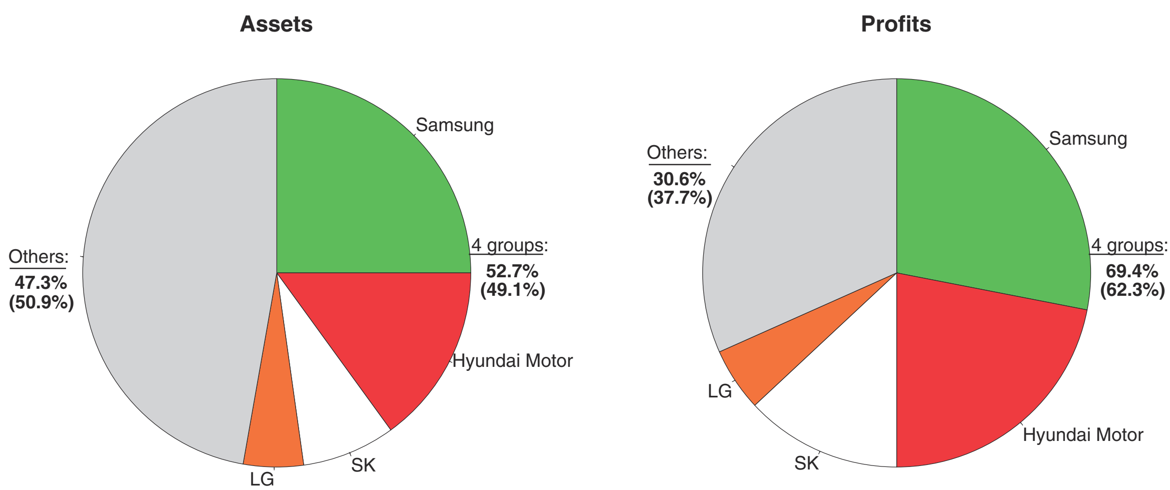
1. The groups that are subject to a special set of regulations, such as the prohibition of cross-shareholding.
Source: Korea Fair Trade Commission.

Exports from the large business groups played the key role in Korea's recoveries from the 1997 Asian financial crisis and the 2008 global recession, aided by a sharp depreciation in the Korean won in both cases. Consequently, the share of the top 30 groups in national sales edged up through 2011. However, the upward trend has since been reversed, with this share falling from 37% to 32% in 2015 (Figure 1.1), reflecting the decline in export volume growth from an annual rate of 11.4% over 2001-11 to 2.6% since 2011. The rising share of services in the economy, where large business groups are less prominent, also puts downward pressure on their share of total national sales. Another factor is the globalisation of the business groups. The share of their production taking place overseas rose from 16.8% in 2009 to 22.1% in 2014 and their domestic employment is falling. Nevertheless, the number of firms affiliated with the top 30 business groups rose in 2017 (Figure 1.4).

As the top four business groups are increasingly powerful, there is strong public demand for government reform measures focusing on them. Together, they accounted for 52.7% of the assets and 69.4% of the profits (Figure 1.6), as well as 54.6% of the sales of the top 30 groups. Their share in each category has risen since 2011. This section looks at the diversification of the business groups, their ownership structure, intra-group transactions, role in the financial sector and profitability.

Figure 1.6. **The largest business groups are increasingly dominant**

The shares of top four business groups as a share of the top 30 groups in 2017 (2011 is shown in parentheses)



Source: Yonhap News, 21 May 2017.

StatLink http://dx.doi.org/10.1787/888933738958

A large number of affiliated firms operating in a diverse range of sectors

The large business groups continue to grow and diversify by adding new firms. The number of affiliates of the top 30 groups nearly doubled over 2006-12, with the groups outside the top four accounting for most of the increase (Figure 1.4). Still, the number of firms affiliated with the top four groups averaged 70 in 2017, compared to 38 for the rest of the groups in the top 30. Most of the affiliates are unlisted. Of the firms belonging to the top 65 business groups, i.e. those that were subject to special regulations, only 14.3% were listed on the stock market in 2016 (Table 1.2). Listed firms are bigger, accounting for two-thirds of sales and capital and 57.9% of assets of the 65 groups.

Table 1.2. **Listed firms play a key role in the large business groups**

Year	Firms in the business group[1]			Listed firms' share of assets, capital and sales[2] (%)		
	Total number	Of which, listed firms	Share of listed firms	Assets	Capital	Sales
2011	1 553	238	15.3	66.2	69.7	74.4
2012	1 832	256	14.0	62.0	65.3	68.5
2013	1 768	255	14.4	57.3	64.7	67.5
2014	1 678	247	14.7	57.0	64.3	67.3
2015	1 696	249	14.7	58.2	65.8	67.5
2016	1 736	248	14.3	57.9	65.6	67.9

1. The number of business groups subject to the restriction on cross-shareholding rose from 55 in 2011 to 65 in 2016 (Table 1.1).
2. As a percentage of the total for the business groups.

Source: Lee and Park (2016).

A high share of inside ownership

The Monopoly Regulation and Fair Trade Act defines a business group as a set of legally independent firms that are under *de facto* centralised control by the "same person" as defined in two presidential decrees: i) a person who "exercises influence on the concerned company's business activities through appointment of directors or in other ways"; and ii) a person who, together with relatives (referred to as the owner families) and affiliated companies, owns 30% or more of the company, and no one else owns more shares (Ministry of Strategy and Finance, 2013).

Through intra-group shareholding and a pyramid structure, the owner family can exert considerably greater control (voting rights) over affiliated companies than their ownership (cash flow rights) implies (Box 1.2). Group strategy is usually overseen by a central planning office answering to the owner family that can override the interests of the shareholders of the affiliated companies. Most business groups also have a centralised R&D centre to promote innovation in the affiliated firms and share human resources. The close relationship between affiliated firms leads to considerable spillovers among them. For example, the announcement of a credit rating change and earnings by one firm in the group influences the valuation of other affiliated firms (Joe and Oh, 2017; Bae et al., 2008).

Box 1.2. **The gap between ownership and control in the business groups**

In the example of a simple business group shown below (Figure 1.7), the owner family holds 25% of the shares of firm A. Firm A holds 40% of the shares of firm B, which in turn holds 25% of firm D. In addition, firm A owns a 25% stake in firm C, which owns a 20% direct stake in firm E. Firm E holds 10% of firm D. Cash flow rights of the owner family in firm D are calculated as the indirect ownership through firms A and B and through firms A, C and E:

- Cash flow rights in firm D through firms A and B = 25% * 40% * 25% = 2.5%
- Cash flow rights in firm D through firms A, C and E = 25% * 25% * 20% * 10% = 0.125%

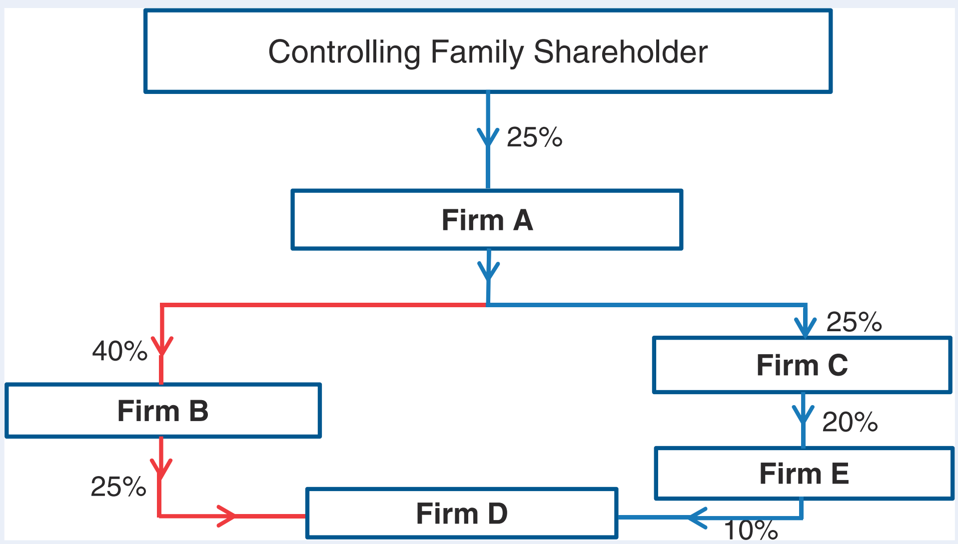
The total indirect ownership, as represented by cash flow rights, is thus 2.625% (2.5% + 0.125%).

The owner family's control is represented by voting rights, which can be measured by its representation on the board of firm D. These rights are measured as the minimum holding of the owner family in the control chain, which is 25% through firms A and B, reflecting the fact that the board of one firm can have a significant effect on the board of another affiliated

Box 1.2. **The gap between ownership and control in the business groups** *(cont.)*

company. The cumulative voting rights in firm D also include the family's 10% indirect stake through firm E. Total voting rights are thus 35%. The gap between control (35%) and ownership (2.625%) in firm D is thus large at 32.375%. The greater the complexity of the business group structure, the greater the gap between control (voting rights) and ownership (cash flow). The greater the gap between control and ownership, the lower is firm profitability as owner families can use their influence for their private benefit, with a negative effect on the firm (Joh, 2003).

Figure 1.7. **Ownership and control in business groups**



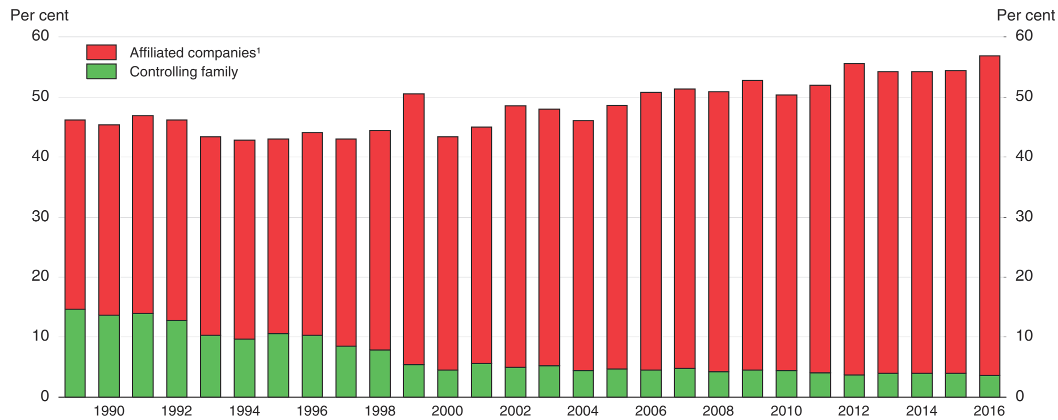
Source: Killeen and Kumar (2016).

Inside ownership – the combined shares of the owner family, affiliated companies and other insiders – is a measure of the controlling power of the owner family of the group. The share of the owner family has been on a downward trend, falling from 16% in 1989 to less than 4% in 2016 for the top 30 groups (Figure 1.8). Owner families typically hold a significant portion of shares in only one or two core firms in the group, usually those with reliable cash flow and high market value. The fall in the share held by the owner families has been more than offset by a rise in the share of affiliated firms from 31% to 51% over the same period. The inside ownership share was much higher in unlisted firms (80%) than in listed firms (48%) in 2015 (Lee and Park, 2016).

The owner-family share is particularly small in the top four groups, falling to only 2.0% in 2017 (Table 1.3). However, they maintained control through the share held by companies affiliated with the group.

Figure 1.8. **Inside ownership has been trending up**

Inside ownership is the share of business groups held by the controlling family and affiliated companies



1. Includes other inside owners, who accounted for 2-3% over 2011-16.

Source: Korea Fair Trade Commission.

StatLink http://dx.doi.org/10.1787/888933738977

Table 1.3. **Inside ownership is high in Korea's large business groups**

Percentage of ownership in 2017 held by:

	Family head	Other relatives	Affiliated companies	Other insiders	Total
Top four groups	0.9	1.1	48.6	1.9	52.5
Middle groups (5th-10th)	0.9	2.3	60.2	3.1	66.5
Lower groups (11th-30th)	3.7	3.0	43.4	4.9	55.0

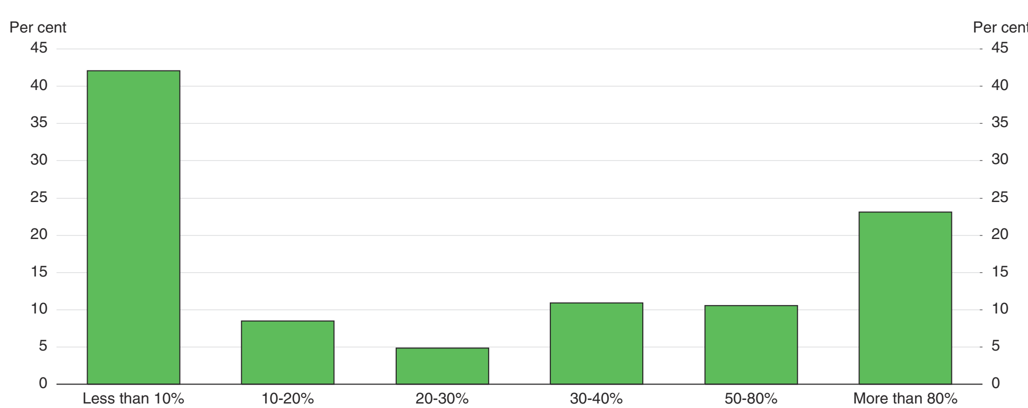
Source: Korea Fair Trade Commission.

A high share of trading within the large business groups

A significant share of the firms affiliated with the business groups trades extensively with sister companies in the same group. In 2015, trading within the group account exceeded 80% of sales for 23% of firms belonging to a business group and between 30% and 80% for another 20% of group-affiliated firms (Figure 1.9). However, intra-group trade accounted for less than 10% of sales at 42% of firms affiliated with the groups.

Figure 1.9. **Intra-group trading is substantial for many firms in the large business groups**

Percentage of affiliated companies by share of intra-group trading in total sales in 2015[1]



1. For the 1 736 firms affiliated with the top 65 business groups. Intra-group trading is defined as the share of a firm's purchases and sales with firms affiliated with the same business group as a share of their total purchases and sales.

Source: Lee and Park (2016).

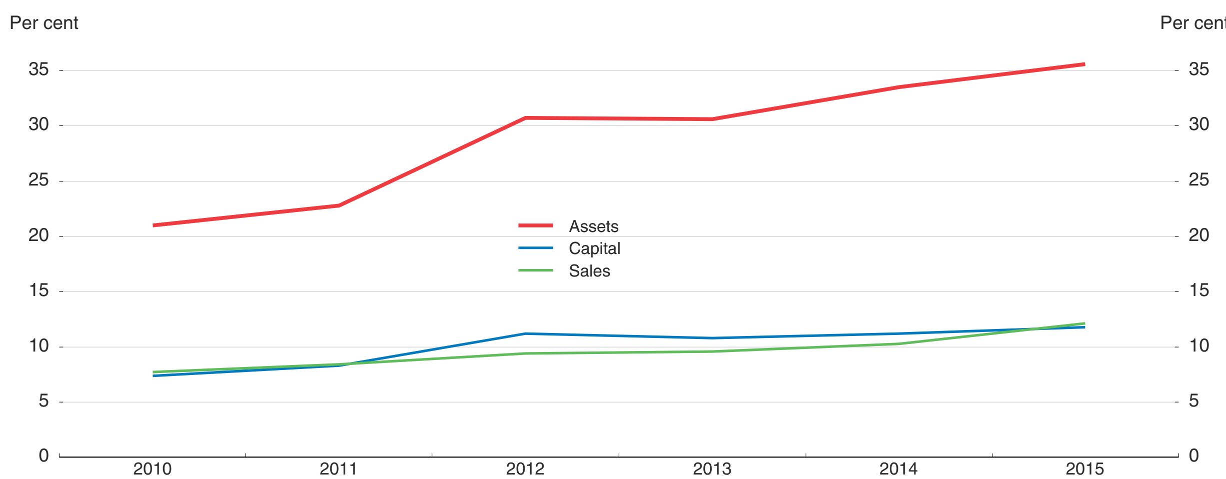
StatLink http://dx.doi.org/10.1787/888933738996

An increasing role for the large business groups in the financial sector

The number and size of financial firms affiliated with the large business groups has been rising. Financial firms' share of assets in the groups increased from 21% in 2010 to 36% in 2015, though the expansion in capital is much less (Figure 1.10). Financial affiliates can be used to assist troubled affiliates. One well-known example occurred in the Dongyang group. When non-financial firms in the group ran into financial trouble in 2013, Dongyang Securities sold commercial paper and corporate bonds issued by those firms to outside investors. When the non-financial companies went bankrupt and their commercial paper and corporate bonds became worthless, as many as 50 000 investors protested, arguing that Dongyang Securities had not provided full information. A guideline aimed at preventing such cases is to be introduced in 2018.

Figure 1.10. **The share of financial firms in the large business groups has risen**

Share of assets, capital and sales of financial firms affiliated with the business groups[1]



1. For the 1 736 firms affiliated with the top 65 business groups (*i.e.* those that are subject to the restriction on cross-shareholding).
Source: Lee and Park (2016).

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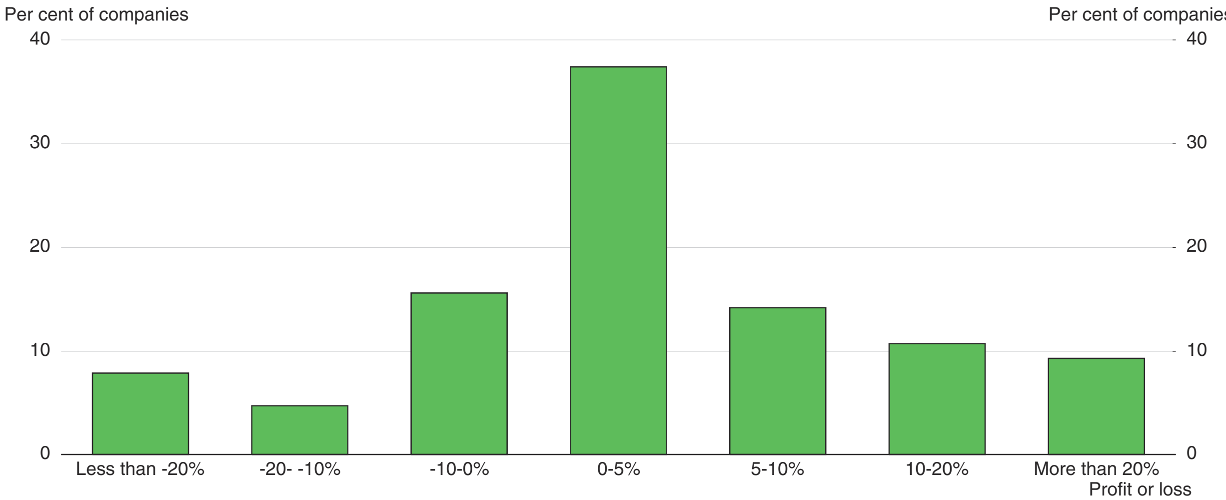
Mixed profitability results

There is considerable diversity in the profitability of the firms affiliated with the large business groups. While one-fifth of firms had profit ratios of at least 10% of sales in 2015, 28% recorded a loss (Figure 1.11). The largest share of firms had profits of less than 5% of sales. Overall, profitable business groups accounted for 89% of total sales by the groups (Lee and Park, 2016). Strong profitability has allowed the groups to accumulate cash. Between 2010 and 2014, the cash reserves of the top 30 groups rose by more than 50%, from KRW 330 trillion to KRW 500 trillion (33.6% of GDP), while their fixed investment increased by only KRW 2 trillion (Hyung-A Kim, 2017). The significant rise in cash reserves amid sluggish investment spending raises concern that the success of the groups is not effectively trickling down to the rest of the economy in the form of investment and employment.

Figure 1.11. **There is a wide variation in the profitability of firms affiliated with the groups**

Percentage of companies by profit or loss as a share of sales in 2015[1]



1. For the 1 736 firms affiliated with the top 65 business groups (*i.e.* those that are subject to the restriction on cross-shareholding).

Source: Lee and Park (2016).

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The problems and risks associated with the large business groups

Korea's rapid economic development has weakened the rationale for the large business groups. The legacy of the partnership between government and the groups, which proved successful in accelerating economic development, has impeded the transition to a full-fledged market economy. As noted above, business groups have served as substitutes for imperfect markets. As emerging economies have improved their economic institutions, the role of large business groups in many emerging economies has been reduced (Hoskisson et al., 2005). However, in Korea, large business groups continue to play a dominant role. One of the major complaints against the business groups is that their diversification into a wide range of business lines stifles the growth of SMEs and the creation of new firms, resulting in a narrow base on which to build Korea's economic future (Chapter 2). This section discusses three aspects of the concentration of economic power: i) the dominance of the business groups in the national economy and in certain business lines, which can reduce competition and efficiency; ii) the concentration of economic power in the owner families; and iii) the link between power concentration and corruption.

Growth of the business groups through diversification

The large business groups are often criticised for "octopus-style" diversification (Ministry of Strategy and Finance, 2013). Affiliates of the 65 top business groups operated in 59.5% of the 1 131 business lines in 2015 (Table 1.4). The average number of business lines tended to be highest for the largest business groups. Despite extensive diversification, the main business activity of each business group accounted for 55.8% of the group's total sales.

In principle, the entry of new firms strengthens competition, thereby boosting productivity (OECD, 2015a). From the perspective of business groups, diversification may be rational, as it creates opportunities for economies of scope, reduces the risk of bankruptcy, lowers transaction costs and facilitates the use of idle resources. Another motivation is to compete with other business groups (Park et al., 2008). Diversification into unrelated

Table 1.4. **Diversification of the business groups**

In 2016 for the 65 business groups that were subject to special regulations

Ranking	Average number of industries[1]	Average number of products in mining and manufacturing[2]	Percentage of sales in the group's main industry[3]
1 to 5	83.2	61.0	61.3
6 to 10	100.4	92.3	51.5
11 to 15	59.6	38.3	43.1
16 to 20	78.8	35.7	47.1
21 to 25	33.0	29.3	69.4
26 to 30	34.4	7.3	54.7
31 to 65	26.9	17.1	63.6
Simple average	59.5	40.1	55.8

1. Number of industries that the business groups participate in among the total of 1 131 industries in the manufacturing, mining and service sectors, based on unit 5 of the Korea Standard Industrial Classification (KSIC).
2. Based on unit 8 of the KSIC.
3. Based on unit 2 of the KSIC.

Source: Data provided by Jaehyung Lee.

industries increased the advantages of using the business group structure by creating economies of scope and reducing risk, according to some studies (Kim et al., 2004). However, the creation of new firms can be used to increase the wealth of the owner families and provide tax-free inheritances to the children and grandchildren of the founder, leading to the misallocation of capital and greater inequality. The benefits of diversification in emerging economies may dissipate over time and eventually become a disadvantage (Lee et al., 2008). A recent study by a public research institute found that the slowdown in Korea's allocative efficiency since 2011, which is a major cause of slower total factor productivity growth, is primarily observed among affiliates of the large business groups (Cho, 2018). A decline in allocative efficiency, measured by the covariance between firms' productivity and market share, indicates that resources are being excessively allocated to low-productivity firms, while the opposite is true for high-productivity firms. One reason is that the rate of firm exit among firms affiliated with the large business groups is relatively low.

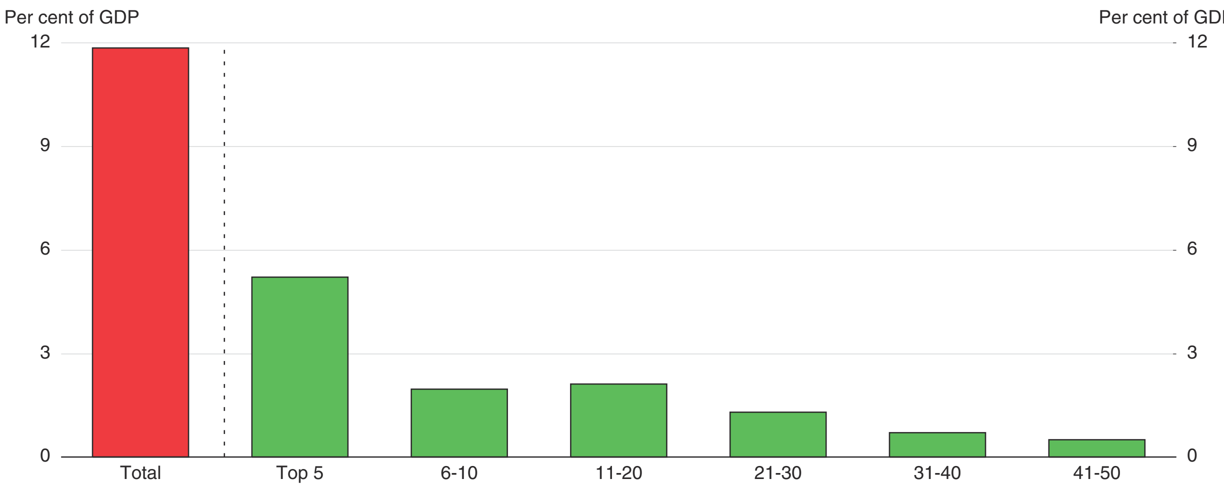
Market concentration by the business groups

As noted above, sales by the top 30 groups accounted for 32% of total national sales in 2015 (Figure 1.1). Although data on the value-added produced by the business groups is not available, the 50 largest companies in Korea – of which 49 belong to the business groups – accounted for nearly 12% of GDP in 2013, with the top ten accounting for more than 7% (Figure 1.12). They include Korea's largest electronic firms (Samsung Electronics and SK Hynix) and car producers (Hyundai Motors and its affiliate, Kia Motors). Of the ten largest firms, seven belong to the four largest business groups.

In business lines where the groups had at least one affiliate among the top three in terms of market share, the average market share of the top three firms was 52%, compared to 44% in business lines where firms affiliated with the groups were not among the top three. A business group affiliate held the largest market share in 24.8% of the 1 131 total business lines in the manufacturing and service sectors in 2015 (Table 1.5). These business lines accounted for 53.3% of all industry sales, with a markedly higher share of sales in manufacturing (69.7%) than in services (46.8%), suggesting some degree of market power, especially in manufacturing. However, most of these firms are multinationals engaged in fierce international competition for market share and facing foreign firms in Korea's increasingly open domestic market.

Figure 1.12. **The value added of the top 50 companies**

Value added as a percentage of GDP in 2013



Source: Kim (2015).

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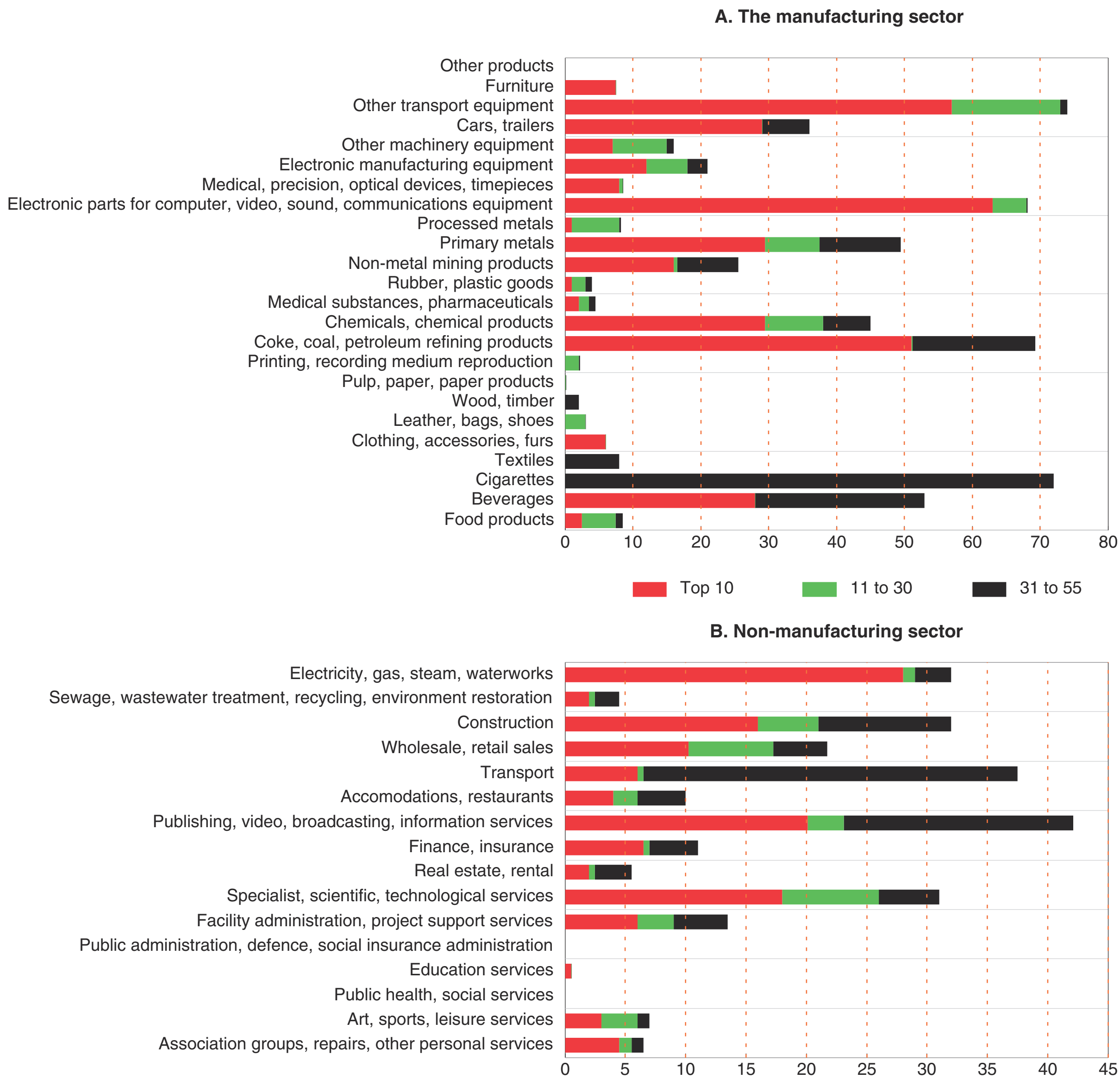
Dividing the manufacturing sector into 24 industries shows that the top 55 business groups (those subject to the restriction on cross-shareholding) in 2011 had a combined market share of more than 50% in six key industries: beverages, cigarettes, coke/coal/petroleum refining products, primary metals, other transport equipment and electronic parts, computers, video/sound/communications equipment (Figure 1.13). Their overall strong role in manufacturing reflects the government's emphasis on developing export industries. However, in more than half of the 24 manufacturing industries, the business groups' combined market share was less than 10%. Outside manufacturing, the groups play a smaller role. Only 28% of their sales are in services, where they face restrictions in some industries (e.g. banking), while some industries are primarily in the public sphere (e.g. education and health). In addition, there are restrictions on the entry of group-affiliated firms into some business lines to protect SMEs (see below). While the market share of the groups did not exceed 50% in any of the 16 service industries, it did surpass 30% in five: broadcasting and publishing, transport, construction, utilities and technical services (Panel B).

Table 1.5. **The market position of firms affiliated with the large business groups in 2015**

A business group affiliate ranks:		1st	2nd or 3rd	Other	Total
All industries	Number of industries (%)	24.8	10.9	64.3	100.0
	Sales (%)	53.3	10.2	36.5	100.0
Manufacturing	Number of industries (%)	24.7	8.6	66.7	100.0
	Sales (%)	69.7	7.4	22.9	100.0
Services	Number of industries (%)	24.9	12.5	62.6	100.0
	Sales (%)	46.8	11.3	41.9	100.0

Note: The study covers 1 131 industries based on the Korea Standard Industrial Classification (KSIC).
Source: Data provided by Jaehyung Lee.

Figure 1.13. **The market shares of the business groups by industry**[1]



1. In 2011 for the 55 large business groups subject to the restriction on cross-shareholding.
Source: Lee (2014).

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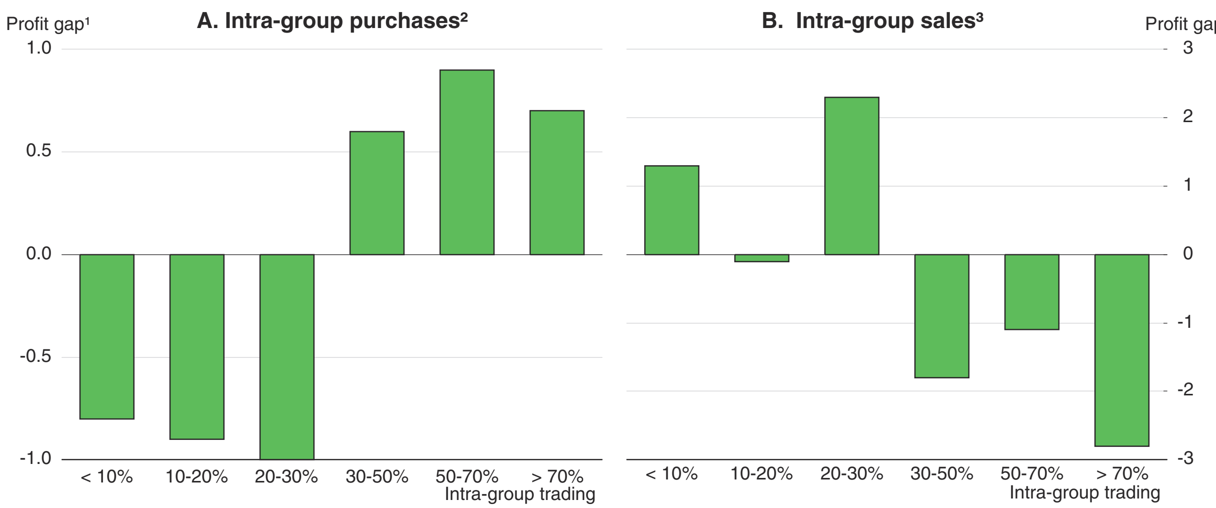
The concentration of management control

The major problem with the business groups is not their size, but the concentration of management control in the owner families. The gap between the owner family's share of ownership of the group and the total inside ownership share – 50.5 percentage points in the case of the top four groups (Table 1.3) – distorts the ownership structure and creates an agency problem between the controlling shareholder and minority shareholders (Box 1.2). Owner families can thus control firms in which they have few or no shares. The larger the gap between cash flow rights and voting rights, the greater the incentive for the owner family to pursue personal interests rather than maximise shareholder value (Byun et al., 2018). There is considerable empirical evidence linking large gaps in voting rights and cash flow rights with poor shareholder returns (Black et al., 2006). The agency problem resulting from the gap between cash flow rights and voting rights is the major reason for the undervaluation of equity prices, the so-called Korea discount (Figure 1.2) (Killeen and Kumar, 2016).

Owner families use a pyramidal structure in business groups to facilitate transfers of wealth between affiliated firms for their personal benefit, a practice referred to as "tunnelling". Intra-group transactions are used to take wealth away from firms where owner family ownership is low to firms where it is high, benefitting the owner families at the expense of smaller investors (Bae et al., 2002). Such transfers are accomplished through intra-group transactions of goods and services at prices that differ from market levels in order to favour key affiliated firms in which the owner families are large shareholders. The average profit rate in firms in which intra-group purchases accounted for more than 30% of their total purchases in 2015 was higher than the overall profit rate in the business group to which they belong (Figure 1.14). However, when a firm's intra-group sales surpassed 30% of their total sales, its average profit rate fell below that of the group. Support can also be provided to affiliated firms through financial and asset transactions, such as selling land at inflated prices.

Figure 1.14. **Company profitability is influenced by intra-group trading**

The profit gap[1] in group-affiliated firms, classified by intra-group trading shares in 2015



1. The profit rate in individual firms minus the profit rate in the business group to which they belong. A positive number thus means that a firm is more profitable than the business group.
2. The share of a firm's purchases from firms affiliated with the same business group as a share of their total purchases.
3. The share of a firm's sales to firms affiliated with the same business group as a share of their total sales.

Source: Lee and Park (2016).

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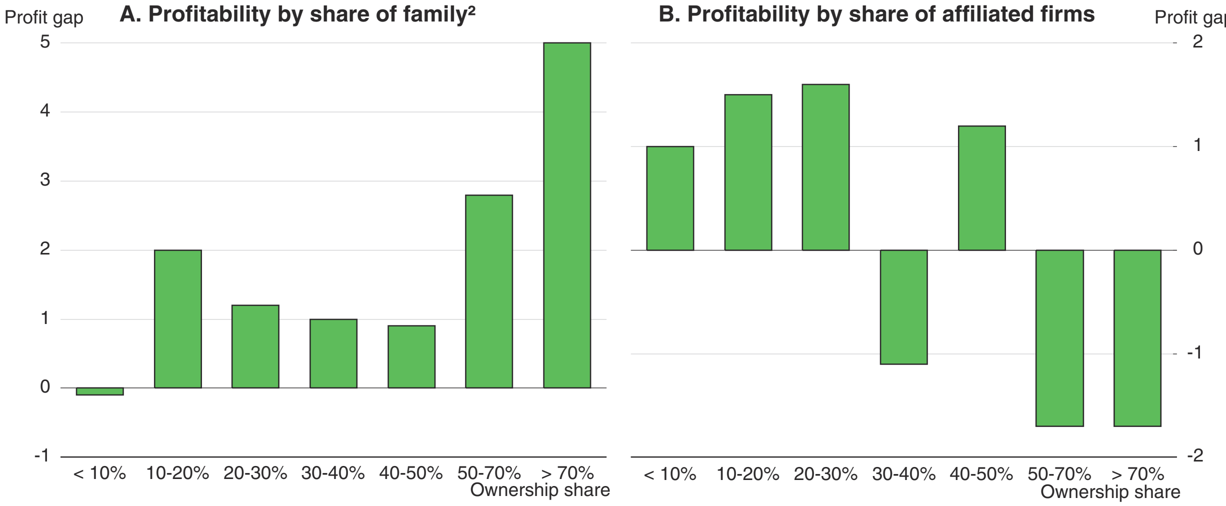
Firms in which the owner families have high ownership stakes have high rates of intra-group trading and a large profit margin, suggesting that the owner families are seeking personal gains through internal trading (Lee and Park, 2016). In 2015, firms in which the controlling shareholder and his children had an ownership share of more than 70% had profit rates 5 percentage points higher than the overall profit rate for the business group (Figure 1.15). In contrast, the profit rate in firms in which the controlling shareholder and his children owned less than 10% was slightly below the group's profit rate. High rates of ownership by affiliated companies had a negative effect on a firm's profits: if that share was above 50%, the firm's profit rate was significantly below the profit rate for the group.

Figure 1.15. **Company profitability is influenced by the structure of ownership**

The profit gap[1] between group-affiliated firms, classified by ownership shares in 2015



1. The profit rate in individual firms minus the profit rate in the business group to which they belong. A positive number thus means that a firm is more profitable than the business group.
2. The chief of the business group and children.

Source: Lee and Park (2016).

StatLink http://dx.doi.org/10.1787/888933738825

One motivation for tunnelling is to transfer wealth to children and avoid the 50% inheritance tax. For example, the heir apparent for leadership at one large group realised extraordinarily high returns by investing in group companies that subsequently won major contracts with other firms affiliated with the group. In another case, the advertising and marketing firm in one of the large groups reaped 47% of its earnings via intra-group trading in 2011. A child of the group chairman held a 40% stake in the company. Such strategies come at the expense of minority shareholders. In addition, shareholders can be disappropriated by M&As designed to restructure the groups and pass control to the next generation (Killeen and Kumar, 2016).

In addition to its impact on income distribution, intra-group trading can promote inefficiency by shielding affiliated firms from the chill winds of competition. Moreover, the option of borrowing from affiliated financial institutions saves them from having to compete with other firms for funding (Lim, 2013). Such support can reduce productivity growth by keeping inefficient firms alive and deterring the entry of more efficient competitors. More than 10% of Korea's capital stock in 2013 was sunk in non-viable ("zombie") firms, defined as those more than ten years old with an interest coverage ratio of less than one for more than three consecutive years (Adalet McGowan et al., 2017).

Unfair treatment of subcontractors

Concerns about the concentration of economic power include unequal trading relationships between large firms and their subcontractors. Large firms have been accused of making easy profits by cutting costs through unfair terms of trade with subcontractors, rather than focusing on innovation to create new demand (Lee, 2017). In practice, subcontracting is a method for two firms to share risks. For subcontractors, the arrangement provides a steady market and eliminates the need for marketing (Yun, 1999). The sales and total assets of subcontracting firms have been found to increase in line with the large enterprises that they supply. However, an increase in the large firm's profits by KRW 1 trillion (USD 926 million) leaves the subcontractors' profits virtually unchanged. This suggests that the profits of subcontractors are fixed, while large firms that bear the risk take the increase in profits (Chang and Woo, 2015).

Political problems related to the business groups

The concentration of economic power has strengthened the political influence of business leaders, resulting in corruption (Eichengreen et al., 2015). Korea's government-business co-operation has also generated a culture of rent-seeking that is difficult to overcome (Jwa, 2002). Many politicians have relied on political and financial support from the business groups. Korea's democratisation in 1987 increased the power of the big business groups by introducing competitive elections, without limits on firms' financial contributions to politicians. When politicians tried to control the business groups, they became powerful adversaries. As the conglomerates grew richer, their influence expanded to the judicial system and the media. Newspapers are financially supported by advertising revenue from the business groups, making journalists hesitant to investigate or criticise corporate malfeasance. Meanwhile, the groups have ingratiated themselves with the judiciary by dangling future employment opportunities in front of judges and lawyers (Financial Times, 17 September 2017). The new government pledged that the "collusive link between politics and business" will completely disappear and promised to end the use of presidential pardons for corrupt executives (Korea.net, 2017).

Evolution of the policy framework to control the business groups

The fifth five-year development plan (1982-86) emphasised market-based competition and corporate governance, reflecting concern about the rapid growth of the business groups, and its impact on lagging sectors of the economy. The 1980 Monopoly Regulation and Fair Trade Act stated that one of its objectives was to "prevent excessive economic power concentration". In 1987, four measures were added to Chapter 3 of the Act on "Suppression of Economic Power Concentration": i) prohibition on establishing holding companies; ii) prohibition of cross-shareholding; iii) a ceiling on the total amount of equity investment; and iv) restrictions on the voting rights of financial and insurance companies belonging to business groups (Table 1.6). The rules were enforced by the Korea Fair Trade Commission (KFTC). However, sustained economic growth through 1997 reduced the urgency of reform of the business groups. Moreover, the large business groups had become well entrenched.

The 1997 crisis sparked reforms to enhance transparency and accountability. Still, the government has found it difficult to limit the role of the business groups while pursuing other objectives, namely: i) the promotion of business investment and economic growth; ii) the facilitation of corporate restructuring; iii) the promotion of international competitiveness; and iv) the protection of the property rights of incumbent owners. Three of the four anti-concentration measures introduced in 1987 were abolished or relaxed after the 1997 crisis (Ministry of Strategy and Finance, 2013), despite the business groups' key role in triggering the crisis. In addition, not all policies that were implemented achieved their objectives, as the groups have been adept at outmanoeuvring government regulations and frustrating their effectiveness. In particular, the groups have circumvented the ban on cross-shareholding by increasing circular shareholding (in its simplest form, firm A holds shares in firm B, firm B holds shares in firm C and firm C owns shares in firm A). This section provides an overview of the key measures imposed on the business groups.

Table 1.6. **Key regulations imposed on the large business groups**

Type of regulation	Date imposed
Prohibition of cross-shareholding	April 1987
Restriction on the voting rights of affiliated financial and insurance companies[1]	April 1987
Prohibition on the creation of holding companies[2]	April 1987
Ceiling on the total amount of equity investment by firms in business groups[3]	April 1987
Specialisation policy to encourage greater focus on core activities	1991
Prohibition of debt guarantees	April 1993
"Big Deals" – swaps of the groups' firms in eight key industries	July 1998
Requirement to disclose large-scale intra-group transactions[4]	April 2000
Requirement to disclose important matters related to non-listed companies	April 2005
Requirement to disclose business group's status	June 2009
Restriction on the pursuit of personal interests	February 2014
Prohibition of new circular shareholding	July 2014

1. It was relaxed in 2002, when they were allowed to vote on important matters in the general meeting of stockholders, though their voting rights could not exceed 30% of the gross number of stock issues. The limit was lowered to 15% in 2008.
2. A company is defined as a holding company if its only or main business is to hold the stocks of other firms and control their business. The ban was lifted in 1999 and a number of groups have adopted a holding company structure, which led to a large rise in the voting rights of the owner families. The holding company must own 20% of listed firms and 40% of non-listed firms.
3. Aimed at curbing reckless expansion, the ceiling was initially set at 40% and lowered to 25% in 1994. It was raised to 40% in 2007 and then abolished in 2009. It was re-established in 2011 and then abolished again in 2012.
4. Business groups must disclose large-scale intra-group transactions in advance and they must be approved by the board of directors.

Source: Korea Fair Trade Commission.

Policies to promote specialisation by the large business groups

The government introduced a "specialisation policy" in 1991 to limit the diversification of the business groups by inducing them to concentrate on core activities. The top five groups were encouraged to pick three core businesses, while the smaller groups could choose two. The groups were exempted from regulations, such as limits on investment, in their core activities. This policy, though, was generally ignored by the groups, who correctly viewed it as interference in their affairs and continued to expand the number of their affiliated firms. This was followed by the 1998 "Big Deals", in which the government strongly urged the largest groups to swap affiliates in eight key industries to make the groups more focused on core areas (1999 *OECD Economic Survey of Korea*). To the extent that these policies were effective, they limited competition and protected incumbent firms.

Policies to protect SMEs and promote co-operation with large firms

Beginning in 1979, the "SME-only Industry Designation System" prohibited large companies from participating in or entering certain industries identified as most appropriate for SMEs. However, to promote economic development, the government decided to abolish the system in 2006. In 2010, the Korea Commission for Corporate Partnership (KCCP) was established by large firms and SMEs to promote win-win growth between large firms and SMEs and to protect SME business areas. The KCCP is a private, non-profit organisation funded by the large business groups, the government and SMEs. The KCCP includes a president and less than 30 board members, including executives from large firms and SMEs, and experts from academia and research institutes.

The KCCP's fundamental objective is to create "a new business ecosystem" based on "synergic partnership and co-operation" and "shared values and mutual growth between conglomerates and SMEs" (Korea Commission for Corporate Partnership, 2016) (Box 1.3). The

Box 1.3. **Korea Commission for Corporate Partnership policies to promote shared growth**

As part of its efforts to create a new business ecosystem, the KCCP established "a Shared Growth Working Committee" to develop models for each sector. In addition, the KCCP, together with the KFTC, produces a "Shared Growth Index", often referred to as the Win-Win Index. In 2016, the Win-Win Index graded 155 large companies that have deep ties with SMEs, based on two components. *First*, the KFTC provided a quantitative assessment of large firms' fairness in contracting with SMEs and their co-operation with SMEs. *Second*, the KCCP surveys more than 12 000 SMEs concerning the behaviour of the 155 large companies in three areas (Table 1.7):

- Their fairness in contracting arrangements with SMEs (a maximum of 40 points).
- Their co-operation with SMEs, including large firms' financial contributions to SMEs through the KCCP (a maximum of 30 points). The funds provided by the large firms are aimed at helping SMEs increase R&D, develop their labour force, raise their productivity and enter overseas markets.

Table 1.7. **Evolution of the Shared Growth Index**

The performance of large companies by type of co-operation with SMEs and sector[1]

A. The index by category					
	2013	2014	2015	2016	Change over 2013-16[2]
Trading relationship with SMEs	87.8	88.4	88.8	87.5	-0.3
Degree of co-operation with SMEs	52.6	57.1	60.4	58.5	5.9
Management system	74.4	77.3	77.9	75.2	0.8
Total	75.9	79.4	82.3	80.3	4.4

B. The index by industry					
	2013	2014	2015	2016	Change over 2013-16[2]
Manufacturing	77.1	79.5	82.3	79.0	1.9
Foodstuffs	70.8	76.0	79.1	79.8	9.0
Construction	75.0	79.1	80.9	82.7	7.7
Wholesale and retail	70.7	77.6	80.2	79.3	8.6
Home shopping	72.7	71.5	78.9	80.5	1.6
Department stores	74.1	79.2	79.2	79.9	5.8
Telecommunications[3]	85.8	90.6	97.8	93.8	8.0
Total	75.9	79.4	82.3	80.3	4.4

1. The number of large firms in the index increased from 100 in 2013 to 155 in 2016.
2. The change in the score in percentage points.
3. Telecommunications in 2013 is calculated as the weighted average of the communication and information service sectors.

Source: Korea Commission for Corporate Partnership.

- Their attitude towards SMEs, including their management environment, recognition and understanding of SMEs, approach to expansion and shared vision (a maximum of 30 points).

The 155 firms are rated as excellent, good, satisfactory and unsatisfactory. Public enterprises are also evaluated but the results are not made public. The government gives benefits to firms with high rankings, such as exemptions from KFTC investigations of violations of competition law, priority in receiving government contracts and expedited immigration procedures for their executives. Moreover, highly-ranked firms receive positive publicity. Given the impact of the ranking, 78 large firms have created specific offices to deal with the Win-Win Index.

Box 1.3. **Korea Commission for Corporate Partnership policies to promote shared growth** *(cont.)*

The improvement in the Index since 2013 is due to higher scores in the "Degree of co-operation with SMEs" category, which reflects financial contributions to SMEs through the KCCP (Table 1.7). Other aspects of their performance (sub-contracting behaviour and attitude toward SMEs) showed little change. By sector, the largest improvements were in foodstuffs, wholesale and retail and telecommunications, while little change occurred in manufacturing.

KCCP has designated about 100 business lines for SMEs in both manufacturing and services, such as restaurants, bakeries and car repair, based on agreement between SMEs and large firms (2016 *OECD Economic Survey of Korea*). The KCCP recommends that large firms not enter the designated business areas for three years, and this can be extended for another three years. If large firms are already operating in the designated areas, they are to refrain from increasing output, facilities and market share (OECD, 2017a). The KCCP monitors compliance twice a year and announces the results. If large firms violate the agreement, the KCCP issues correction recommendations.

Over 2004-14, SMEs increased their share of value-added in light industry (77.9% to 84.6%) and in heavy industry (39.4% to 41.3%). However, it is doubtful whether three to six years of restrictions on entry or expansion by large firms will significantly narrow the productivity gap between SMEs and large companies. Indeed, SME labour productivity fell from 55.0% of that in large firms in 1980 to 32.5% in 2014. However, preventing the entry of large firms in important markets, many in services, and restricting their expansion in markets where they are already operating reduces aggregate productivity and consumer welfare. Rather than reducing their domestic opportunities, the government should make the domestic market attractive for all firms (2014 *OECD Economic Survey of Korea*). Removing excessive regulation on all firms, including those affiliated with the business groups, would strengthen competition and boost productivity in SMEs and the service sector (Chapter 2).

The ban on cross-shareholding and debt guarantees

Financial links between affiliated companies in business groups though shareholding and debt guarantees can exaggerate business cycle fluctuations and create financial instability through chain bankruptcies. Although groups sometimes grow through the acquisition of existing firms, it is common for firms in a business group to acquire a large portion of the stocks issued by newly created companies. Cross-shareholding between two companies in the same group has thus been prohibited since 1987. This might be better described as a ban on "reciprocal equity investment" in which two firms in the same group own shares in each other.

However, the impact of the prohibition on cross-shareholding has been undermined by the sharp increase in circular shareholding. Cross-shareholding and circular shareholding allow owner families to control more affiliated companies by creating "fictitious capital" that enables them to secure more shares with voting rights that exceed the amount of their capital. When a business group expands by having its member companies acquire stocks of a member-to-be company, the capital is fictional in the sense that it exists only in accounting books, with no corresponding funds brought into the group. Although the business group's total amount of capital appears to increase, the additional capital cancels each other out in the consolidated balance sheet of the business group. Moreover, the fictional capital would be erased if the two companies were merged. In sum, the rule against cross-shareholding led to a more complicated and less transparent form of intra-group shareholding.

In addition, cross-shareholding and circular shareholding help the second and third generations of the owner family to inherit management rights without bearing additional financial costs, and impedes the restructuring of insolvent companies by providing unfair support to them. In sum, the expansion of a business group through the cross-shareholding and circular-shareholding undermine the transparency of the governance structure by creating a complicated shareholding structure. This less transparent ownership structure makes it difficult to identify where the capital comes from and where it goes, while increasing the possibility that a crisis in a specific company may be capable of triggering the collapse of an entire business group.

The growth of the business groups in the 1970s and 1980s was fuelled by the ability of their affiliated companies to borrow more and on better terms than other enterprises. Part of this advantage was based on debt guarantees from sister companies that reduced the risk to lenders. The Limitation on Debt Guarantees was enacted in 1993. It was reinforced in 1998 to prohibit any firm in a business group from giving debt guarantees to affiliated firms, with a few exceptions, such as for finance and insurance companies and to promote international competitiveness. This regulation has achieved visible results in reducing debt ratios and systemic risks (Ministry of Strategy and Finance, 2013). Moreover, it has reduced the disadvantage to firms not belonging to business groups, particularly SMEs.

Restrictions on intra-group support and pursuit of personal interest

The Monopoly Regulation and Fair Trade Act prohibits unfair support between affiliated companies if it undermines fair competition in the market. For example, trading goods and services at prices that are not offered to other entities is not allowed. The business groups are required to regularly submit details of trade between affiliates to the KFTC and to make a public notice in the stock market if the firms engaged in trading are listed. The amendment of the Commercial Act in 2012 strengthened board procedures concerning intra-group trading and required listed companies with assets of over KRW 500 billion (USD 463 million) to appoint "compliance officers" to ensure that they observe the law on intra-group trading (OECD, 2017b).

The competition law was amended in 2014 to restrict the pursuit of personal interests by large shareholders in the business groups, even if such actions do not undermine fair competition in the market. It applies when a firm in a group provides support to an affiliated company in which the owner family owns at least 30% in the case of listed firms and at least 20% if it is unlisted. The rule covers all actions that result in unfair gains for owner families, including: i) funding support; ii) providing assets or commodities; iii) provision of human resources; and iv) unfair trading. Monitoring by the KFTC was enhanced by these measures. In addition, intra-group transactions can also be subject to gift taxes.

Despite the new rule, internal trading by 91 companies controlled by owner families increased 26% over 2014-16 (Nikkei Asian Review, 2017). To expand the coverage of the law, the government is considering cutting the ownership threshold on listed firms from 30% to 20%, which would be helpful. In addition, a new organisation to handle intra-group trading is to be set up within the KFTC. However, the business groups have evaded such regulations, for example by lowering the shareholding ratio of the owner families in their affiliates. Moreover, they can increase trading with offshore affiliates in order to avoid regulations on intra-group deals, given the difficulty of monitoring international transactions.

Restrictions on the voting rights of insurance and financial companies in the business groups

In 1986, financial and insurance companies belonging to the large business groups were prohibited from exercising their voting rights in the stocks of affiliated companies in which they owned shares. The regulation was aimed at preventing the business groups from expanding their control of non-financial companies by increasing the shares held by their affiliated finance and insurance companies. However, the business groups complained that the regulation left them vulnerable to hostile takeovers by foreign investors. The regulation was virtually eliminated in 2002 to allow financial and insurance affiliates to exercise their voting rights on critical matters in general meetings up to a ceiling of 30%. This increased the control of owner families and allowed business groups to expand via their financial or insurance companies (Ministry of Strategy and Finance, 2013). The limit on exercising voting rights was lowered to 15% in 2008.

Policy directions to reform the business groups

The scandal involving a large business group and former President Park Geun-hye raised doubts over the effectiveness of the framework created over the past 35 years to deal with the groups and increased support for reform (Lee, 2017). Reform should not aim at destroying the groups but instead to create a framework in which competitive firms grow, regardless of whether they belong to a business group, and shareholder rights are respected. The restructuring of business groups should not be delayed over short-term concerns about employment and output. For example, the decision by a consortium of creditors, led by the state-owned Korea Development Bank, in September 2017 to support highly-indebted Kumho Tires (a member of the Kumho-Asiana business group) sends the wrong signal to the business groups.

Regulation is a second-best approach to control the entrenched power of the large business groups as it can weaken economic dynamism. Moreover, its effectiveness can be limited due to the ability of the business group to evade regulation. As noted above, the prohibition on cross-shareholding has been undermined by other types of intra-group shareholding, while regulation of intra-group transactions is difficult to enforce. Moreover, a regulatory approach cannot anticipate new types of harmful actions taken by the business groups. Once such actions occur, it takes time for the authorities to analyse the economic effects and to implement corrective measures. In addition, regulations can prevent actions by the business groups that would have been beneficial. Finally, some of the regulations aimed at the large business groups, which are often intended to help SMEs, can have a negative impact on the economy as a whole (Jung, 2016).

Given the inherent weaknesses of relying on regulation, it should be supplemented by a comprehensive approach to improve the business groups. *First*, strengthening competition – international and domestic – would force business groups to become more efficient in order to survive. Stronger competition should include a more active market for corporate control and measures to address unfair subcontracting practices by the business groups. *Second*, Korea needs a framework that enhances internal and external monitoring of the business groups, including improved corporate governance and a larger role for institutional investors. *Third*, greater use of private remedies, such as class action and derivative suits, is needed to protect the rights of minority shareholders. *Fourth*, the ownership structure of the groups should be improved, which is the approach taken in Israel (Box 1.4).

Box 1.4. **Israel's approach to dealing with large business groups**

Business groups in Israel are defined as three or more firms operating in at least two different lines of business under the control of the same entity. Most groups are holding companies that own shares in listed subsidiaries that in turn have their own subsidiaries, with some pyramids having as many seven levels. The use of pyramidal structures has allowed a limited number of business groups to control a large proportion of the Israeli economy (OECD, 2016a). In 2012, 24 business groups controlled about a quarter of the nearly 600 listed companies. The top ten groups accounted for 41.3% of total stock market capitalisation, compared to 46.8% for the top four groups in Korea in 2017 (Bebchuk, 2012). In addition, many combined financial and non-financial enterprises.

The gap between the voting rights of the controlling entities and their cash flow rights, which were often very small, created problems as in Korea. Consequently, the incentives for those in control were not well aligned with shareholders. Those controlling the pyramids could fully capture private benefits, for example by tunnelling resources through intra-group trading, while bearing only a small fraction of the negative effects on cash flow rights. While Israel has rules with respect to interested party transactions, it is not possible for such rules to address all the ways in which private benefits can be extracted by those in control. In addition, the large role of business groups limited competition, thereby driving up the price of basic goods. In the face of protests, the government established a committee that proposed reforms that were incorporated in a new Law for Promotion of Competition and Reduction of Concentration, which was passed by the Parliament in 2013.

Under the new law, the groups were given four years to flatten the pyramids to no more than three levels (not counting the controlling group). The groups could meet this intermediate requirement by selling their holdings, going private, merging, etc. The deadline prompted many transactions as groups that failed to meet the 10 December 2017 deadline faced force sales by a trustee. According to a government study, only 13 groups had more than three levels by September 2017 compared to 67 in 2010. The large number of transactions reportedly created significant opportunities for new players (Herzog, 2017). This law is a significant change from the previous approach aimed at neutralising the negative effects of concentration, such as improving corporate governance. At the same time, corporate governance is to be upgraded by introducing the election of outside directors by minority shareholders and allowing the audit committees to supervise interested party transactions.

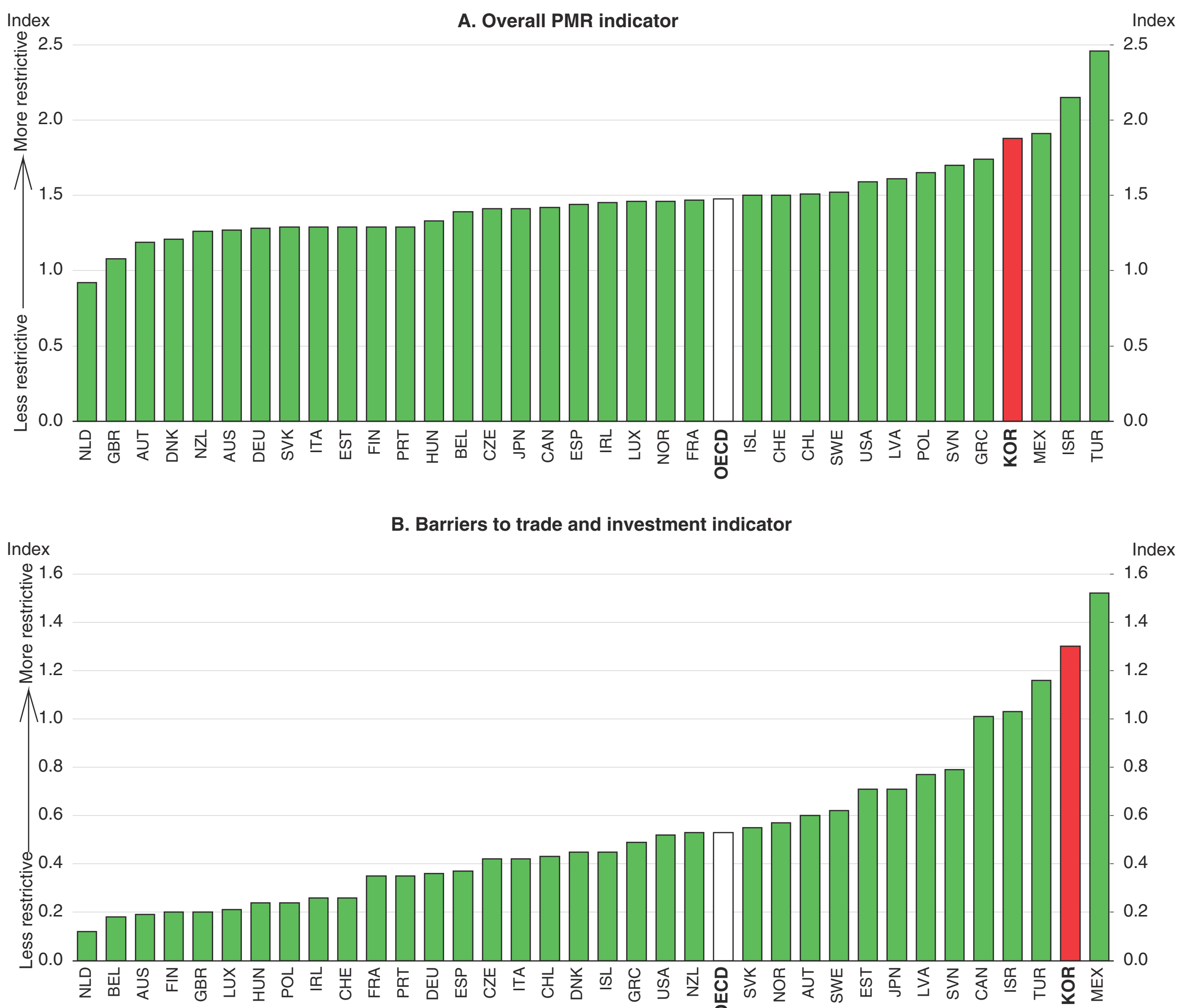
The Concentration Law requires that groups shed another layer of subsidiaries by December 2019, leaving them with just two. In addition, a ban on large companies holding both financial and non-financial enterprises takes effect in December 2019. The number of transactions remains high as the groups prepare to comply with the new rules.

Strengthening competition

Among firms affiliated with business groups, the gap between the cash flow rights and voting rights of the owner family is smaller for those operating in competitive markets (Byun et al., 2018). Product market competition is thus an important disciplinary mechanism that reduces the concentration of economic power by limiting the ability of owner families to pursue the private benefits of control. The positive effect of competitive markets on the ownership structure of a firm is stronger the weaker the firm's market power. Given the weakness of corporate governance in Korea (see below), product market competition is a valuable tool to discipline owner families. Moreover, it encourages them to improve corporate governance practices to promote the survival of affiliated firms.

To strengthen competition, product market liberalisation is a priority. Korea's score in the most recent OECD indicator of product market regulation (PMR) was the fourth most stringent in the OECD (Figure 1.16). The pace of regulatory reform in Korea has failed to keep up with the OECD area since 2008, when Korea's PMR was the sixth most stringent. The rise in the total number of regulations through 2013 was centred on services; the number applied in the service sector was more than four times higher than in manufacturing (Park et al., 2014).

Figure 1.16. **Korea has scope to liberalise product market regulation and barriers to trade and investment**



Note: The indicators are for 2013. The OECD indicators of product market regulation are a comprehensive and internationally-comparable set of indicators that measure the degree to which policies promote or inhibit competition. Empirical research shows that the indicators have a robust link to performance. The indicator, which ranges from zero (most relaxed) to four (most stringent), is available for 33 OECD countries. The overall indicator is based on more than 700 questions.
Source: OECD Product Market Regulation Statistics (database); Koske et al. (2015).

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Lowering barriers to international trade and investment fortifies competition, as firms that cannot compete in the global market downsize, while those that can, expand production. Although Korea has pursued trade liberalisation through a number of free trade agreements, its index of barriers to trade and investment was the second highest in the OECD area in 2013 (Panel B). Such barriers help to explain why the stock of FDI as a share of GDP in Korea was the second lowest in the OECD area at 13% in 2016.

The strength of competition also depends on the enforcement of the Monopoly Regulation and Fair Trade Act by the KFTC. Competition policy has been emphasised, with the KFTC budget rising by 46% since 2010 and the number of actions taken against cartels and economic power concentration rising (Table 1.8). The KFTC has aggressively enforced laws related to cartels (Yun et al., 2016) and individuals can be punished for cartel activity with fines of up to KRW 200 million or, in principle, with three years in prison. In addition, penalty surcharges are often imposed. Raising the penalties for cartel behaviour may promote competition. The increase in the penalty on repeat offenders from a maximum of 50% of the basic levy to a maximum of 80% in 2017 is a step in the right direction. In addition, allowing class action suits (see below) against cartel activity could reduce illegal behaviour.

Table 1.8. **The number of cases handled by the Korea Fair Trade Commission**

Number of cases with an outcome tougher than a warning[1]

	2011	2012	2013	2014	2015
Abuse of market dominance	0	1	0	0	4
Mergers and acquisitions	21	37	21	39	24
Economic power concentration	7	7	15	20	46
Cartels	45	30	33	61	70
Prohibited act of enterprise organisations	51	18	21	20	26
Unfair business practice[2]	138	77	38	30	36
Total	262	170	128	170	206

1. For violations of the Monopoly Regulation and Fair Trade Act.
2. Includes unfair international contracts and resale price maintenance.
Source: Korea Fair Trade Commission.

A market for corporate control

Strengthening competition should include activating the market for corporate control. Takeovers – or the threat of them – are an external control mechanism that can lead to improved firm performance, better corporate governance and the departure of incompetent managers. The market for corporate control in Korea is not active and successful hostile takeovers are still extremely rare (Byun et al., 2018). Moreover, there has never been one involving foreign investors. Even while deploring the concentration of economic power, public opinion in Korea has viewed business groups as "national treasures" that must be protected from foreign investors (Ministry of Strategy and Finance, 2013). Business groups have lobbied for protection from takeovers, for example by arguing that their affiliated financial and insurance companies should be able to exercise voting rights (Lim, 2013).

The rule prohibiting foreigners from acquiring stocks of a company without the consent of the board of directors was abolished in 1998. However, given the inside ownership share of over 50% on average in the business groups, hostile bids are not a viable option to acquire control of firms affiliated with the groups. The misalignment of control and ownership, together with legal and socio-political impediments, have protected firms in business groups from hostile takeovers. Business groups are seeking protection of their managerial rights through such measures as poison pills, which would allow existing shareholders to buy new shares at below-market prices when faced with hostile M&A bids. Multiple voting rights for certain shares, such as those held by the owner families, would allow them to maintain control over management despite their small stakes. Multiple voting rights were proposed by the government in 2008, but ultimately rejected on the grounds that they would enhance owner families' control over the business groups. Measures to protect incumbent management should be carefully balanced with the goal of activating the market for corporate control.

Preventing unfair subcontracting practices

KFTC monitoring of subcontracting relationships has resulted in around 1 000 actions stronger than a warning in most years. In 2013, Korea introduced the possibility of treble damages against firms that violate subcontracting laws. However, in practice, treble damages have never been imposed, as small firms hesitate to rupture their relationship with large firms. The Fair Transactions in Subcontracting Act recently introduced a system that rewards informants who provide evidence against companies suspected of violating the Act. The underlying problem is the monopsony power of large firms, suggesting that subcontractors need to find more buyers to boost their bargaining position. In Japan, the internationalisation of supplying firms has eased problems with unfair subcontracting relationships.

Improving corporate governance

Good corporate governance is not an end in itself. Instead, it is a means to create an environment of market confidence and business integrity that supports capital market development and corporate access to equity capital for productive long-term investments. The quality of a country's corporate governance framework is therefore of decisive importance for the competitiveness of its business sector and economic efficiency (OECD, 2017b).

The core problem in Korea's corporate governance is the control of the owner families, despite their low ownership share, over group-affiliated firms and their shareholders. The weakness of minority shareholder rights magnifies the impact of the misalignment of ownership and control. As noted above, important decisions tend to be made by the owner family, rather than by the firms' CEO, who is responsible to the shareholders. To reduce the problems created by the gap between ownership and control, Korea needs an incentive and monitoring system to ensure that the CEOs work in the interest of their shareholders rather than the owner families of the business groups. The regulatory framework discussed above has not been able to achieve that objective, making it essential to improve corporate governance (Box 1.5).

The Asian Corporate Governance Association ranked the improvement in Korea's corporate governance over 2010-16 as the largest among the 11 Asian economies studied (Table 1.9). However, there is still scope for improvement, as Korea remained in eighth place in 2016, ahead of China but behind India. In particular, Korea's corporate governance culture ranked low compared to the other economies (Panel B). Even as a rising number of Korean firms grow into world-class companies, their corporate governance lags behind best practices. Reforms should focus on strengthening boards of directors, limiting the power of CEOs and protecting the rights of minority shareholders.

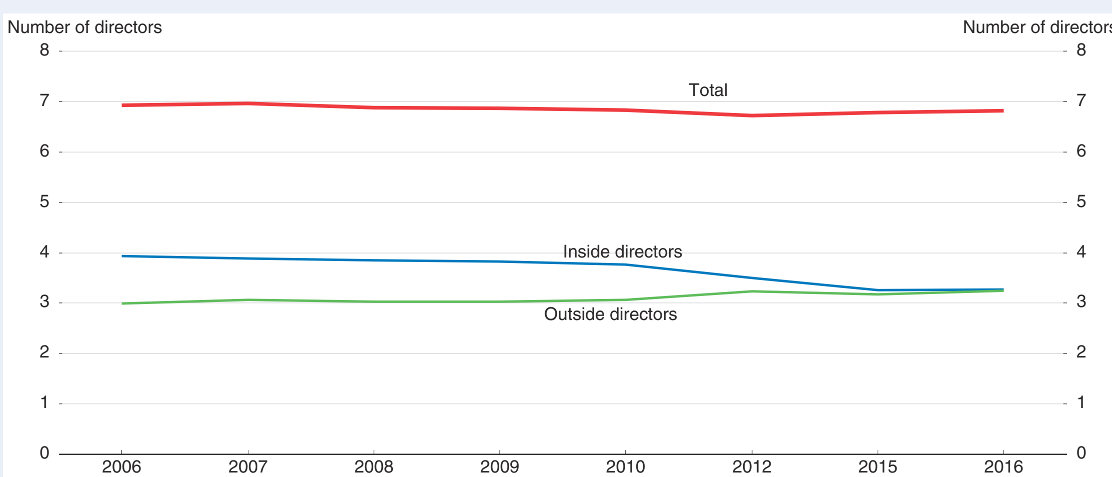
Box 1.5. **Korea's corporate governance framework**

Korea had no effective system of corporate governance prior to the 1997 crisis. Most firms were family controlled and run. Their corporate boards, which were required by law to "monitor" management, consisted primarily of management. Corporate governance was unable to prevent business groups from pursuing growth and market share at the expense of profitability and shareholder value. Minority shareholders had few rights. They were required to own 5% of the company to bring a lawsuit against the firm or to examine corporate accounts (Kim and Lee, 2012).

The "Memorandum of the Economic Programme" with the IMF in 1997 stated that "The government recognises the need to improve corporate governance and the corporate structure". Given the role of the business groups in causing the 1997 crisis, measures to improve corporate governance focused on the groups. Reform emphasised improving the accountability and transparency of management through both internal and external monitoring mechanisms. The improvement in corporate governance has been largest among newly-privatised companies and financial institutions with large foreign ownership shares. However, firms affiliated with the business groups have resisted change. In fact, there has been a backlash by some of the business groups against reforms (Kim and Kim, 2008).

Internal mechanisms focused on empowering the board of directors as a way to protect minority shareholders. In 1998, all listed companies were required to appoint at least one outside director, comprising at least a quarter of the board, on the grounds that outside directors would be better at monitoring companies than inside directors. In 1999, the share was raised to at least half of the total directors, effective in 2001, in firms with more than KRW 2 trillion (USD 1.9 billion) in assets (around 100 firms at the time). Companies above the asset threshold experienced significant share price increases even before the new rule went into effect (Black et al., 2006). In 2004, the requirement was changed from at least half to a majority of the board. By 2016, outside directors accounted for 48% of the boards of firms affiliated with the business groups. This was accomplished primarily by reducing the number of inside directors, leaving boards relatively small at an average of less than seven directors (Figure 1.17).

Figure 1.17. **The share and number of outside directors is rising gradually**[1]



1. In firms affiliated with the large business groups.
Source: Economic Reform Research Institute (2017).

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Outside directors must meet independence criteria, which essentially require being independent from the company in terms of ownership, kinship, employment and business relations during the preceding two years. The largest shareholder and his family or those with a share of more than 10% are not eligible to serve as

Box 1.5. **Korea's corporate governance framework** *(cont.)*

outside directors. In addition, companies with over KRW 2 trillion in assets must create a committee to recommend candidates for outside directors, so as to limit the controlling shareholders' influence on the appointments. More than half of the members of that committee must be outside directors. Outside directors accounted for 59.2% of total directors of companies listed on Korea Stock Exchange with over KRW 2 trillion in assets and 36.6% for listed companies below that threshold in 2017.

Audit committees were introduced in 2000 to replace internal statutory auditors, and made mandatory for firms with more than KRW 2 trillion in assets. This also increased the number of outside directors, as the committee had to have at least three members, of whom two-thirds were outside directors. Since 2004, at least one member of the committee has to be "financially literate". Appointments to audit committees tend to increase a firm's stock price, particularly when the director is independent and financially literate. However, firms that replace a member of the committee are typically viewed as opportunistic, resulting in a decline in their stock price (Choi et al., 2014).

Reforms have also aimed to protect minority shareholders, in part by reducing the number of shares necessary to initiate the removal of a director and inspect corporate accounts. In 1997, the Commercial Law was amended to require board members to put the company's interests above their own. Class action suits related to securities, which require a minimum of 50 shareholders whose aggregate equity in the company is 0.01%, have been allowed since 2005 in certain cases, such as damages arising from false disclosure and claims against auditors of financial records. Such suits are also allowed in the case of unfair securities practices, including insider trading and market manipulation (Lee, 2015). In 1998, the Commercial Act was amended to reduce the ownership threshold required for a derivative suit, which increased minority shareholders' rights. In addition, the required aggregate equity to file a derivative suit for shareholders in non-listed companies was also reduced from 5% to 1% of shares. As for listed companies, the ownership requirement has remained unchanged since 1998: shareholders must maintain 0.01% of aggregate equity of the company for a minimum of six months. Private enforcement was credible enough in enforcing director liability that it resulted in a surge in purchases of liability insurance by directors. In 1999, a cumulative voting system was introduced, which would allow shareholders with less than 3% of shares to elect a director. However, the system is not mandatory and most companies have changed their charters to prohibit cumulative voting.

External monitoring was also upgraded, based in part on strengthened disclosure requirements. Key external monitors in Korea include non-governmental organisations (NGOs) and foreign shareholding groups, which increased in importance after the lifting of the ceiling on foreign shareholding in 1999. Foreign investors have introduced the notion of shareholder capitalism (Kim and Lee, 2012) and have launched hostile takeovers bids, though none have been successful (Kim and Kim, 2008).

Upgrading corporate boards by strengthening outside directors

Most outside directors are appointed by the firms' management and the owner families of the business groups – the very people that they are supposed to supervise. In addition, 40% of listed firms had three or more members of owner families on the board in 2012 (CLSA and ACGA, 2012), making it difficult for outside directors to prevent actions against the interests of minority shareholders. Moreover, the CEO in most Korean firms is also the chair of the board of directors. Outside directors rarely vote against management proposals. Of 9 101 agenda items proposed to directors of 100 large Korean firms over 2010-12, there were only 33 instances (0.4% of the total) in which at least one outside director cast a dissenting vote (broadly defined to include conditional consent) (Kim and Lee, 2015). Other studies report a similar proportion (Chun, 2017). These results cast doubt on the independence and effectiveness of outside directors. Some business leaders argue that it is a foreign concept that does not fit well in Korea's corporate culture (OECD, 2017b).

Table 1.9. **The quality of corporate governance in Korea does not compare favourably in Asia**

A. Overall score[1]

	2010	2012	2014	2016
1.Singapore	67	69	64	67
2.Hong Kong, China	65	66	65	65
3.Japan	57	55	60	63
4.Taiwan	55	53	56	60
5.Thailand	55	58	58	58
6. Malaysia	52	55	58	56
7. India	49	51	54	55
8. Korea	**45**	**49**	**49**	**52**
9. China	49	45	45	43
10. Philippines	37	41	40	38
11. Indonesia	40	37	39	36
Average	52	53	53	54

B. Corporate governance performance by category in 2016[1]

	Total	Rules and practices	Enforcement	Political and regulatory	Accounting and auditing	Culture
1.Singapore	67	63	63	67	87	55
2.Hong Kong, China	65	63	69	69	70	53
3.Japan	63	51	63	69	75	58
4.Taiwan	60	54	54	64	77	50
5.Thailand	58	64	51	45	77	50
6. Malaysia	56	54	54	48	82	42
7. India	55	59	51	56	58	49
8. Korea	**52**	**48**	**50**	**53**	**70**	**41**
9. China	43	38	40	36	67	34
10. Philippines	38	35	19	41	65	33
11. Indonesia	36	35	21	38	58	32
Average	54	51	49	53	71	45

1. Based on 95 questions. Australia, which was included in the study as a benchmark, had a score of 78 in 2016, higher than the 11 Asian economies shown.

Source: CLSA and Asian Corporate Governance Association (various years).

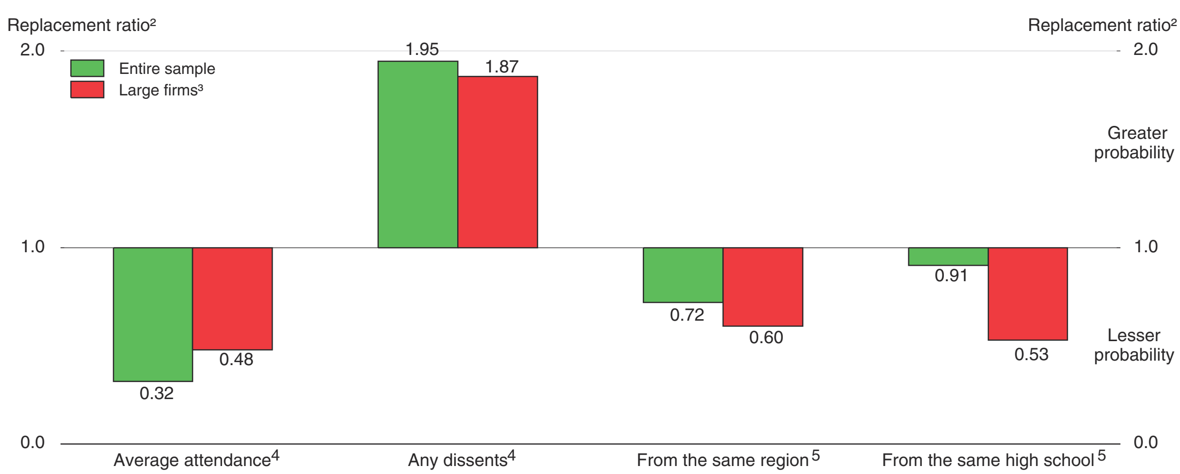
Around a quarter of outside directors have a personal connection with the CEO, defined as coming from the same region or high school. Regional rivalries, which reflect conflicts between ancient kingdoms, are particularly strong in Korea. For example, following the 1997 financial crisis, a survey of firms in the Seoul capital regions found that workers from a certain region faced a higher rate of layoffs despite little difference in their qualifications (Kang and Lee, 2007). Outside directors with a personal connection to the CEO are less likely to dissent and have a lower attendance rate at board meetings, particularly when there are other "friendly" outside directors to support the CEO. This suggests that outside directors with a connection to the CEO are more willing to abandon their fiduciary duties and leave decisions to inside directors, who are typically from the company management or an affiliated company (Kim and Lee, 2015). Moreover, most outside directors tend to be passive to avoid being labelled as "trouble makers", and losing their value in the market for outside directors (Song, 2008).

A recent study categorised firms by the personal connections of their outside directors to the CEO and the turnover of CEOs. In companies where personal connections ranked in the top quartile, the probability of the CEO being replaced is not affected by the firm's performance relative to other firms. For boards where the personal connections were in the bottom quartile, the CEO of a poorly-performing firm is eight times more likely to be replaced than the CEO of a company where personal connections were in the top quartile. In firms where an outside director made at least one dissenting vote, the CEO of a poorly-performing firm is five times more likely to be dismissed (Lee, 2016). CEOs and the controlling owner families limit monitoring by nominating outside directors with whom they have personal connections, thus reducing their effectiveness.

Moreover, outside directors who cast dissenting votes are nearly twice as likely to be replaced than those who never oppose agenda items (Figure 1.18). However, the tenure of outside directors also depends on their links to the CEO. The probability of outside directors from the same region as the CEO being dismissed, regardless of their voting record, is 60% of that for other outside directors in large firms. For those from the same high school, the probability of replacement is only half of those from different schools. Finally, CEOs minimise the impact of outside directors by addressing sensitive issues when there is a vacancy among them (Kim and Lee, 2015).

Figure 1.18. **Factors influencing the probability of outside directors being replaced**

Top 100 non-financial firms over 2010-12[1]



1. For which information on their outside directors' attendance and voting records by item is available.
2. The "replacement ratio" is the conditional probability of an outside director being replaced in the next term. A ratio above (below) 1.0 means that the probability of replacement is higher (lower) than for the entire sample. For example, a value of 2.0 means that the probability of replacement is two times higher than for the entire sample, while a value of 0.6 indicates that it is only 60% as high.
3. Defined as having more than KRW 2 trillion in assets.
4. During the preceding year.
5. As the CEO.

Source: Kim and Lee (2015).

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While independence is important, it is not sufficient. Business and financial expertise also matters (Agrawal and Chadha, 2005). Among outside directors on the boards of firms in Korean business groups, the share with a background in business management and finance fell from 33.1% in 2006 to 21.3% in 2016 (Table 1.10). The largest share of outside directors is from academia, suggesting a lack of business expertise. In addition, the share of former government officials (excluding those who are lawyers) rose to 23.4%. Among former officials, the largest shares were from the National Tax Service, the Ministry of Strategy and Finance and the KFTC, which is responsible for regulating the groups (Chun, 2017). This suggests that an important role of outside directors is to communicate with the government rather than monitor the firm.

Table 1.10. **Background of outside directors**

Percentage of total

	2006	2007	2008	2009	2010	2012	2015	2016
Management and finance	33.1	31.1	29.7	27.8	29.7	24.0	23.3	21.3
Government officials	18.9	19.6	20.1	18.6	21.0	24.0	21.7	23.4
Legal profession	13.3	14.3	13.2	14.3	12.9	15.2	13.6	12.7
Academia	27.1	27.7	29.3	30.8	28.6	30.5	31.2	32.4
Accountants	2.3	1.9	2.7	3.1	2.7	2.2	2.6	2.6
Journalists	2.9	2.5	2.4	2.8	2.8	2.6	4.2	4.4
Politicians	--	--	0.4	0.6	0.6	0.3	1.8	1.5
Other	2.4	2.9	2.3	2.0	2.0	1.2	1.7	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Hyungsuk Kim (2017).

Nevertheless, the increased number of outside directors appears to have improved board monitoring and boosted firms' valuation. One study found that firms in which outside directors account for half of the board, the firm's share price was 40% higher (Black et al., 2006). Another study shows that firms with a high share of inside ownership and boards dominated by insiders improved their performance by adding outside directors that are truly independent and actively involved in the firms' affairs (Choi et al., 2007). A recent study by the Corporate Governance Service found that a firm's value is closely correlated with its performance in six areas of corporate governance: i) auditing systems; ii) board procedures; iii) minority shareholder rights; iv) ownership structure; v) disclosure; and vi) related-party transactions (Hyungsuk Kim, 2017).

Another benefit of independent outside directors is that it makes firms less likely to participate in cartels. Corporate boards in cartel firms have a higher share of outside directors with personal connections to the CEO and they serve longer terms, allowing collusion to persist (Lee, 2016). Strengthening the independence of outside directors thus serves as a deterrent to collusion.

The role and independence of outside directors would be strengthened by:

- Requiring a larger share of listed firms to create special committees to recommend candidates for outside director. Since 2011, the Commercial Act mandates such committees for firms with more than KRW 2 trillion in assets. Such firms accounted for only 150 of the nearly 2 000 listed firms in 2016.
- Limiting the membership of the committees to recommend outside directors to outside directors and allowing the committee to set the remuneration of outside directors to limit the influence of CEOs.
- Having the committee that recommends outside directors propose more than one candidate, while providing sufficient information on nominees.
- Requiring an objective evaluation and disclosure of outside directors' board activities.
- Strengthening the definition of independence imposed on outside directors. For example, the requirement that outside directors must not have had an economic relationship with the firm, its management, controlling shareholder or related companies during the preceding two years could be lengthened.
- Providing training for outside directors, as many have limited expertise (Table 1.10).

Limiting the power of CEOs to evade monitoring by the board

Some of the measures above would limit the power of the CEO and enhance the independence of the board of directors. However, the turnover of CEOs from owner families is not related to firm performance, regardless of the board's independence, suggesting that improvement of corporate governance will be limited in such situations (Lee, 2016). At a minimum, the posts of CEO and chair of the board should be separated. In 35 jurisdictions surveyed by the OECD, ten require the separation of the two posts, while another ten recommended separation through a "comply or explain" approach (OECD, 2017b).

Protecting minority shareholders

It is also important to support minority shareholders' engagement in corporate governance. Although insiders account for more than half of the ownership of group-affiliated firms (Figure 1.8), the ownership of remaining shares is quite dispersed. The number of shareholders exceeded 5 000 in more than half of listed companies in 2013 (Chun, 2017). The agency problem in most listed companies is between controlling and minority shareholders.

The OECD Principles of Corporate Governance (OECD, 2015b) state: "Shareholders should be able to vote in person or in absentia, and equal effect should be given to votes whether cast in person or in absentia". However, in Korea, some firms use a range of mechanisms to discourage minority shareholder participation: i) holding annual general meetings (AGM) on the same day – 924 firms out of around 2 000 listed firms held their 2017 meeting on 24 March; ii) prohibiting non-shareholders from serving as proxies in voting; and iii) bundling multiple resolutions into a single vote. In Korea, the rules on convocation and distribution of information for the AGM are not adequately enforced for unlisted companies (OECD, 2013). The limited time available for proxy solicitations also restricts shareholders' ability to vote. In addition, firms have been able to use "shadow voting" by requesting the Korean Securities Depository to cast votes on behalf of non-participating shareholders in the same proportion as the overall vote at the AGM. A quorum could thus be reached relatively easily without minority shareholder votes that may not support management. In 2017, 641 firms, about a third of listed firms, requested shadow voting. Shadow voting was abolished at the end of 2017.

Such practices have impeded minority shareholders' ability to influence company decisions and the selection of board members. Electronic voting was introduced in 2010 to make it easier for minority shareholders to vote their shares, and is now used by over a third of listed companies. Mandating the use of cumulative voting, which is currently optional, would enhance the power of minority shareholders. Making both electronic and cumulative voting mandatory is part of the revision of the Commercial Act that is pending in the National Assembly.

Treasury shares are often used by a company to protect management rights (Kim, 2009). When a company repurchases its shares, they may either be cancelled or held for reissue. If not cancelled, such shares are referred to as treasury shares, which are not entitled to receive a dividend and have no voting rights. Selling the treasury shares is effectively the same in financial terms as issuing new shares. With the approval of the board, treasury shares can be sold to friendly shareholders, in contrast to issuing new shares, which must be allocated to existing shareholders, leaving voting rights unchanged. The sale of treasury shares has been a common tactic of Korean firms to protect management rights to the detriment of minority shareholders (Cho, 2017).

Improving transparency and disclosure

Laws requiring financial disclosures by firms should be reinforced to prevent accounting fraud. As part of the government's accounting reform efforts, the Act on External Audit of Stock Companies was amended in 2017. Under the Act, companies and accounting firms are subject to tougher regulations, and a penalty (with no upper limit) on accounting fraud has been introduced. Moreover, the Securities and Futures Commission now has authority to designate an external auditor of all listed companies in principle. In addition, audit committees should be strengthened. Such committees are mandatory for firms with more than KRW 2 trillion in assets and two-thirds of the committee members should be outside directors. The Act on External Audit of Stock Companies grants audit committees the power to designate an auditor, uncover accounting fraud and take countermeasures as appropriate.

Strengthening the role of institutional investors

Effective corporate governance requires oversight by all stakeholders, including institutional investors, defined as non-bank organisations or persons trading securities in quantities large enough to qualify for preferential treatment. In Korea, institutional investors account for about 13% of total market capitalisation. Institutional equity ownership, especially by foreigners, has been found to enhance firm performance (Choi et al., 2007). However, most domestic institutional investors in Korea are not active in corporate governance, in part because they are affiliated with the business groups or have business ties to them (Kim and Lee, 2012). In addition, the practice of shadow voting limited the role of institutional investors. As noted above, shadow voting was abolished at the end of 2017.

A Stewardship Code was introduced on a voluntary basis in December 2016 to encourage institutional investors to effectively exercise their voting rights on key business decisions at companies in which they invest. It aims to enhance investor returns, support sustainable growth of capital markets and reduce the "Korea discount". Institutional investors are advised to join the Code. Thus far, around 90 institutional investors have adopted or plan to adopt the Code. However, some complain that the rule that requires them to disclose their stock holdings of 5% or more in a listed firm within five days of trading could weaken their investment strategy. Some smaller firms also worry about the costs of monitoring their implementation of the Code.

The effectiveness of the Code will be enhanced by the decision of the National Pension Service (NPS), the dominant institutional investor, to join in 2018. The NPS manages the National Pension Fund, the third largest in the world at USD 495 billion (30% of GDP). Moreover, it accounts for 5.5% of market capitalisation in Korea and is the largest institutional investor in many listed firms. The NPS has not been active in initiating shareholder proposals, such as board nominations, in order to avoid direct government intervention in private firms (OECD, 2012a). The chairman of the NPS has been put on trial because of the decision by the National Pension Service Investment Management (NPSIM) to support a controversial merger of two firms in a major business group. Reforms to protect the NPSIM and its chief investment officer from political pressure are a prerequisite for a more active role in corporate governance.

Private enforcement of corporate governance

Given the shortcomings of monitoring mechanisms, such as corporate governance, the market for corporate control and institutional investors, private enforcement – notably shareholder lawsuits – is needed to deal with misbehaviour by management. Considering the structure of ownership and control in Korea, private enforcement may be more effective than relying on outside directors to improve corporate governance. Such an approach is used to complement public supervision and enforcement in some OECD countries (OECD, 2013). One advantage of private enforcement is that it can recover losses for investors, while public enforcement only imposes fines.

Private enforcement is particularly important in the case of related-party transactions, an area that is difficult for supervisors to monitor and enforce rules. This is a key issue in Korea, where 58% of firms report significant related-party transactions, the second highest among 29 jurisdictions surveyed (OECD, 2012b). As noted above, related-party transactions between affiliated firms in business groups are forbidden if they undermine fair market competition. Intra-group transactions related to directors and the owner family must be approved by two-thirds of the board of directors, who have a fiduciary duty to protect their company's interests. Given that outside directors have to account for a majority of the board of directors in large firms, this implies that the transactions must be approved by some outside directors, underlining the importance of their independence.

The rules on intra-group transactions only have teeth if those hurt by such transactions can successfully pursue legal action. In the United States, rules covering related-party transactions are primarily enforced through private litigation, typically alleging a violation of fiduciary duties by directors. Shareholder lawsuits in such cases are based on strong disclosure requirements (OECD, 2013). The OECD Principles of Corporate Governance call for disclosure concerning related-party transactions.

Class action suits – a legal action initiated by one or more shareholders to seek recovery of damages on their own behalf as well as other similarly situated shareholders – is the key tool to enforce the fiduciary duties of directors and controlling shareholders. When ownership is widely dispersed and the cost of litigation is substantial, it is not economically viable for a few individual shareholders to initiate litigation, as the potential recovery would typically not cover the cost of litigation (OECD, 2013). A second private mechanism against intra-group transactions is a derivative suit – a suit brought by shareholders on behalf of the firm. Korea is considering the introduction of multiple derivative suits, which allow shareholders of a subsidiary to take action on behalf of the holding company that owns the subsidiary.

Although Korea introduced class action lawsuits in 2005, only eight cases have been launched thus far. Meanwhile, derivative suits have been similarly underused by shareholders, with most suits filed by NGOs. Reforms are thus needed to make shareholder lawsuits an effective remedy for minority shareholders subject to malpractice and negligence by board members. *First*, the success of shareholder suits in the United States is due in part to an active and extensive set of plaintiff attorneys who are capable of and interested in pursuing cases in which there is a realistic prospect of success (OECD, 2013). Korea has fewer attorneys and most large law firms also represent the large business groups, making them hesitant to argue shareholder lawsuits against important clients. *Second*, the litigation costs borne by the shareholders may discourage suits. For example, if shareholders lose a case, they have to pay the legal costs of the defendants as well as their own. *Third*, rules to prevent frivolous suits that lead to settlements between defendant managers and plaintiff attorneys may be too strict (Song, 2008).

Improving the ownership structure

Owner families choose ownership structures to maintain their control rights over the business group and maximise their benefits (Byun et al., 2018). Stronger competition will help improve the ownership structure by narrowing the gap between the owner families' cash flow rights and voting rights, as discussed above. Improved corporate governance will also reduce the problems associated with the ownership gap by reducing the owner families' control over the board of directors. However, the progress toward stronger competition and better corporate governance is likely to be gradual and evolutionary. Achieving the government's goal of significant reform of the business groups requires directly improving the ownership structure. One step would be to phase out circular shareholding. In 2014, the business groups were prohibited from increasing circular shareholding. Currently, four large business groups report ten cases of circular shareholding, down from 93 in 2017. Given the difficulty of such a reform for some business groups, circular shareholding should be phased out gradually. The ban on direct shareholding in 1987 set a three-year grace period to meet the rule and it was achieved without market turbulence. While phasing out circular shareholding would improve the allocation of capital, it remains essential to upgrade corporate governance to cope with other forms of intra-group shareholding.

Expanding the use of holding companies increases transparency and the accountability of the owner families. The ban on holding companies, which are now required to hold 20% of listed companies and 40% of non-listed companies, was lifted in 1999 to facilitate corporate restructuring. The shift to a holding group structure requires the business groups to unwind circular shareholding and separate financial and non-financial businesses. Nevertheless, by 2010, 12 of the large business groups had adopted a holding company structure. However, the owner families' power was strengthened by the shift to holding companies, as they increased their voting rights by 2.4 times at no cost (Ministry of Strategy and Finance, 2013). To insure that the shift to a holding company structure does not increase the power of the owner families, the conditions should be tightened by raising the ownership requirements. A bill to raise the minimum share for holding companies to 30% for listed companies and 50% for non-listed companies is pending in the National Assembly.

Recommendations to reform the large business groups to promote productivity and inclusion

- Strengthen product market competition by relaxing barriers to imports and inward foreign direct investment and liberalising product market regulation.
- Reinforce the role of outside directors by enhancing the criteria for independence.
- Reduce the role of management in nominating outside directors.
- Require that outside directors comprise more than half of the boards of all listed firms.
- Phase out existing circular shareholding by firms belonging to the same business group.
- Make cumulative voting (which would allow minority shareholders to elect directors) and electronic voting (which would help minority shareholders to vote their shares) mandatory.
- Follow through on the government's pledge to not grant presidential pardons to business executives convicted of corruption.

Recommendations to reform the large business groups to promote productivity and inclusion *(cont.)*

Further recommendations

- Reinforce the monitoring role of institutional investors, particularly the National Pension Fund, in part by active implementation of the new Stewardship Code and the end of shadow voting.
- Implement reforms to encourage the use of class action suits and derivative suits, particularly to address the problem of intra-group trading, and introduce multiple derivative suits.
- Increase the penalties on cartel behaviour and allow class action suits against cartel activity.
- Remove obstacles to an active market for corporate control as insider ownership is reduced.
- Effectively implement the guideline to restrict intra-group transactions involving financial and non-financial firms and make clear to investors the risks of purchasing such financial products.
- Require objective evaluations of outside directors.
- Raise the ownership requirements for the creation of holding companies.
- Improve financial disclosures by corporations and prevent accounting fraud by increasing disclosure requirements and strengthening audit committees.

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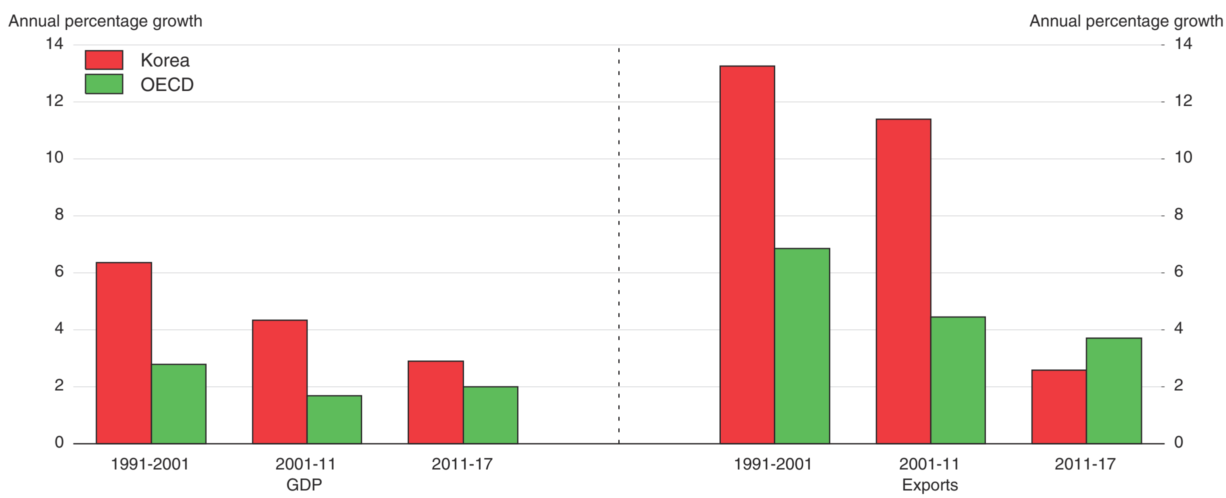
Chapter 2

Enhancing dynamism in SMEs and entrepreneurship

Making SMEs and start-ups a driver of growth and job creation requires a number of policies to improve the performance of SMEs, whose labour productivity in the manufacturing sector has fallen to less than a third of that in large companies. The large-scale support for SMEs should shift from supporting the survival of firms to raising productivity. Measures to accelerate SMEs' take-up of new technology and increase their participation in international trade would boost productivity and inclusive growth. Given the chronic labour shortages facing SMEs, reforming the education system to reduce labour market mismatch is a priority. Relaxing the regulatory burden and government control would allow innovative SMEs to create new products and services. Entrepreneurship is lagging, reflecting a higher fear of failure and a lack of skills. Upgrading entrepreneurship education and lowering the personal costs faced by entrepreneurs who fail would be beneficial. A greater role for venture capital, in part by activating the M&A market to allow investors to recuperate their funds, would encourage firm creation.

In the new paradigm envisaged by the government, SMEs and start-ups will replace large firms as drivers of innovation. One reason for a new strategy is that the traditional model of growth led by exports of manufactures by large business groups, known as *chaebols*, which fuelled Korea's exceptionally rapid economic development (Chapter 1), appears to be faltering. Although economic growth typically slows as countries approach the high-income economies, the sharp deceleration from an annual rate of 6.4% over 1991-2001 to 2.9% since 2011 (Figure 2.1), raises concerns. Moreover, export volume growth slowed from a double-digit annual pace over 1991-2011 to 2.6% since 2011, lagging behind global trade.

Figure 2.1. **Korea's output and export growth have slowed sharply**



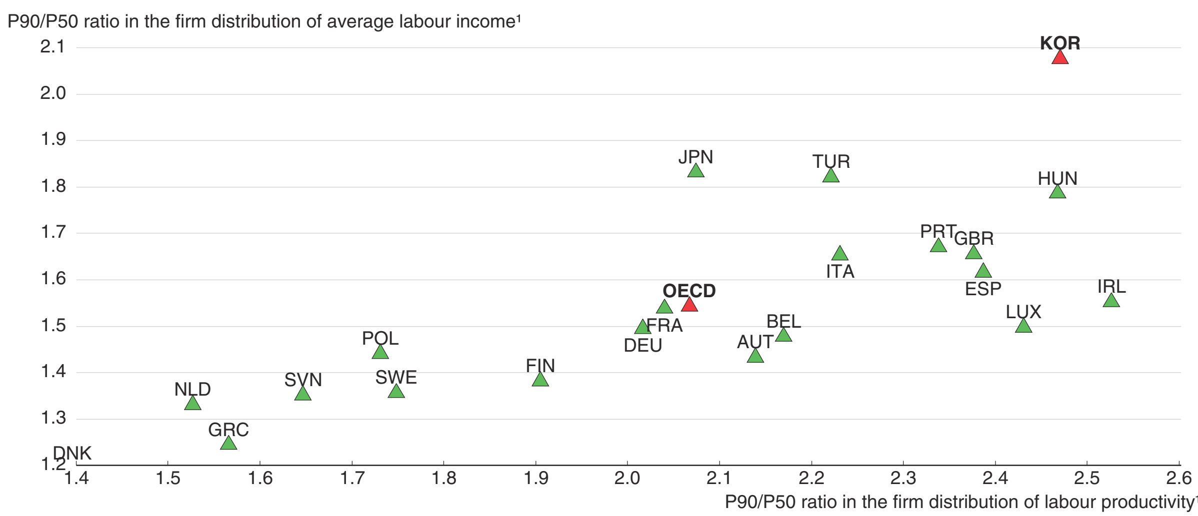
Source: OECD Economic Outlook: Statistics and Projections (database).

StatLink http://dx.doi.org/10.1787/888933739034

The export deceleration has limited the growth of employment and household income. In addition, the "trickle-down effect" – the expansion in domestic demand and employment for a given increase in exports – appears to be weakening. The additional value added and employment induced by production in the semiconductor, car, and ship industries has already started to decrease (Hong and Hong, 2017). In the face of intensified competition from emerging countries, particularly China, firms have limited wage increases and shifted production overseas. The share of overseas production by large firms rose from 16.8% in 2009 to 22.1% in 2014, with a negative effect on subcontracting companies. Large firms have also responded to intensified competition by increasing labour-saving investment and by shifting their product mix to more capital and technology-intensive products. However, the experience of the past few years suggests that exports by large companies are not sufficient to sustain Korea's growth.

In addition, Korea's traditional growth model has led to economic polarisation and inequality. The economic dominance of large business groups, which received generous government support during the high-growth era (Chapter 1), has stifled opportunities for small and medium-sized enterprises (SMEs). While the government has provided extensive support to SMEs, large productivity gaps between large firms and SMEs and between the manufacturing and service sectors have contributed to greater income inequality. Indeed, the dispersion between productivity in firms at the 90th and 50th percentiles in the OECD area is positively correlated with the dispersion in average wage income (Figure 2.2). For example, productivity and labour income gaps are relatively small in some northern European countries in contrast to some central European countries. The dispersion of productivity in Korea is the second highest in the OECD and the dispersion of wage income is the highest, boosted as well by labour market dualism.

Figure 2.2. **Labour income inequality is positively correlated with productivity disparities between firms**



1. This figure compares the labour productivity and labour income of a firm at the 90th percentile to one at the 50th percentile.
Source: OECD (2016c).

StatLink http://dx.doi.org/10.1787/888933739243

The lack of SME dynamism in an economy dominated by large manufacturing exporters is thus a source of inequality in addition to being a serious drag on output growth in Korea. Policies that improve the performance of SMEs will promote inclusive growth by creating job opportunities and boosting the quality of SME jobs by raising productivity and wages. Indeed, small enterprises are the main source of net job creation in the OECD (OECD, 2016b). In addition, development of SMEs tends to promote broad-based income gains across regions and industries, thereby reducing income inequality and poverty (OECD, 2009 and 2017c). Moreover, promoting innovative entrepreneurship is an important channel for enhancing social participation and mobility, particularly for women and youth.

Achieving inclusive growth thus requires policies that improve the performance of SMEs, particularly in the service sector. The longstanding government objective of promoting growth through innovation requires a greater contribution from SMEs. To accomplish this, the government aims to build an innovative ecosystem to foster SMEs, helping them to lead the fourth industrial revolution, and increase their participation in world trade. This emphasis is reflected in the creation of the Ministry of SMEs and Start-ups (MSS) in 2017. In addition, a range of new programmes is envisaged (Box 2.1).

Box 2.1. **Initiatives launched by the new government to promote SMEs and start-ups**

Measures to boost financing

- The government is launching a KRW 10 trillion (USD 9.3 billion) venture capital investment fund.
- Increased financial support for SMEs is being provided through state-owned banks.
- The Ministry of SMEs and Start-ups (MSS) is boosting support for start-ups that contribute to job creation.
- The Financial Services Commission is working to attract more funds to SMEs and venture start-ups.
- The government is developing the KOSDAQ (Korean Securities Dealers Automated Quotations) market (a second-tier market for smaller firms) to support innovative SMEs.
- The central bank is increasing its lending support through financial intermediaries.
- The government is expanding assistance to SME exporters.

Addressing labour shortages

- The government is providing SMEs with annual support of KRW 20 million (USD 18 524) per newly hired young adult employee for three years.
- The government is encouraging young employees at SMEs to remain in their jobs by increasing the matching funds that it provides to their individual savings accounts.

Other policies

- To promote the fourth industrial revolution, MSS is introducing programmes, such as cross-generation start-up teams, to promote the creation of new industries.
- MSS is implementing all of its start-up programmes as "Tech Incubator Programmes for Start-ups", which provide mentoring and technology development.
- The government is protecting small merchants and SMEs by reducing costs, including labour, social insurance premiums, credit card fees, taxes, financial debts and rent.
- Penalties on unfair subcontracting practices are being increased and policies to eliminate such practices are to be introduced.

Building on the 2014 and 2016 *OECD Economic Surveys of Korea*, this chapter analyses the current status of SMEs to develop policy directions that promote higher productivity and inclusive growth. After a brief overview of the SME sector, the second section discusses the need for innovation to increase productivity. The third section addresses an urgent need – overcoming the chronic labour shortages faced by SMEs. The benefits of increasing SMEs' role in international trade is analysed in the fourth section, followed by a discussion of various measures to improve the SME ecosystem. Policies to promote entrepreneurship are considered in the sixth section, followed by a discussion of SME financing issues. Policy recommendations are presented at the end of the chapter.

Overview of SMEs in Korea

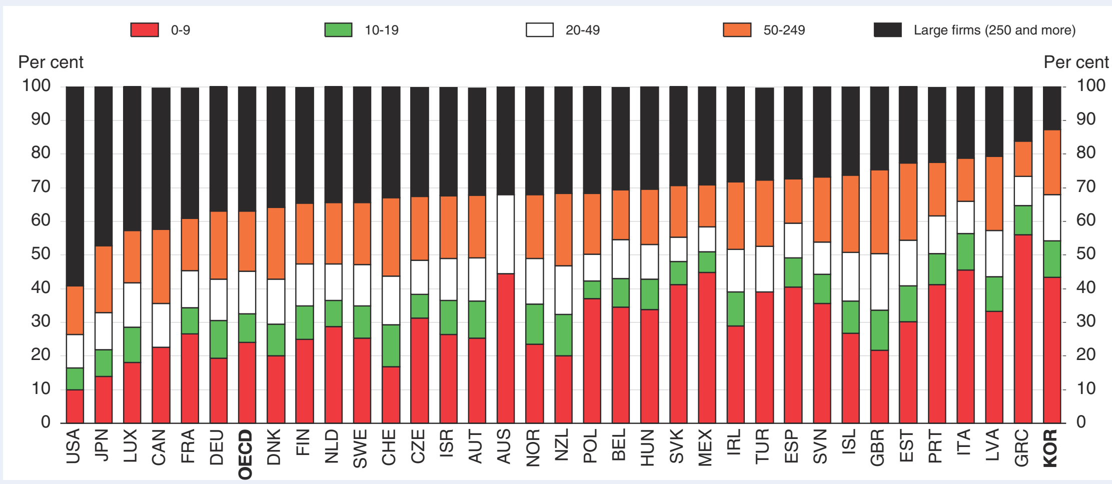
SMEs play a prominent role in Korea (Box 2.2). The early departure of employees from firms – before age 50 on average – prompts a large number to create small firms using their retirement allowance. SMEs are thus a key element of the social safety net. Korea's 1987 Constitution declares that the "State shall protect and foster SMEs". In 2017, there were

Box 2.2. **A statistical overview of large firms, mid-sized firms and SMEs in Korea**

There is no standard international definition of SMEs. For statistical purposes, the OECD defines SMEs as firms with up to 249 employees, divided into: micro-enterprises (1 to 9); small firms (10 to 49); and medium enterprises (50 to 249). By this definition, the share of workers employed at SMEs in Korea was the highest in the OECD at 88% in 2015 (Figure 2.4).

Figure 2.3. **The share of employment in SMEs in Korea is the highest in the OECD**

Percentage of all persons, total business economy, 2015 or latest available year



1. For Canada, Switzerland, Israel, Japan, Korea and the United States, data do not include non-employer enterprises, which are primarily self-employed persons. Data for Korea and Mexico are based on establishments. Data for the United Kingdom exclude an estimated 2.6 million small unregistered businesses. For Australia, Canada and Turkey the size class 1~9 refers to 1~19.

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

StatLink http://dx.doi.org/10.1787/888933739376

Until 2014, the definition of SMEs in Korea was based on the number of regular workers, sales, capital and total assets, with the thresholds varying by industry. However, this had a statistically significant negative impact on the growth of small firms: SMEs artificially stayed below the thresholds in order to continue receiving the favourable treatment offered to SMEs (Kim, 2017). To reduce this distortion, the definition was changed in 2015 to total assets (up to KRW 500 billion – USD 463 million) and sales. To be classified as a SME, a firm's average sales during the past three years must not surpass a certain threshold of the industry in which they operate. The ceiling on sales ranges from KRW 40 billion (USD 37 million) to KRW 150 billion (USD 139 million) in the industries specified in the law on SMEs. However, the incentives for SMEs to remain below the threshold are still present under this revised definition.

Almost two-thirds of SME employment is in the service sector, with manufacturing accounting for another 27% and construction 8%. SMEs accounted for 90% of employees in the service sector, 85% in construction and 81% in manufacturing in 2014 (OECD, 2017c).

In 2014, the government established an intermediate classification of mid-sized enterprises that includes firms that are too large to qualify as SMEs and are not affiliated with the large business groups that are subject to rules on cross-shareholding. Total assets of firms in this category must be between KRW 500 billion and KRW 10 trillion (USD 9.3 billion), which, as in the case of SMEs, creates disincentives to growth. This category excludes firms that are more than 30% owned by financial, public and non-profit institutions or whose largest shareholder is a foreign company. Although economic power is concentrated in the large enterprises (see Chapter 1), the mid-size firms, which are often referred to as "high potential enterprises", play an important and expanding role. Indeed, their growth in sales and assets in 2013 exceeded that of SMEs and large firms (Table 2.1).

Box 2.2. **A statistical overview of large firms, mid-sized firms and SMEs in Korea** *(cont.)*

SMEs accounted for 99.8% of firms and 76.8% of employment in 2014 (Table 2.1). In addition, SMEs had the largest proportion of sales, although large enterprises accounted for two-thirds of exports. However, SMEs had the lowest operating profit margin and the highest debt-to-equity ratio (Panel C), although this partly reflects the fact that they tend to be younger than larger firms.

Table 2.1. **A comparison of large firms, mid-sized firms and SMEs**

	Large enterprises	Mid-size firms[1]	SMEs
A. Percentage of total in 2014			
Enterprises	0.05	0.12	99.8
Employees	13.5	9.7	76.8
Sales	40.2	14.8	45.0
Exports	67.0	15.7	17.1
B. Percentage growth in 2013			
Sales	0.3	5.8	5.6
Assets	7.9	8.3	3.6
C. Ratios in 2013			
Operating profits margins[2]	4.7	4.1	3.2
Debt-equity ratio	133.5	120.2	168.3
Labour productivity[3]	100.0	56.2	28.8

1. Often referred to as high potential enterprises.
2. As a percentage of sales.
3. Labour productivity as per cent of that in large companies.

Source: Statistics Korea.

Korea faces large and widening gaps in labour productivity between the different firm sizes. Indeed, the labour productivity of SMEs is only about half of mid-sized firms, which in turn is a bit more than half of the large firms. As noted above, large productivity gaps exacerbate income inequality and are an obstacle to inclusive growth. In addition, the low productivity in SMEs and mid-sized firms handicaps large firms, whose international competitiveness depends in part on the efficiency of its suppliers. Low productivity in smaller firms thus tends to accelerate off-shoring.

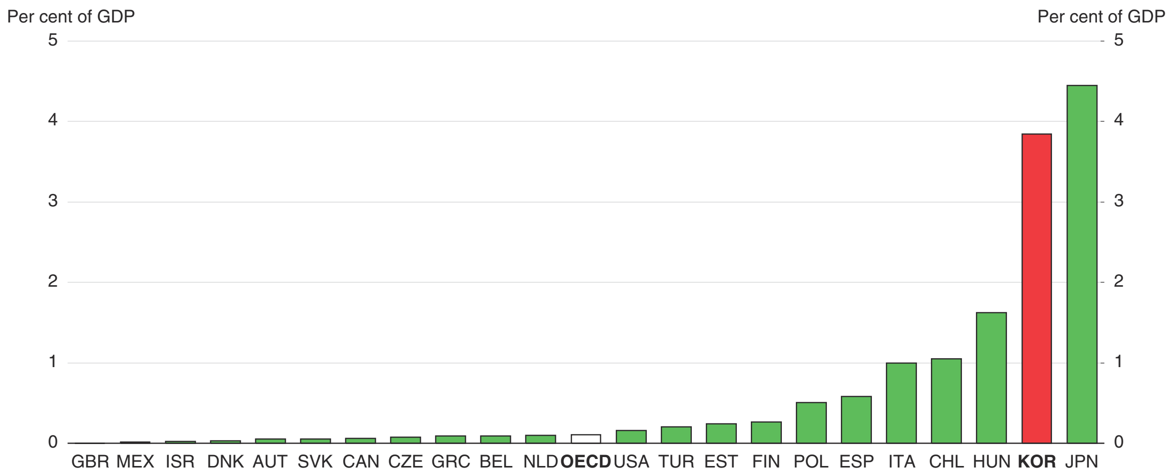
288 central government programmes to support SMEs, in addition to 1 059 programmes at the local government level. Central government spending on such programmes amounted to 3.0% of its total spending in 2017. The government also provides large-scale support to SMEs through public funds and credit guarantees, which were the second largest in the OECD at 3.8% of GDP in 2016 (Figure 2.4).

In addition, SMEs are assisted through: i) preferential treatment in public procurement; ii) lower tax rates at both the central and local government levels and preferential treatment that lower taxable income; iii) exemptions for associations of SMEs from the Monopoly Regulation and Fair Trade Act; iv) the right to hire foreign workers; and v) discounted prices for water and electricity. The decline in labour productivity in SMEs in manufacturing from more than half of large companies to less than a third (see below) calls into question the effectiveness of such support and the importance of new approaches.

SMEs' share of value added in manufacturing edged up from 47.4% in 2004 to 49.1% in 2014 (Table 2.2). While their share in heavy industry also increased slightly, it remains

Figure 2.4. **Government credit guarantees for SMEs in Korea are exceptionally high**

Stock of guarantees in 2016 or latest year available



Source: OECD (2018).

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much less than the SMEs' 84.6% share of value added in light industry. The concentration of SMEs in labour-intensive sectors is a key reason for their lower wages and productivity. It also makes SMEs the main source of job creation. Firms with less than 300 employees accounted for 91.9% of the employment gains in 2015 (Table 2.3). Micro-firms (those with less than ten employees) alone accounted for three-quarters.

Despite increasing government support, the growth of value added per worker in SMEs has been on a downward trend (Figure 2.5). Labour productivity in SMEs in manufacturing fell from 53.8% of that in large firms in 1988 to 32.5% in 2014 (Panel B). The productivity gap between large firms and SMEs is one of the biggest in the OECD (Panel C). While data are not available for the entire service sector, labour productivity of small firms (one to nine employees) in the retail and wholesale sector was only 24% of that in large firms in 2012, the largest gap among the 25 countries for which data are available (OECD, 2015b). Low productivity in SMEs may be related in part to weak investment, which has limited their role in the transition to technology and knowledge-intensive activities. On the positive side, their financial structure has been strengthened: the debt-to-equity ratio of SMEs, which soared to 305.5% during the financial crisis in 1997, fell to 168% in 2013.

Table 2.2. **SMEs' share of manufacturing value added is edging up**

Percentage of value added

	2004				2014		
	Light[1]	Heavy[2]	Total		Light[1]	Heavy[2]	Total
SMEs	77.9	39.4	47.4	SMEs	84.6	41.3	49.1
Large firms	22.1	60.6	52.6	Large firms	15.4	58.7	50.9
Total	100.0	100.0	100.0	Total	100.0	100.0	100.0

1. Light industry includes food and beverages, tobacco, textiles, clothing, leather products, wood and wood products, paper and paper products, printed and recorded products, rubber and plastic products, furniture and other products.
2. Heavy industry includes refined petroleum products; chemicals and chemical products; medical materials and medicines; non-metal mineral products; primary metals; metal processing products; electronic components; communication, computer, video and audio equipment; medical, precision and optical machinery; watches; electrical equipment; other machinery; cars; and other transport equipment.

Source: Statistics Korea, *Survey of Mining and Manufacturing*.

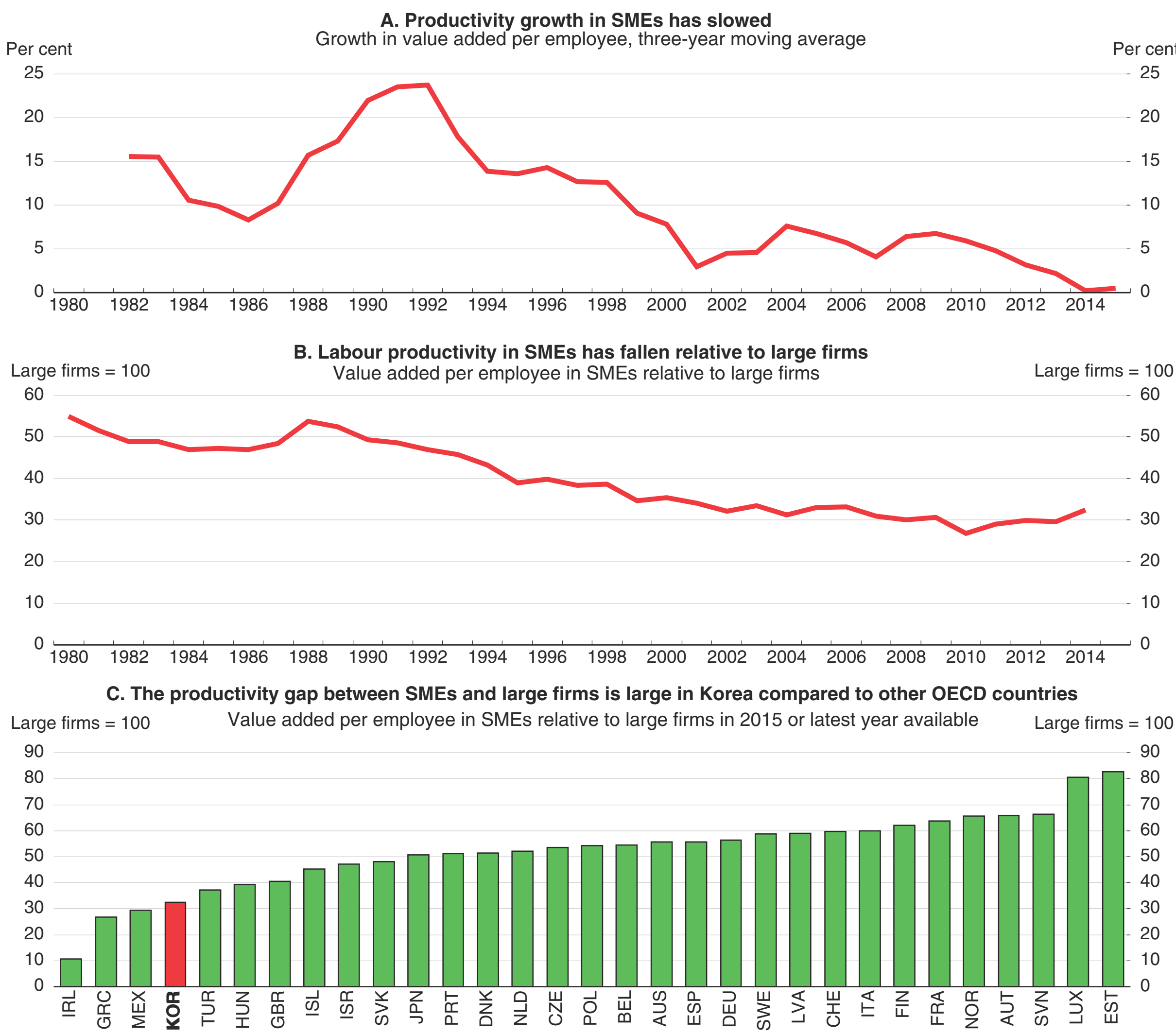
Table 2.3. **SMEs, especially micro-firms, account for most of employment gains**

Thousand workers in 2015

Firms by number of employees	Gain in employment due to: Establishment and closure of firms (A)	Gain in employment due to: Growth and decline of firms (B)	Net gain in employment A + B	Share of employment gains (%)
0-4	125	129	254	64.1
5-9	47	1	48	12.1
10-29	42	-6	36	9.1
30-99	27	-11	16	4.0
100-299	15	-5	10	2.5
Under 300	256	108	364	91.9
300+	9	23	32	8.1
Total	265	131	396	100.0

Source: Noh (2017).

Figure 2.5. **Labour productivity in SMEs in manufacturing is low**



Source: Statistics Korea, KOSIS database; OECD Structural and Demographic Business Statistics (ISIC Rev. 4) (database).

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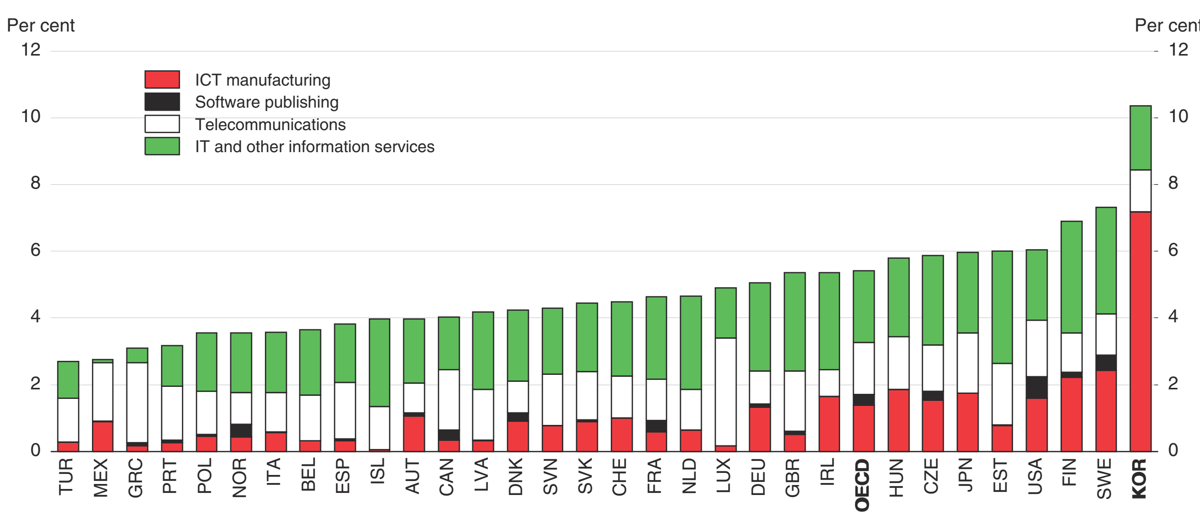
Enhancing productivity of SMEs through innovation

In the new paradigm envisaged by the government, Korea will shift from a fast follower adopting technology developed elsewhere to a first mover, led by SMEs and start-ups. SMEs and start-ups play a central role in innovation in many countries. As they tend to operate outside the dominant paradigm, they can more freely explore technology and commercial opportunities that tend to be overlooked by existing firms (Baumol, 2002; OECD, 2010). The advent of digitalisation is changing the business environment by levelling the playing field between SMEs and larger firms. A small firm today has access to communications and information systems that were available only to large multinationals a few decades ago. The active use of digital platforms can improve the productivity and price competitiveness of SMEs compared to large enterprises. It can also enhance access to alternative financial instruments and promote the emergence of innovative start-ups by using the Internet to lower fixed costs and outsource important functions (OECD, 2017b). Even micro businesses can engage in exports as a major activity, capitalising on digital tools. Two-thirds of SMEs that export report that more than half of their international sales depend on online tools (OECD, 2017c).

Building on its position as a world-leader in the provision of Information and Communications Technology (ICT) goods and benefiting from extensive broadband deployment, Korea has great scope to harness the potential of the digital economy to drive productivity. Korea's large and growing ICT sector accounted for over 10% of value added in 2015, double the OECD average (Figure 2.6). However, this reflects the large share of ICT manufacturing (7% of value added). In contrast, telecommunications, IT and other information services were below the OECD average as a share of GDP.

Figure 2.6. **The ICT sector is large in Korea, and concentrated in manufacturing**

In 2015



Source: OECD (2017e), *OECD Digital Economy Outlook 2017.*

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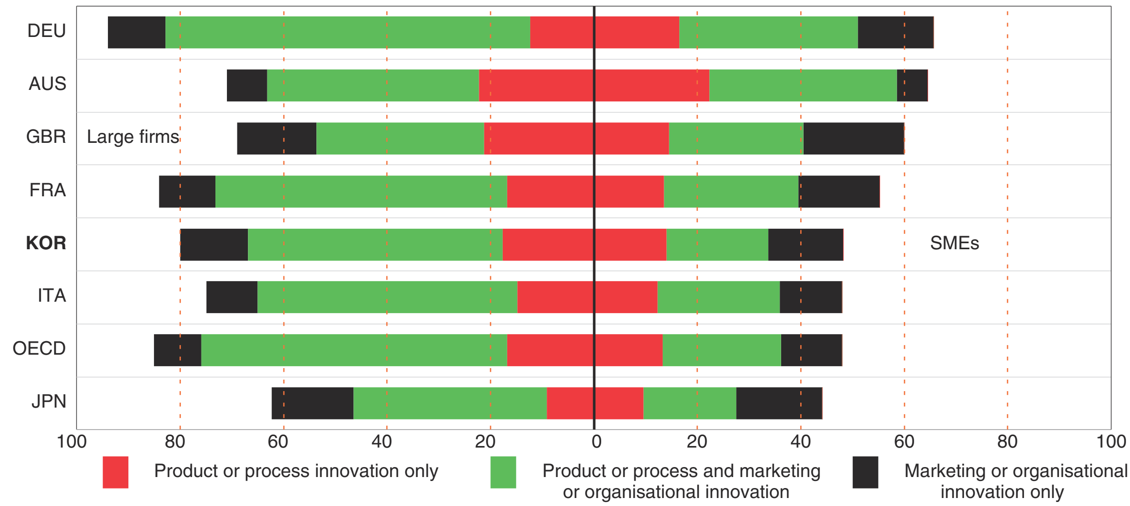
Weaknesses in digitalisation and automation slows innovation by SMEs

The proportion of innovative firms among SMEs is around the OECD average, but there is considerable scope for improvement to match the best performers (Figure 2.7). To generate innovation and new markets, it is essential to develop "convergence technology" –

Figure 2.7. **The proportion of innovative firms among SMEs in Korea matches the OECD average**

Innovative firms, in percent of all firms in the given size category over 2012-14[1]



1. For Korea, 2013-15.

Source: OECD (2017f), *OECD Science, Technology and Industry Scoreboard 2017*.

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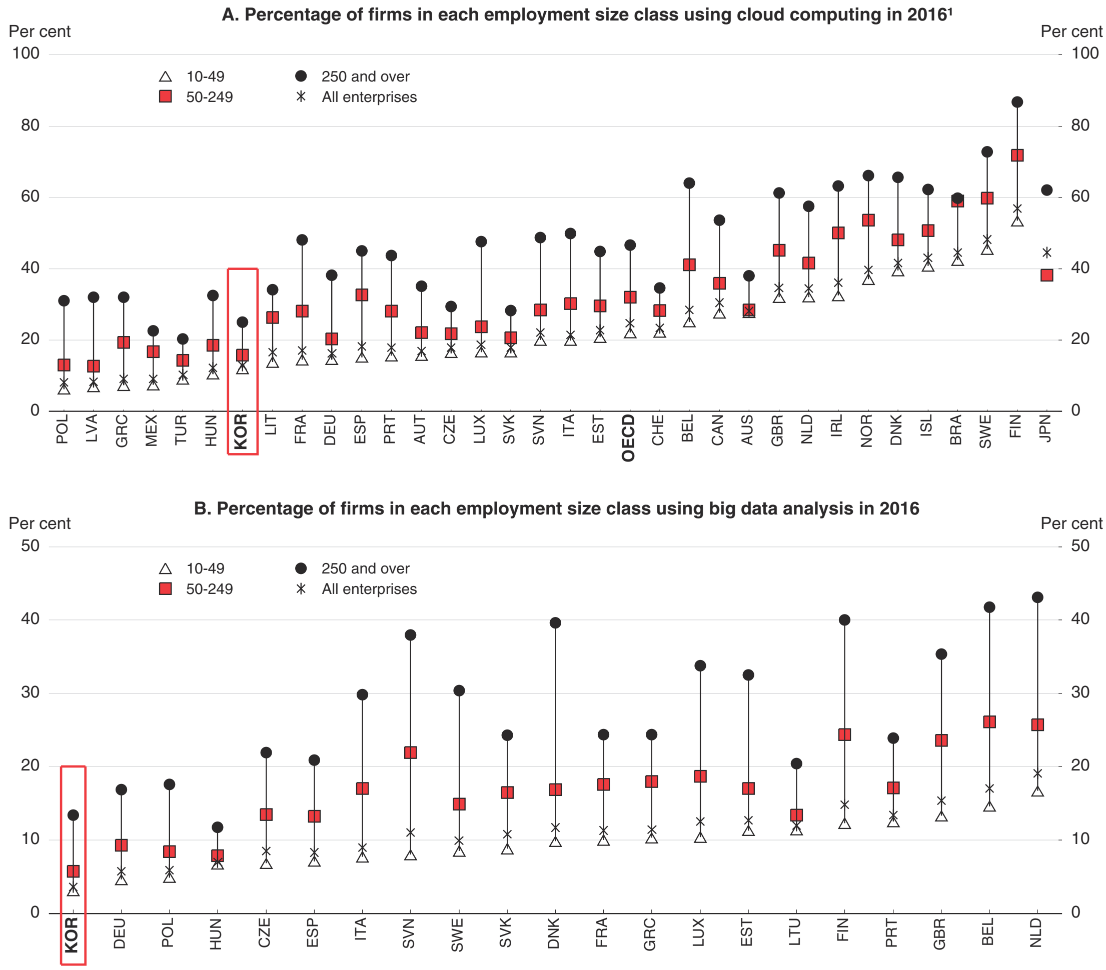
notably sensors, robots, and 3D printing – which integrates the possibilities generated by ICT. However, only 2.5% of Korean SMEs have acquired these technologies.

In particular, Korean firms lag far behind in their use of cloud computing technology, a key ICT convergence technology (Figure 2.8). The share of firms in Korea with between 50 and 249 employees that used cloud computing in 2016 was 10%, one-third of the OECD average. Cloud computing allows SMEs to overcome the barrier of high fixed costs associated with the use of "big data", which is generated from activities that are carried out electronically and from machine-to-machine communications. Big data is a useful tool given its vast volume, variety and the velocity at which data are generated. For example, it allows SMEs to improve their production processes, satisfy the needs of customers, and gain a better understanding of the business environment. The share of Korean SMEs using big data was only 4% in 2016, well below the 11% OECD average (Panel B), reflecting their limited use of cloud computing.

In addition, 62.5% of SME exporters have not automated their manufacturing processes (Chang and Lee, 2017). Moreover, the level of automation that has been introduced is relatively basic, consisting of barcodes (17%) or radio-frequency identification (14%). The reason that SMEs do not automate their manufacturing processes is that more than half of them do not feel the necessity of automation. This suggests a lack of competition that would oblige firms to introduce automation to ensure their survival.

The creation of smart factories, based mainly on ICT, occurs primarily among large firms, while the share of SME workplaces converted to smart factories is low at 7.4%. To assist SMEs, the government announced that it would help 20 000 SMEs establish smart factories, which integrate software and the Internet of Things (IOT), by 2022. Half of the KRW 2 trillion (USD 1.85 billion) in funding is from the government with the other provided by the firms. In addition, the Korea Smart Factory Foundation supports SMEs that have limited technological capability. In order to accelerate the spread of smart factories, it is necessary to address the problems of redundant investment due to delayed standardisation, the leakage of internal

Figure 2.8. **Korean firms lag significantly in their use of key digital technologies**



1. Cloud computing refers to ICT services used over the Internet as a set of computing resources to access software, computing power, storage capacity and so on. Data refer to manufacturing and non-financial market services enterprises with ten or more persons employed, unless otherwise stated. Size classes are defined as: small (10~49 persons employed), medium (50~249) and large (250 and more). The OECD average in Panel A is a simple average of the available countries.

Source: OECD (2017e), *OECD Digital Economy Outlook 2017*.

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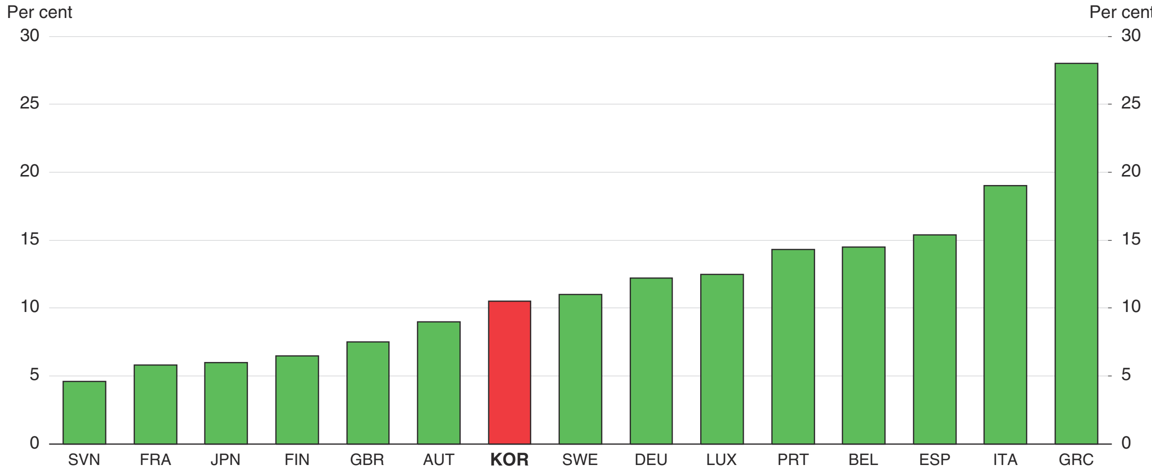
technology to large firms and rising fixed costs. In addition, the diffusion of smart factories is limited by reliance on expensive foreign solutions (K. Chang, 2017). A lack of human resources in digitalisation also slows the introduction of technology in SMEs, which do not have the financial strength to match salaries offered by large firms (see below).

Policies to promote digitalisation and the take-up of new technology

The gap between firms at the technological frontier and lagging firms in the global economy has widened in recent years. This reflects, in part, the increasing cost and technical sophistication of new investments necessary to introduce cutting-edge technology. In addition, "it has become relatively easier for weak firms that do not adopt the latest technology to remain in the market" (Andrews et al., 2016). The survival of non-viable firms traps workers and capital in unproductive activities. In Korea, more than 10% of the capital stock in 2013 was sunk in non-viable ("zombie") firms, defined as more than ten years old with an interest coverage ratio of less than one for more than three consecutive years (Figure 2.9).

Figure 2.9. **The share of capital sunk in non-viable firms**

Firms at least ten years old that had an interest coverage ratio under one for more than three consecutive years



Source: Adalet McGowan et al. (2017a).

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Policies to spur competition are needed to encourage reallocation and increase firms' incentives to increase digitalisation and other key technology. The most effective policies in this regard include (Andrews et al., 2018):

- Reduce barriers to international trade and inward foreign direct investment.
- Employment flexibility, which facilitates the expansion of innovative firms and the downsizing of lagging firms. However, Korea was ranked 106th in the world in labour market flexibility and 112th in the cost of redundancy by the Global Competitive Index (World Economic Forum, 2017).
- Insolvency regimes that promote productivity by strengthening market selection and the reallocation of resources to more productive uses (see below).
- Venture capital investment, which promotes the creation of innovative firms. Korea ranks fourth highest in the OECD with respect to venture capital investment as a share of GDP (see below).
- Avoiding high corporate income tax rates promotes firm creation. Korea's corporate tax rate was 22% in 2016, slightly below the 24.6% OECD average, but was raised to 25% for 77 large firms in 2017.

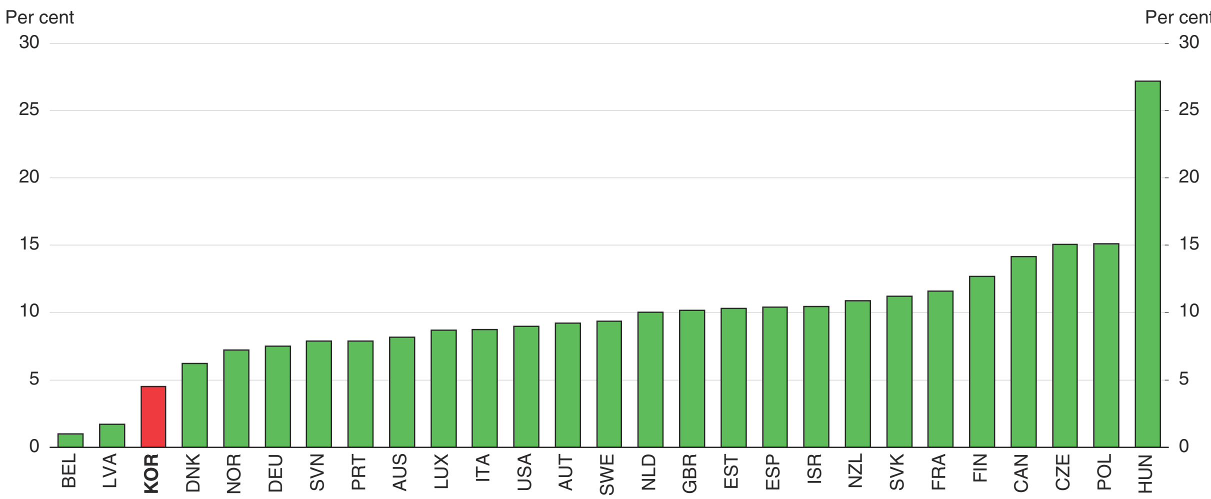
Firm entry and exit drive the "creative destruction" that leads to technological change and productivity growth. However, the firm exit rate has been falling in Korea and was the third lowest in the OECD area in 2014 (Figure 2.10), reflecting in part weakness in the insolvency regime (Adalet McGowan et al., 2017b). The problems of weak market selection, survival of non-viable firms and inefficient capital reallocation are likely to be more pronounced in economies where insolvency regimes: i) impose a high personal cost on failed entrepreneurs; ii) lack sufficient preventive measures; and iii) lack tools to facilitate restructuring. In the OECD's indicator of insolvency regimes, Korea ranked below average (Figure 2.11), reflecting problems in three areas:

- The time to discharge – the number of years a bankrupt person must wait until they are discharged from pre-bankruptcy indebtedness – is long in Korea, raising the personal costs associated with entrepreneurial failure.

- Korea lacks an early warning system for bankruptcy, although the government has provided business consulting services since 2013.
- Korea has an indefinite stay on assets, which stops actions by creditors to collect debts from a debtor.

Figure 2.10. **The exit rate of companies is very low in Korea**

The number of employer enterprise exits as a percentage of active employer enterprises, 2014 or latest year



Source: OECD (2017c), *Entrepreneurship at a Glance 2017*.

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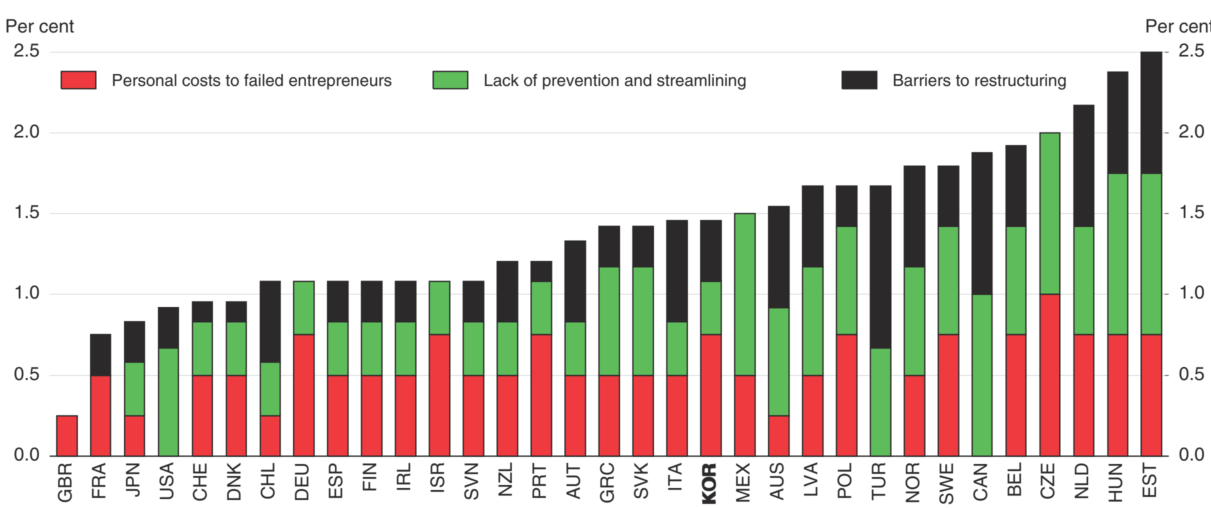
Promoting SME innovation through R&D and international links

Korea's total R&D spending has risen rapidly since 2000, reaching 4.2% of GDP in 2015, the second highest in the OECD (Figure 2.12). Business expenditure on R&D is the highest in the OECD at 3.2% of GDP, underpinned by government support equivalent to 0.35% of

Figure 2.11. **Korea ranks slightly below average in the OECD's indicator of insolvency regimes**

In 2016; a lower score indicates a better insolvency regime



Source: Adalet McGowan et al. (2017b).

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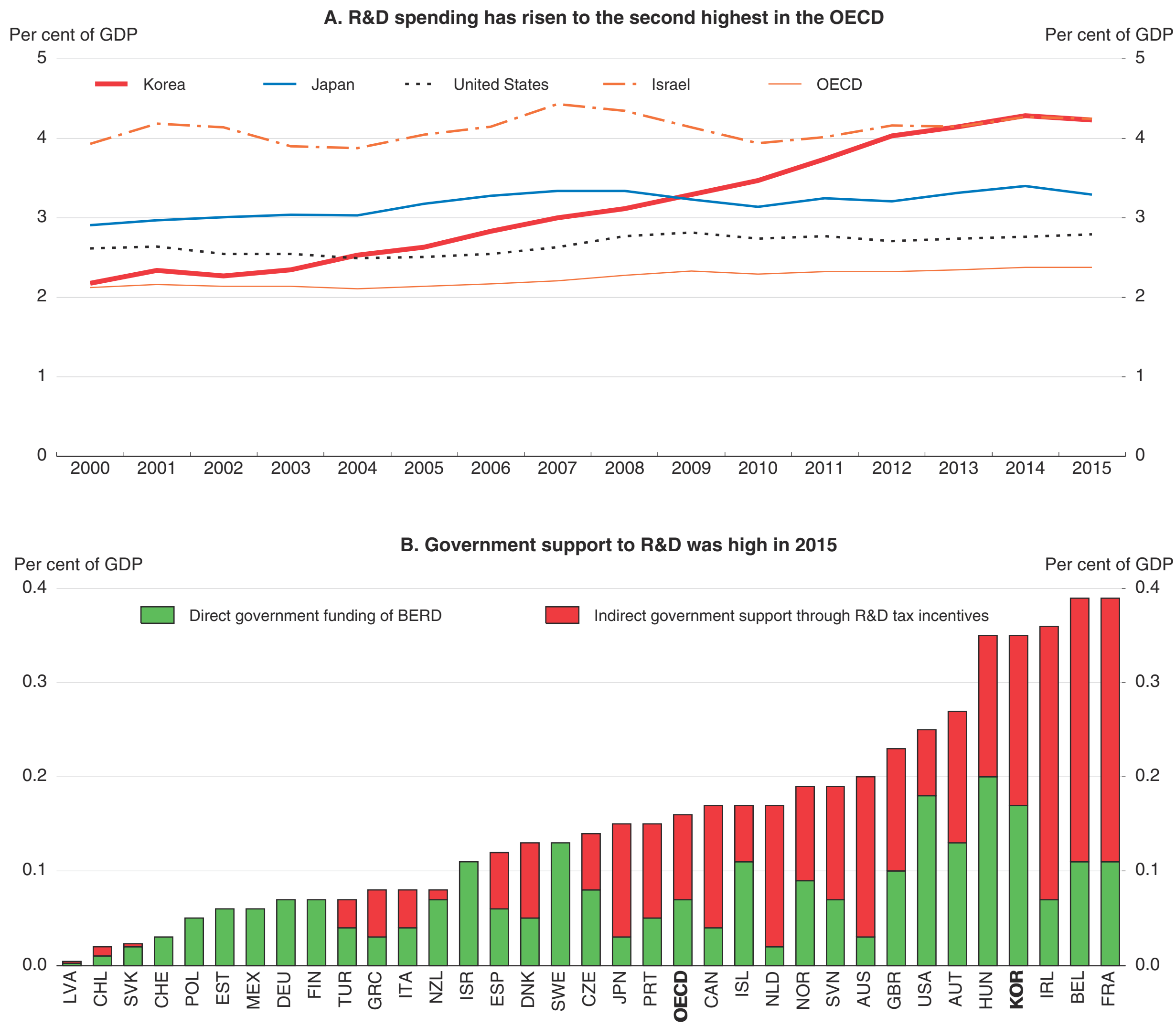
Figure 2.12. **R&D spending and government support for R&D are exceptionally high in Korea**



Source: OECD Science, Technology and R&D Statistics (database).

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GDP, the fourth highest in the OECD (Panel B). To promote innovation, the government provides tax incentives for R&D, asset acquisition, technology commercialisation and human resource support.

However, the traditional *chaebol*-led R&D model, focusing on manufacturing, cannot achieve the government's goal of achieving a fourth industrial revolution. SMEs' low level of investment in R&D and other knowledge-based assets has slowed their uptake of new technology, including digitalisation. SMEs account for about 20% of business R&D, compared to an OECD average of around 30% (OECD, 2016e). The lower R&D investment by SMEs reflects in part their concentration in services (see below). At present, SMEs can choose between a tax credit of 25% of spending on research and manpower development expenses or 50% of the additional spending above the average of the past year. Marginal R&D tax subsidy rates (the generosity of the tax system for a marginal unit of R&D expenditure) for Korean SMEs are relatively high at 0.25 for profit-making firms (versus an OECD median of 0.18) and

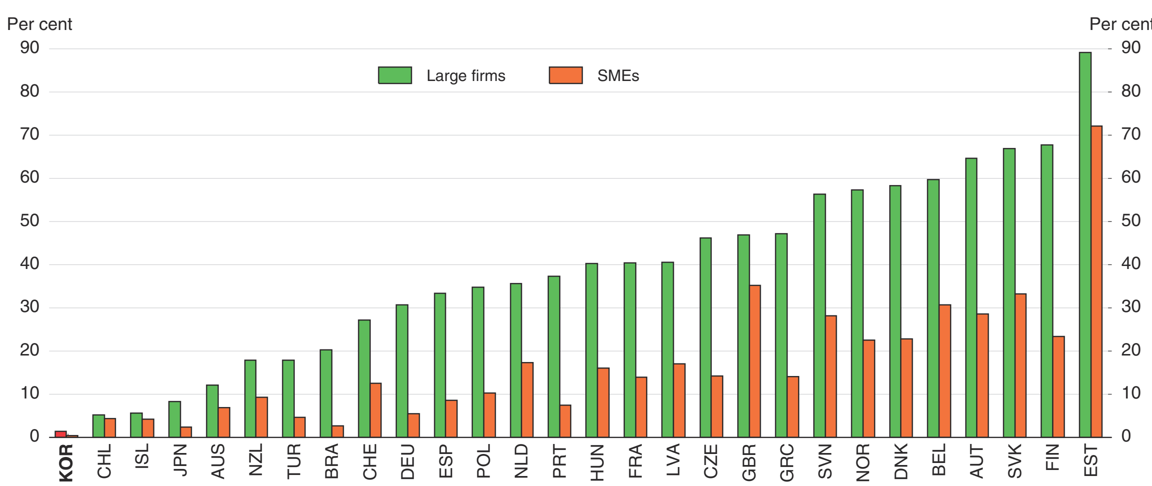
0.20 for loss-making firms (OECD median of 0.11). In contrast, the R&D tax subsidy rates for large firms are 0.04 for profit-making ones and 0.03 for loss-making ones (OECD, 2017i).

Given SMEs generally low productivity and weak financial position, it is important to ensure that R&D incentives are effective for them. The tax incentive for SMEs could be strengthened by combining a basic deduction for R&D spending, with a deduction for a certain amount of additional spending. Start-ups are typically not profitable in their early years so the R&D tax credit, which applies to the corporate income tax, does not provide any incentive to invest. Although unused credits can generally be carried forward for five years (OECD, 2017i), many start-ups do not survive that long. Allowing the R&D tax credit to be used immediately to offset other business taxes would encourage greater R&D (Noh, 2017).

Open or network-based innovative knowledge economies can help new and small businesses participate in innovation (OECD, 2010). Digitalisation facilitates collaborative networks with multinational corporations, universities and research institutes around the world by reducing costs (OECD, 2015b). However, in Korea, both large firms and SMEs rank last in the OECD measure of international innovation co-operation (Figure 2.13). Moreover, Korea ranked third lowest in 2015 in its share of R&D funding from overseas. Korea also ranked second lowest in international co-patenting and third lowest in international science co-operation in 2013. The government has developed a plan to promote such co-operation, emphasising the creation of a global network of overseas science, technology and innovation outposts, expansion of S&T official development assistance, promotion of international joint R&D, and sharing of large R&D facilities. These measures could be usefully complemented by reducing barriers to trade and investment, which would facilitate foreign investment in R&D and help Korea connect to global science and innovation networks (2016 *OECD Economic Survey of Korea*).

Figure 2.13. **Korean firms are less connected to global innovation networks**

Firms engaged in international collaboration for innovation by firm size, 2012~14[1]



1. As a percentage of firms engaged in product or process-innovation. For Korea, data are for 2013-15.

Source: OECD (2017f), *OECD Science, Technology and Industry Scoreboard 2017.*

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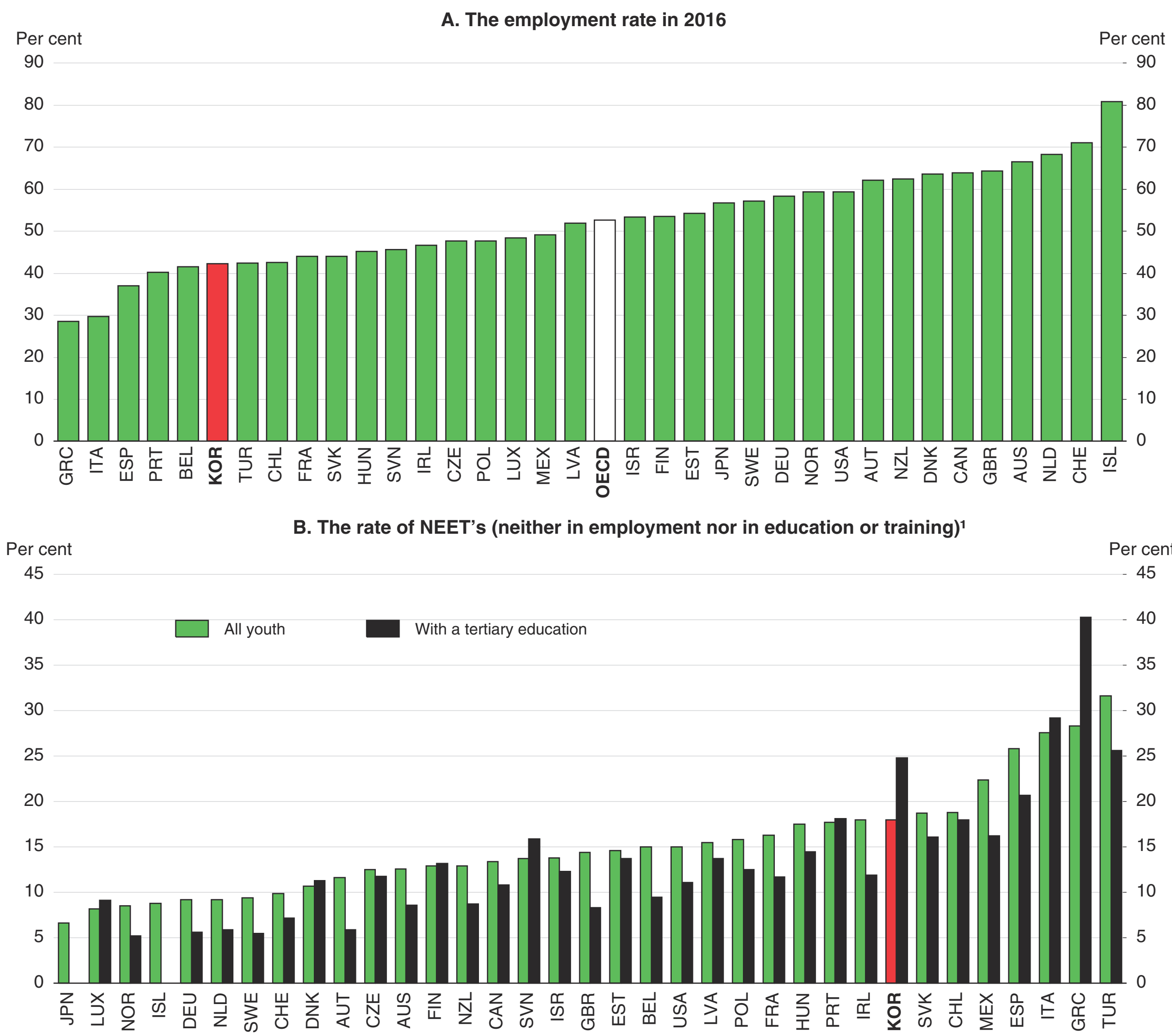
Coping with labour shortages in SMEs

Raising productivity in SMEs is essential to raise wages (Figure 2.2) and overcome the chronic labour shortages in smaller firms, which reflect low wages and poor working conditions. A recent poll by the Korea Small Business Institute reported that 80.5% of SMEs are experiencing difficulty finding employees, despite rising inflows of foreign workers. The number of foreigners allowed to enter Korea on work visas to be employed at SMEs rose from 479 000 in 2012 to 549 000 in 2016. Many Korean workers shun jobs in SMEs as being underpaid and difficult. A 2016 survey of university students by the Federation of Korean Industries reported that 32% wanted to work for a big company and another 25% preferred state-run institutions. Only 5% said they wanted to work at an SME. In addition, SMEs experience a high rate of labour turnover.

However, the labour shortage at SMEs is not due to a lack of available workers. The youth employment rate fell from 45% in 2005 to 42% in 2016, well below the OECD average of 53% (Figure 2.14). In addition, the share of youth who were neither in employment nor in

Figure 2.14. **Korea's youth employment rate is below the OECD average and the number of NEETs is high**



1. In 2013 for the 15-29 age group. It should be noted that data on programmes that straddle the boundary between upper secondary and post-secondary education [ISCED 4] are not available in Korea and 11 other OECD countries, leading to an overestimation of the number of youth classified as NEETs.

Source: OECD Employment and Labour Market Statistics (database); OECD (2015a), *Education at a Glance 2015*.

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education or training (NEET) was high (Panel B), although the statistics do not capture the share of youth in Korea and other countries engaged in unofficial education. Low youth employment reflects the mismatch between the skills acquired in school and those demanded by firms due to an over-emphasis on higher education and a decline in the share of students choosing vocational high schools (Kim, 2015). Indeed, the share of high schools students enrolled in vocational high schools fell from 28% in 2006 to 19% in 2015, well below the 47% OECD average. Since the 2008 global crisis, students seem to focus more on employability, reducing the share of high school graduates advancing to higher education from 83.8% in 2008 to 69.8% in 2016, but it remains high.

Korea is one of the few countries in which the rate of NEETs for tertiary graduates (24.8%) is higher than for the overall 15-29 age group (18.0%) (Figure 2.14, Panel B). For many university graduates, waiting for an attractive job opportunity is better than being trapped in SMEs, where job security and wages are low. Periods of inactivity have a negative long-term effect on the employment and wage prospects of youth. The mismatch problem is high as well among youth who find jobs. For workers in the 15-29 age group, 37% were in jobs that did not match their field of study and literacy skills (OECD, 2014).

Reducing labour shortages in SMEs by addressing the mismatch in the labour market

The low productivity and wage levels in SMEs discourage young people from accepting jobs at smaller companies, thus perpetuating low productivity. Breaking this vicious circle requires helping young people enter the labour market earlier through strengthened hands-on vocational education that begins at the secondary level. The government is changing the vocational education system at both the secondary and tertiary levels from a "theory-based" approach to "practice-based". It draws on 897 National Competency Standards developed by public and private experts that set out the knowledge, skills and attitudes that are required to perform a particular occupation. The government introduced Meister schools in 2008 to improve the negative social perception of vocational education. The Meister schools, which now total 46, allow students to pursue studies and internships simultaneously. In 2015, the government created work-study dual programmes at the secondary level. Finally, the government recently introduced "blind recruitment" in all 332 public institutions to ensure that people are hired based on their skills rather than other factors, such as academic achievements, family background and personal characteristics. The government is now encouraging private firms to follow suit.

A number of policies are needed to raise youth employment. *First*, breaking down labour market dualism would reduce the number of educated youth who prefer waiting for an attractive job opportunity to the stigma of non-regular employment, which is most prevalent in SMEs. *Second*, further enhancing the link between firms and all types of education is essential to address mismatch. Students in Meister schools and work-study dual programmes account for only 9% of vocational high school students. *Third*, the capacity of vocational high schools is too low to meet demand. The government should expand capacity to reach its target of raising the share of high school students enrolled in vocational schools to 29% by 2022. In addition, the introduction of blind recruitment may reduce discrimination. However, it may also discourage students from studying hard to qualify for admission to high level educational institutions.

Ensuring adequate skills in the workforce of SMEs

In addition to reducing the shortage of workers, it is necessary to ensure that education and training provide workers with enough skills, including digital skills, to achieving the government's goal of making SMEs drivers of innovation and digitalisation. SMEs are limited by a lack of skilled manpower and their capacity to train their workers is low compared to large firms (OECD, 2013a). In particular, promoting lifelong learning will be essential in this regard given the large gap in computer skills between generations. Indeed, the ability of youth (16-24) to solve problems using computers is one of the highest in the OECD, while that of older workers (55-64) is among the lowest (OECD, 2013b). However, the share of older workers receiving vocational education and training in Korea is low. In addition, Korea should expand the number of visas for employment at SMEs to allow high-skilled foreign workers, in addition to those with low skills, to fill shortages in SMEs. Finally, the tax code supports experts who directly engage in research activities at SME research institutes. They are allowed to deduct up to KRW 200 000 (USD 185 000) per month for research expenses (Noh, 2017).

Enhancing SME productivity by strengthening linkages with global markets

The share of SMEs in Korea's total exports dropped from 21% in 2009 to 18% in 2015. SMEs have not benefited fully from the rapid growth of emerging economies and the proliferation of FTAs, nor have they become major players in global value chains (GVCs) in Asia. The share of small firms that participate in global value chains is the lowest in the OECD. Instead, SMEs are primarily focused on domestic demand: exports accounted for only 8.7% of sales of manufactured products by SMEs in 2015 (Table 2.4). In addition, the proportion of retail sales has declined, while sales to other SMEs and to large firms have risen, reflecting the growing importance of subcontracting. In addition, SMEs' indirect contribution to exports appears limited: value added from domestic services, where SMEs account for 90% of employment, accounted for only 26.0% of gross exports over 2010-14, well below the 40% OECD average (Figure 2.15). Moreover, Korea is one of the few countries to record a significant decline since the late 1990s.

Table 2.4. **SMEs are focused primarily on domestic markets**

Percentage of sales of manufactured products by customer

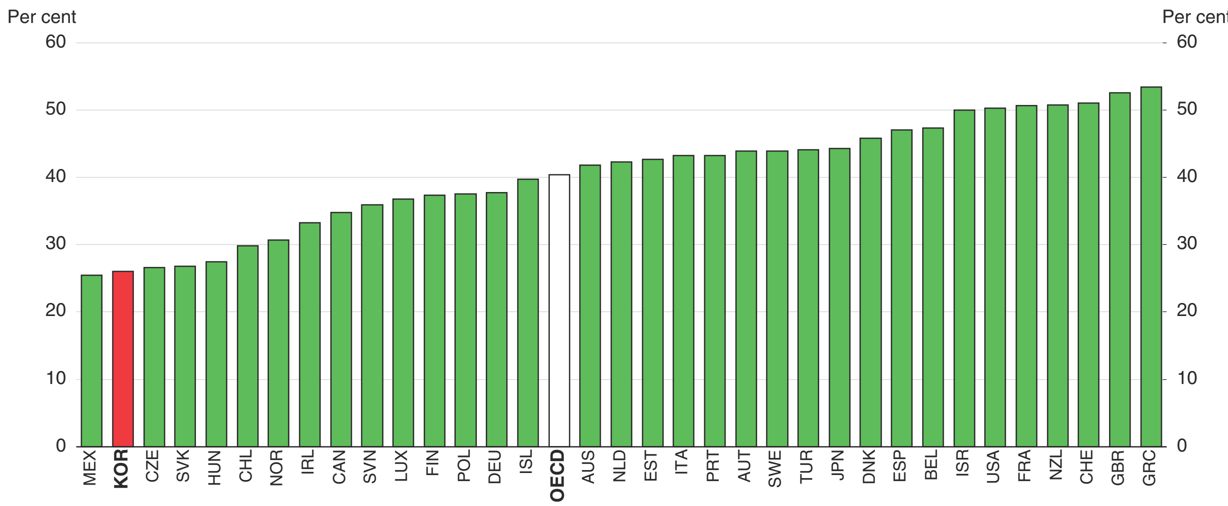
	Exports	Domestic sales					Total
		Sales to large firms	Sales to other SMEs	Sales to public institutions	Retail sales	Sub-total	
2004	8.4	29.8	46.1	3.6	12.1	91.6	100.0
2015	8.7	29.9	47.6	4.9	8.9	91.3	100.0
Difference	0.3	0.1	1.5	1.3	-3.2	-0.3	0.0

Source: Statistics Korea, KOSIS database.

Exports provide an opportunity for expansion and job creation (Moon, 2017). According to a government survey of more than 2 700 SMEs, those that are export-oriented (defined as a firm in which direct exports account for at least 29.8% of their total sales) are more focused on R&D, which accounted for 10.7% of their sales, compared to less than 3% for all SMEs. Exports by SMEs could be increased by: i) better utilising digital platforms to enhance linkages with the global market; ii) making greater use of ICT convergence technology, as noted above; iii) increasing participation in high value-added GVCs, in part by eliminating trade and investment barriers; and iv) developing trade in services.

Figure 2.15. **The contribution of services to exports is relatively low in Korea**

Domestic services value added as a share of gross exports, average over 2010-14



Source: OECD-WTO: Statistics on Trade in Value Added (database).

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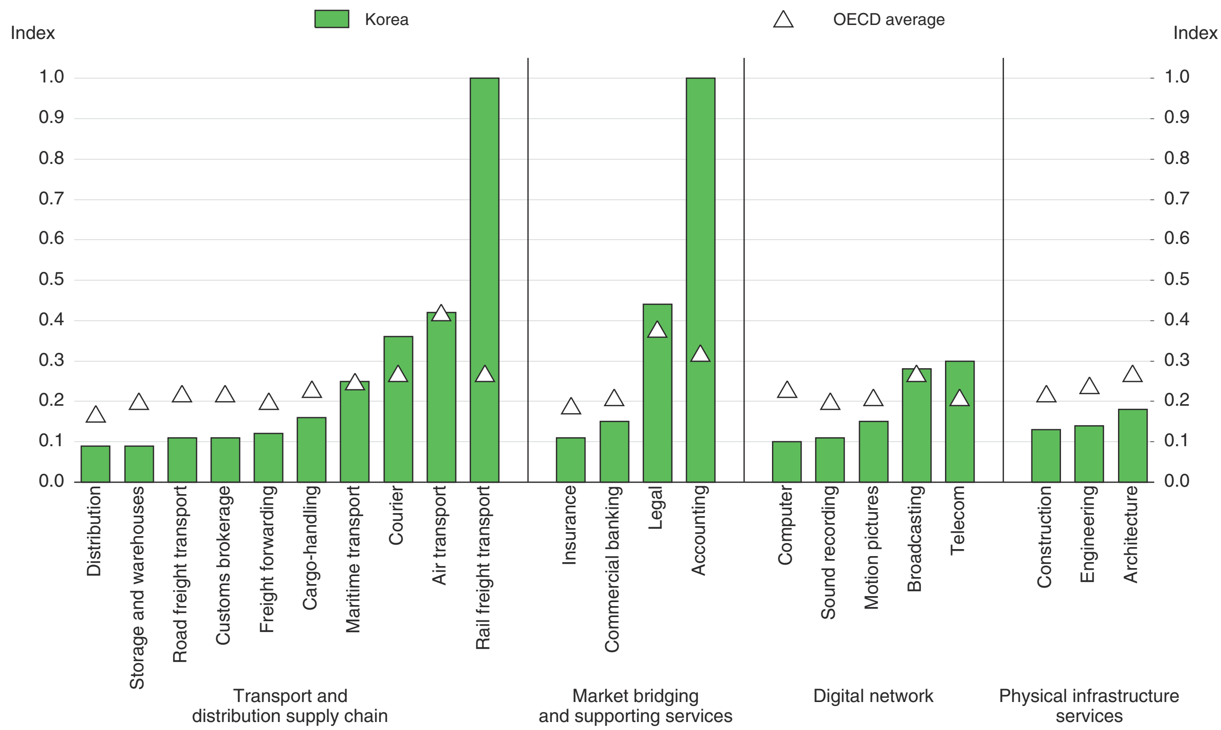
Digital platforms provide new opportunities for small enterprises to tap into foreign markets (OECD, 2016a). However, only 12.4% of exporting SMEs in Korea used e-commerce, according to a government survey (Chang and Lee, 2017), as firms rely more on face-to-face contact. In companies with more than 31 years of export experience, the rate of e-commerce utilisation is only 4%. SME exporters give a number of reasons for not using e-commerce: i) they are not interested in it (27%); ii) they lack the professional manpower to use it (26%); iii) they are not familiar with it (25%); and iv) the cost of constructing such systems is too high (15%). Moreover, among those using e-commerce, the major platform used is the homepage of the exporting company (49%), with smaller roles for globally popular platforms (29%) and the export target country's major platform (14%). Policies to educate SMEs about the possibilities of using e-commerce to export, help them train the necessary manpower and reduce the cost of implementing such systems would help increase SME exports (OECD, 2017e and 2017g) and promote "global start-ups" (Box 2.3). The government's SME Export Support Centre should develop an on-line platform to facilitate contacts between SMEs and overseas buyers. However, success in exporting ultimately depends on overcoming the problems that hamper productivity in Korean SMEs that are discussed in this chapter.

Korea is active in "Factory Asia", as the import content of its exports was 38% in 2014, compared to the OECD average of 30%. A quarter of export-oriented SMEs have overseas production bases, of which three-quarters are participating in GVCs. Firms that participate in GVCs are more productive than non-participating firms. However, the productivity gap is much bigger among large firms than among small firms, as more than half of Korea's SME exporters are concentrated in low value-added work such as finished goods assembly (32.6%) and parts production (20.2%) (Kim et al., 2016).

Lowering Korea's barriers to trade and investment, which were the second highest in the OECD in 2013, would promote the participation of SMEs in high value-added GVCs. Given the concentration of SMEs in services, increasing trade in services would help boost their productivity. Many of the key trade barriers affect services. Korea's service trade restrictiveness index is below the OECD average in 14 out of 22 sectors but still above it in some sectors that play key roles in GVCs, such as telecom, legal and accounting services and rail freight transport (Figure 2.16). In addition, enhancing institutional transparency and regulatory reform (see below) and harmonising standards and technical regulations would reduce regulatory costs.

Figure 2.16. **Korea should reduce barriers to trade in key services**

In 2017 or latest year[1]



1. The STRI indices take values between zero and one, one being the most restrictive. The STRI database records measures taken on a "Most Favoured Nation" basis while excluding preferential trade agreements.

Source: OECD Services Trade Restrictiveness Index (database).

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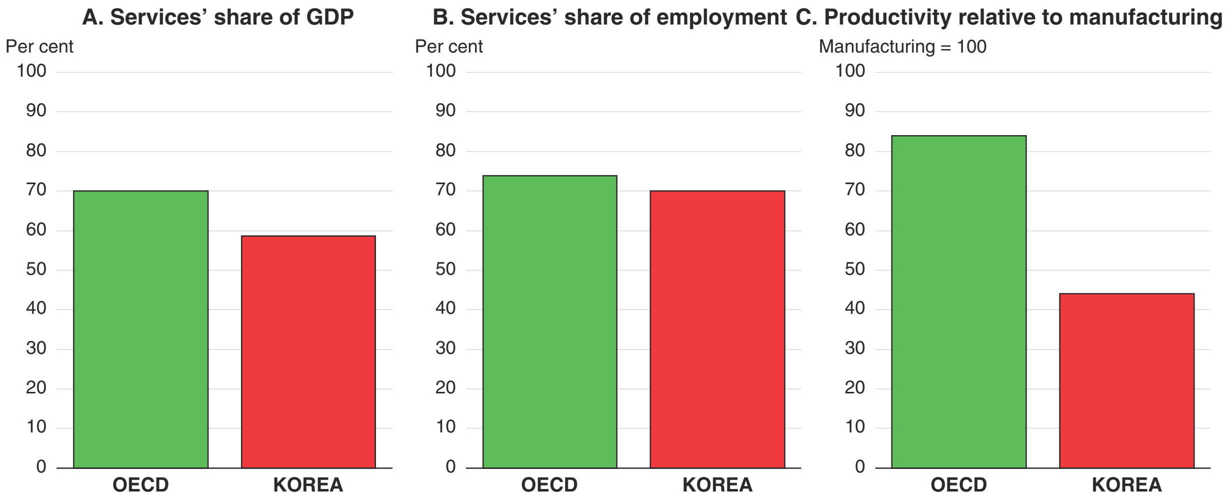
Increasing SMEs' direct exports of services would also be beneficial, although it would be a challenge given that Korea's service sector is relatively undeveloped. Export-led development has siphoned capital, talent and other resources away from services and toward manufacturing. Services accounted for 58.6% of Korean GDP in 2017, well below the OECD average, and accounted for 70.1% of employment (Figure 2.17). The share of the service sector in employment has been on an upward trend, while its share of output has been stagnant. The 46% gap in the level of economy-wide labour productivity between Korea and the top half of OECD countries is largely explained by low productivity in services, which was 44% of that in manufacturing in 2017, compared to an average of 84% in the OECD (Panel C). Services also play a relatively small role in international trade. While Korea was the world's eighth-largest exporter of goods in 2016, it ranked 17th in service exports.

The first priority to increase SME participation in global trade would be to raise the share of domestic services value added in gross exports from its current low level (Figure 2.15). However, this requires addressing the factors that keep its productivity low

Figure 2.17. **Service sector productivity is low in Korea**

In 2017[1]



1. Based on 2010 prices for value added.

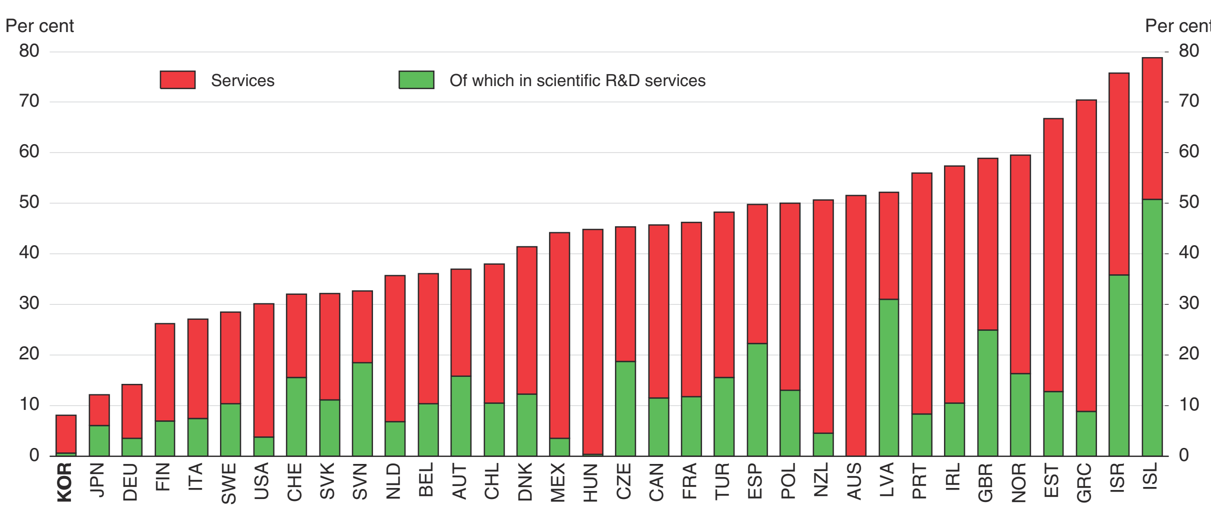
Source: OECD National Accounts Statistics (database); OECD Structural Analysis Statistics (database).

StatLink http://dx.doi.org/10.1787/888933739167

(Jones, 2009). One reason is that services account for only 8% of Korea's business expenditure on R&D, the lowest in the OECD (Figure 2.18). Moreover, services accounted for only 3.4% of public R&D spending in 2017. The government aims to raise the share to 6% during the next five years. In addition, the measures discussed above to make the R&D tax credit more effective for SMEs would be beneficial.

Figure 2.18. **Korea R&D in services is the lowest in the OECD**

As a percentage of business enterprise R&D in 2015



Source: OECD (2017f).

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Box 2.3. **Global start-ups**

"Global start-ups", a term applied to young firms heavily involved in international trade, have made large contributions to innovation and employment, two top priorities of the government. In 2016, 490 "innovative start-ups" that were less than seven years old were surveyed (Lee et al., 2017). Of them, 124 are classified as global start-ups based on three criteria: i) they entered overseas markets within three years after their establishment; ii) they are active in at least two foreign countries through, for example, joint ventures or strategic alliances; and iii) their exports account for more than 25% of total sales. On average, they exported some 50% more than other innovative start-ups.

Global start-ups achieve more employment growth, raising the number of employees by seven over 2009-15, a larger increase than in enterprises that attract venture capital investment (but may not qualify as global start-ups). Meanwhile, non-global start-ups increased employment by five persons. The ability of global start-ups to produce internationally-competitive products from the outset suggests relatively strong innovation capabilities. The share of their products using breakthrough technology not seen before in Korea or the world was 28.5% compared to 19.0% for non-global start-ups.

Only 38% of the global start-ups participated in government programmes providing assistance. Instead, they relied primarily on private-sector networks, such as their personal contacts and domestic trading companies, which are able to provide objective evaluation and sufficient support. This suggests that private-sector experts with a proven track record are better able to provide the necessary assistance to start-ups. Moreover, the complexity of joining government programmes, which tend to require a record of success, discourages the participation of start-ups. Improving the programmes would allow them to complement the private-sector networks of the start-ups and increase the number of innovative start-ups that turn into global start-ups.

An ecosystem to promote dynamic SMEs

Regulatory reform to reduce the burden on SMEs and create new opportunities

In 2013, it was estimated that 8 291 regulations – 59% of the total number – applied to SMEs (Table 2.5), reflecting their prevalence in services. Economic regulations covering entry, price, trading and quality, which can distort the functioning of markets, accounted for about one-third of the regulations. Another third were social regulations on environment, industrial accidents, consumer safety and social discrimination. In addition more than 1 800 SME regulations applied to the creation of enterprises (Panel B). In sum, the creation of SMEs and their business activities are subject to a large number of regulations. As in other countries, regulation is a key obstacle to the emergence of dynamic SMEs (OECD, 2016b). In line with its goal of making SMEs the driver of the fourth industrial revolution, the government plans to lower the cost of starting firms and reduce the regulatory burden on existing firms. Potential entrepreneurs in Korea face high start-up costs at 14.6% of per capita gross national income, four times higher than the 3.1% OECD average (World Bank Group, 2017). It is also far above other Asian economies such as China (0.6%) and Chinese Taipei (2.0%).

One major obstacle to firm creation is Korea's positive-type regulatory system, which prohibits everything except what is specifically allowed. One step towards a negative-type regulatory system (which allows everything except what is specifically prohibited) is the government's plan to liberalise regulations in specific geographic areas and industries, notably ICT (Office for Government Policy Coordination Prime Minister's Secretariat, 2017).

Table 2.5. **There are a large number of economic regulations on SMEs**[1]

A. By type of regulation (in 2013)

Type of regulation		Number of regulations	Per cent of total
Economic regulations	Entry	154	1.9
	Price	1 012	12.2
	Trading	1 092	13.2
	Quality	606	7.3
	Sub-total	**2 864**	**34.5**
Social regulations	Environment	806	9.7
	Industrial accidents	423	5.1
	Consumer safety	1 440	17.4
	Social discrimination	279	3.4
	Sub-total	**2 948**	**35.6**
Administration regulations		**2 479**	**29.9**
Total		**8 291**	**100.0**

B. Economic regulations on SMEs by type of activity (in 2013)

Type of regulation		Number of regulations	Per cent of total
Creating an enterprise	Founding	1 247	15.0
	Building	310	3.7
	Location	264	3.2
	Sub-total	**1 821**	**22.0**
Business activities	Administration	2 143	25.8
	Production	1 075	13.0
	Sales	912	11.0
	Personnel	635	7.7
	Finance	442	5.3
	Safety	407	4.9
	Environment	343	4.1
	International trade	208	2.5
	Technology	62	0.7
	Sub-total	**6 227**	**75.1**
M&As and business transition	Merger	84	1.0
	Sale of assets	4	0.0
	Sector switching	1	0.0
	Sub-total	**89**	**1.1**
Family business succession		65	0.8
Closure & company clean-up		89	1.1
Total		**8 291**	**100.0**

1. Regulations either legally limited to SMEs, pertaining to sectors where practically all firms are SMEs or cited by SME associations as important to their member firms.

Source: Cho and Kim (2013).

This is to be accompanied by "regulatory sandboxes", which allows the temporary provision of licenses in sectors using new technology (World Bank Group, 2017). This approach is being used in a number of countries, including Japan, which will soon apply it to automated driving and long-range drones (Nikkei Asian Review, 2017). An initial step in this regard in Korea was a 2015 law that created a type of regulatory sandbox to promote the ICT sector. However, by mid-2017, only three cases had been dealt with and it took an average of 133 days to receive temporary permission (Choi et al., 2017). Using regulatory sandboxes effectively would help Korea shift to a comprehensive negative-list regulatory system.

A second obstacle is that the regulatory burden tends to be relatively greater on SMEs than on large enterprises (OECD, 2017h). Indeed, the uncertainty, complexity and inconsistency of regulation are sometimes greater problems for SMEs, which have fewer resources than large firms, than the regulation itself. Of the 8 291 regulations applied to SMEs in 2013, only 1.7% allowed differential treatment for SMEs. A number of countries are taking steps to ease regulatory burdens on SMEs. For example, the United States introduced the "Regulatory Flexibility Act" in 1980 to allow differences in regulations applied to SMEs and large firms. Korea should make efforts to reduce the burden of regulatory compliance, focusing on SMEs, while ensuring that key economic and social objectives, such as those related to the environment, safety and labour rights, are met.

Protecting SMEs by strengthening the stringency of regulation on large enterprises should be avoided as the overall economic effect would be negative. General equilibrium models suggest that the positive effect of regulatory reform is greatest when it applies to both large enterprises and SMEs (Jung, 2016). Moreover, the positive impact of regulatory reform that is applied only to large firms is greater than that applied only to SMEs. Similarly, the negative effect of regulation imposed only on large firms is more negative than regulation imposed only on SMEs. In short, using regulations to improve the position of SMEs relative to large enterprises is counter-productive, while trying to eliminate unfair business practices. In general, the objective should be to remove regulations that inhibit competition by large firms and SMEs, while achieving social objectives.

Using public procurement to assist SMEs

SMEs are supported through a broad range of programmes in Korea to boost their share of public procurement of goods and services. Indeed, the law sets a target of 50% for SMEs' share of total public procurement, which accounts for a 21.7% of government spending. SMEs captured 54% of contracts awarded through competition in 2014, up from 30% in 2009. An OECD study concluded that public procurement in Korea is "overly focused on SMEs, to the exclusion of large suppliers" (OECD, 2016f).

Public procurement policies to benefit SMEs have the unintended side effect of increasing dependency on public support and slowing productivity gains. SMEs chosen for public procurement in 2009 had significantly lower productivity in 2011 and a greater chance of survival than other firms (W. Chang, 2017). Public procurement policies thus result in a moral hazard by encouraging SMEs to depend on the procurement market for survival without improving their productivity to the level demanded by the market. The government should reduce this distortion by tightening the screening process for SMEs involved in public procurement and monitoring their performance. In order to promote innovation by SMEs, government procurement programmes for SMEs and start-ups are focusing more on technologically-advanced products.

Addressing other obstacles to the development of SMEs

Making SMEs a driver of innovation to achieve the fourth industrial revolution requires shifting from a "fast-follower" approach that has driven Korea's catch-up to a "first-mover" strategy. Under the fast-follower model, the government has supported winners who were able to compete in international markets. The government's science, technology, industrial and education policies have focused on repeating past successes, while failing to create an innovative ecosystem (Lee and Choi, 2017). Bureaucratic decisions to select and support national champions have interfered with technological decisions and stifle innovation. The costs associated with administrative burdens and red tape are relatively higher for SMEs than for large enterprises, thus hamstringing innovation in SMEs. Shifting to a fast-follower strategy requires a fundamental shift in government strategy, as well as in the education system and corporate practices. In sum, direct interference by the government should be reduced.

The criteria to receive special treatment as an SME, which were based on the number of regular workers, sales, capital and total assets until 2015 (Box 2.2), created disincentives for SMEs to grow and lose their preferential treatment. This led to a "bunching effect" as firms stopped expanding once they reached the various thresholds in order to remain eligible for government support (the "Peter Pan syndrome"). This led to a new definition of SMEs in 2015 that is based on total assets and sales. However, there is still bunching as SMEs limit assets and sales to stay below the threshold. One strategy of enterprises that want to maintain SME status is to split the firm in two (Kim, 2017). The disincentive to growth also applies to mid-size firms, which must keep their total assets below KRW 10 trillion to continue receiving special benefits.

Special tax treatment for SMEs is one of the major incentives that discourages firms from growing and graduating from SME status, which has a negative effect on a country's growth (OECD, 2015c). Moreover, it also gives incentives to artificially split up into different businesses to continue benefitting from the preferential tax treatment. Tax support for SMEs in Korea is high and its coverage is broad compared to other OECD countries, and continues to favour manufacturing. In most OECD countries, preferential tax treatment applies only to firms with less than 50 employees, while in Korea all SMEs, which account for 99.8% of companies, and mid-size companies, are eligible. A range of tax credits are offered to firms that, for example, make investments that create jobs, increase their employment of regular workers and convert non-regular workers to regular status. Reducing the range of SMEs receiving preferential tax benefits would weaken the Peter Pan syndrome. The negative effect on company growth from government subsidies to specific firm classes should be reduced by scaling back their generosity and phasing out benefits gradually for firms that graduate from SME or mid-size firm status.

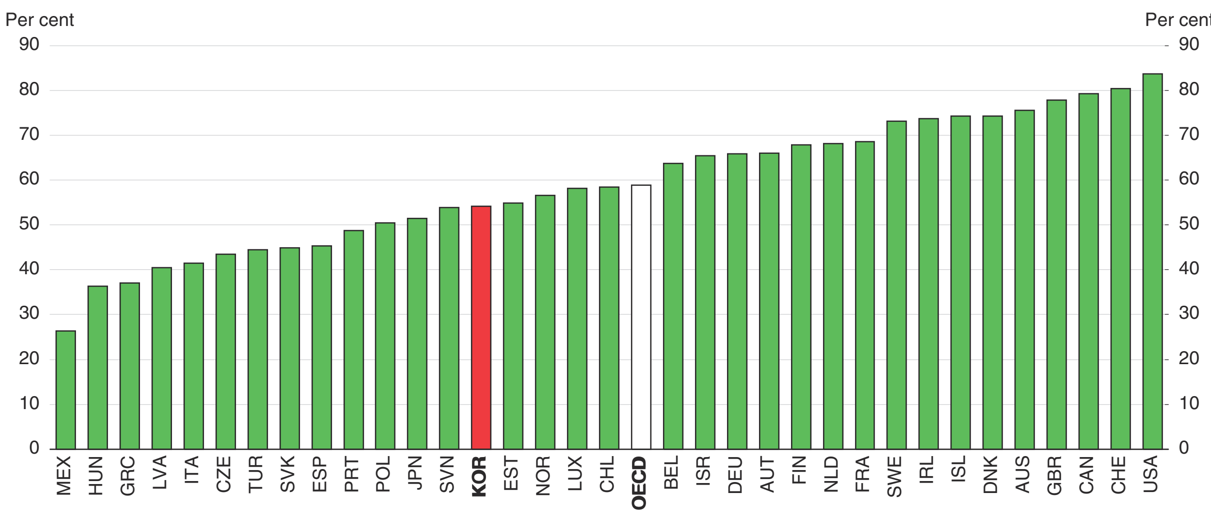
Subcontracting relationships (Chapter 1) have a big impact on SME performance, given that they account for a large share of SME sales (Table 2.4). The sales and total assets of SMEs that subcontract with large and mid-size enterprises are larger than for SMEs that do not subcontract. Indeed, the sales and assets of the large companies are correlated with those of the subcontracting SMEs. However, the increase in SMEs' sales and assets is not accompanied by a rise in their operating profit ratio (Chang and Woo, 2015). This reflects their generally weak bargaining power relative to large firms. Even among mid-size firms, 23% reported that they had been asked to reduce their delivery prices by 3% to 5% in 2015 (Association of High Potential Enterprises of Korea, 2017). This has negative implications for productivity as subcontracting SMEs and mid-sized firms have little incentive to become more efficient. The virtuous circle of reinvesting profits to become more productive is broken. This also has implications for government support for SMEs, which may be passed on to the large firms (W. Chang, 2018). This so-called "straw effect" is statistically significant in the ICT sector, where the government is increasing SME support to promote the fourth industrial revolution.

Promoting entrepreneurship to increase the number of start-ups

Increasing enterprise creation boosts "labour productivity growth, with evidence pointing to a correlation between start-up and churn rates, and productivity growth, although, the impact on recorded labour productivity growth may not be immediate"

(OECD, 2016b). Korea was ranked 21st in the OECD according to the 2018 Global Entrepreneurship Index (Figure 2.19). In the Global Entrepreneurship Monitor international survey, Korea ranked 37th among the 60 countries surveyed. Moreover, only 34% of the Korean population has a favourable perception of start-ups, far below the OECD average of 49% (OECD, 2014). These indicators suggest weaknesses in entrepreneurship that should be addressed to promote inclusive growth (Park, 2017). In November 2017, the government launched a "Plan to Create an Ecosystem to Nurture Innovative Start-ups" (Box 2.4), which is similar to the 2013 "Measures to Improve the Venture Start-up Ecosystem" (2014 *OECD Economic Survey of Korea*). Both include tax incentives for business angels, public-private venture capital funds, measures to promote M&As and strengthening KOSDAQ.

Figure 2.19. **Korea is ranked 21st in the 2018 Global Entrepreneurship Index**



Source: Global Entrepreneurship Development Institute (2018), *Global Entrepreneurship Index 2018*.

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Box 2.4. **A government plan to create an ecosystem to nurture innovative start-ups**

The plan announced by the government in November 2017 set three goals and policies to achieve them.

1. Creating a start-up-friendly environment to foster entrepreneurship

- Support talented individuals launching diverse start-ups: i) encourage spin-offs from existing firms by introducing a "start-up leave" system, which allows entrepreneurs to return to employment in case of failure; and ii) allow professors in universities to have more flexible employment arrangements to encourage start-ups.
- Transform the venture start-up support system into a private sector-driven system. Utilise the Tech Incubator Programme for Start-ups (TIPS) as part of the government's overall policy on start-ups.
- Provide support during the seed stage of start-ups, such as office space and online and offline networking opportunities. Utilise the Pangyo Techno Valley, government properties and public institutions as "makerspaces" to facilitate the exchange of ideas and commercialisation of innovative ideas.

Box 2.4. **A government plan to create an ecosystem to nurture innovative start-ups** *(cont.)*

- Assist start-ups during their developmental stages, including financing, participation in public procurement, securing markets, including overseas, thereby helping them survive the so-called "Valley of Death" and grow into strong mid-size enterprises.

2. Expanding financing opportunities and tax incentives

- Set up an "innovation adventure fund" worth KRW 10 trillion (USD 9.3 billion): i) the public sector will contribute KRW 3 trillion through fiscal expenditure and policy-based loans and the private sector will provide KRW 7 trillion; and ii) provide a comprehensive funding package for venture business throughout different stages, from commercialisation of ideas to market launch, and from M&A to business reorganisation.
- Promote technology financing based on the firm's profitability and the future value of the technology. Provide more educational programmes on technology financing, for example at the Korea Banking Institute.
- Diversify tax incentives for start-up investment to attract investment by a broader group of investors: i) double the amount of the angel investment tax exemption that is 100% deductible from the current level of KRW 15 million (USD 13 893); ii) reintroduce the tax exemption for gains from stock options, iii) increase the tax exemption for employee stock ownership from KRW 4 million to KRW 15 million; and iv) introduce tax incentives for investment in start-up investment associations to encourage investment in small amounts.

3. Establishing a virtuous cycle between start-ups and investment

- Gradually phase out joint surety (guarantees), which pose a heavy burden on entrepreneurs' family and friends in the case of bankruptcy, making it difficult to re-start the company. Policy-based financing institutions will abolish it within the first half of 2018 and private institutions will phase it out gradually.
- Facilitate Initial Public Offerings (IPOs) and M&As: i) strengthen the independence of the KOSDAQ Market Committee to boost the KOSDAQ and KONEX markets; ii) encourage investment from pension funds, iii) boost incentives for large enterprises to take part in M&As; and iv) attract foreign venture capital investment in domestic M&As.
- Prepare measures to prevent technology theft: launch a task force at the Korea Fair Trade Commission this year and expand its investigative mandate over technology theft.

Source: Ministry of Strategy and Finance (2017), *Press Release* (2 November).

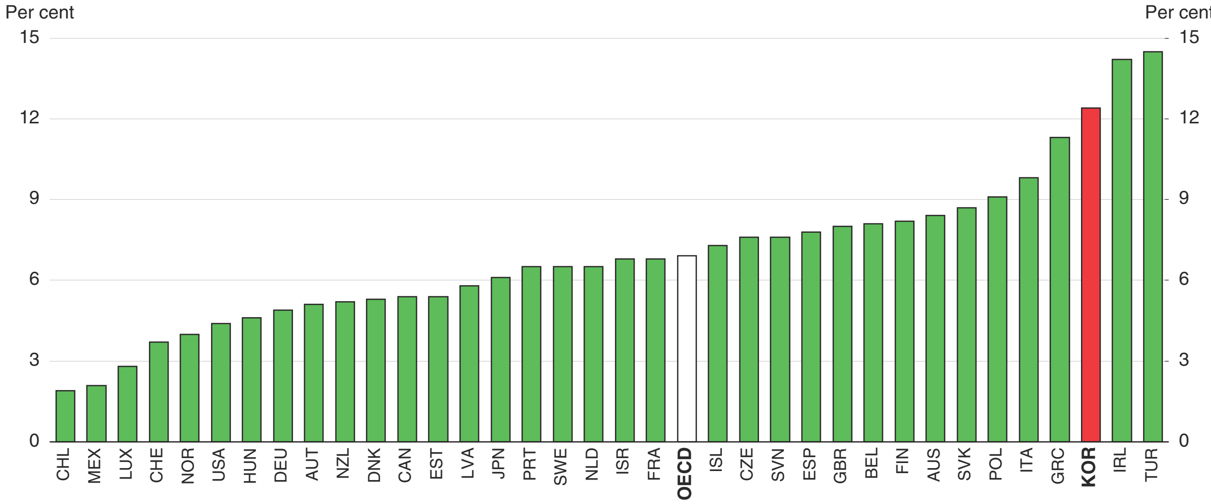
Promoting opportunities for female entrepreneurs

Entrepreneurial opportunities in Korea for women are relatively limited compared to men. The share of female entrepreneurs (defined as self-employed persons with employees and own account workers) was 14% in 2016, compared to the 10% OECD average. However, it was well below the 26% rate for Korean men, leading to the third-largest gender gap in entrepreneurship in the OECD (Figure 2.20).

Female entrepreneurs cited six key disadvantages in a 2015 survey: i) balancing work and family responsibilities (80%, i.e. only 20% did not feel any difficulty); ii) adapting to male-centred business practices (76%); iii) obtaining financing (70%); iv) loss of business opportunities due to their perceived passive management (69%); v) discrimination against women in business (69%); and vi) operating in male-oriented networks that limit

Figure 2.20. **The gender gap in the entrepreneurship rate in Korea is high**

The share of male entrepreneurs minus the share of female entrepreneurs



1. Defined as self-employed with employees and self-account workers as a share of total employed.

Source: OECD (2017c), *OECD Entrepreneurship at a Glance 2017.*

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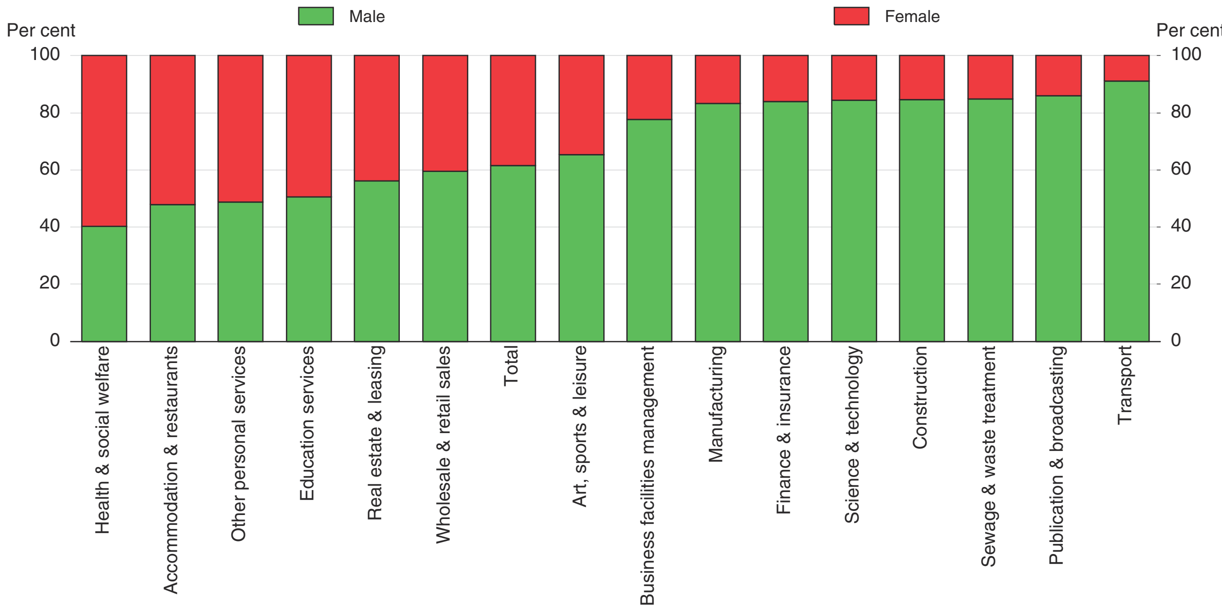
participation by women (Korea Women's Entrepreneurship Association, 2015). Regarding financing, the initial capital of female entrepreneurs in 2015 was only 62% of that of men, which is close to the gender wage gap. Difficulties in financing have reduced opportunities for female entrepreneurs to enter high value-added industries, as discussed above.

Developing entrepreneurship opportunities for women is a priority to achieve inclusive growth. Entrepreneurship enables women to avoid the dualistic labour market, which leads to the largest gender wage gap in the OECD (37%), reflecting the fact that 41% of female employees are non-regular workers. The attractiveness of starting one's own business has increased during the past few years of relatively slow growth and slack labour market conditions. Although start-ups by women in Korea rate highly in terms of job creation and business stability (Korea Women's Entrepreneurship Association, 2015), female entrepreneurs are concentrated in basic livelihood sectors, such as health and social welfare, accommodations and restaurants, other personal services and educational services (Figure 2.21), reflecting in part their more limited access to financing and their educational background. Such sectors are characterised by fierce competition and relatively high failure rates. Relatively few female entrepreneurs create firms in manufacturing or high value-added sectors such as finance and insurance and science and technology. In addition, nine out of ten firms started by female entrepreneurs have less than ten employees.

The government is investing in female entrepreneurs, using a fund aimed at women. The fund, which totalled KRW 54 billion (USD 50 million) over 2014-17 is to be increased to KRW 90 billion over 2018-22. One of the criteria for firms to qualify for support from the fund for female entrepreneurs is to have women account for 35% of their employees, even if the entrepreneur is male. However, only 114 of the 712 persons receiving support from the Start-up Academy Programme in 2016 were women (Table 2.6). Female start-up's share of support for exports, funding and R&D was even smaller, though increases were planned for 2017. At a minimum, support for female start-ups should match that for male start-ups and the number of women receiving such support should be increased. Government

Figure 2.21. **Female entrepreneurs are concentrated in certain industries**

Within seven years after creation of the firm



Source: *Ministry of SMEs and Start-ups (2018), 2017 Survey on the Status of Start-ups.*

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support should be combined with greater market-based financing (see below). Experience shows that to increase the number of start-ups by women, it is not enough to simply encourage more women to start companies. A key is to have more women join venture capital firms (Raina, 2016).

Strengthening the entrepreneurial spirit of youth

The entrepreneurial spirit of Korean youth has dimmed following the venture capital boom of the late 1990s. In the early 2000s, 32% of the chief executive officers of Korean venture companies were in the 20 to 30 age group, but this share fell to 10% in 2010. Korea had the second-lowest percentage of young people age 18 to 34 involved in early-stage entrepreneurship in the OECD in 2012 (Figure 2.22). Youth were held back by a seeming absence of opportunities, the lack of the necessary knowledge and skills to start a firm and a fear of failure. This weakening of youth's entrepreneurial spirit will frustrate Korea's objective of achieving growth led by SMEs and start-ups. Measures to improve attitudes toward entrepreneurship are thus a priority (Kim, 2014).

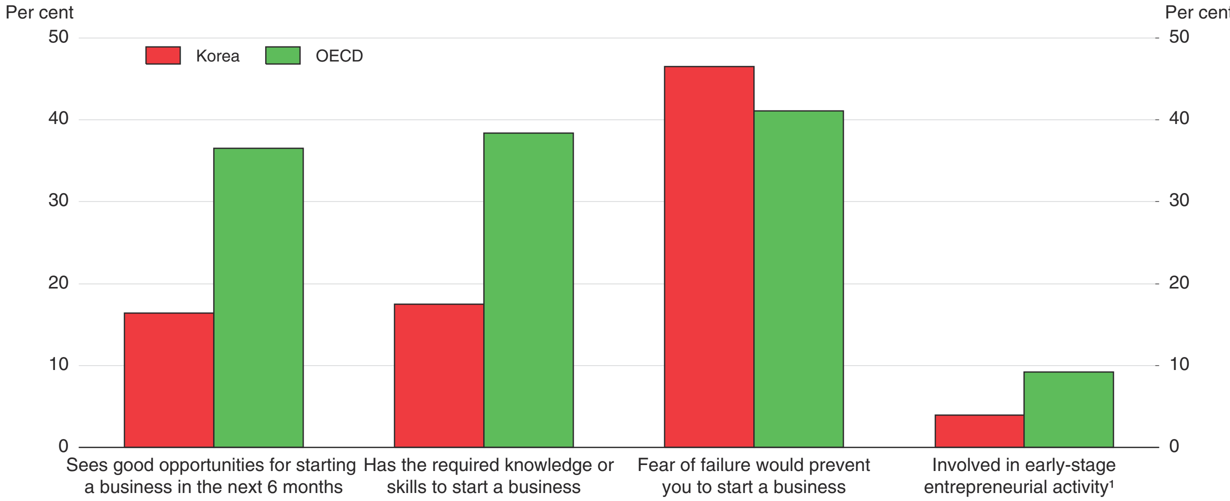
Table 2.6. **Government support for female entrepreneurs is low**

	R&D support (billion won)	Funding support (billion won)	Export support (number of firms)	Support from the Start-up Academy Programme (number of persons)
Government support for female entrepreneurs in 2016	61.3	482.6	1559	114
Share of total support	6.5	10.7	15.0	16.0
Government support for female entrepreneurs in 2017	75.8	430.2	2083	266
Share of total support	8.0	12.0	18.0	28.0

Source: Ministry of SMEs and Start-ups (2017c), *Promotion Plan for Female's Business Activities.*

Figure 2.22. **Korea's entrepreneurship rate for youth is far below the OECD average**

Percentage of population between the ages of 18 and 34 in 2012



1. Defined as the share involved in a nascent or new business.

Source: Global Entrepreneurship Monitor (2013).

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First, it is essential to improve the image of entrepreneurship and the capacity of youth to become entrepreneurs through education beginning in primary school. Korea has been running the "Bizcool" programme in primary and lower secondary schools since 2002, but it covered only 15 primary and ten middle schools in 2013. Entrepreneurship education is being introduced as a regular course in all primary and secondary schools in 2018, including after-school "start-up classrooms". The programme should draw on the OECD's Entrepreneurship 360 project. The Start-up Leading University (SLU) programme, which has a significant impact, is currently run by three separate ministries. Management should be combined in one ministry. In addition, leaves for students creating a start-up should be extended and more academic credit should be given for those engaged in entrepreneurial activities.

Second, the infrastructure for start-ups needs to be improved outside of the Seoul capital region. Surveys indicate that 77% of university students outside the capital region are very interested in starting a business, compared to only 25% of those inside the capital region (Lee et al., 2012). However, the entrepreneurial infrastructure as well as the human resources and education systems to mentor young entrepreneurs are concentrated in the capital region. In November 2017, the government announced that it would redesign the 19 Centres for Creative Economy and Innovation that have been established throughout the country as regional innovation hubs (Ministry of SMEs and Start-ups, 2017b), which should help reduce the infrastructure gap.

Third, it is important to reduce the risk of failure to encourage greater entrepreneurship, in part by facilitating second chances for entrepreneurs who have experienced failure. The average debt, including tax delinquency, borne by the head of a bankrupt firm in 2017 was KRW 356 million (USD 330 000). Helping failed entrepreneurs cope with the high debt is essential to ensuring second chances. In 2017, the government took some measures to reduce their debt burden (MOSF, 2017):

- Companies receiving loans have co-guarantors, who are responsible for the debt if the borrowers are unable to pay. The impact on the co-guarantors is one of the factors that make entrepreneurs avoid bankruptcy at all costs. The government has decided to abolish the requirement for co-guarantees on loans by four public institutions in 2018.

- Failed entrepreneurs who re-start their company or accept employment will be forgiven tax arrears of less than KRW 30 million (USD 27 785).
- The monthly restriction on their spending is planned to be raised from KRW 1.5 million to KRW 1.8 million (USD 1 667).

Measures to promote senior entrepreneurship

As noted above, the early departure of employees from firms – before age 50 on average – prompts a large number to create small firms using their retirement allowance. Many of these "necessity-driven" start-ups have little capital and technology. The policies to encourage entrepreneurship by women and youth through education, training support and providing infrastructure should also be extended to older persons to help them succeed as entrepreneurs. Creating positive awareness of entrepreneurship as a late-career option could help remove negative bias against older persons, which acts as a potential barrier to senior entrepreneurship. It is also important to ensure that start-up financing schemes do not discriminate against older entrepreneurs (OECD and EU Commission, 2012).

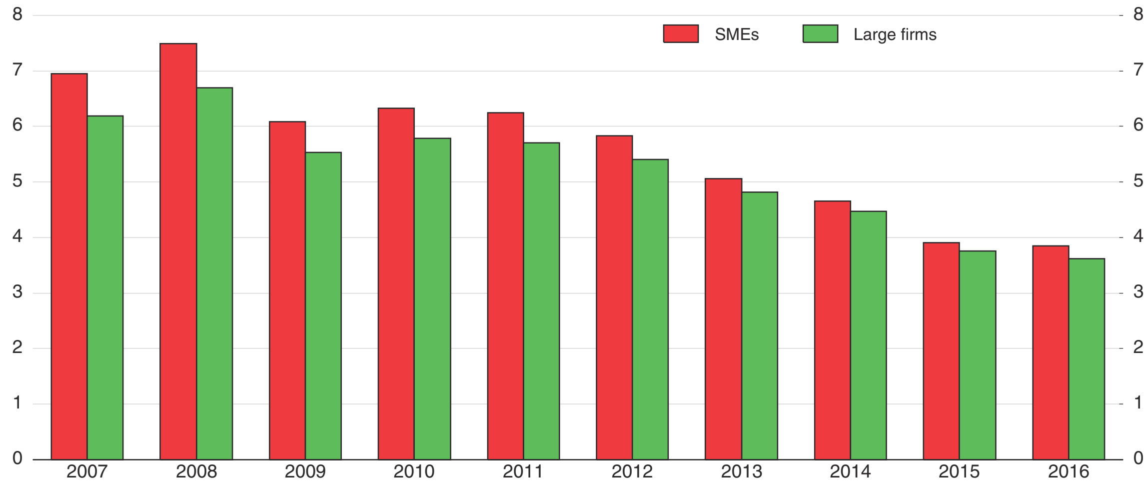
Policies to improve financing of SMEs and start-ups

Small firms' access to credit is limited by their absence of collateral, short credit history and lack of expertise needed to produce financial statements. From the supply side, the small scale of lending involved may not compensate the cost of screening and monitoring, resulting in an information asymmetry. As a result, financial institutions attribute a high risk of default to borrowers, providing some justification for government intervention to overcome this market failure (Jones and Kim, 2014). Korea has responded with large-scale support for SMEs. *First,* public credit guarantees for SME lending amounted to 3.8% of GDP in 2016, down from 4.1% in 2014, but still the second highest in the OECD after Japan (Figure 2.4). *Second*, the government provides direct lending, amounting to KRW 4.5 trillion (0.3% of GDP in 2016). In 2016, 68% of loans requested by SMEs were authorised. *Third*, the government provides a range of subsidy programmes as discussed above. The size and number of public SME financing programmes is high by international standards (Koo et al., 2015).

With such government support, the financing situation for SMEs appears relatively strong. SMEs accounted for 79% of total business loans in 2016, a high share by international standards (OECD, 2018). The gap between the average interest rate on loans to SMEs and large firms fell from 79 basis points in 2008 to 23 in 2016 (Figure 2.23). The financing gap – the shortage in funding to SMEs due to market failure – was estimated at KRW 28 trillion for firms less than ten years old in 2015 (Lee et al., 2015). This amounts to 5% of total lending to SMEs. Another study that examined credit rationing in the SME loan market concluded that the probability of rationing was more than 80% in only 0.4% of firms over 2013-14 (Lee and Lim, 2017). These studies cast doubt on the need for extensive public financing of SMEs.

A study of 23 OECD and EU countries found that very few have undertaken rigorous studies of the economic costs and benefits of public support for SMEs through credit guarantees (OECD, 2017d). However, in Korea, current public programmes to support SME financing actually lowered the productivity of recipient firms and increased the survival probability of incompetent ones, according to recent evaluations by public think tanks (Chang et al., 2014; Cho et al., 2016; Chang, 2016a; Chang, 2016b). As a result, they have had

Figure 2.23. **The interest rate spread between large firms and SMEs has fallen**



Source: OECD (2018), *Financing SMEs and Entrepreneurs 2018: An OECD Scorecard.*

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a negative impact on the national economy. Once loans are given to a firm, credit guarantee providers and financial institutions share a common interest in its survival, as a default would result in losses for both of them. To delay or prevent such a loss, they may continue to support the firm, a phenomenon referred to as "evergreening", which facilitates the survival of non-viable firms. In 2016, 17% of SMEs said that they had not covered interest costs for more than six months during the preceding three years. However, many SMEs are not audited and do not have reliable financial information.

Public support through direct credit and guarantees to SMEs has other adverse effects:

- It crowds out private funding and hinders the development of the market by reducing financial institutions' incentives to develop their credit evaluation and risk management skills for SME lending (Sohn and Kim, 2013).
- High and lasting government support discourages companies from expanding and thereby achieving economies of scale. The average age of firms in Korea that receive public guarantees on their loans is around 11 years and more than half of the guarantees were given to highly-rated companies.

This calls for: i) shifting the objective of SME policy from firm survival to productivity; ii) introducing a rigorous evaluation system based on appropriate performance indicators; and iii) restructuring policies to enhance efficiency based on such evaluations (Chang, 2016a).

In addition, a system of graduation from government financing support would reduce the share of support that only serves to extend the life of marginal companies (2016 *OECD Economic Survey of Korea*). Such a system would increase the emphasis on young firms, which face the largest the risk of market failure in obtaining financing. Indeed, the risk of credit rationing declines with a firm's age (Lee and Lim, 2017). Support for older firms crowds out support for start-ups and highly innovative young firms, which remain vulnerable. The survival rate of new start-ups after three years is relatively low in Korea at 41.0%, compared to other countries such as Austria (62.8%), the United States (57.6%), Israel (55.4%) and Italy (54.8%) (Financial Services Commission, 2015). The 2015 initiative to reduce support for SMEs that are older than five years is a step in the right direction. In sum, SME programmes should shift from keeping non-viable companies alive to preventing market failures that bankrupt high-potential firms. Such a shift in policies would also facilitate a gradual decline in public support.

The "Integrated Management System for SMEs", which was established in 2015, could provide the basis for a rigorous evaluation system based on appropriate performance indicators and a graduation programme. The System currently covers 689 programmes, whose cumulative assistance to small firms amounted to KRW 361 trillion (USD 334 billion) by April 2018. In addition, the System, which encompasses the support provided to 2.04 million SMEs since 2010, can reduce the number of SMEs benefitting from multiple programmes.

Lending for SMEs is typically based on direct government lending, public guarantees and collateral provided by the borrower, each with certain drawbacks. The government launched an initiative in 2014 to promote loans based on technology to provide greater financing for start-ups without collateral. Technology lending reached KRW 92.8 trillion (23.2% of total loans to SMEs) at end-2016. However, technology finance is complicated given the high degree of information asymmetry due to the uncertainties inherent in technology development, private lenders' unfamiliarity with intangibles and the heterogeneous nature of the assets. Consequently, technology finance is increasingly reliant on public financial institutions, (Brassell and Boschmans, 2018). Even so, public institutions provide low-risk financing to outstanding companies rather than lending to develop advanced technology associated with high risks, reflecting prudential regulations. This lowers the effectiveness of policy finance, while increasing the size of support. In short, public financing for technology focuses too much on existing firms wishing to expand using their current technology, rather than on start-ups with new technology.

Commercial banks tend to be reluctant to provide funds for start-ups that are technically strong but have poor profitability and financial stability and prefer to rely on collateral as a basis for lending. Such problems can be alleviated by the provision of more professional information on technology that can alleviate asymmetric information problems for start-up technology companies. However, banks have not invested enough to overcome this problem, which requires a high level of human capital. The biggest contribution that policy intervention can make is to help the market determine which company-owned intangible assets have realisable value (Brassell and Boschmans, 2018). To achieve this, the government created the Technical Credit Rating Agency in 2014. It has developed an integrated credit model, which combines credit evaluation and technology evaluation for innovative start-ups in the manufacturing sector. It should be broadened to cover the service sector.

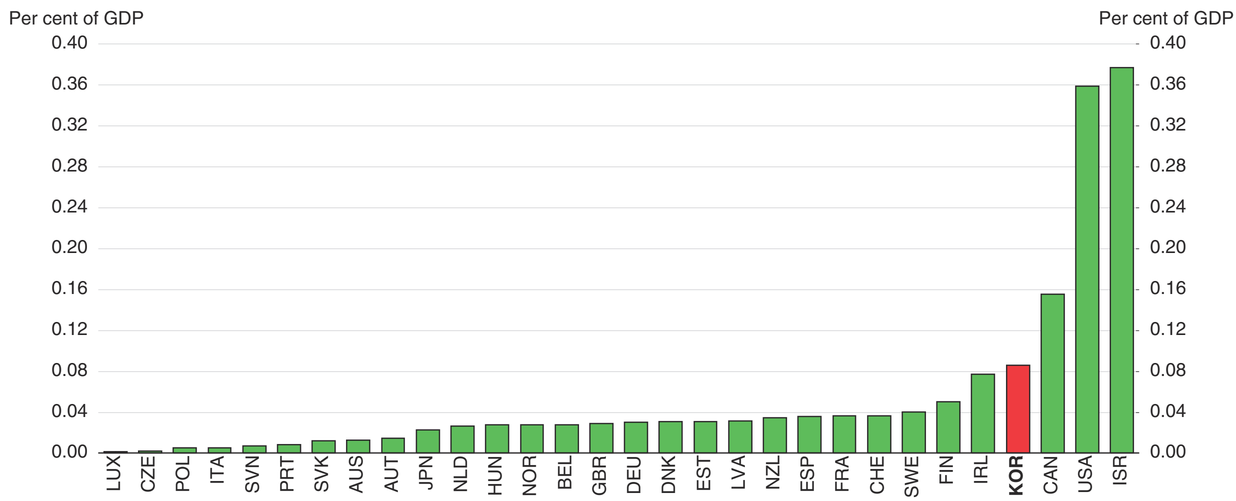
Given the characteristics of technology finance, venture capital investment to finance high profit-high risk investment in technology would be appropriate. However, investment by business angels and venture capital firms amount to only 4% of total technology finance (Sohn, 2015). The technology finance ecosystem to encourage participation by private financial institutions and by venture capital firms is still at an early stage.

Venture capital to promote innovative start-ups

Venture capital investment in Korea, at 0.09% of GDP in 2016, was the fourth highest in the OECD and well above the average of 0.05% (Figure 2.24). Nevertheless, venture capital is a relatively minor source of SME financing, amounting to only 0.4% of loans to SMEs (OECD, 2018). The public sector's share of venture capital investment fell from 49.3% in 2013 to 33.1% in June 2017, reflecting a large rise in private-sector activity (Table 2.7). This will facilitate the creation of venture capital funds that do not receive public funding and the accompanying government oversight. Venture capital funds based exclusively on private-sector funding would be able to operate autonomously and creatively, in contrast to the more cautious funds that include the public sector, which tend to avoid more risky, early-stage enterprises.

Figure 2.24. **Venture capital in Korea is among the highest in the OECD**

In 2016, or latest year available



Source: OECD (2017c), *OECD Entrepreneurship at a Glance 2017*.

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One result is that venture capital investment is not sufficiently focused on start-ups. Indeed, 63% of total venture capital in June 2017 was in firms more than three years old. Firms more than seven years old accounted for 32%. The relatively small share invested in young firms reflects the absence of a secondary market and M&As for investors to sell their shares and recover their investments. Consequently, they tend to rely on IPOs, which in 2016 took an average of 11½ years on both the KOSDAQ and KONEX markets. Given that the average duration of venture capital funds is about seven years, they prefer to invest in relatively mature firms that are closer to an IPO. Recovery of their investment through M&As, which is the most common method in the United States, accounted for only 3% of

Table 2.7. **The public-sector's share of venture capital investment is falling but still high**

Billion won and per cent

	2012	2013	2014	2015	2016	June 2016	June 2017
Public-sector investors[1]	429.3	822.3	1 050.4	1 114.7	1 207.5	615.5	468.6
Share (%)	47.1	49.3	40.1	42.3	36.0	35.1	33.1
Private investors	481.4	845.8	1 569.1	1 519.9	2 144.0	1 137.5	947.7
Total	910.7	1 668.1	2 619.5	2 634.6	3 351.5	1 753.0	1 416.3

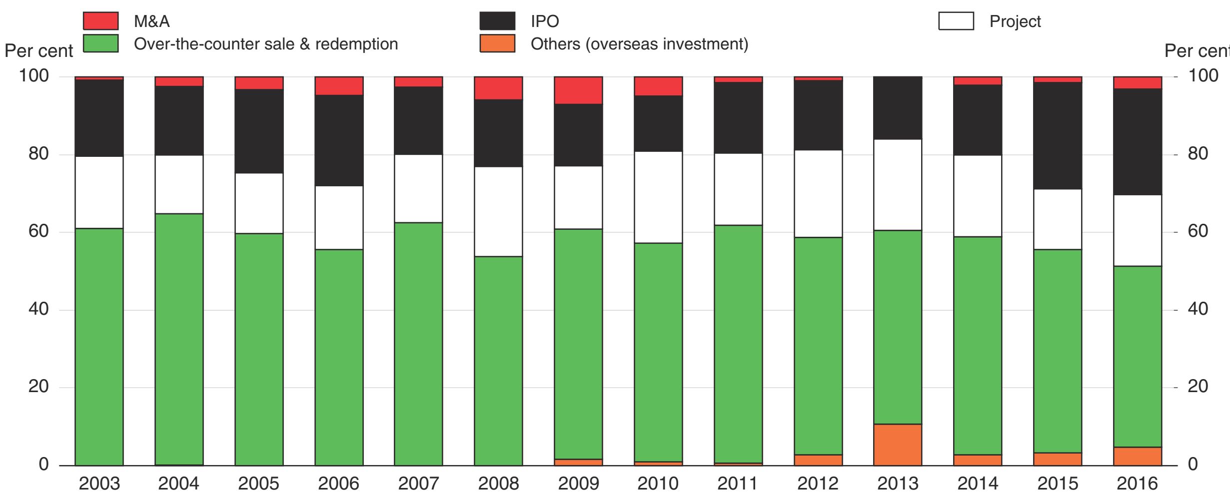
1. The public sector includes central government ministries, local governments, the Korea Development Bank, growth ladder funds and public funds, including the National Pension Fund.

Source: Ministry of SMEs and Start-ups (2017d).

the total in 2016 (Figure 2.25). Low-quality "over-the-counter sale and redemption" accounted for half of the total in 2016.

Figure 2.25. **The recovery of investment funds through M&As is still low in Korea**

Percentage of total



Source: Korea Venture Capital Association (2017), *Korea Venture Capital Association Overview*.

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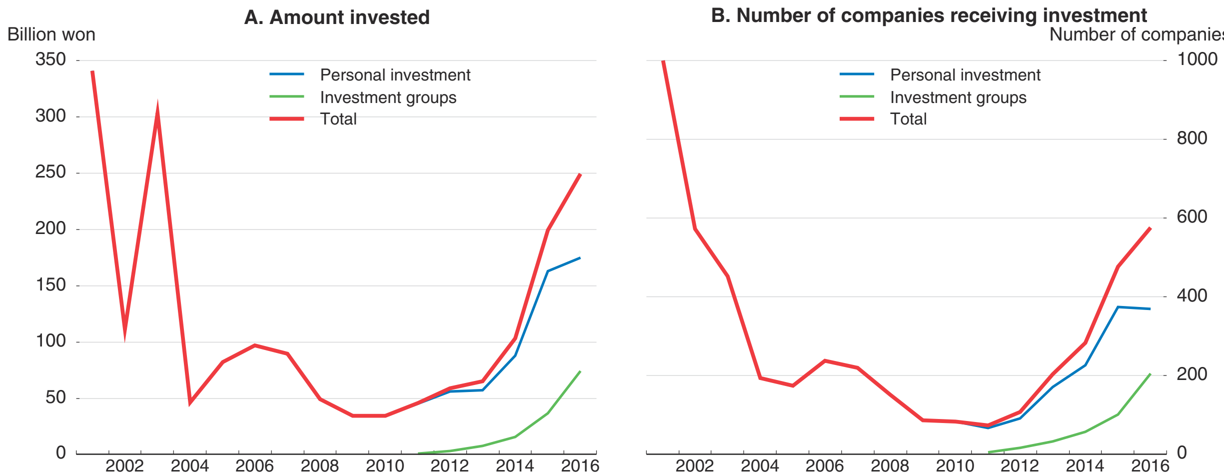
Given that venture capital funds and angel investors are reluctant to invest in early-stage firms that carry high risk, due to the inactive M&A market, reforms to activate it are necessary. The M&A market in Korea remains small for a number of reasons. *First*, the heavy reliance of small firms on loans reduces their market potential. *Second*, business people avoid M&As, which have long been associated with corporate bankruptcy procedures. *Third*, there is a lack of active participation of buyers such as private equity funds and strategic investors. *Fourth*, M&A-related regulations constrain the market. The government's 2014 plan to revitalise the M&A market by attracting potential buyers through mitigating investor regulations and restrictions on M&A procedures should be pursued more vigorously. In addition, the tax benefit for M&As aimed at acquiring technology should be maintained (2016 *OECD Economic Survey of Korea*).

Another objective is to expand investment by business angels. Although the amount of angel investment has rebounded since 2010, it is still 27% below its peak in 2001 (Figure 2.26). The number of enterprises receiving investment from angels dropped from around 1 000 in 2001 to 74 in 2011, before rebounding (Panel B). Angel investment as a share of adventure capital investment (angel investment plus investment by venture capital firms) is only about 7.5%, compared to around half in many countries. Business angels play a crucial role at the early stage of start-ups, as it is difficult to judge the future of a company without access to internal information. The judgement of experienced angel investors, who can approach and evaluate internal information of start-ups as both investors and mentors, can attract venture capital funds, which would otherwise refrain from investing due to information asymmetries. To attract business angels, the government has cut the tax rate each year since 2012. In 2017, a 100% tax deduction was provided for gains of less than KRW 15 million (USD 13 893) per person.

Figure 2.26. **Investment by angel investors has rebounded but remains below earlier peaks**



Source: Ministry of SMEs and Start-ups (2017a).

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Crowdfunding can provide new opportunities for SMEs that have not been able to obtain financing through traditional channels. Given that crowdfunding relies on the general public and takes place via the Internet, it is relatively cheap and fast, but has a high risk of fraud. A 2016 reform allows crowdfunding in the form of securities and loans. For securities, it is allowed for the commercialisation of ideas of start-ups, defined as unlisted companies within seven years of their creation. Non-professional individual investors can invest a maximum of KRW 2 million (USD 1 852) per firm. The maximum amount for crowdfunding per company was also limited to KRW 0.7 billion (USD 0.6 million) per year. As of March 2017, 14 securities firms were registered as financial intermediaries recognised by the Financial Services Commission in the Korea Securities Depository's CrowdNet website. The total amount of securities raised through crowdfunding increased from KRW 17.4 billion, amounting to 0.8% of venture capital investment in 2016, to KRW 27.8 billion (USD 25.7 million) in 2017. Loans provided through crowdfunding have increased more rapidly, reaching KRW 2.3 trillion (USD 2.1 billion) in 2017.

The Tech Incubator Programme for Start-ups (TIPS)

Korea is developing business incubation centres that combine mentoring for start-ups and financial support. By 2016, Korea had 67 centres supporting 6 655 companies, with a total budget of KRW 25 billion (USD 23.2 million). Around 80% were located at universities and research centres, which made them useful for technology development and industry-academia co-operation. However, they were less proficient at providing business sector expertise.

The government launched the TIPS programme in 2014 to better combine technological development and business expertise. The programme, which is modelled on Israel's Technology Incubator (TI) (Box 2.5), is designed to induce angel investors to provide incubation and mentoring, which is combined with government R&D (Figure 2.27). *First*, TIPS are led by the private sector. The private-sector angel investor invests KRW 100 million in the start-up and the government provides KRW 500 million (USD 463 000) of R&D funding. *Second*, TIPS allows for the failure of start-ups. Unlike in the past, failed firms do not have to reimburse the government for the R&D funding. *Third*, TIPS provides funding,

Box 2.5. **Korea's Tech Incubator Programme for Start-ups is based on Israel's programme**

Korea's Business Incubator (BI) programme, introduced in 1998, had a number of difficulties. To provide better service for start-ups, Korea chose Israel's Technological Incubator (TI) programme as a model for its Tech Incubator Programme for Start-ups (TIPS), which was launched in 2014. Indeed, TIPS closely resembles the TI programme (Table 2.8), which has a number of positive features (Bae, 2013);

- The government, incubator operator and companies have strong incentives to participate in the TI programme. In the case of successful firms, the government can reinvest the royalties in new start-ups or in R&D. Incubator operators can own 30% to 50% of the equity of a start-up by covering 15% of the total cost of the project. Companies benefit by having their expenses paid and have greater chance of success through the support and mentoring while avoiding financial or credit problems in the case of failure.
- TI projects focus primarily on high technology fields, such as medical devices, ICT and biotech, which can be commercialised quickly with a low investment cost, in contrast to general manufacturing industry.
- An evaluation committee composed of internal and external experts selects the participating companies through rigorous screening of their technical ideas. The experts evaluate the company's achievements relative to its plan and provide additional funds only when the key milestones are reached.
- The companies will receive up to USD 500 000 for two years and will be connected to various private funds for support necessary to cross "Death Valley" (the time between when a start-up receives an initial capital injection until it starts generating revenues).
- The incubator operator, which used to be a public-sector institution but is now a private-sector entity, is differentiated according to field of specialisation.

Table 2.8. **A comparison of Israel's TI programme with Korean incubator programmes**

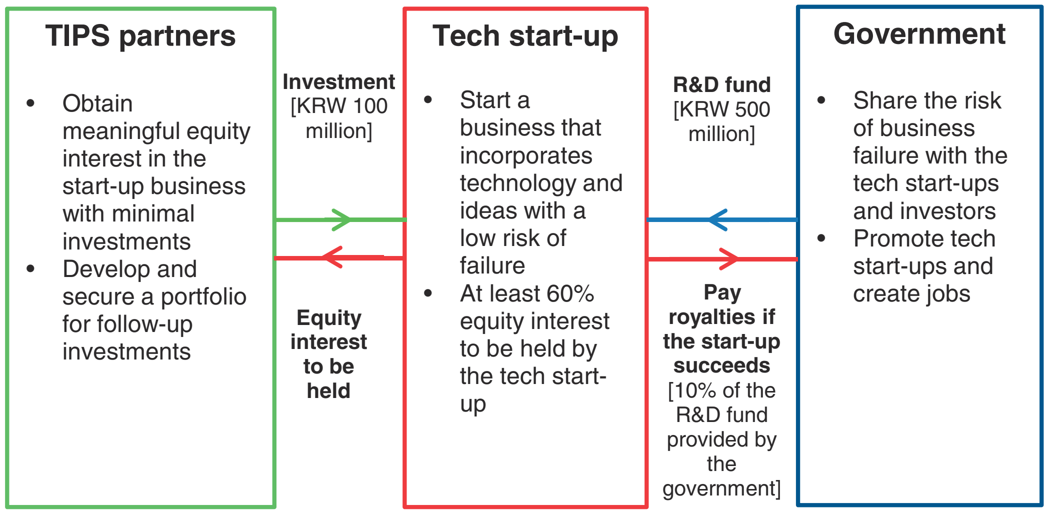
Year of introduction	BI (Korea) 1998	TIPS (Korea) 2014	TI (Israel) 1991
Government budget	Mainly for establishing BI centres	Operating expenses and R&D funding	Operating expenses and R&D funding
Operator selection process	Government designated	Open competition bidding method	Open competition bidding method
Major operator	Mainly universities (78.3%)	Consortium led by angel investment companies	Consortium led by venture capitalists
Operator's business period	15 years	6 years	8 years
Equity interest participation	No equity interest participation	Equity interest participation up to 30%	Equity interest participation up to 50%
Target company	Preparing entrepreneurs and firms less than seven years old	Preparing entrepreneurs and firms less than seven years old	Preparing entrepreneurs
Incubating period	Maximum 3 years	Maximum 3 years	Maximum 2 years
Incubating and investment	Separation of incubating and investment	Convergence of incubating and investment	Convergence of incubating and investment
Repayment of government grants in case of success	No	Pay 10% of R&D fund provided by the government as royalty	Pay 3% of sales as contingency fees

Source: Bae (2013); TIPS Website (2018); Small and Medium Business Administration (2011).

a workplace, incubating and mentoring together with the angel investment. In November 2017, the government announced a plan to select 20 innovative companies each year that have growth potential and to foster them in TIPS (MOSF, 2017). The main criteria for receiving public funding will not be whether the firm is an SME or its number of employees, but rather the company's age and business history. The government's priority is on start-ups given their success in creating jobs.

The success of TIPS depends on ensuring that public support contributes to productivity improvement of firms rather than extending the survival of marginal firms. As noted above,

Figure 2.27. **The operating process of TIPS**



Source: TIPS Website, *www.jointips.or.kr/about.php*.

the productivity of firms receiving public funds is estimated to be less than that of firms that do not receive support. In addition, firms' survival probability two years after receiving funding from the government was higher than for firms that did not receive government funding. This suggests that government intervention in providing financing has undermined the efficiency of the market (Chang, 2016a). To avoid negative outcomes, support should focus on start-ups at an early age rather than mature firms.

Recommendations to enhance dynamism in SMEs and entrepreneurship

Key recommendations

- Introduce a comprehensive negative-list regulatory system.
- Allow firms in new technologies and new industries to test their products and business models without being subject to all existing legal requirements (i.e. a regulatory sandbox).
- Increase lending based on firms' technology by expanding public institutions that provide technological analysis to private lending institutions.
- Ensure that support provided to SMEs improves their productivity by carefully monitoring their performance and introducing a graduation system.
- Increase the quality and availability of vocational education to reduce labour market mismatch and labour shortages in SMEs.

Further recommendations

- Further tailor regulatory systems to company size while avoiding incentives that encourage SMEs to remain small.
- Reduce barriers to trade (including services) and foreign direct investment to strengthen product market competition and increase opportunities for SMEs to join global value chains.
- Make the R&D tax credit more advantageous for small firms.

Recommendations to enhance dynamism in SMEs and entrepreneurship *(cont.)*

- Enhance labour market flexibility to make the use of digitalisation more effective for firms while expanding the social safety net.
- Improve the insolvency framework to reduce the personal costs for failed entrepreneurs, thereby raising Korea's low firm exit rate and encouraging the reallocation of resources to innovative firms.
- Help potential female entrepreneurs to balance work and family and obtain financing to reduce the large gender gap in entrepreneurship rates.
- Expand and improve entrepreneurship education at the primary and secondary level to improve the social image of entrepreneurship and develop entrepreneurial skills, attitudes and behaviours.
- Increase venture capital investment in early stage firms by activating the M&A market by relaxing regulations and providing financial support to sellers.

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