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BETTER POLICIES FOR BETTER LIVES

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20th anniversary of Korea's accession to the OECD

This year, we celebrate the 20th anniversary of Korea's accession to the OECD. Korea's invitation to join the Organisation represented the culmination of 35 years of extraordinary growth that transformed it from one of the poorest nations in the world to a major industrial power.

For Korea, membership in the OECD has provided an opportunity to exchange ideas with the most advanced countries and to learn best practices. The OECD has played a crucial role in developing and advancing Korea during the past two decades. Moreover, the OECD is Korea's most trusted policy advisor. Korea has seriously taken the OECD's recommendations and guidelines into account and reflected them in its economic policies.

During its 20 years as an OECD member country, Korea has fulfilled its responsibilities and has been at the forefront in sharing success stories and best practices with other member countries. For example, as the chair country of the Ministerial Council Meeting of OECD in 2009, Korea played a leading role in adopting the Green Growth Initiatives. In 2010, Korea joined the OECD's Development Assistance Committee, transforming itself from a recipient to a donor nation. Moreover, in 2015, the OECD Committee for Scientific and Technological Policy held a ministerial-level meeting in Korea, the first time that it was held outside the OECD headquarters.

The world economy is facing a prolonged period of low growth and low inflation, highlighting the need for structural reform and increasing interest in policy areas such as social cohesion, environmental issues and regional policies. The changing atmosphere calls for the OECD to play a bigger role in further promoting global policy responses to pressing issues. Korea is looking forward to further strengthening its collaboration and partnership with the OECD to promote the goal of "better policies for better lives", thereby helping to realise the stable development of the world economy and enhance the quality of life in member countries.

Table of contents

Thematic chapters

Tables

Figures

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 7 March 2016. 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 25 April 2016.

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

The previous Survey of Korea *was issued in June 2014.*

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

BASIC STATISTICS OF KOREA, 2014

(Numbers in parentheses refer to the OECD average)*

LAND, PEOPLE AND ELECTORAL CYCLE

Population (million)	50.4		Population density per km^2	502.9	(34.9)
Under 15 (%)	14.3	(18.1)	Life expectancy (years, 2013)	81.8	(80.4)
Over 65 (%)	12.7	(16.0)	Men	78.5	(77.8)
Foreign-born (%, 2013)	2.0		Women	85.1	(83.0)
Latest 5-year average growth (%)	0.5	(0.6)	Latest general election	April	2012

ECONOMY

Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	1 411		Primary sector	2.3	(2.5)
In current prices (billion KRW)	1 486 079		Industry including construction	38.2	(26.4)
Latest 5-year average real growth (%)	2.96	(1.7)	Services	59.5	(71.1)
Per capita (000 USD PPP)	33.4	(40.2)			

GENERAL GOVERNMENT
Per cent of GDP

Expenditure	32.0	(42.3)
Revenue	33.2	(38.5)

EXTERNAL ACCOUNTS

Exchange rate (KRW per USD)	1 052		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1)	882		Machinery and transport equipment	55.0	
In per cent of GDP			Manufactured goods	13.2	
Exports of goods and services	50.3	(53.7)	Chemicals and related products, not elsewhere specified	11.8	
Imports of goods and services	45.0	(49.8)	Main imports (% of total merchandise imports)		
Current account balance	6.0	(0.01)	Mineral fuels, lubricants and related materials	33.4	
Net international investment position	6.2		Machinery and transport equipment	27.0	
			Manufactured goods	11.0	

LABOUR MARKET, SKILLS AND INNOVATION

Employment rate for 15-64 year-olds (%)	65.3	(65.6)	Unemployment rate, Labour Force Survey (age 15 and over) (%)	3.5	(7.3)
Men	75.7	(73.6)	Youth (age 15-24, %)	10.0	(15.1)
Women	54.9	(57.9)	Long-term unemployed (1 year and over, %)	0.01	(2.5)
Participation rate for 15-64 year-olds (%)	67.8	(71.2)	Tertiary educational attainment 25-64 year-olds (%)	44.6	(33.5)
Average hours worked per year	2 124	(1 770)	Gross domestic expenditure on R&D (% of GDP)	4.3	(2.4)

ENVIRONMENT

Total primary energy supply per capita (toe)	5.3	(4.1)	CO_2 emissions from fuel combustion per capita (tonnes, 2013)	11.4	(9.6)
Renewables (% of TPES)	1.1	(9.1)	Water abstractions per capita (1 000 m^3, 2005)	0.6	
Fine particulate matter concentration ($PM_{2.5}$, µg/m^3, 2013)	29.1	(13.8)	Municipal waste per capita (tonnes, 2013)	0.4	(0.5)

SOCIETY

Income inequality (Gini coefficient, 2013)	0.302	(0.308)	Education outcomes (PISA score, 2012)		
Relative poverty rate (%, 2013)	14.6	(10.9)	Reading	536	(496)
Median equivalised household income (000 USD PPP, 2010)	21.1	(20.4)	Mathematics	554	(494)
Public and private spending (% of GDP)			Science	538	(501)
Health care, current expenditure	7.1	(8.9)	Share of women in parliament (%, December 2015)	16.3	(27.7)
Pensions (2012)	3.1	(8.7)	Net official development assistance (% of GNI)	0.13	(0.37)
Education (primary, secondary, post sec. non tertiary, 2012)	3.7	(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.

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

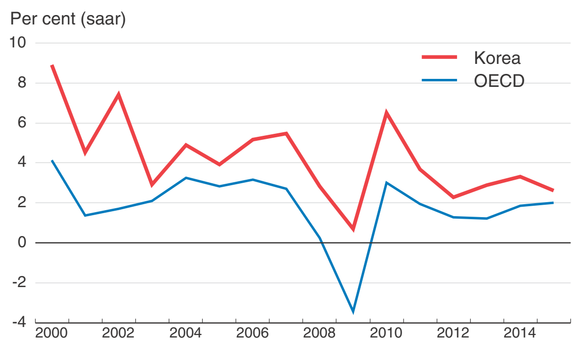
Korea is experiencing a spell of slower growth and low inflation

Productivity is low due to large gaps between manufacturing and services, and large companies and SMEs

Problems in the labour market raise inequality and poverty, and discourage employment

Korea is experiencing a spell of slower growth and low inflation

Real output growth has slowed



Source: *OECD Analytical Database.*

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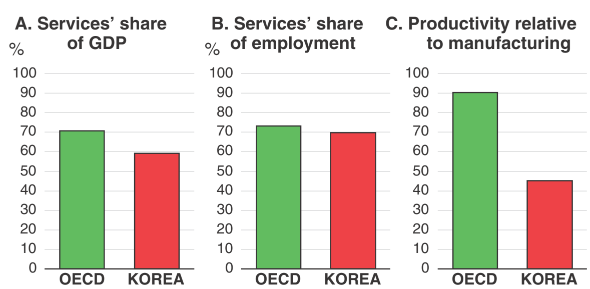
Output growth slowed to a 2¾ per cent annual rate over 2011-15, still higher than the OECD average, while inflation has remained below the central bank's target. Although export growth has been sluggish, the current account surplus has risen to nearly 8% of GDP, reflecting weak domestic demand, falling oil prices and transitory demographic trends. Robust residential investment is one bright spot, as the policy interest rate has been cut to a record low. However, high household debt is constraining private consumption, although it does not pose a systemic risk to the financial system. Fiscal stimulus was effectively used in 2015 to support growth. The fiscal situation is sound, with the budget in surplus and the government a net creditor.

Productivity is low due to large gaps between manufacturing and services, and large companies and SMEs

Labour productivity in services is low in Korea



Source: *OECD National Accounts Database; OECD STI Database.*

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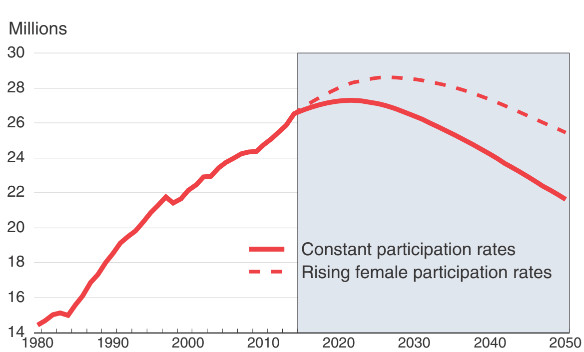
Labour productivity (output per worker) slowed to around 1% over 2011-15. The level of labour productivity in the service sector is less than half of that in manufacturing. SME policy promotes the survival of small firms, rather than higher productivity, and very few grow into medium-sized firms. Venture capital investment has had limited effectiveness in encouraging innovative start-up companies. Product market regulation is among the most stringent in the OECD area. The gains from Korea's high level of investment in R&D are limited by structural weaknesses in the innovation system. However, following the introduction of the Three-year Plan for Economic Innovation in 2014, progress is being made, notably in regulatory reform and the R&D and venture ecosystems.

Problems in the labour market raise inequality and poverty, and discourage employment

The labour force will fall sharply at current participation rates



Source: *Statistics Korea; OECD calculations.*

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The labour market is segmented into regular and non-regular workers, who earn only 62% as much per hour as regular workers, boosting inequality and relative poverty. Women account for a disproportionate share of non-regular workers, thus discouraging female employment. The employment rate of youth is one of the lowest in the OECD, while older workers are pushed out of firms at age 53 on average into low-quality jobs and self-employment. Short working lives contribute to a high elderly poverty rate. Due in part to policy efforts, the employment rate is at a record high, reflecting the growth in female employment, and the elderly poverty rate has fallen.

MAIN FINDINGS	KEY RECOMMENDATIONS
Raising productivity	
Product market regulation is the fourth most stringent in the OECD, with adverse implications for competition and innovation.	Use the new "cost-in, cost-out" system to reduce the regulatory burden, based on accurate Regulatory Impact Assessments, and phase out positive-list regulations.
While venture capital investment is rising, thanks in part to public financing, its funding of start-ups is limited.	Focus venture capital on start-ups by facilitating early-stage IPOs in the KOSDAQ and KONEX markets and taking further steps to jumpstart the M&A market through regulatory reform.
Only 0.7% of the R&D in Korea in 2014 was financed from abroad and international co-authorship and co-patenting are among the lowest in the OECD. Only 1.3% of business-financed R&D is carried out in universities.	Relax barriers to trade and investment to help firms better connect to global innovation networks. Strengthen R&D links between academia, business and government by promoting the mobility or researchers.
Fiscal policy	
Korea faces headwinds from weak overseas demand and sluggish domestic demand.	Use fiscal policy to sustain growth in 2016-17, while setting policy in a framework that ensures Korea's long-run fiscal sustainability.
Increasing employment	
The employment of women is constrained by the limited take-up of maternity and parental leave and the availability of high-quality childcare. Career breaks for women widen the gender wage gap, which is the largest in the OECD.	Increase the take-up of maternity and parental leave systems by enforcing compliance and raising the benefit level for parental leave. Enhance childcare quality by making accreditation mandatory and strengthening competition.
The youth (15-29) employment rate is one of the lowest in the OECD, while the share of NEETs (neither in employment nor in education or training) is high, reflecting a high level of labour market mismatch.	Expand Meister vocational schools and the Work-Study Dual System, thereby enhancing links between schools and firms, and basing curriculum on the National Competency Standards.
Older workers (50-64), whose skills are low compared to young workers, are pushed out of firms at an early age, forcing them into temporary jobs and self-employment.	Accelerate the adoption of the wage peak system and expand education for older persons with low skills.
Promoting social cohesion	
Non-regular workers earn only about half as much as regular workers per month, although their skill levels are reported to be broadly similar.	Break down dualism by relaxing employment protection for regular workers and making it more transparent, increasing the minimum wage and expanding social insurance coverage and training for non-regular workers.
The rate of relative poverty among the elderly is the highest in the OECD at 49.6%, four times the OECD average of 12.6%.	Focus the Basic Pension on the elderly with the lowest incomes to reduce poverty; expand the coverage of the National Pension Scheme to reduce poverty in the long run.
Green growth to improve the environment	
The amount of water taken from ground or surface water sources in Korea as a share of renewable resources was the third highest in the OECD in 2012. The number of premature deaths due to outdoor air pollution increased from around 16 000 in 2005 to more than 20 000 in 2013.	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. Air pollution should be reduced, in part, by co-operation with other countries in the region and through appropriate economic instruments.

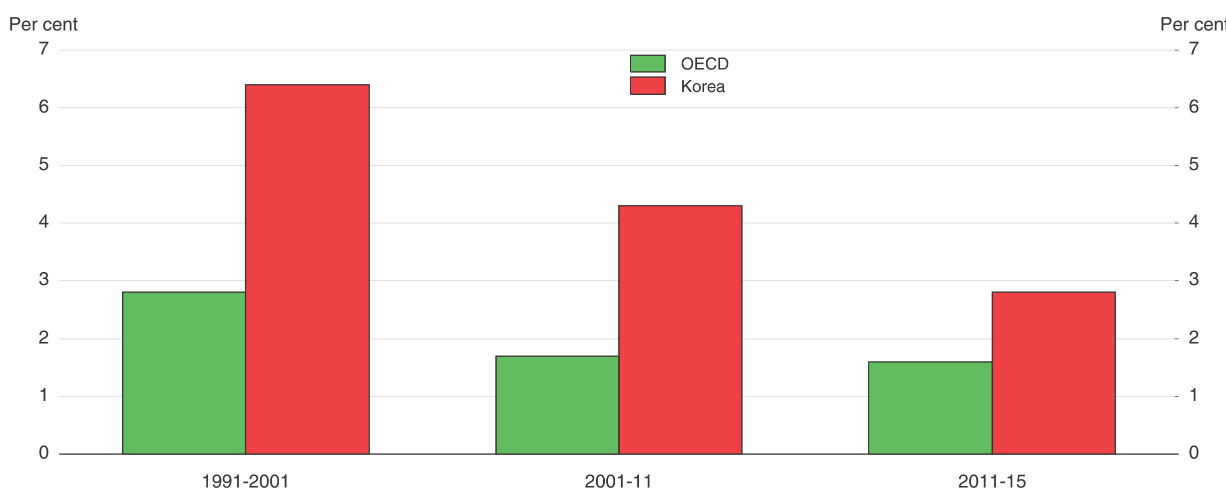
Assessment and recommendations

- *Policies to end low growth and inflation are boosting the economy*
- *Raising productivity through innovation and structural reform*
- *Labour market reforms to promote inclusive growth and social cohesion*

Korea has been one of the fastest growing OECD economies over the past 25 years, boosting its per capita income from 39% of the average of the top half of OECD countries in 1991 to 75% by 2014. Sustained double-digit export growth in volume terms helped make Korea the 6th-largest exporter and 11th-largest economy in the world by 2015. A number of Korean companies are world leaders in key industries. Korea is exceptional in terms of its high levels of education and R&D investment.

However, growth has slowed from an average of 4¼ per cent per year over 2001-11 to 2¾ per cent since 2011 (Figure 1). The slowdown in world trade since 2010 has been especially detrimental to Korea, as exports account for nearly 60% of total demand. Moreover, Korea's exports have faced strong competition from emerging economies, notably China, and with advanced economies in high-end markets. Meanwhile, domestic demand has been constrained by structural problems, such as high household debt, stagnant service-sector productivity and struggling small and medium-sized enterprises (SMEs). Korea has a dualistic economy, characterised by large productivity gaps between manufacturing and services, large and small firms, and regular and non-regular workers. Overall productivity is only 55% of the top half of OECD countries. Labour market dualism has resulted in high wage inequality and a relative poverty rate that is the eighth highest in the OECD.

Figure 1. **Korea's growth is slowing, but is still above the OECD average**



Source: *OECD Analytical Database.*

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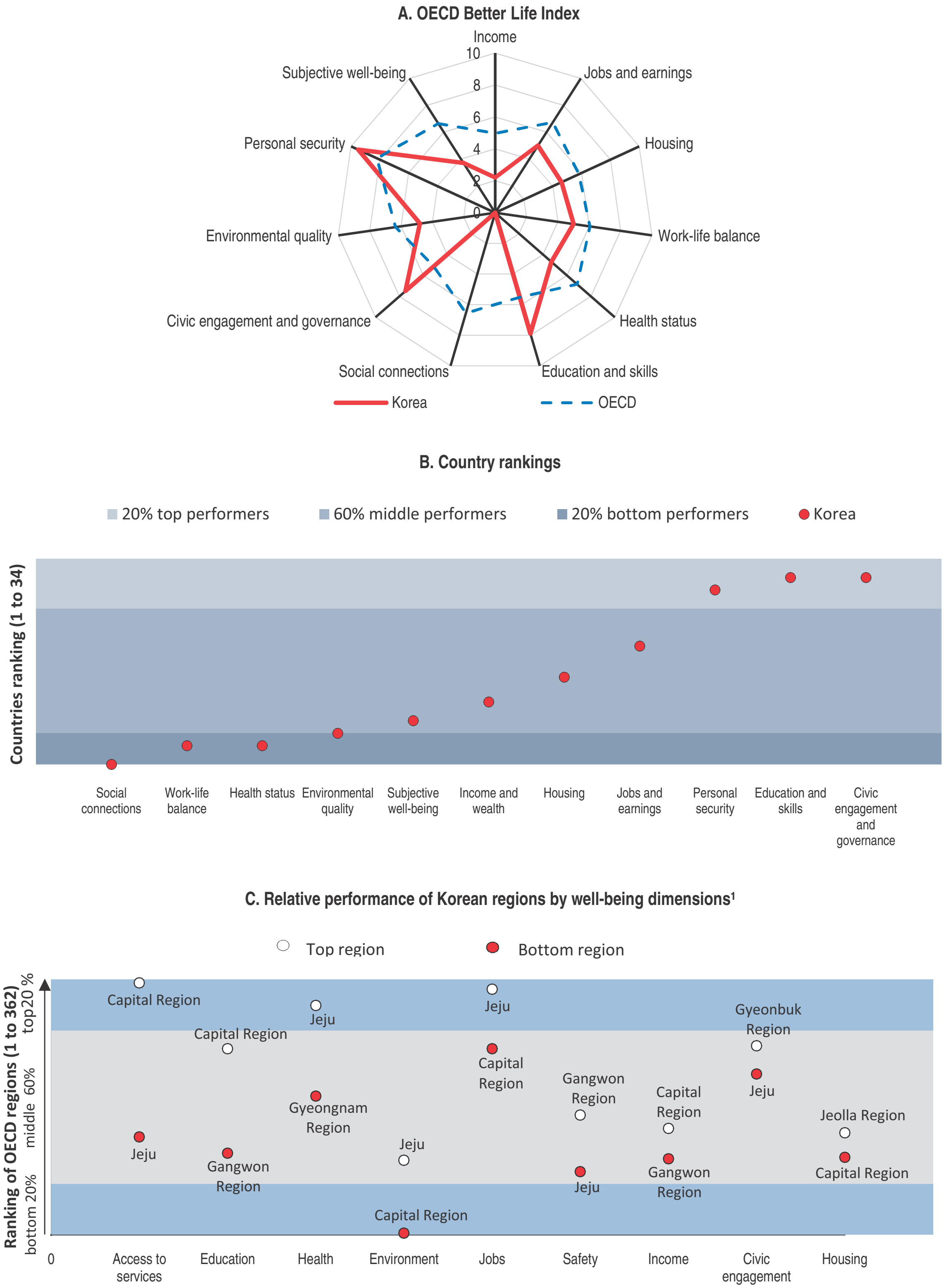
In terms of well-being, Korea has outstanding scores in personal security, education and skills and civic engagement and governance (Figure 2), but ranks poorly in social connections, work-life balance, health status and environmental quality (Panel B). In addition, subjective well-being in Korea is well below the OECD average. Finally, Korea has large regional disparities in access to services, education and health (Panel C). In terms of

Figure 2. **Well-being indicators suggest room for improvement in Korea**



1. Relative ranking of the regions with the best and worst outcomes in the nine well-being dimensions, with respect to all 362 OECD regions. The nine dimensions are ranked according to the size of regional disparities in the country.

Source: *OECD Better Life Index Database*; *OECD Regional Well-Being Database*.

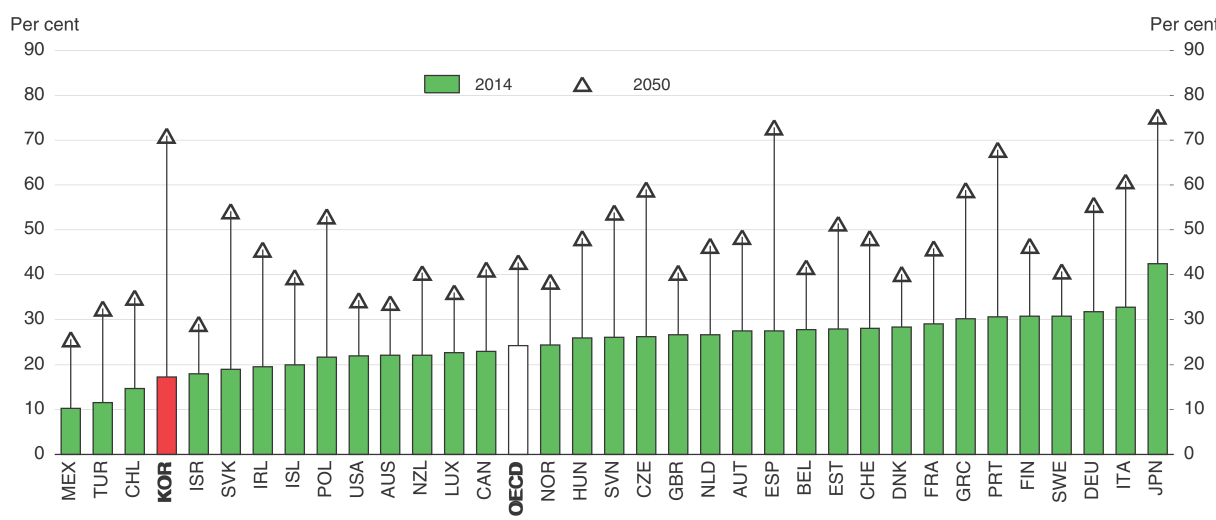
StatLink http://dx.doi.org/10.1787/888933355968

the Sustainable Development Goals, Korea ranks 23rd out of the 34 OECD countries overall and last in renewable energy use and on actions to combat climate change (Kroll, 2015).

Sustained output growth would help Korea further raise living standards, cope with population ageing, which is projected to be the fastest in the OECD (Figure 3), and deal with the cost of possible rapprochement with North Korea. The government launched an initiative in 2013 to foster a "creative economy" to generate new jobs and economic revitalisation through innovation. Korea's traditional growth model, based on exports that are produced primarily by large firms affiliated with the business groups known as *chaebols*, has become less effective. The creative economy is to be driven, in part, by regulatory reform and increased competition to stimulate entrepreneurship and improve efficiency, especially in SMEs, where productivity is only 30.5% of that in large firms. This implies a greater role for domestic demand and the service sector. In launching the "Three-year Plan for Economic Innovation", the government pledged to raise the potential growth rate, currently estimated at around 3% by the OECD and the Bank of Korea, to 4% by 2017 and stated that Korea will have "no future" unless it breaks the protracted cycle of low growth. To promote social cohesion, the government is pushing for labour market reforms and aims to boost employment to 70% of the working-age population (2014 *OECD Economic Survey of Korea*).

Figure 3. **Population ageing in Korea is projected to be the fastest in the OECD**

Population aged 65 and over as a percentage of the population aged 15 to 64



Source: *OECD Demography and Population Database.*

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The reforms that Korea has presented to the G20 have great potential. The OECD estimates that within ten years GDP would be 3% higher than otherwise (Table 1) – assuming swift, full implementation of the reforms – through gains in productivity and employment. Delays, or partial implementation, would reduce the gains. However, dynamic effects may amplify them.

The key messages of this *OECD Economic Survey* are:

- Productivity growth has slowed markedly, slowing the rise of incomes and well-being. This calls for ambitious reforms to strengthen competition and raise efficiency in low-productivity services and in SMEs.

Table 1. **The impact of Korea's reform programme on growth over ten years is significant[1]**

In per cent

	GDP level	Via productivity growth	Via employment growth
Product market reform	1.4	1.4	
Labour market reform			1.0
Active labour market policy	0.1		0.1
Unemployment benefits	0.3		0.3
Female labour participation (childcare)	0.6		0.6
Reform of the tax structure	0.2	0.2	
R&D and innovation	0.4	0.4	
Total	**3.0**	**2.0**	**1.0**

See Annex A1 for details. Annex A2 summarises the major elements of the Three-year Plan for Economic Innovation.
Source: OECD calculations.

- Removing the substantial obstacles to the employment of women, youth and older people would promote social inclusion, while sustaining the size of the labour force as the working-age population peaks in 2016.
- Labour market dualism is the major cause of Korea's wide wage dispersion and high relative poverty rate. Breaking it down, and expanding the social welfare system, would improve social inclusion.

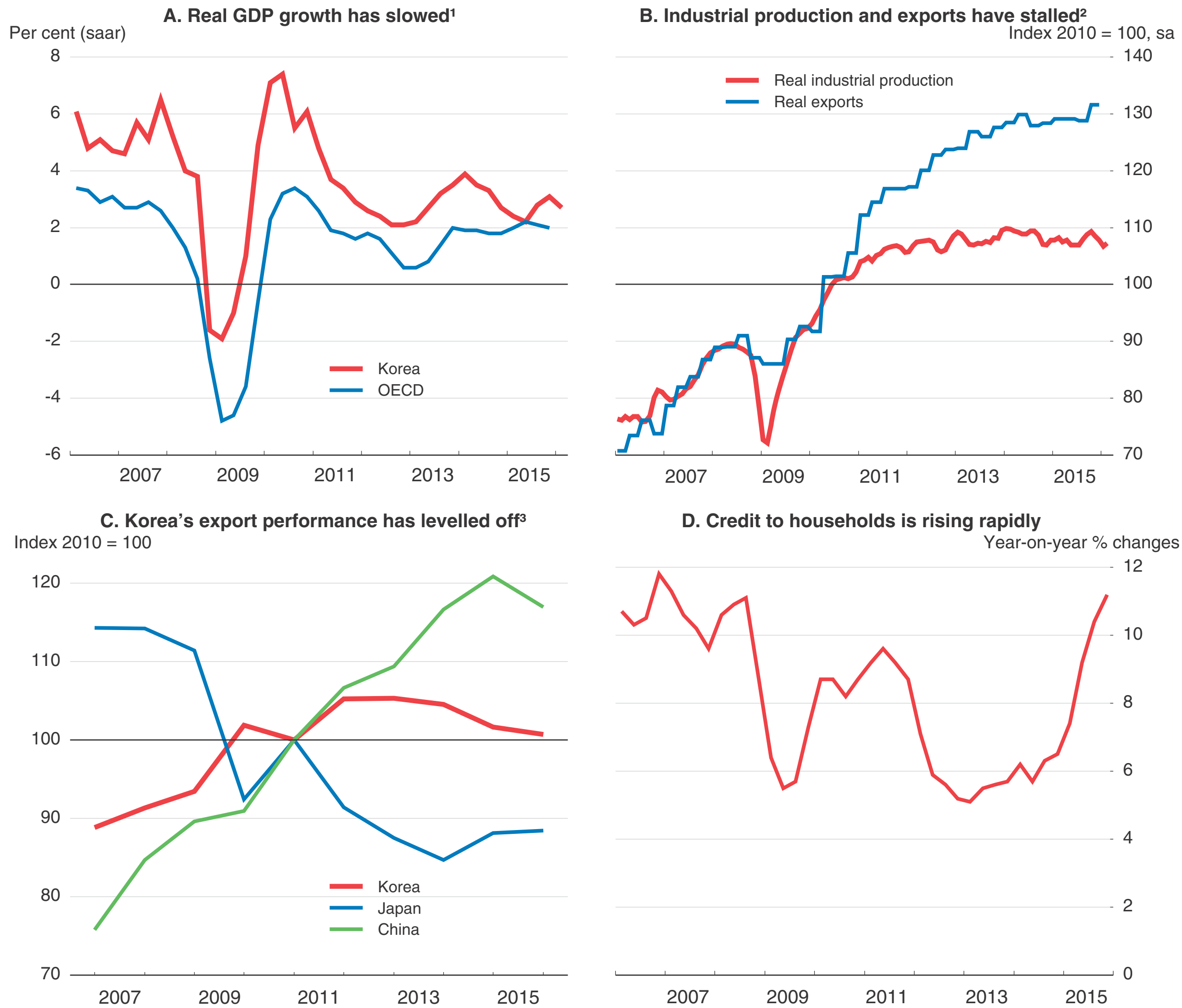
Policies to end low growth and inflation are boosting the economy

In 2015, the economy was hit by two shocks. *First*, an outbreak of the Middle East Respiratory Syndrome led to a contraction in private consumption in the second quarter. *Second*, a marked slowdown in demand from China and other Asian countries, which account for half of Korean exports, resulted is slowing export growth (Figure 4, Panel B). In addition, Korea's exports have continued to expand less rapidly than import growth in its export markets (Panel C). However, domestic demand growth picked up in the second half of 2015, helped by monetary and fiscal stimulus (see below).

High household debt, which reached 158% of household disposable income by 2011, has tended to exert a drag on private consumption. Although the government launched a plan that year to reduce the household debt ratio, credit growth to households accelerated from 6% in 2012 to more than 10% in 2015 (Figure 4, Panel D). The pick-up occurred after housing market deregulation measures and the relaxation of macro-prudential regulations on mortgage loans in 2014, and was further encouraged by a fall in interest rates. Consequently, residential investment has been robust, rising at a 25% annual rate since the final quarter of 2014 and housing prices (adjusted for inflation) are increasing at a 2.2% annual pace. At the same time, investment in business equipment remained robust.

Overall, output growth slowed in 2015, but at 2.6% it remained higher than the OECD average of around 2%, thanks to continued monetary policy easing and significant fiscal stimulus in the second half of the year. Government spending, initially set to rise by 5.5% in 2015, was boosted in mid-2015 by 1% of GDP in additional spending. Headline inflation was 0.7% in 2015, well below the Bank of Korea's target range of 2.5% to 3.5% for 2013-15 (Figure 5), reflecting sluggish growth and falling oil prices. However, core inflation, which excludes energy and food, picked up to 2.2%.

Figure 4. **Key macroeconomic indicators**



1. Three-quarter moving average.
2. Exports on a national accounts basis and three-month moving average for industrial production.
3. Actual 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 48 major trading partners. Export performance improves if Korea's export growth exceeds import growth in its 48 trading partners.

Source: *Statistics Korea*; *OECD Analytical Database*; Bank of Korea.

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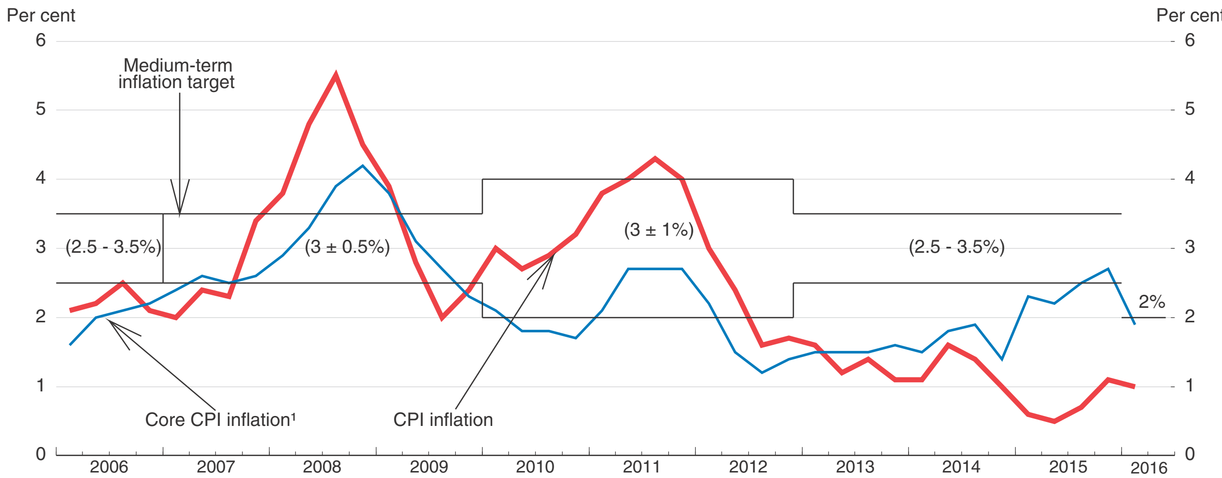
Korea's current account surplus widened sharply from 1.6% of GDP in 2011 to 7.9% in 2015, reflecting the fall in oil prices, weak domestic demand and transitory demographic factors. Oil imports declined by 4% of GDP over that period, although up to one-third of the impact may have been offset by lower prices for Korea's exports of petroleum products (IMF, 2015). Weak fixed investment, which has a relatively high import component, also limited import growth. The investment slowdown is reflected in the swing in the saving-investment imbalance of the non-financial corporate sector from substantial deficits in 2011-12 to a surplus in 2013 (Figure 6). In addition, the household sector's balance shifted from a deficit in 2011 to a surplus in 2012-14, in part due to transitory demographic factors (Kwon, 2015). Indeed, the household saving rate rose from less than 4% to 7.2% over

Figure 5. **Consumer price inflation is well below the central bank's target**

Year-on-year percentage changes in headline and core consumer price indices



1. OECD measure of core inflation, which excludes food and energy. The central bank's target is for CPI inflation.
Source: *OECD Analytical Database*; Bank of Korea.

StatLink http://dx.doi.org/10.1787/888933355998

that period, consistent with weak private consumption. These trends underline the importance of stronger domestic demand driven by consumption and business investment to reduce the large external surplus.

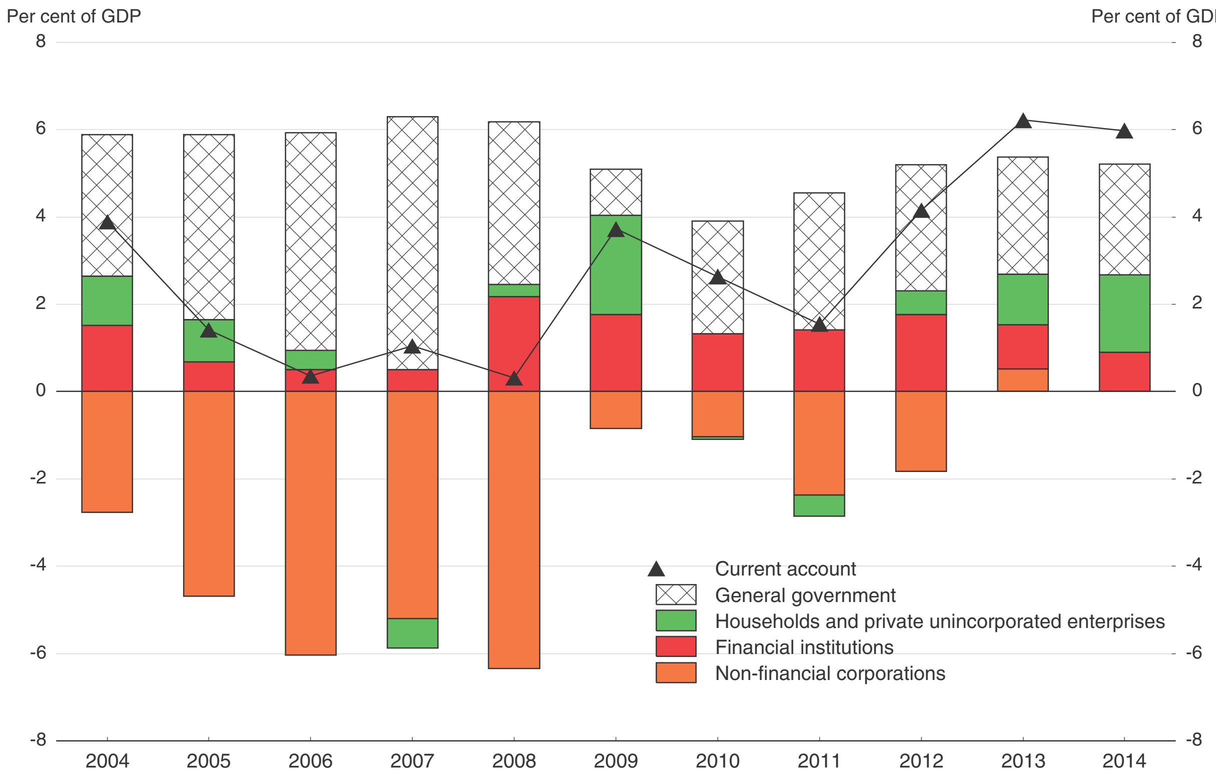
The economic outlook for 2016-17

The strong rebound in the second half of 2015, supported by fiscal stimulus, faltered in early 2016 as private consumption declined. Weak demand from China, which accounts for a quarter of Korean exports, continues to constrain export growth (Table 2). Residential investment, which increased at a double-digit pace over 2013-15, is moderating following the tightening of prudential rules on mortgage lending in early 2016, in part to restrain the high and rising level of household debt. Nevertheless, continued gains in employment and real wages sustain the economic expansion.

Output growth is projected to pick up, reaching 3% in 2017, thanks in part to faster world trade growth that will boost Korean exports and business investment (Table 2). Faster wage gains are expected to raise private consumption, supported by a fall in the household saving rate, which has risen sharply to nearly 9%. Faster output growth and the expected stabilisation of oil prices are projected to increase headline inflation to 1.7% in 2017, while the current account surplus remains high at 7½ per cent of GDP.

Given Korea's reliance on export-led growth, a delayed rebound in world trade is the biggest risk to a sustained expansion. In particular, a sharper-than-expected slowdown in China would be very detrimental to Korea, given that its merchandise exports to China accounted for 10% of GDP in 2014. Global financial market turbulence in the context of diverging monetary policy stances and weakness in emerging market economies also pose downside risks. The upward trend in household debt could further constrain private consumption. On the upside, Korea's strong external position provides a buffer against shocks and effective structural reforms could reignite export growth and reverse the decline in export performance. More rapid progress toward the goal of a 70% employment

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



Source: Bank of Korea.

StatLink http://dx.doi.org/10.1787/888933356006

rate would also lead to faster-than-projected growth. Vulnerabilities that are difficult to assess within the context of this projection are discussed in Table 3.

Fiscal policy to sustain the expansion, while maintaining low debt in the long run

After increasing 8.1% in 2015, including the supplementary budget, government spending in 2016 is set to rise by only 0.4% (Table 2), suggesting fiscal drag. In February 2016, the government announced measures to boost growth; i) frontloading 40% of government spending in the first quarter of 2016; ii) expanding policy lending by public financial institutions by 15.4% in 2016; and iii) extending the cut in the excise tax on cars (from 5.0% to 3.5%) during the first half of 2016. However, the impact of these measures may be limited. In this light, additional fiscal stimulus is called for in 2016 to eliminate any fiscal drag, all the more so given Korea's sound public finance position.

In the long run, Korea needs an effective framework to maintain fiscal soundness and low public debt, despite spending pressures driven by social outlays. Public social spending rose from 6.5% of GDP in 2005 to 10.6% in 2014. While it is still the third lowest in the OECD as a share of GDP (Figure 7), the government projects it will reach 29% of GDP by 2060 under the current framework. In particular, pension outlays under the National Pension Scheme (NPS) are expected to rise by nearly 7% of GDP by 2060 (Figure 8). Under the current parameters, the NPS would shift from a surplus of 3.3% of GDP in 2015 to a deficit of 4.1% in 2060.

Table 2. **Macroeconomic indicators and projections**[1]

Annual percentage change unless specified otherwise, volumes at 2010 prices

	Per cent of 2012 GDP in current prices	2013	2014	2015	2016	2017
GDP	100.0	2.9	3.3	2.6	2.7	3.0
Private consumption	51.4	1.9	1.7	2.2	2.5	3.0
Government consumption	14.8	3.3	3.0	3.4	1.2	1.3
Gross fixed capital formation	29.6	3.3	3.4	3.8	3.5	3.4
Housing	3.2	23.4	11.1	14.2	10.9	2.8
Business	22.1	0.9	3.3	3.5	4.0	4.3
Government	4.8	1.8	5.3	6.5	3.0	0.0
Final domestic demand	95.1	2.5	2.5	2.9	2.6	2.9
Stockbuilding[2]	2.1	-1.0	0.5	0.9	0.0	0.0
Total domestic demand	97.2	1.4	3.0	3.7	2.6	2.9
Exports of goods and services	56.3	4.3	2.0	0.8	1.1	3.9
Imports of goods and services	53.5	1.7	1.5	3.2	0.6	3.7
Net exports[2]	5.3	1.5	0.4	-1.1	0.3	0.3
Potential GDP		3.5	3.3	3.3	3.2	3.1
Output gap[3]		-0.9	-0.9	-1.5	-2.0	-2.0
Employment		1.6	2.1	1.3	1.2	1.2
Unemployment rate[4]		3.1	3.5	3.6	3.5	3.4
GDP deflator		0.9	0.6	2.2	0.7	1.6
Consumer price index (CPI)		1.3	1.3	0.7	1.0	1.7
Core CPI		1.6	2.0	2.2	1.5	1.7
Household saving rate[5]		5.6	7.2	8.8	8.7	8.7
Export performance		-0.8	-2.8	-0.9	-1.2	0.7
Current account balance[6]		6.2	6.0	7.9	7.6	7.6
Central government budget balance[6, 7, 8]		-1.5	-1.7	-3.0	-2.3	-2.0
Central government spending growth[8]		7.3	1.9	8.1	0.4	2.6
General government fiscal balance[6]		1.3	1.3	0.8	1.1	1.6
Underlying government primary fiscal balance[3]		0.9	1.6	1.4	1.7	2.0
General government gross debt[8, 9]		34.3	35.9	37.9	40.1	41.0
Three-month money market rate		2.7	2.5	1.8	1.5	1.4
Ten-year government bond yield		3.3	3.2	2.3	1.9	2.3

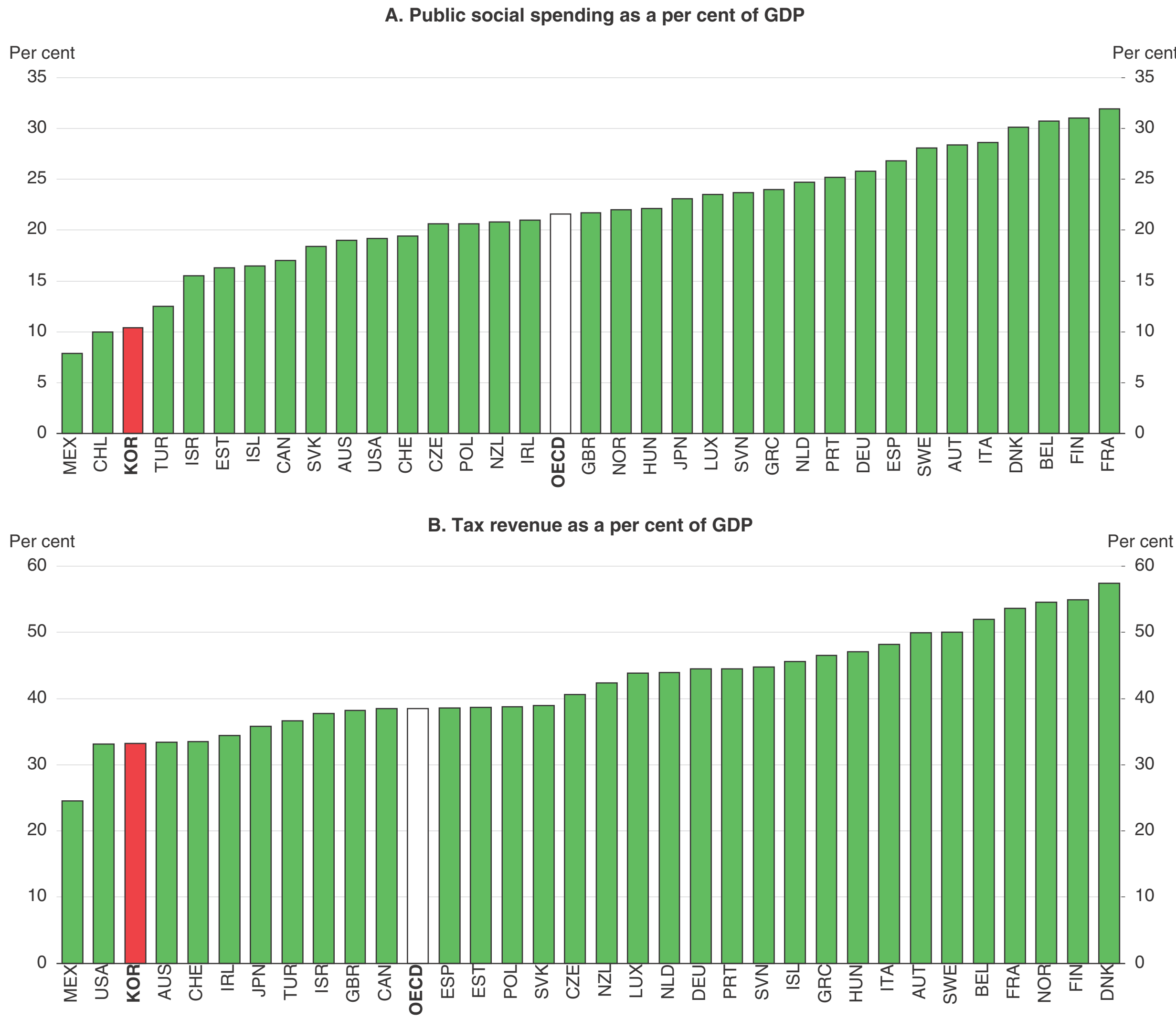
1. Historical data through 2015, based on the data announced on 26 April 2016. For 2016-17, the projections are based on those prepared for the OECD Short-term Economic Prospects meeting on 2 May 2016.
2. Contributions to changes in real GDP (percentage of real GDP in previous year).
3. As a percentage of potential GDP.
4. As a percentage of the labour force.
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. Figures for 2015-17 are based on the government's Medium-term Fiscal Management Plan for 2015-19.
9. Based on GFS86 (cash basis). Internationally comparable data based on SNA 2008 on a consolidated basis are not available.

Source: *OECD STEP 99 Database.*

Table 3. **Shocks that might affect economic performance**

Shocks	Possible outcome
A more rapid normalisation of US monetary policy	A tightening of global financial conditions could lead to funding pressures on Korean banks.
Further increases in debt in the household and corporate sectors, and a substantial increase in the number of non-viable firms	A large rise in non-performing loans, coupled with a macroeconomic shock, would affect the financial sector and hurt growth.
Rapprochement with North Korea (see Annex A3)	Substantial fiscal costs countered by the access to a large and competitive labour force and strong demand as living standards rise from low levels in the North.

Figure 7. **Korea's social spending and tax burden were relatively low in 2014**



Source: *OECD Social Expenditure Database* (SOCX); *OECD Analytical Database.*

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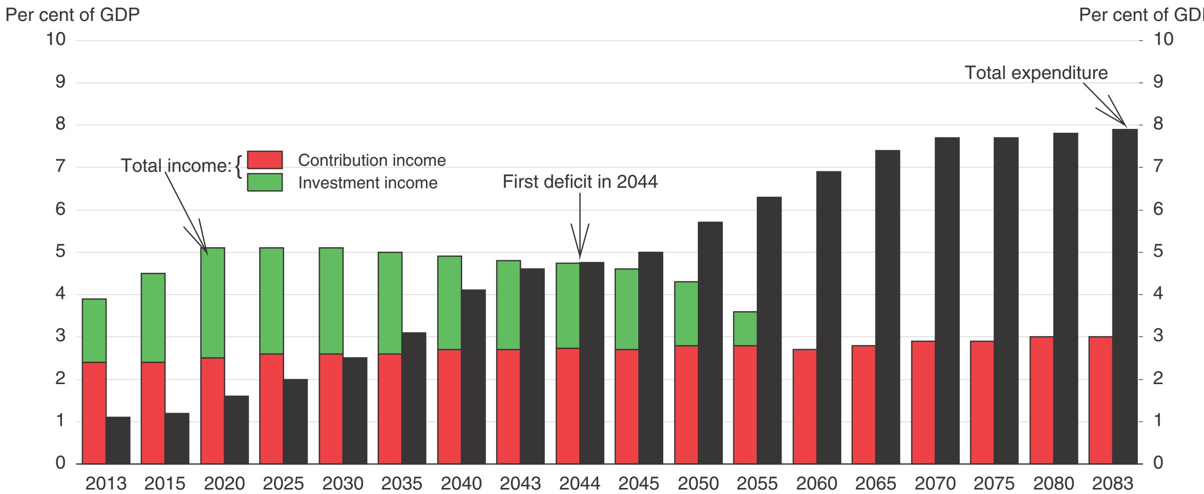
Faced with such spending pressures, it is essential to enhance public-sector efficiency, as planned in the Three-year Plan for Economic Innovation, and carefully target social welfare. A universal approach, such as the provision of free childcare since 2013 to all children under age five, regardless of household income and the mother's employment status, is costly. Tax revenue, still well below the OECD average (Figure 7, Panel B), will have to increase to finance rising social spending over the long run. The priority is to broaden the tax base by cutting exemptions and capturing more of the informal economy. Higher rates will also be necessary, focusing on taxes with a less negative impact on economic growth, such as the VAT and environmentally-related taxes (Arnold et al., 2011), while ensuring that the tax burden is fairly shared across the population. The 10% VAT rate is only about half of the OECD average. It is also important to ensure the fiscal sustainability of the NPS, which is projected to go into deficit in 2044 (Figure 8).

Figure 8. **Spending by the public pension system is projected to rise rapidly**



Source: National Pension Research Institute (2013).

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Maintaining a sound fiscal position in Korea is a priority given spending pressures, including those stemming from population ageing and the potential cost of intensified economic co-operation with North Korea. In 2004, Korea introduced the National Fiscal Management Plan, which aims at controlling fiscal risk and facilitating efficient resource allocation by integrating a medium-term perspective into budgeting. The plan serves as a baseline for the fiscal balance and the sectoral allocation of expenditure. Although the Plan is not legally binding, the government is required to submit it to the National Assembly, each September, along with the budget for the following fiscal year. Measures are needed to make the Plan more binding. Empirical evidence suggests that a combination of budget balance and spending rules produces the best results for fiscal consolidation (Guichard et al., 2007). While simple budget balance rules are inherently pro-cyclical, spending rules work best during economic upturns due to their counter-cyclical nature. The key to an effective medium-term fiscal plan is its power to bind annual budgets to the outcomes contained in the plan in order to achieve the fiscal target.

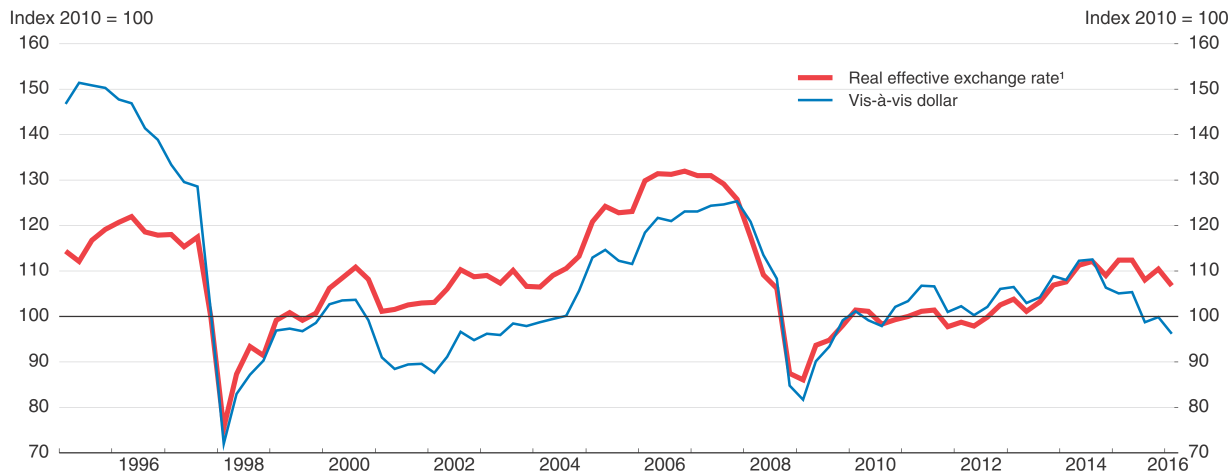
Monetary and exchange rate policy

The Bank of Korea cut its policy interest rate in June 2015 to a record low 1.5% and reduced its inflation target to 2% for the period 2016-18. This new point target can be expected to better anchor inflation expectations and is more in line with the current practice of central banks in other advanced economies. In addition, the new requirement to explain deviations from target will enhance central bank accountability.

There is a case for further monetary easing, as inflation is still far below the new target. Monetary decisions need to take into account risks to financial stability, including those stemming from household debt and capital flows. Although there is concern about the possible impact on the already high and rising level of household debt on financial institutions, the Financial Services Commission is taking steps to limit this risk. A second concern is that lower interest rates in Korea could result in capital outflows. However, capital outflows have remained below Korea's current account surplus in recent years.

Monetary policy also needs to take into account exchange rate developments. Korea's foreign exchange policy, which focuses on smoothing excessive volatility, was classified as "freely floating" from 1997 to 2008 and as "floating" since 2009 by the IMF. Maintaining a flexible exchange rate is essential as a buffer against external shocks. Trend won appreciation since 2013 (Figure 9) is helping to support imports, implying positive spill-over effects on other countries.

Figure 9. **The won has fluctuated widely**



1. Trade-weighted, *vis-à-vis* 48 trading partners, calculated using consumer prices.
Source: OECD Analytical Database; Bank of Korea.

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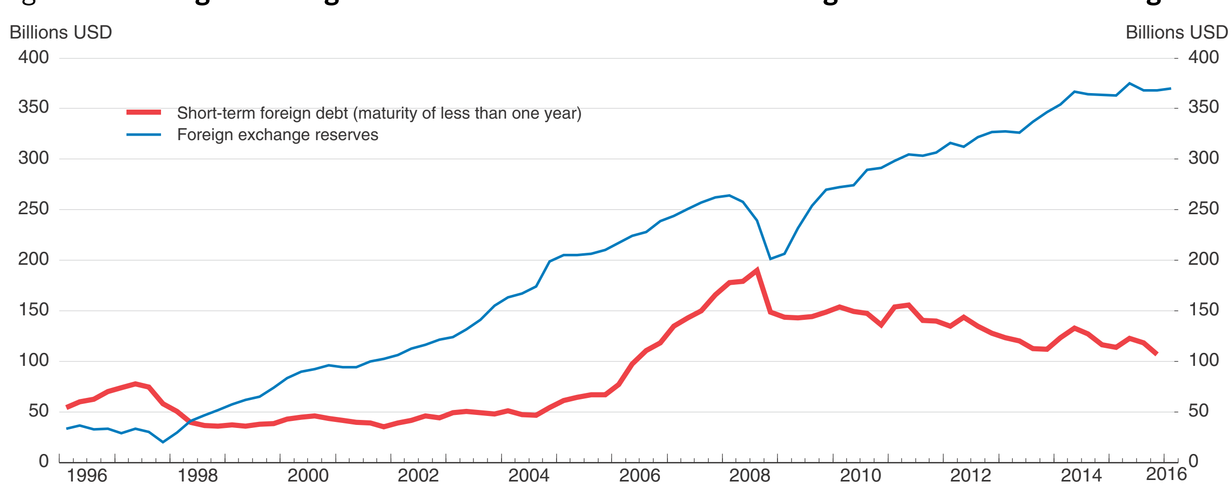
Korea is sensitive to external shocks, which caused capital flight and rapid currency depreciation in 1997 and 2008. However, Korea appears more resilient as its short-term foreign debt fell from USD 190 billion in September 2008 to USD 107 billion in December 2015 (Figure 10), reducing its share of total debt from 52.1% to 27.1%. Foreign

Figure 10. **Foreign exchange reserves are more than three times higher than short-term foreign debt**



Source: Bank of Korea.

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exchange reserves rose from USD 201 billion at the end of 2008 to USD 368 billion in December 2015, equivalent to 26.4% of GDP and 3.4 times short-term foreign debt. This will help protect Korea against future crises and reduce the cost of foreign borrowing. However, reserves also have significant fiscal costs and entail foreign exchange risk. Instead, swap agreements, which played a key role in resolving Korea's foreign exchange shortage in 2008, can supplement foreign exchange reserves, although they depend on the co-operation of other countries. Korea maintains swap agreements with a number of countries, including China and Australia. It is also important to continue building a transparent and sound financial system to maintain investor confidence and better absorb shocks from abroad (2014 *OECD Economic Survey of Korea*).

The financial sector

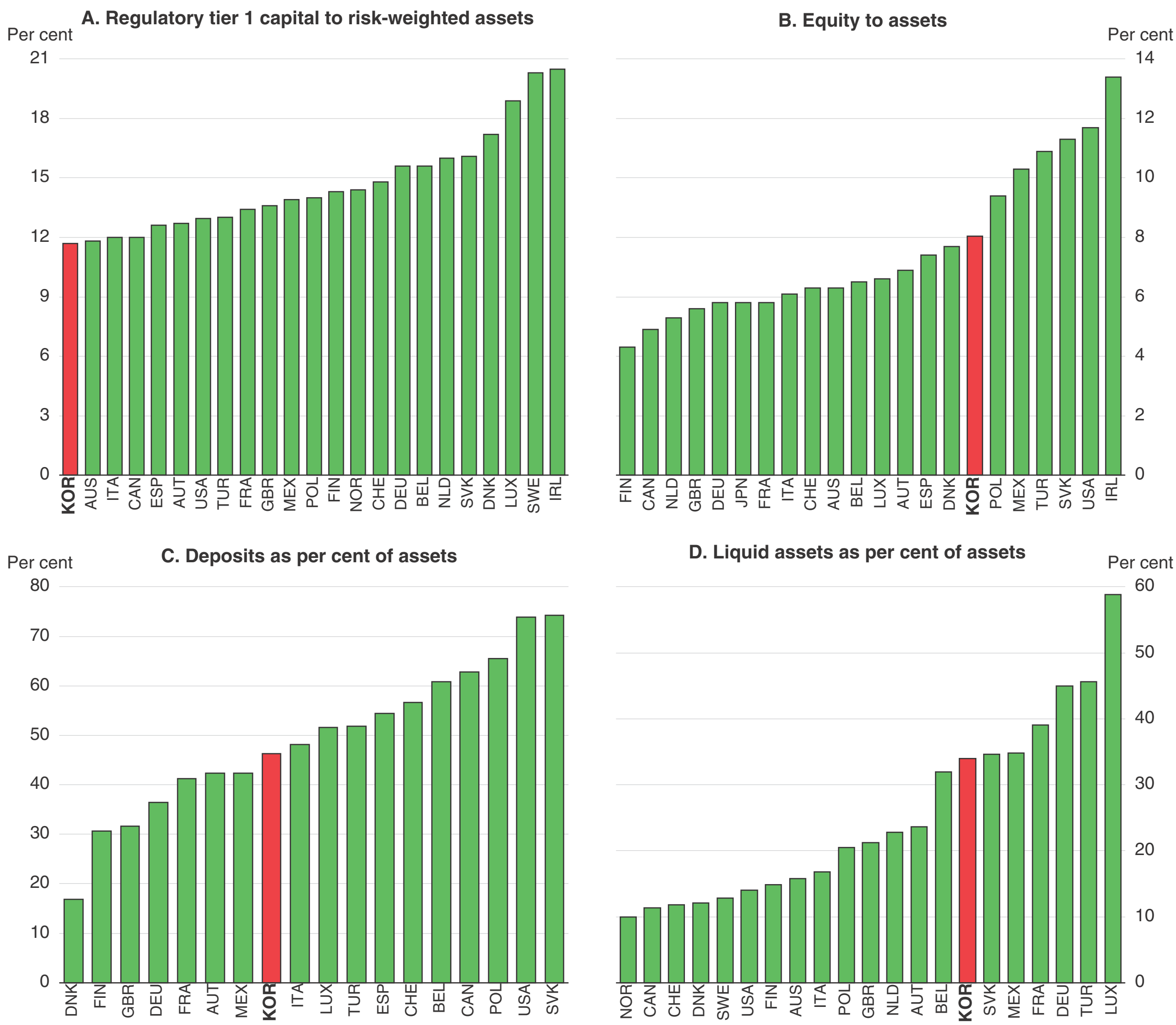
Korea's household debt was 163% of household disposable income in 2014, well above the OECD average of 137%. Older persons, self-employed and low-income workers in particular face high debt burdens, raising social cohesion concerns, as financial institutions have become increasingly reluctant to lend to such persons (Jones and Kim, 2014a). The mortgage market has weaknesses. *First*, interest-only loans accounted for 61.1% of mortgage lending at the end of 2015. *Second*, floating rate loans accounted for 64.3% of loans. The share of such loans, though, is falling, thanks to government financial incentives for banks. The government has a target of expanding amortised and fixed-rate loans to 50% and 40%, respectively, of mortgages by the end of 2017 (FSC 2015b). Systemic risk is limited by several factors: i) housing prices were essentially flat, adjusted for consumer price inflation, between 2009 and 2014, and the government tightened regulations on mortgage loans in metropolitan areas in February 2016; and ii) household financial assets have also increased and exceed debt. The share of household loans classified as non-performing fell from 0.7% at the end of 2012 to 0.4% at the end of 2015.

Meanwhile, corporate debt (including bonds) edged up from 101.5% of GDP in 2008 to 105.7% in 2014, while the number of firms unable to cover interest expenses with operating profits for three consecutive years rose from 12.8% in 2009 to 15.2% in 2014. Balance-sheet problems have emerged as a result of falling exports and slowing growth. Indeed, sales revenue growth fell from 12.2% in 2011 to 1.3% in 2014. Pockets of weakness, notably in the steel, shipbuilding and maritime transport industries, prompted the Financial Services Commission to launch a plan in 2015 to strengthen banks' credit risk management to reduce the effect of corporate insolvency on their soundness. The share of loans to the non-financial corporate sector classified as non-performing edged up from 1.7% at the end of 2012 to 2.4% at the end of 2015. Overall, the corporate sector is sound, with a debt-to-equity ratio close to 100% in 2014.

Rising household debt and large corporate loans to weak sectors, such as shipbuilding, have boosted the banking sector's risk-weighted assets. In 2015, the ratio of regulatory tier 1 capital to risk-weighted assets was the lowest in the OECD at 11.7%, though still above the 8% standard set by the Bank for International Settlements (Figure 11). Other measures of banks' balance sheets – equity to assets, deposits as a share of assets and liquid assets as a share of assets – are sound, suggesting that systemic risks are low. In addition, since 2009, commercial banks' non-performing loans have remained below 2% of their total lending, despite the increasing level of household and corporate debt. In sum, systemic risks to the financial sector appear small in the absence of large macroeconomic shocks (IMF, 2015). Korea's banking sector, though, does face challenges, such as declining

Figure 11. **Korea's banking sector is generally strong**

In 2015



Source: IMF, *Financial Soundness Indicators Database.*

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profitability, which is low by international standards, and falling labour productivity (Lee and Nam, 2013). The government is reforming its financial regulatory practices in an effort to reverse these trends. In particular, it aims to give financial firms more autonomy by re-defining the financial supervisor's role from "coach" to "referee", while making financial institutions more responsible for their decisions. Such reforms will enable the launch of new, innovative financial products and services. In particular, developing the fintech industry by introducing Internet-only banks and allowing financial transactions without face-to-face identification is expected to boost efficiency in Korea's financial sector.

Raising productivity through innovation and structural reform

Korea's potential growth rate declined from more than 9% in 1990 to 3% in 2016, reflecting both its success in narrowing the gap with the most advanced countries and the challenges that Korea faces. The deceleration is due to falling contributions from labour inputs and productivity (Figure 12). The downward trend in labour inputs will intensify as Korea's population goes from the fourth youngest in the OECD in 2012 to the third oldest by 2050 (Figure 3) and working time continues to fall toward the OECD average. Even if participation rates were to increase, policies to support productivity growth are crucial to sustain output growth. The government is pursuing a wide range of reforms in line with previous OECD recommendations (Table 4).

Figure 12. **Korea's potential GDP growth has fallen sharply since 1990**

Source: *OECD STEP 99 Database.*

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Korea's labour productivity rose at an annual rate of 4.6% over 1995-2014, nearly three times the OECD average. However, the level of productivity per hour of labour input was only 55% of the top half of OECD countries in 2014. The large gap is largely explained by low productivity in services, which was 45% of that in manufacturing in 2014, compared to an average of 90% in the OECD (Figure 13). Korea's export-led development has siphoned capital, talent and other resources away from services and toward manufacturing. Moreover, the share of domestic services in value-added in exports was the fifth lowest in the OECD, and service exports are low.

The service sector is dominated by SMEs, which account for about 90% of service-sector employment and operating profits. Productivity in SMEs fell from 53.8% of that in large enterprises in 1988 to only 30.5% in 2014, as large enterprises invested in labour-saving technology. Entry and exit rates in both manufacturing and services – a measure of economic dynamism – have fallen markedly between 2001 and 2013 (Ahn, 2015), though they picked up somewhat in 2014-15. SMEs that achieved rapid total factor productivity (TFP) growth over 2007-11 did not have a higher share of output in 2011 (Chang, 2015), suggesting problems in resource allocation. Moreover, only 0.01% of small companies grew into medium-sized companies over 2011-14. Converging to productivity levels in the most advanced countries requires narrowing the productivity gaps between manufacturing and services and between large and small firms. This, in turn, depends on improving framework conditions, upgrading Korea's innovation system, increasing human capital and reforming policies for SMEs and venture capital.

Table 4. **Korea is implementing many previous OECD recommendations**

Earlier OECD recommendations	Action taken or planned
Product market regulation: Liberalise regulations to promote an efficient allocation of resources in favour of innovative firms (2012, 2014).	Regulatory reform is a priority of the Three-year Plan for Economic Innovation launched in 2014. Around 10% of economic regulations were abolished during the year to January 2015 and the government launched a "cost-in, cost-out" system to cap the regulatory burden on firms. A number of new initiatives, such as the Regulatory Guillotine and the Thorn under the Nail, have been launched.
Promote international competition: Lower barriers to trade and investment (2012, 2014).	In line with the Three-year Plan, Korea has signed free trade agreements with six countries (China Australia, Vietnam, Canada, New Zealand and Turkey) over 2014-15.
Pension reform: Reform the civil service pension system, which relies on large government subsidies (2008).	Civil service pension reform, another priority of the Three-year Plan, was passed by the National Assembly in 2015. The reform cuts pension benefits, raises pension contributions and raises the pension eligibility age, thereby reducing its reliance on government subsidies.
Increase the effectiveness of social welfare programmes: Expand the Basic Livelihood Security Programme (BLSP) (2012, 2014).	The BLSP was expanded in 2014 by raising the income threshold for in-kind benefits, such as for housing and education, in line with the Three-year Plan's goal of establishing a strong social safety net.
Labour market reform: Break down labour market dualism and raise the employment rate, especially for women (2012, 2014).	The 2015 Tripartite Agreement between management, labour and the government lays the groundwork for reforms aimed at expanding youth employment and alleviating labour market dualism. Measures to promote the take-up of parental leave have been introduced.
Vocational education and training: Raise youth employment through improved vocational education and training that is linked to the National Competency Standards (NCS) (2012, 2014).	The number of Meister vocational schools, which have job placement rates of more than 90%, has increased from 35 in 2014 to 41, with six more planned for 2016-17. The Work-Study Dual System now includes more than 2 000 firms and nearly 13 000 students. The 887 NCS are playing a key role in revising training standards and setting the curriculum for vocational education.
Small and medium-sized enterprises: Focus support on start-ups and early-stage firms and streamline the large number of government programmes used to support SMEs (2012, 2014).	The government launched a plan in 2015 to reduce support for SMEs more than five years old. In 2015, six SME programmes were eliminated and 13 merged, resulting in budget savings.
M&A market: Expand Korea's small M&A market in part to enable venture capital investors to recover their investments (2014).	The government launched a plan in 2014 to activate the M&A market by easing restrictions on investors in order to attract potential buyers, providing financial support for sellers and reducing restrictions on M&A procedures and tax disincentives.

Figure 13. **Service sector productivity is low in Korea**

Value added in 2014 based on 2010 prices

Source: *OECD National Accounts Database; OECD STI Database.*

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Improving framework conditions, in particular by accelerating regulatory reform

Korea's 2013 score in the OECD Product Market Regulation (PMR) indicator was the fourth most stringent in the OECD (Figure 14), reflecting in part regulations in network industries. 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. PMR has a significant relationship with aggregate productivity across the OECD (Bouis et al., 2011). Cutting PMR would boost investment in innovative activities, knowledge diffusion, managerial performance and entry by new firms (Westmore, 2013). The rise in the total number of regulations through 2013 was centred on services; the number of regulations applied in the service sector in 2013 was more than four times higher than in manufacturing (Park et al., 2014). The regulatory burden is thus heavier on SMEs, given their concentration in services. Administrative burdens and complex regulatory procedures are a particular burden on SMEs, constraining market entry, productivity gains and scaling up.

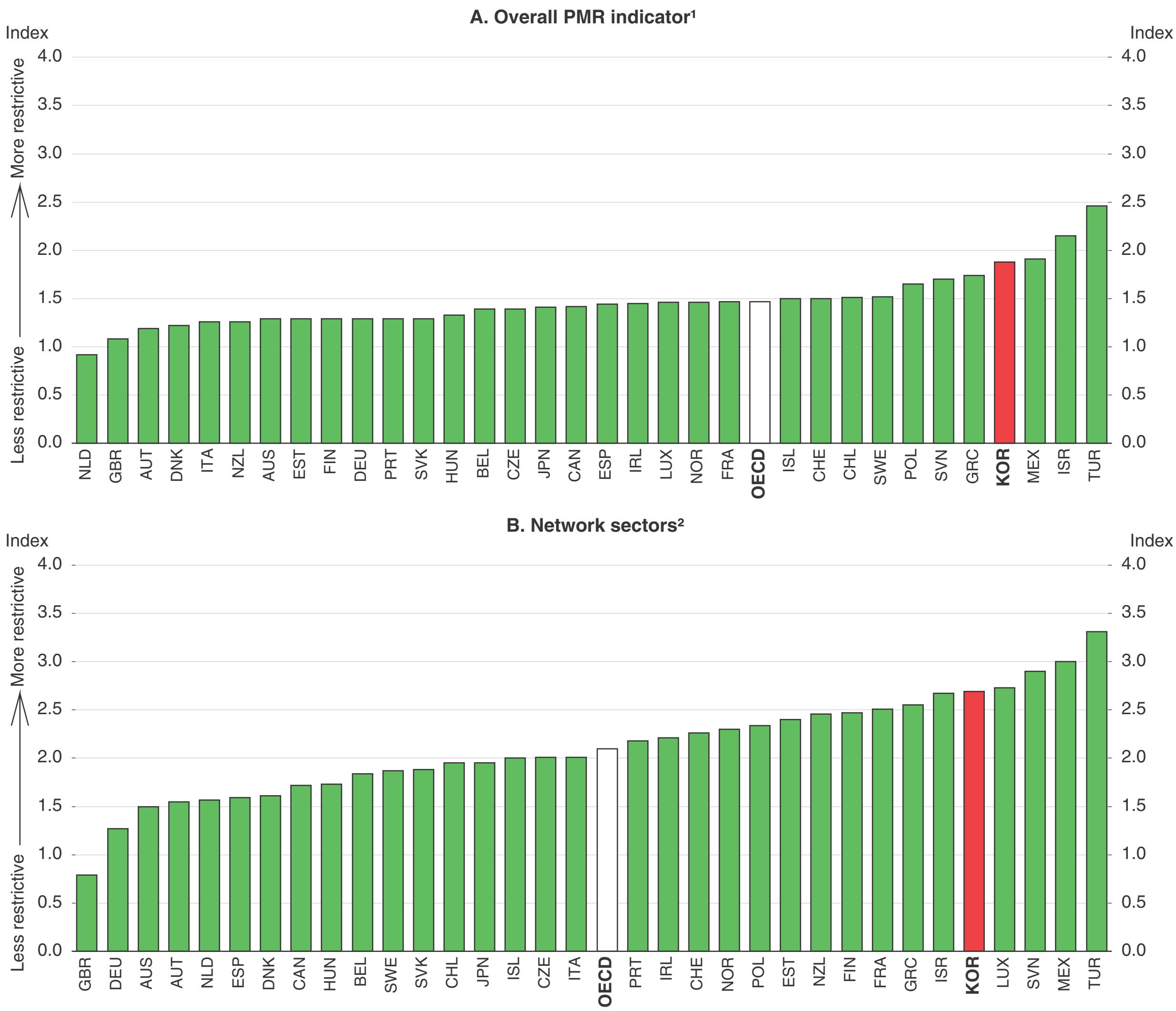
Recognising the costs of overly burdensome regulation, the government reduced the number of economic regulations, which numbered 9 876, by 10% in the year to January 2015. To cut regulations, the government has introduced several initiatives, such as the *Shinmungo*, which allows citizens to suggest regulatory reforms, the *Regulatory Guillotine* and the *Thorn under the Nail*, which focuses on SMEs. The government is trying to ensure that SMEs in particular benefit from regulatory reform.

In addition, the government wants to cap the regulatory burden by introducing a "cost-in, cost-out" system, which aims to offset the costs of new regulations by abolishing or relaxing existing regulations. The system included 15 ministries in 2015 and the number may be increased depending on an evaluation of the system. The success of the regulatory reform agenda will ultimately hinge on the extent to which it reduces the regulatory burden – merely maintaining it will not bring much gain. To garner support for reform, the government should systematically carry out estimates of the economic gains from recent or planned reforms. At the same time, some of the regulations that firms find most onerous – such as measures restricting the activities of large firms to protect SMEs and limiting construction in the Seoul metropolitan area – have considerable political support to achieve non-economic objectives.

Achieving the goal of stabilising the regulatory burden would be facilitated by improving the quality of regulations. However, Korea lags behind the leading countries in the implementation of key tools, especially with regards to *ex post* evaluation. It also needs an explicit and mandatory methodology for developing new laws and regulations. Quality control measures, such as impact assessments, public consultation and competition assessments by the Regulatory Reform Committee, apply only to new regulations initiated by the executive branch, which account for no more than 16% of the total (OECD, 2015d). Similar standards should be applied to regulations initiated by the National Assembly.

The lowering of barriers to international trade and investment broadens the scope for knowledge diffusion and technological transfers across borders, and boosts productivity through more efficient resource allocation. Korea's index of barriers to trade and investment was the second highest in the OECD in 2013. Since then, Korea has signed six FTAs, which have reduced these barriers (Table 4). Relaxing regulation of key service and network industries would yield significant benefits in boosting economy-wide productivity. Korea's service trade restrictiveness index is below the OECD average in 13 out of 22 sectors but still above it in some sectors that play a key role in global value chains,

Figure 14. **Product market regulation in Korea was the fourth most stringent in the OECD in 2013**



1. 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.
2. Includes electricity, gas, telecom, postal services, rail, airlines and road transport.

Source: *OECD Product Market Regulation Database*; Koske et al. (2015).

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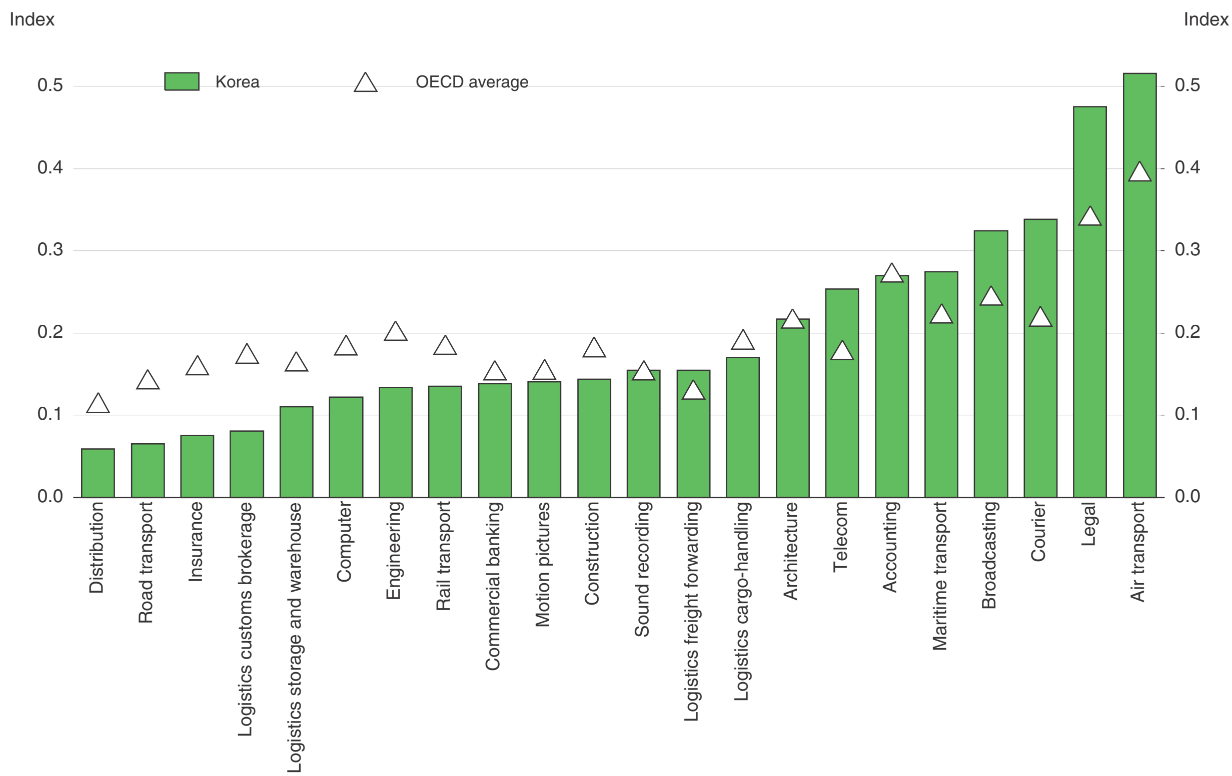
such as maritime and air transport, courier services and legal services (Figure 15). Barriers to foreign entry include equity restrictions in sectors such as telecoms and air transport. Some sectors are also less competitive because of state control of major firms, such as the Korea Railway Corporation.

Innovation also requires continuous reallocation of labour within and across firms and sectors. Employment protection can be a major barrier to labour flows (Martin and Scarpetta, 2012). High levels of protection restrict the ability of innovative firms to attract workers and reduce venture capital investment and R&D expenditure, particularly in innovative sectors (Andrews and Criscuolo, 2013). In Korea, employment protection is problematic, as reflected in the dualistic nature of the labour market (see below).

Figure 15. **Korea's service trade restrictiveness is relatively high in some sectors**

In 2015 or latest year



Note: The STRI indices take values between zero and one, one being the most restrictive. They are calculated from the *STRI Regulatory Database*, which contains information on the 34 OECD countries and some emerging economies. The STRI database records measures taken on a "Most Favoured Nation" basis while excluding preferential trade agreements. Air transport and road freight cover only commercial establishments. The data have been peer reviewed by OECD member countries.

Source: OECD (2016b).

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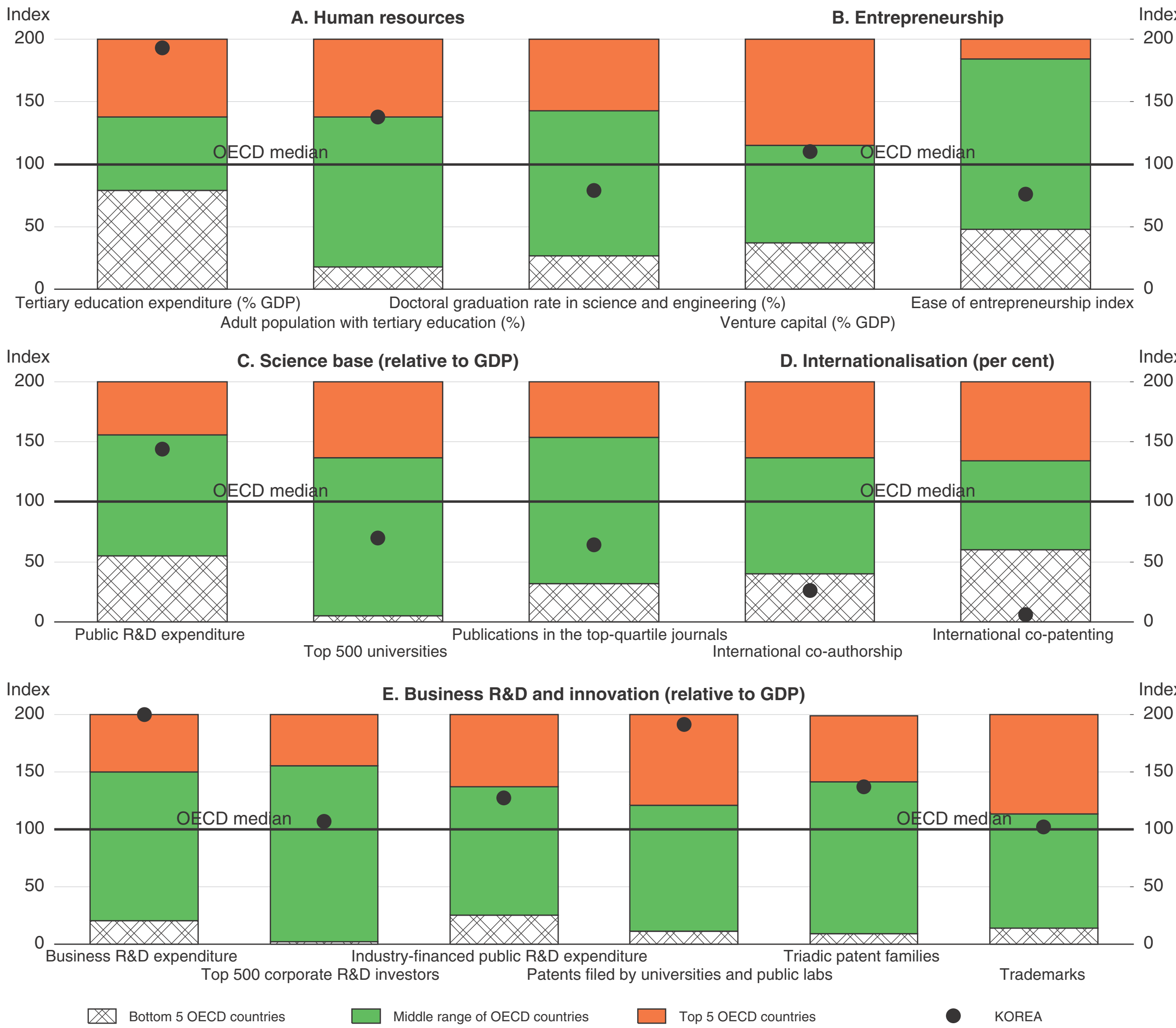
Upgrading the innovation framework

Korea is the world's most R&D-intensive country, investing 4.3% of GDP in R&D in 2014, and it ranks first in business R&D (Figure 16, Panel E), which is concentrated in the large manufacturing conglomerates. However, policies to strengthen links between industry, university and government research institutes (GRIs) are needed to improve technology transfers and commercialisation (Jones and Kim, 2014b). Current initiatives, such as the programme to support exchanges of researchers between universities and GRIs and establish several joint industry-GRI-university R&D centres, are helpful in this regard. International linkages are also weak, as only 0.7% of the R&D carried out in Korea in 2014 was financed from abroad. Moreover, Korea's levels of international co-authorship and co-patenting are among the lowest in the OECD (Figure 16, Panel D). Limited co-patenting reflects Korea's conglomerate structure, which tends to retain technology within the group. As firms approach the technological frontier, Korea needs to better connect to global science and innovation networks. To achieve this, the government is creating a global network of science and technology outposts. These measures could be usefully complemented by further improvement of the regulatory environment for trade and investment to facilitate foreign investment in R&D.

Figure 16. **An overview of Korea's national science and innovation system**

Normalised index of performance relative to the median values in the OECD area in 2014 (Index median = 100)



Note: Normalised index of performance relative to the median values in the OECD area, which are set at 100. The top performer is set at 200 and the lowest at zero. The fifth-highest performer in the case of the "Top 500 universities" had a score of 137 relative to the OECD median, while the fifth lowest had a score of 5. Korea, with a score of 70, was in the middle range.

Source: OECD (2014d).

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Services accounted for only 8% of Korea's business R&D in 2013, well below the OECD average of 38%. Only 6.4% of Korea's service-sector firms were engaged in R&D activity over 2011-13, just about a quarter of the share in manufacturing, according to a government survey (Table 5). Moreover, the share of service firms engaged in product and process innovation is relatively low, although services do match manufacturing in organisation and marketing innovation.

The large sectoral differences in R&D in Korea contribute to a divergent pattern of TFP growth (Baek and Joo, 2014). During the 2000s, TFP made a negative 1.0 percentage-point contribution to value-added growth in services, in contrast to a positive 1.7-point contribution in manufacturing (Figure 17). Government efforts to raise the SMEs' share of

Table 5. **Service firms are less active in R&D and innovation than those in the manufacturing sector**

Percentage of all firms over 2011-13[1]

	Service sector	Manufacturing sector
R&D activity rate	6.4	22.3
Innovation activity rate in four areas	27.0	30.9
Product innovation	5.2	17.1
Process innovation	3.7	7.4
Organisational innovation	16.9	16.4
Marketing innovation	13.9	12.1

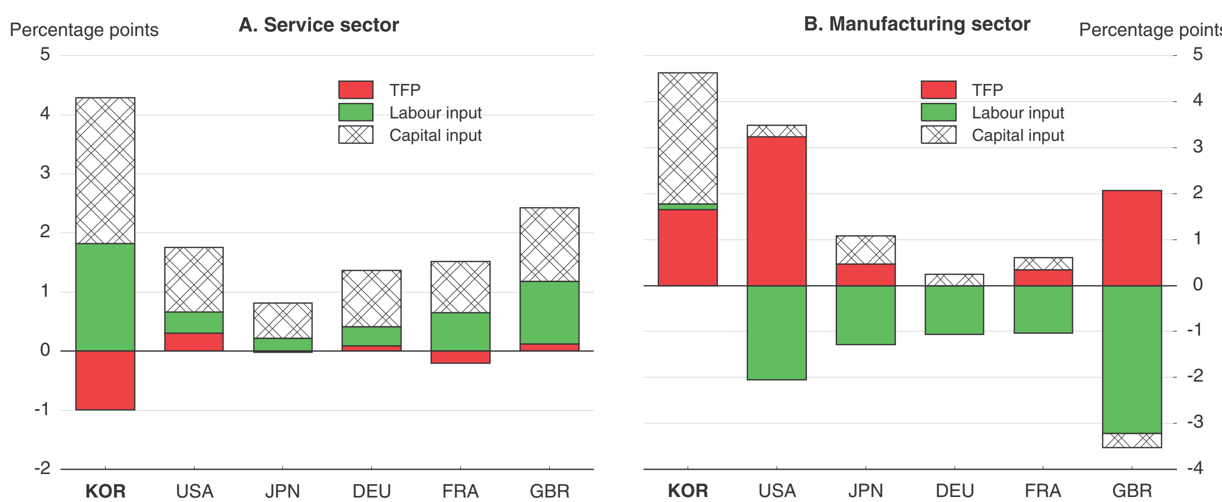
1. The R&D and innovation activity rates are the number of firms taking part in each activity divided by the total number of firms. The lower rate for services reflects to some extent their different nature than manufacturing.

Source: Science and Technology Policy Institute (STEPI) (2014).

public R&D investment, including via GRIs, are likely to boost innovation in services. However, a key stumbling block to R&D is the weak financial position of SMEs. Indeed, about one-third of SMEs do not earn enough to even cover their interest payments, while small firms have had negative operating profits since 2006. In addition, the technological capacity of workers in SMEs is weaker than in manufacturing, which is dominated by large firms.

Figure 17. **Total factor productivity growth in Korea's service sector has been negative**

Contribution to value-added growth in percentage points in the 2000s[1]



1. 2001-10 for the United States and 2001-09 for the other countries.

Source: Korea Productivity Centre (2014).

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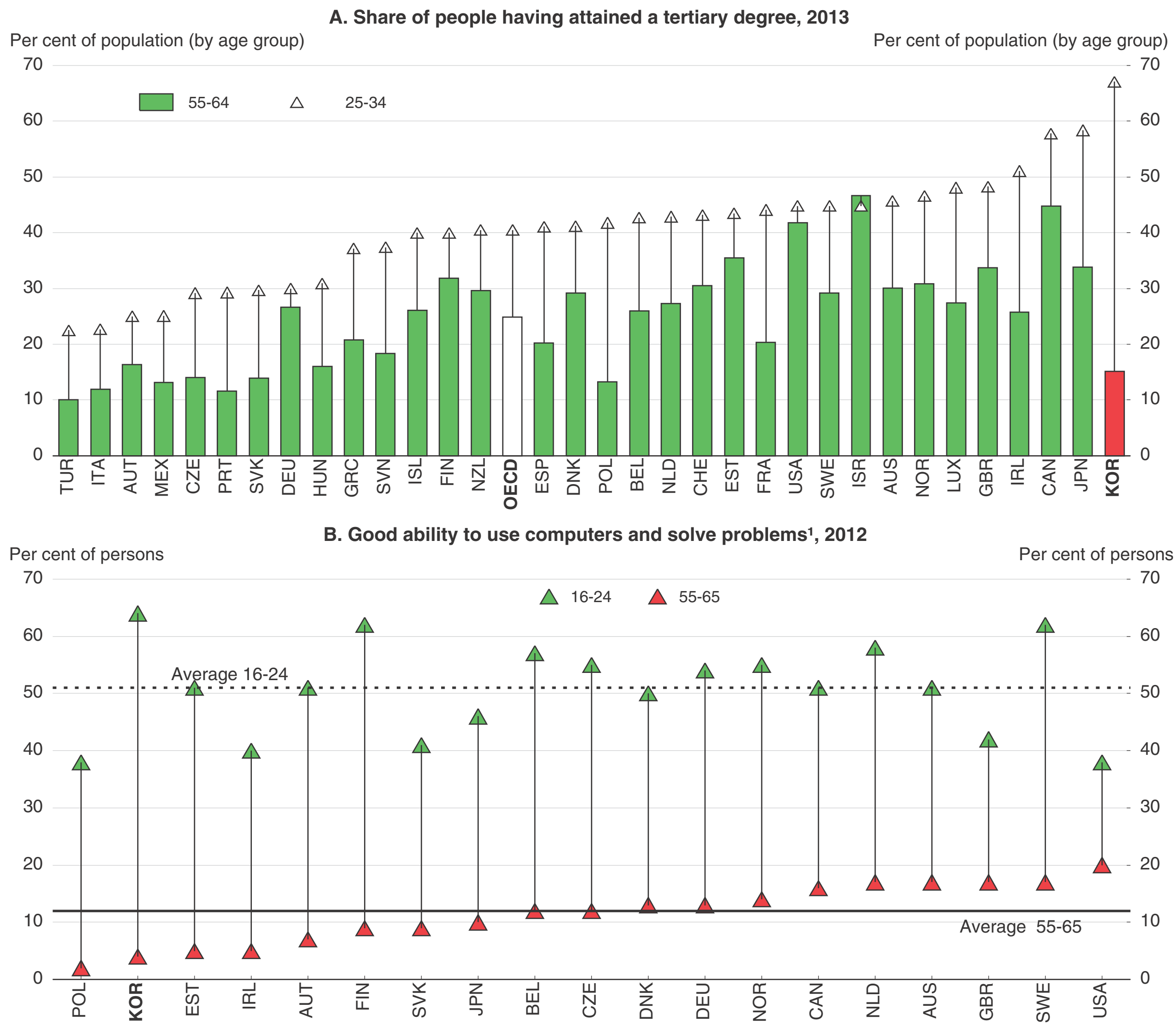
Increasing human capital

Korea consistently ranks near the top in the OECD PISA tests on reading, science and mathematics, an international comparison of 15 year-olds across countries. In addition, the share of young adults (25-34) with a tertiary education is the highest in the OECD (Figure 18) and the performance of young adults in the OECD Survey of Adult Skills (PIACC) is also outstanding (Panel B). However, the gap between young adults and older persons is the largest in the OECD in terms of tertiary graduation rates and skill levels. The large difference illustrates the importance of lifelong learning. In Korea, though, the proportion of adults with weak skills who participate in adult education is below the OECD average.

Figure 18. **The education and skill gap between younger and older workers in Korea is large**



1. Results are similar in Korea for numeracy and literacy skills.

Source: OECD *Education at a Glance Database*; OECD (2013a).

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Korea's National Competency Standards (NCS), which identify the knowledge, skills and attitudes necessary to perform tasks by sector and level of industry, should play a key role in training as well as in schools. By end-2015, 847 out of 887 NCSs had been completed and will be used to revise training standards and qualification exam criteria. The OECD Skills Strategy for Korea (2015f) sets out a comprehensive approach to develop skills from childhood to adulthood, activate these skills in the labour market and use them effectively in the economy and society.

Reducing labour mismatch is essential to make better use of human capital. Under-skilled workers hold back productivity within firms, while trapping over-skilled resources in low-productivity firms makes it more difficult for more productive firms to attract skilled labour and gain market share (Adalet McGowan and Andrews, 2015). In Korea, mismatch amounts to 22% of the labour force, in line with the average of the 19 OECD countries for which data are available. The labour productivity gain from lowering Korea's skill mismatch to the best-practice level is estimated to be 5%.

Strengthening the role of SMEs and venture capital in the creative economy

The government's 2013 Creative Economy Action Plan aims to expand the role of SMEs and venture capital. Small firms' access to credit is limited by their lack of collateral, short credit history and a lack of expertise needed to produce financial statements. The government has long intervened by providing financial support directly to SMEs and by guaranteeing loans from private financial institutions to SMEs. Market failures that limit financing for SMEs provide a rationale for public support. While increased support was justified during the 2008 global financial crisis, public financing for SMEs increased 18% over 2009-13 (Table 6), rising to more than 6% of GDP. Moreover, government guarantees as a share of GDP were more than 5% of GDP in 2014, the third highest in the OECD, and should be reduced (Figure 19). Despite policies to develop capital markets, direct financing (bonds, equity and venture capital) accounted for only 1.2% of SME funding in 2013 (Table 6), reflecting the difficult issuance requirements, the complexity of issuing procedures and high costs. SMEs' share of direct financing fell from 1.7% in 2009 to 1.2% in 2015.

Table 6. **SME reliance on government financing has increased since 2009**

In trillion KRW in the top row for each year; as a percentage of total financing in the bottom row

	Indirect financing			Direct financing				Government financing				Total
	Bank loans[1]	Non-bank loans[2]	Sub-total[3]	Bonds[4]	Stocks[5]	Venture capital	Sub-total	On-lending[6]	Policy loans[7]	Guarantee balance[8]	Sub-total	
2005	256.5	82.5	293.6	0.3	3.0	3.4	6.7	-	3.2	45.4	48.6	348.9
	73.5	23.6	84.2	0.1	0.9	1.0	1.9	0.0	0.9	13.0	13.9	100.0
2009	443.4	121.8	497.5	1.1	4.5	3.9	9.5	0.2	5.9	67.7	73.8	580.8
	76.3	21.0	85.7	0.2	0.8	0.7	1.6	0.0	1.0	11.7	12.7	100.0
2013	489.2	-	489.2	0.1	0.8	6.4	7.2	6.7	4.9	75.5	87.1	583.5
	83.8	0.0	83.8	0.0	0.1	1.1	1.2	1.1	0.8	12.9	14.9	100.0

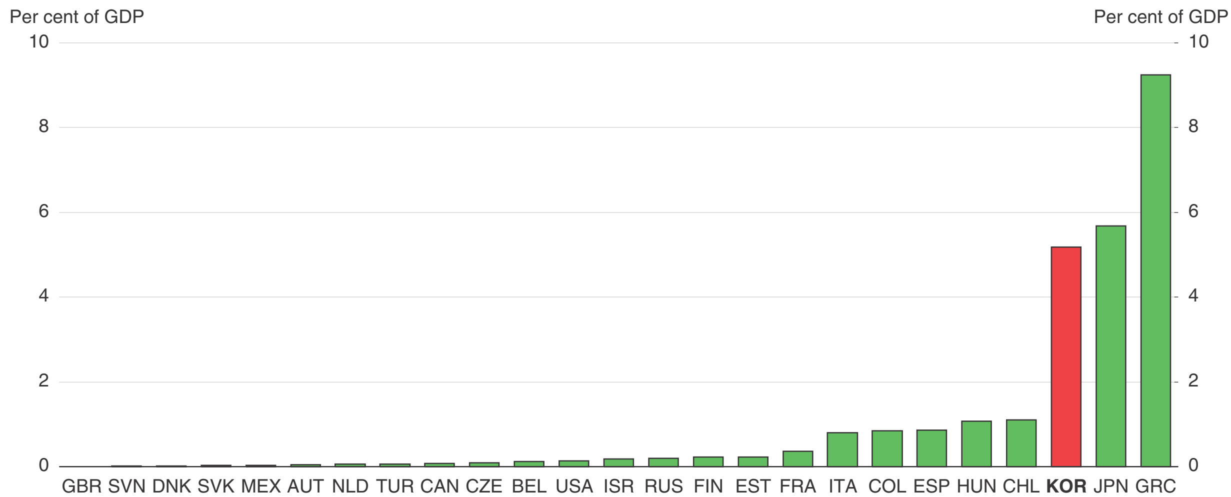
1. Incluldes general banks and specialised banks.
2. Includes loans of mutual savings bank, credit associations, mutual finance companies and Saemaeul finance firms. No data are available for 2013.
3. The sub-total excludes the government's guarantee balance, except in 2013, as the share of guarantees applied to bank loans is unkown.
4. Excludes ABS and financial bonds.
5. Stock issuance through IPOs and paid-in capital increase.
6. A public institution (Korea Finance Corporation) provides 40% of the loan to financial institutions. On-lending is the Korea Finance Corporation's policy loan balance.
7. The balance of the Small and Medium Business Administration's policy loans.
8. The sum of the guarantee balances in the Korea Credit Guarantee Fund (KODIT), the Korea Technology Finance Corporation (KIBO), and local KODIT.

Source: Koo et al. (2015).

While public support has reduced bankruptcy among small firms, it does not significantly improve SME performance. A study comparing SMEs receiving support to those that did not over 2003-09 found that public support failed to boost profits and sales (KDI et al., 2011). Another study found that SMEs that received government support had higher survival rates in 2011 and, in some cases, higher sales and employment than firms not receiving support. However, their profits and wages did not improve and in some cases fell. Moreover, TFP in firms receiving support has increased less than in firms without support (Chang et al., 2014). Meanwhile, another study found that SMEs receiving public support recorded improved financial performance such as higher revenue and operating profit ratios than firms without support (Nam et al., 2015). Government policies that boost

Figure 19. **Government guarantees for loans to SMEs are high in Korea**

As a percentage of GDP in 2014



Source: OECD (2016a), *Financing SMEs and Entrepreneurs 2016: An OECD Scoreboard.*

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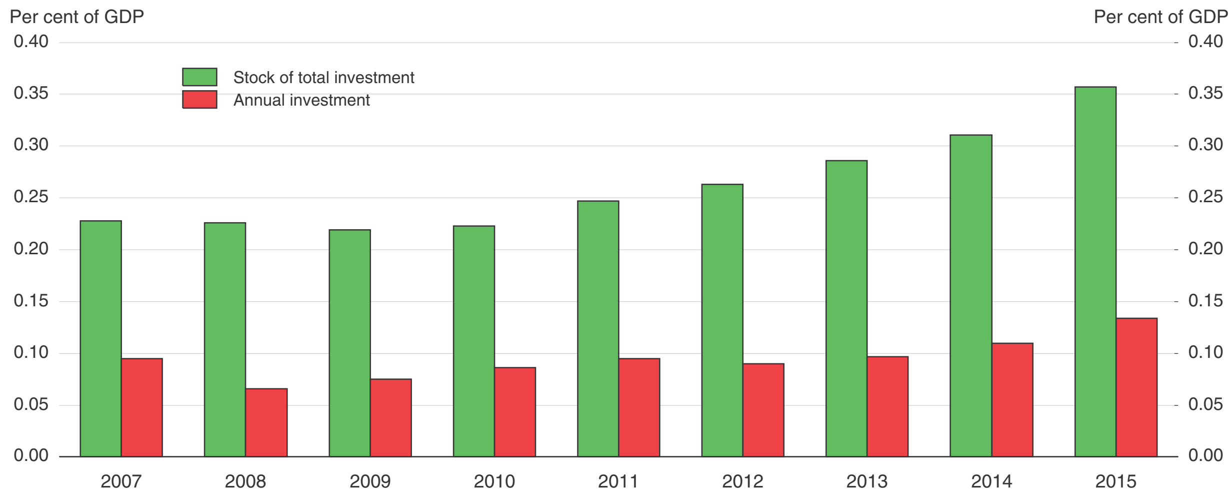
survival rates of low–productivity firms are detrimental to long-run efficiency. The generosity of support to SMEs should be reduced.

Public support has other negative side effects (2014 *OECD Economic Survey of Korea*). *First*, it reduces incentives for financial institutions to improve their capacity for credit evaluation of SMEs, thus impeding the development of a market for SME financing and prompting further public support. *Second*, public support allows some weak companies to survive. This limits viable companies' access to finance, because once loans are given to a non-viable firm, financial institutions and credit guarantee providers share an interest in its survival. *Third*, Korean SME policy encourages small firms to remain small so as to stay eligible for public support, thereby foregoing the economies of scale associated with growth (OECD, 2014a). Over 2011-14, only 0.01% of small companies grew into medium-sized companies, the so-called "Peter Pan effect". Consequently, Korea has relatively few medium-sized companies. In November 2015, the government announced that it would reduce credit guarantees to mature SMEs to focus more on start-ups and early-stage SMEs, where the difficulty of securing market financing is greatest (FSC, 2015b).

SMEs also face shortages of human capital and low use of ICT. While Korea is a world leader in the provision of ICT goods and benefits from extensive broadband deployment, the share of firms with less than 50 workers that engaged in e-commerce in 2013 was only 15%, one of the lowest in the OECD. For large companies, the share is higher at 25% but still below the OECD average of 40% (OECD, 2015e). Similarly, the share of Korean small firms using cloud computing was the fourth lowest in the OECD in 2014 (OECD, 2015c), reflecting a lack of skilled workers.

Venture businesses and start-ups play a key role in commercialising new technology and creating jobs (Andrews and de Serres, 2012). Firms less than five years old, regardless of size, accounted for less than a fifth of total non-financial business employment but generated half of all new jobs in the OECD area over 2001-11. Venture capital investment in Korea has been gradually reviving since the 2008 global crisis, thanks primarily to government policies (Figure 20). The number of companies receiving venture capital

Figure 20. **Venture capital investment has been increasing since 2011**



Source: Korea Venture Capital Association.

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investment has risen to nearly 1 000 in 2015 (Lee, 2016), thanks in part to the growing role of business angels. Investment by angels nearly doubled over 2010-14, reaching KRW 80 billion (USD 70 million), reflecting more favourable tax treatment and the establishment of a matching fund. In addition, the government has established 17 "Centres for Creative Economy and Innovation" to support start-ups and SMEs through a range of services, including financing.

Nevertheless, Korea's venture capital market is still small, accounting for around 1% of SME financing, and exhibits many weaknesses. *First*, the number of angel investors and the amount of their investment is still far below its peak in the early 2000s. *Second*, venture investment is not sufficiently focused on start-ups. Indeed, 68.9% of the total in 2015 was in firms more than three years old and 26.7% was in firms more than seven years old. Although firms less than three years old received less than a third of the investment, they accounted for 47.2% of the companies receiving investment. *Third,* the large role of the government risks crowding out private investors. The government accounted for 30.3% of venture capital funds in 2015, with an additional 3.7% share for public pension funds. *Fourth,* the merger & acquisition (M&A) market is underdeveloped, with only 97 in 2014. Instead, initial public offerings are the primary method for venture capitalists to realise returns from their investment. Given demanding listing requirements, it takes more than 12 years on average for start-ups to be listed on KOSDAQ, established in 1996 with the goal of facilitating IPOs. This far exceeds the lifespan of most venture capital funds, and the number of companies listing on KOSDAQ was less than 50 in 2014. Many start-ups must pass through "Death Valley" until they receive an initial investment. Consequently, start-ups often fail to reach the commercial stage due to a lack of funds even if they succeed in developing technology.

The government has taken a number of reforms to promote venture capital investment. In 2013, it launched KONEX, a third stock exchange with rules for listing that are less strict, to promote IPOs by SMEs. Requirements for listing on KOSDAQ were also relaxed. By end-2015, KONEX included 108 firms, with a total market value of 0.2% of GDP. The average age of firms listing on the KONEX is around 11 years, somewhat less than the

12 years in KOSDAQ. The rule requiring private venture capital funds to accept government money, which resulted in government supervision that burdened the funds, has been waived, thereby enhancing their autonomy and creativity. The government launched a plan in 2014 to activate the M&A market by easing restrictions on investors in order to attract potential buyers, providing financial support for sellers and reducing restrictions on M&A procedures and tax disincentives. In addition to helping investors recover their investments, it could help SMEs grow through mergers. Finally, the government is taking steps to facilitate access to loans by failed entrepreneurs.

Continued reforms are needed to make venture capital a driver of innovation, as part of a shift from a bank-centred financial system to greater reliance on capital markets. The government strategy should focus on Korea's strengths, such as its firms at the technology frontier and highly educated youth. To avoid crowding out private investment through an excessive supply of public funds, the government should focus on early-stage financing. It needs to foster an environment that provides entrepreneurs who take risks but fail another opportunity to create new ventures. Finally, the development of the market for M&As remains a priority.

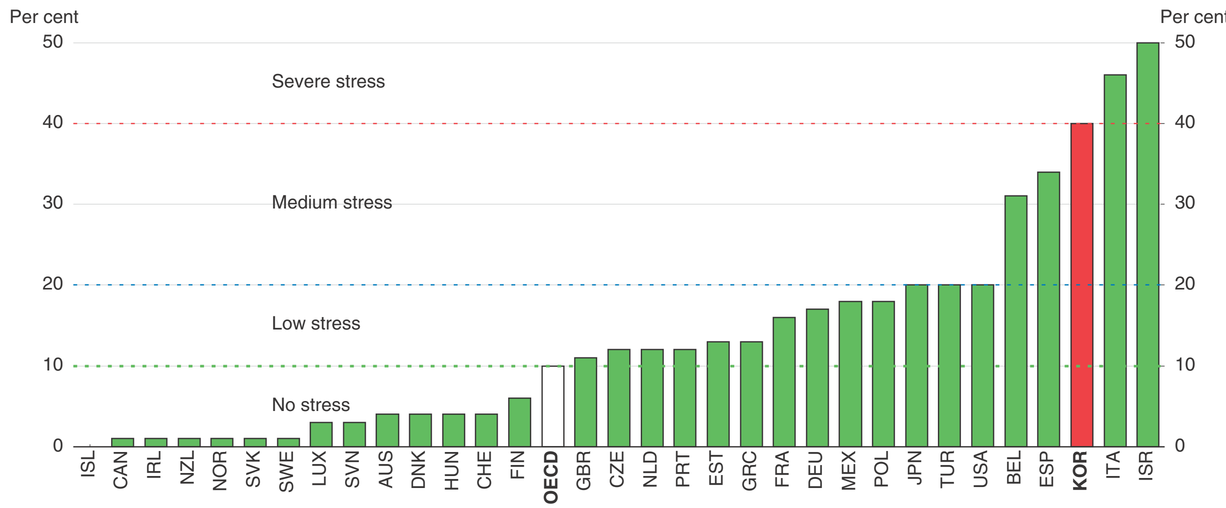
Green growth is a priority for innovation

Despite large-scale spending during the first green growth plan (2009-13), greenhouse gas emissions (GHG) rose 18% over 2007-11, reversing the downward trend in the ratio of emissions to GDP that began in 1997. The launch of a nationwide emissions trading system (ETS) in 2015 is a key step to fulfilling Korea's commitment at COP21 to reduce GHG emissions by 37% by 2030 relative to a "business as usual" scenario. The share of permits that are auctioned will be gradually increased based on the outcome of the first phase (2015-17). Firms accounting for two-thirds of national emissions were covered by the ETS in 2015. Once the ETS is well established, it would be preferable to expand it to ensure a uniform price on emissions. A well-functioning ETS should also trigger private investment in green growth to accompany the government's "2030 Strategy for Expanding New Energy Industries", which aims to develop energy prosumers, low-carbon generation, electronic vehicles and environment-friendly processes.

Greening growth also means reversing the environmental degradation that accompanied rapid industrialisation in order to improve the quality of life. The number of premature deaths caused by outdoor air pollution increased from around 16 000 in 2005 to more than 20 000 in 2013 (Institute for Health Metrics and Evaluation, 2013). Air pollution should be reduced, in part, by co-operation with other countries in the region and through appropriate economic instruments. The Eco-Innovation Technology Development Project (2011-2020) goes beyond GHG emissions to focus on issues such as water. Indeed, the amount of water taken from ground or surface water sources in Korea as a share of renewable resources was the third highest in the OECD in 2012, suggesting risks of water shortages (Figure 21). Water resource development relies extensively on supply augmentation and innovative technologies. It is essential to improve pricing policies to increase efficiency. The price of water and sanitation services to households is one of the lowest in the OECD and fails to cover water supply costs, reflecting a large number of inefficient suppliers. In addition, bulk water tariffs (paid by large firms and municipalities) and water charges (the right to take water from a reservoir or another body of water) are set nationally and do not sufficiently reflect scarcity.

Figure 21. **Korea faces water shortages**

Water taken from ground or surface water sources as a percentage of renewable resources in 2012 or latest year



Source: OECD (2012b).

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Labour market reforms to promote inclusive growth and social cohesion

Korea's labour market, which was shaped by the era of rapid growth, is inadequate to meet the challenge of developing a creative economy. Reforms are needed to promote flexibility and job creation, particularly for youth, and to reduce inequality. The government, workers and employers announced a Tripartite Agreement for reforms in September 2015. The Agreement addresses entrenched labour market dualism, which undermines equality and social cohesion. Almost a quarter of full-time workers in 2013 earned less than two-thirds of the median wage, the second-highest share in the OECD, and wage dispersion was one of the highest. Dualism is also detrimental to labour participation. Korea announced a roadmap in 2013 to boost employment from 64.2% of the population in 2012 to 70% by 2017 (Table 7). However, one labour union confederation did not take part in the Tripartite Agreement and the second confederation, which did participate, renounced the Agreement in January 2016. The Economic and Social Development Commission has indicated that the confederation's decision does not nullify the Agreement and the government vows to press ahead with legislation to reform the labour market.

Table 7. **The employment rate targets set by the roadmap**

As a percentage of the working-age population

	2000	2012	2014	2015	2017 target	Gap	OECD average (2014)
Total	61.5	64.2	65.3	65.7	70.0	4.3	65.8
Women	50.0	53.5	54.9	55.7	61.3	5.6	58.0
Youth (15 to 29)	43.4	40.4	40.7	41.5	46.6	5.1	51.2
Adults (30 to 54)	73.7	75.6	76.7	77.0	81.2	4.2	76.9
Older persons (55 to 64)	57.8	63.1	65.6	65.9	69.3	3.4	57.3

Source: Government of Korea; *OECD Employment Outlook Database*.

The costs of labour market dualism

Labour market dualism in Korea is exceptionally strong. A third of all employees are non-regular workers, such as fixed-term, part-time and dispatched workers. The share of temporary workers (22%) was more than double the OECD average. In 2014, non-regular workers were paid 38% less than regular workers on an hourly basis, even though the skills of temporary workers match those of permanent prime-age workers (OECD 2013c). Labour market dualism is thus a major cause of income inequality. Other types of dualism discussed above – large productivity gaps between large and small firms and between manufacturing and services – also contribute to inequality.

The difference in pre-tax income by employment status rises with age. For age groups above 50, a household headed by a regular worker earns 60-90% more than one headed by a non-regular worker (Figure 22). Relative poverty is 16% among households headed by a non-regular worker compared to only 5% in those headed by a regular worker. There is also a marked difference in marriage rates. In non-regular households headed by a person in his or her 40s, nearly 15% were single, more than double the share in households headed by regular workers. The low income and precarious status of non-regular workers thus discourages family creation and fertility. The low income of non-regular workers also squeezes family budgets (Panel B), contributing to the household debt problem.

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. Moreover, there is limited mobility between regular and non-regular employment. 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 according to a survey (OECD, 2015b). Dualism has a number of other negative implications for non-regular workers: i) less coverage by the social safety net; ii) precarious employment and the highest rate of worker turnover in the OECD; and iii) less access to training.

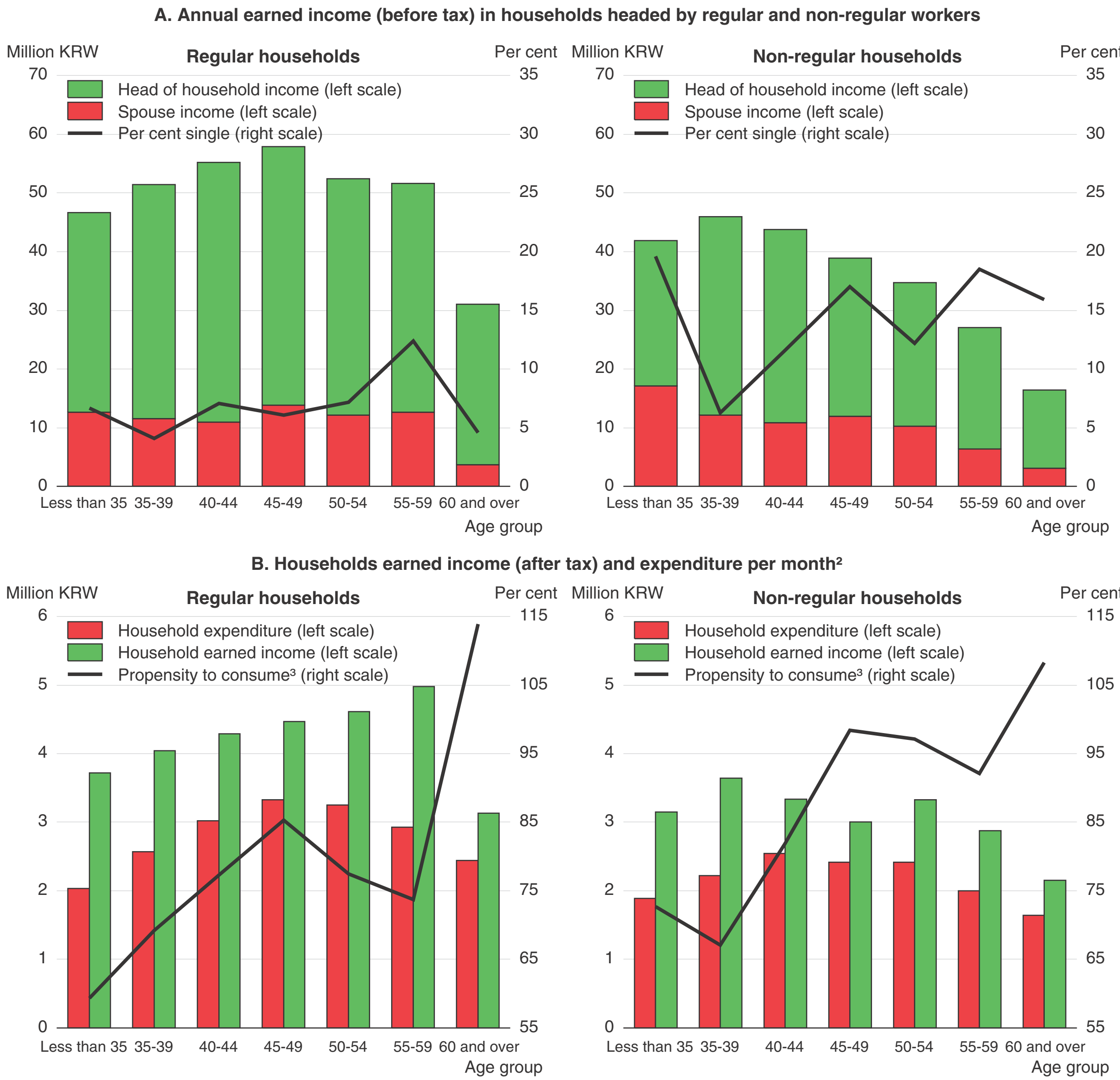
Policies to break down labour market dualism

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 the incentives that encourage firms to hire non-regular workers: i) increasing employment flexibility and thereby avoiding the cost of laying off regular workers during economic downturns; and ii) reducing the gap in labour costs (wages and payroll taxes paid by firms). An improved minimum wage system could help narrow the wage gap between regular and non-regular workers. The minimum wage reached nearly half of the median wage in 2015, matching the OECD average, and the Tripartite Agreement calls for continued gradual increases. However, the key issue is compliance. The government plans to strengthen monitoring to improve compliance. Sanctions on violations should also be increased.

The gap in labour costs could also be narrowed by extending social insurance coverage to more non-regular workers (Table 8). The average coverage of non-regular workers by the three major schemes was 54.1% in 2015, well below the nearly universal coverage of regular workers, reflecting weak monitoring and enforcement of penalties. Hiring a non-regular worker cuts a firm's labour cost by 8-9% compared to a regular worker covered by the three schemes. It is essential to increase compliance to weaken incentives to hire non-regular workers and enhance the welfare of such workers. Giving the National Tax Service a larger role in supporting the collection of contributions and stricter enforcement of penalties for non-compliance could increase coverage for all workers.

Figure 22. **The gap in income and expenditure between regular and non-regular workers is large**

Households with two or more persons in 2011[1]



1. Based on the *Korean Labour and Income Panel Survey* (KLIPS), an annual household survey since 1998 that consists of about 6 000 households (13 000 individuals). Non-regular workers are identified using the official definition of non-regular workers, the same definition used in *Strengthening Social Cohesion in Korea* (OECD 2013b). Job status and age category is that of the household head.
2. Contributions to the National Pension Scheme and National Health Insurance are included in expenditures. Household earned income equals annual income after taxes, divided by 12.
3. Propensity to consume is the ratio of household expenditure to household earned income after tax.

Source: Korea Labour Institute, *Korean Labour and Income Panel Survey (KLIPS)*; OECD calculations.

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Breaking down dualism also requires reducing employment protection for regular workers (OECD, 2013b). 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 only allowed for "urgent

Table 8. **Non-regular workers receive less social insurance and company-based benefits**

Employed persons by status in 2015

	National Pension Scheme	National Health Insurance	Employment Insurance System	Average for social insurance[1]	Retirement allowance[2]	Bonus payments[3]
Total	87.6	87.5	88.5	87.9	81.2	58.1
Regular	97.6	97.8	95.4	96.9	93.1	69.4
Non-regular	48.2	51.2	63.0	54.1	45.1	23.8
of which:						
Part-time	48.5	50.4	58.4	52.4	33.3	16.0
Atypical	30.6	35.1	58.6	41.4	33.6	12.7

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

Source: Ministry of Employment and Labour (2015), *Survey on Labour Conditions by Employment Type*.

managerial reasons". In considering whether layoffs meet this criterion, courts consider the company's financial situation and competitiveness and market conditions. In addition, firms face a number of other requirements before dismissing workers. The cost of dismissal, therefore, is uncertain and can be high due to long and complex court rulings, thus increasing incentives for firms to hire non-regular workers (Lee, 2015). The Tripartite Agreement acknowledged the importance of "clarifying the standards and procedures for terminating employment contracts". In sum, breaking down dualism requires a comprehensive strategy of relaxing employment protection for regular workers and making it more transparent, while increasing social insurance coverage and the minimum wage and upgrading training for non-regular workers (2014 *OECD Economic Survey of Korea*).

However, relaxing employment protection is strongly opposed by regular workers. One option would be 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. However, this would further penalise youth, who already face difficult labour market conditions in Korea. Measures to strengthen the social safety net, as pledged in the Tripartite Agreement, may also be needed to facilitate a shift from protecting jobs to protecting individuals. Although it is increasing, the redistributive impact of Korea's tax and transfer system on relative poverty is the second weakest in the OECD, reflecting the low level of social spending. Increased social spending could reduce the relative poverty rate, which is the eighth highest in the OECD. The major programmes for the working-age population should be improved:

- The *Employment Insurance System (EIS)*: Only a third of the unemployed in 2013 received benefits. The low EIS coverage of non-regular workers (63%) is problematic, given their precarious jobs.
- *The earned income tax credit (EITC)*: Coverage is limited to around 8% of households, in part due to eligibility criteria. Spending on the EITC was 0.1% of GDP in 2015.
- *The Basic Livelihood Security Programme (BLSP)*: The BLSP, the primary public assistance programme, 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 (OECD, 2013b).

Increasing labour market opportunities to promote inclusion

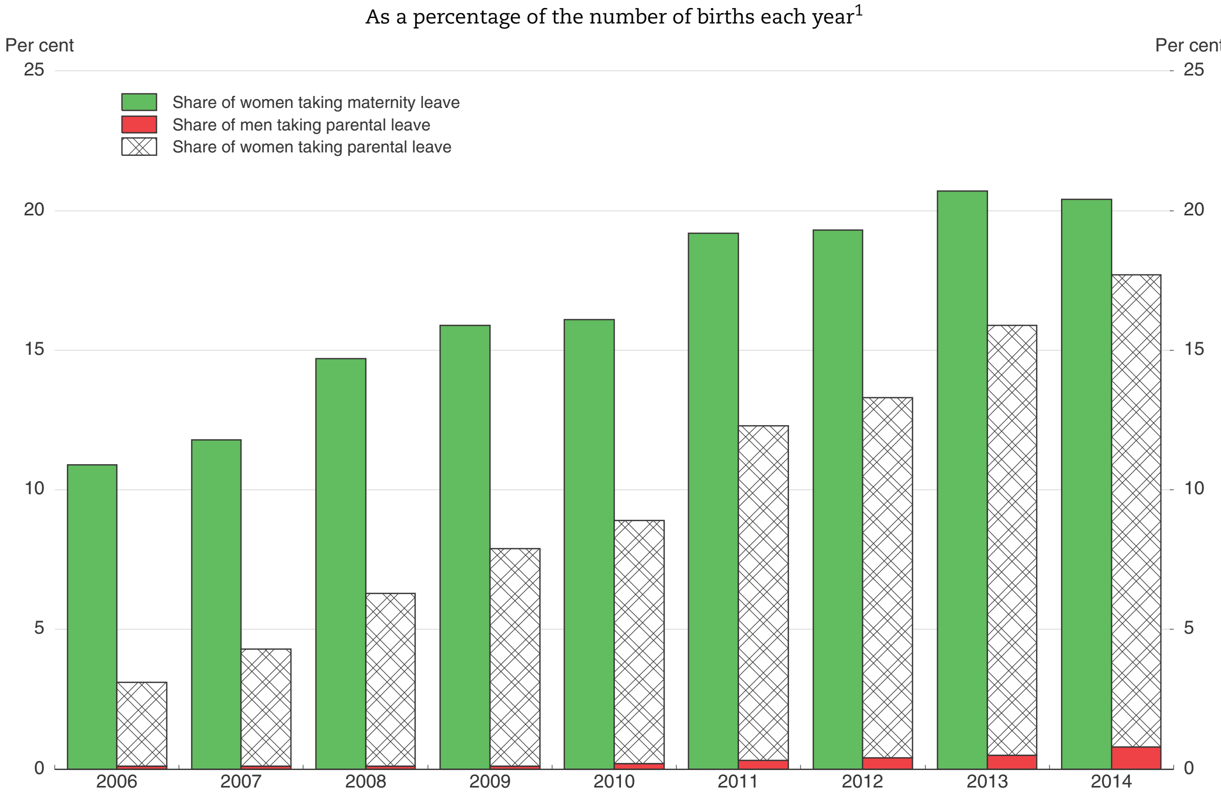
Expanding opportunities for women to work in the labour force

Women's employment decisions depend on a number of factors: i) maternity and parental leave; ii) the availability of high quality and affordable childcare; iii) the gender wage gap; and iv) working time and men's role in family responsibilities. As a result of barriers in each of these areas, the employment rate of women in 2014 was 21 percentage points below the employment rate of Korean men, the fourth-largest gap in the OECD. Raising female employment would reduce gender inequalities and increase the scope for women to use their skills and talents. Raising the female employment rate will require reducing the share of women who leave the labour force and attracting more women back into employment after a break for family responsibilities.

The exodus of mothers out of the labour market suggests that maternity and parental leave are not fully achieving their objectives. All women are guaranteed 90 days of paid maternity leave, with all or part of the benefit paid by the EIS. The number of women taking maternity leave has nearly doubled since 2006, but still amounted to only 20% of the number of babies born in 2014 (Figure 23). Indeed, a large share of women leave the labour force before giving birth. In addition, the share of mothers taking maternity leave (26.3% in 2014) is below the share of mothers who are employed at the time of giving birth

Figure 23. **Trends in maternity and parental leave**

As a percentage of the number of births each year[1]



1. Data provided by the Employment Insurance Scheme, which excludes public-sector employees.

Source: Yoon (2014).

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(Table 9). The take-up of maternity and parental leave is lower among non-regular workers, who are less likely to be covered by the EIS and have less job security, and in SMEs. Ensuring the right of all new mothers to take maternity leave through increased monitoring and enforcement is thus a priority.

Table 9. **Maternity leave and employment status**

A. Employment status of women at time of giving birth (per cent)			
	2012	2013	2014
Employed	33.6	34.5	35.6
Employees	29.6	30.6	31.6
Public sector	6.5	6.7	6.0
Private sector	23.1	23.9	25.6
Self-employed	4.0	3.9	4.0
Not in labour force	66.4	65.5	64.4

B. Share of new mothers taking maternity leave (per cent)			
	2012	2013	2014
Private-sector employees	83.3	86.9	79.6
All women who work[1]	76.6	79.6	74.0
All new mothers	25.7	27.5	26.3

1. Public and private-sector employees, plus self-employed.
Source: Ministry of Health and Welfare.

The take-up of parental leave is limited by the small number of fathers using it; fathers accounted for only 4.5% of the total in 2014 and the length of leave is relatively short compared to mothers, despite government efforts to encourage fathers to take leave. This reflects concern about their career prospects, which suggests that women's career prospects are being damaged. Changing workplace culture is necessary, especially in small firms where the take-up by fathers is especially low. Another obstacle is the substantial income loss, given that the benefit is set at 40% of the parent's wage up to a ceiling that is less than one-third of the average wage. Increasing financial support during parental leave would encourage more parents, particularly fathers, to take it.

The share of children aged 0-2 enrolled in childcare rose to 34% in 2013, slightly above the OECD average, from 11% in 2006. The increase was based on a sharp rise in private-sector centres, which account for 90% of the children in childcare, supported by a rapid expansion in public spending. However, the increase in the number of children enrolled in childcare has not been fully reflected in higher female employment, which is 35% of mothers with children aged 0-2, compared to the OECD average of 51%. The share of children enrolled in childcare is continuing to increase, in part as the government decided in 2013 to provide 12 hours per day of free childcare for all children up to age five, regardless of the employment status of the mother and family income, a policy not found in any other OECD country.

Parents still face a shortage of high-quality childcare. The government operates a voluntary accreditation system based on requests from childcare centres. The system is intended to encourage childcare centres to maintain the quality of their services and teachers. In November 2015, 77.8% had received accreditation. The government can prevent the entry of new providers to avoid excessive competition, although this weakens competition and quality (Yun et al., 2014). Quality is also reduced by the price ceilings imposed on private childcare centres.

Paradoxically, universal free childcare has actually reduced access for working mothers, as childcare centres prefer to enrol the children of non-working mothers, who tend to pick up their children earlier than working mothers. From 2016, the provision of 12 hours per day of free childcare has been limited to families where both parents are employed or have more than one child. For others, free childcare is now capped at six hours per day, plus 15 additional hours per month. Further targeting of free childcare may be necessary. Other reforms are needed. *First*, the government should upgrade accreditation standards and make them mandatory for all early childhood education and care (ECEC) institutions. *Second,* the quality of private ECEC institutions should be improved by strengthening qualification standards for ECEC teachers and raising the pay and benefits of private ECEC teachers. *Third*, fee ceilings on private childcare and entry barriers should be relaxed to improve quality. Integrating childcare and pre-primary education would improve quality, while cutting costs.

The withdrawal of women from the labour force following marriage and childbirth lasts about ten years on average (Hong and Lee, 2014). 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 41.5%, for the 40-44 age group (Figure 24), compared to the OECD average of 24%. The overall gender wage gap is also explained by women's concentration in low-paid non-regular jobs. In 2015, 40% of female employees were non-regular compared to only 26% of men. Breaking down dualism is thus crucial to reduce the gender wage gap. The gap is falling very gradually, from 40% in 2000 to 37% in 2014, still the highest in the OECD (Panel B). The large gender wage gap discourages women, particularly those with higher education, from working. Indeed, the employment rate of women with a tertiary education was the lowest in the OECD in 2014, while the rate of those with less than a high school education was above the OECD average. Reforming the wage system to emphasise performance and job category (see below) would narrow the gender wage gap.

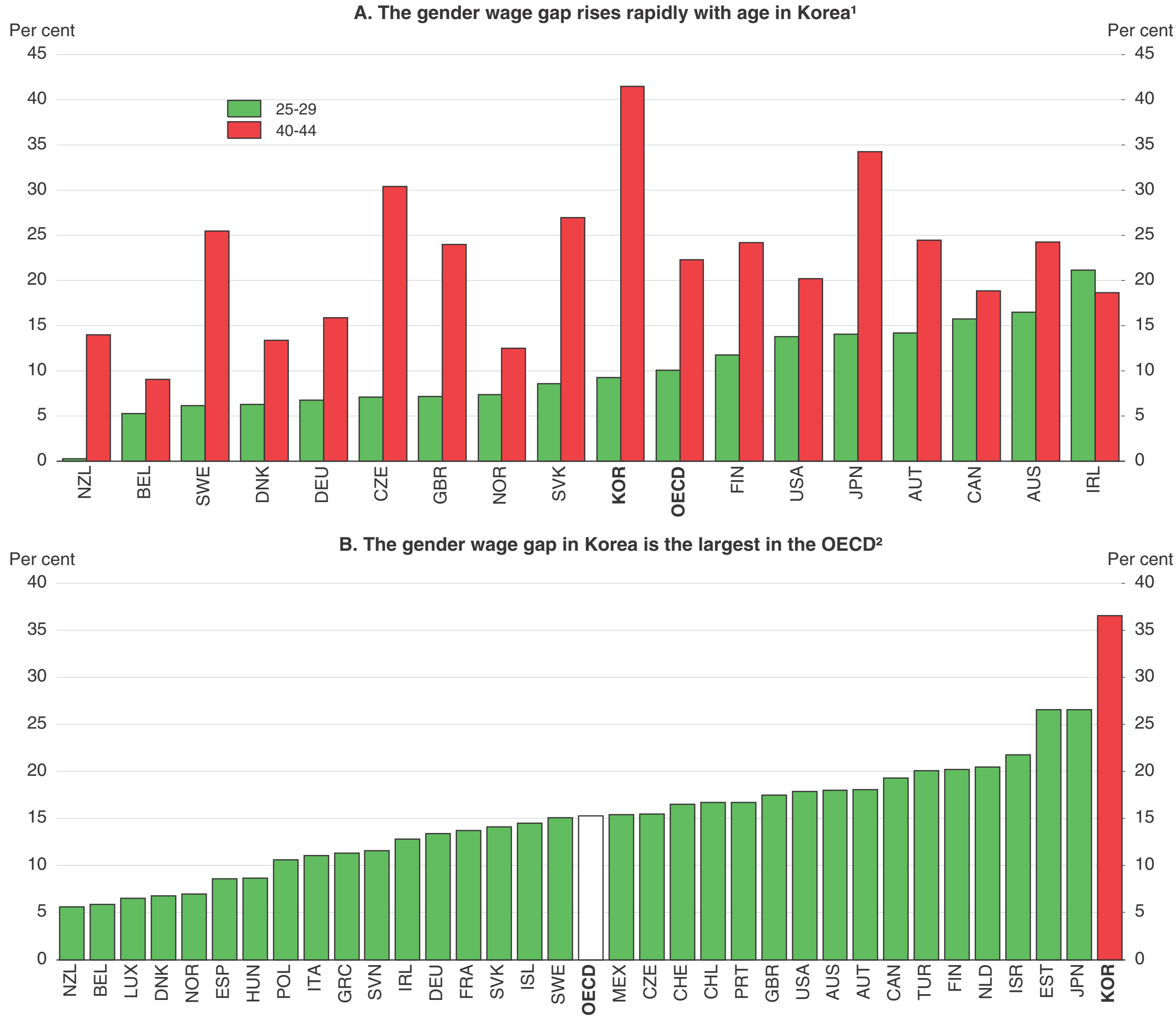
Women's absence from the labour force following childbirth and their concentration in non-regular jobs limit their rise up the corporate ladder. Women's representation on corporate boards, at 2.1% in 2014, lagged behind other Asian economies, such as Malaysia (12.8%) and Indonesia (12.2%) (Vinnicombe et al., 2015). Similarly, the share of women in management in Korea was the lowest in the OECD, at 10% in 2010. Since 2014, the government gives preference in public procurement to firms with a higher share of women in management and publicly names companies that fall short.

Total working hours in Korea fell by 17% over 2000-11, but were still 17% above the OECD average in 2014 (Figure 25), equivalent to an extra 354 hours of work each year. Long working hours are a factor in the low amount of unpaid work by men at home – 45 minutes a day on average – which limits female employment. For women who are employed, working hours were the longest in the OECD in 2014 (Panel B), with adverse implications for labour participation, the quality of life and the fertility rate. The Tripartite Agreement reaffirmed the 2010 goal of cutting working time to around 1 800 hours per year by 2020. The government has stepped up efforts to enforce compliance with the legal limits on working time. In addition, it has introduced legislation to change the legal limit on working time to include work done on weekends.

Achieving the government's goal of reducing working time requires addressing the underlying causes. *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. *Third*, working hours are the longest in

Figure 24. **Korea's gender wage gap rises with age and is the largest in the OECD**

In 2013 or latest year available for full-time employees



1. The difference between male and female mean wages divided by male mean wages.
2. The difference between median earnings of men and women relative to median earnings of men.

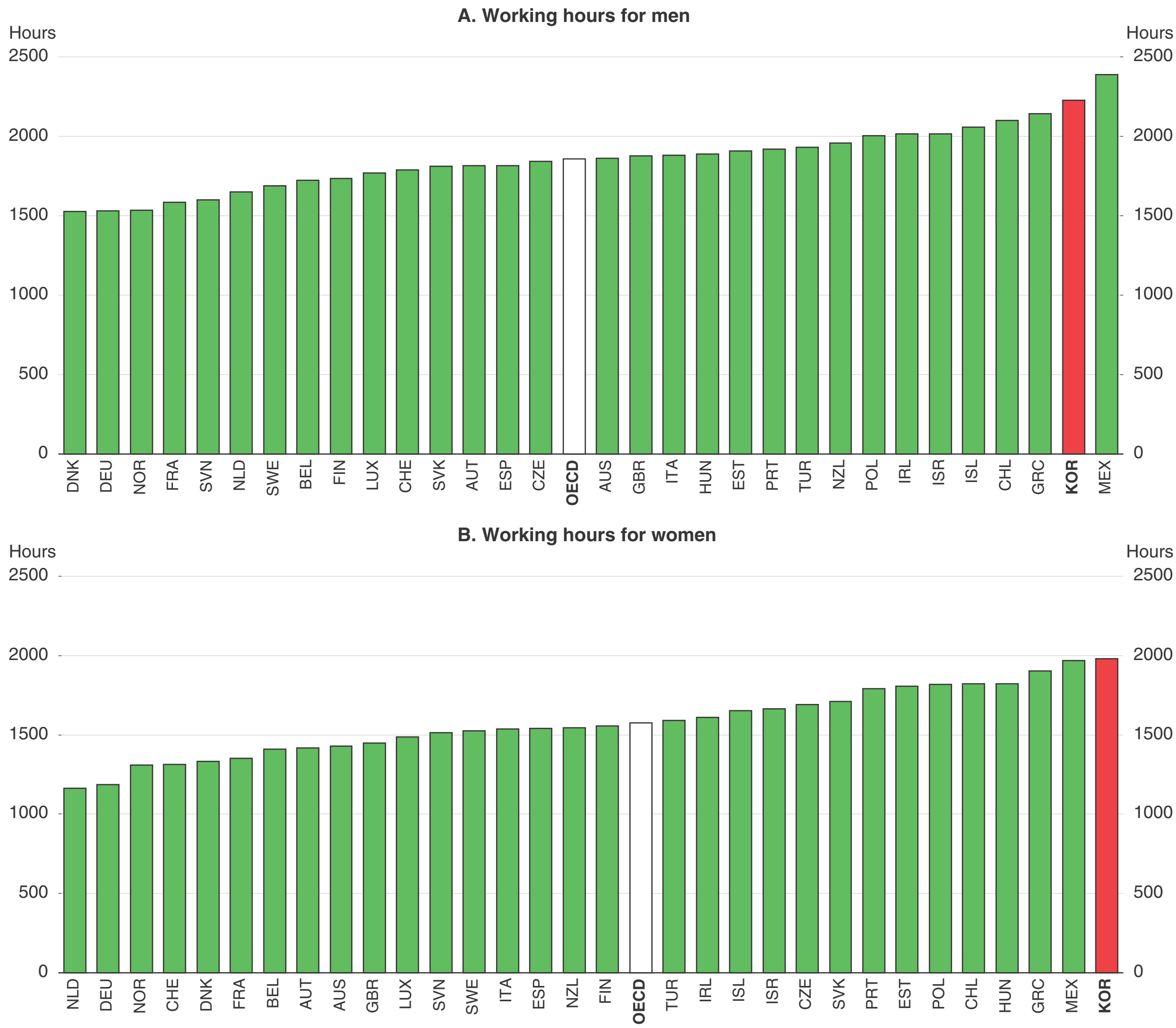
Source: OECD Earnings Distribution Database.

StatLink http://dx.doi.org/10.1787/888933356158

SMEs, which face labour shortages, making it important to resolve the labour mismatch problem. In sum, the tradition of long working hours should be replaced by a productive work culture. Indeed, Korea's labour inputs (relative to its population) are the highest in the OECD while labour productivity per hour of work is only 55% of the top half of the OECD.

Addressing the issues of maternity and parental leave, childcare, the gender wage gap and working time, would expand working choices and almost surely result in women working more. If so, it would help to offset the effects of population ageing. For example, if participation rates were to remain at their current levels for each age group and gender, the labour force would peak at 27.3 million in 2021 and then fall by 21%, to around 21.6 million, by mid-century (Figure 26). 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 25.5 million, 18% higher than in the case of unchanged participation rates.

Figure 25. **Working hours in Korea were long for both men and women in 2014**



Source: *OECD Family Database.*

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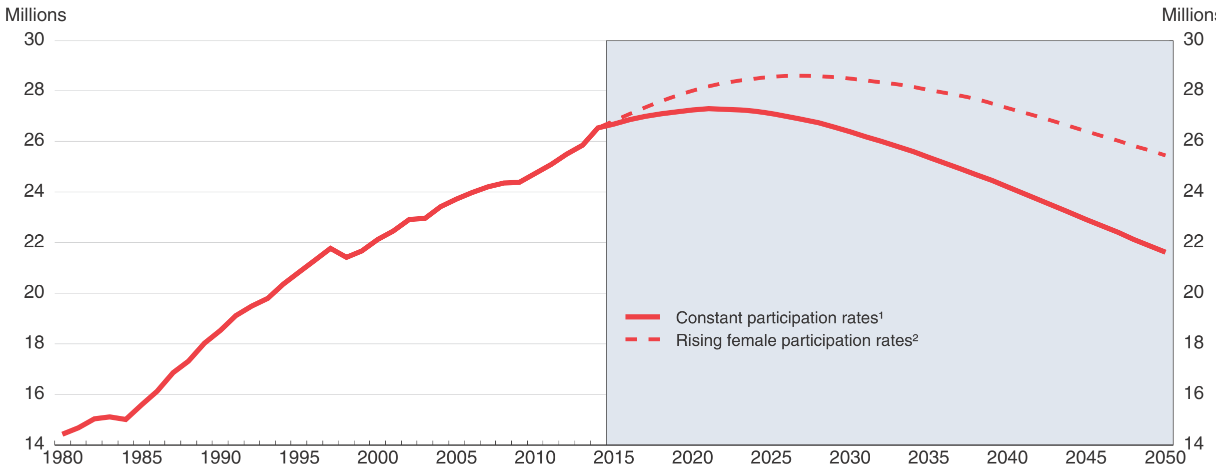
Raising Korea's youth employment rate

The youth employment rate has fallen significantly during the past decade and is well below the OECD average (Figure 27). At the same time, the share of youth who were neither in employment nor in education or training (NEET) was high in Korea (Panel B), although the number of NEETs may be overestimated. Meanwhile, SMEs face labour shortages that are partially filled by foreign workers. Low youth employment reflects the mismatch between the skills acquired in school education and those demanded by firms (Y. Kim, 2015). The share of high school graduates advancing to higher education increased from 33% in 1990 to 83% in 2008 and remained high at 71% in 2014. University graduates expect regular employment. To many, no job is better than being trapped in non-regular employment. In addition, they want to avoid SMEs, where job security and wages are low. The mismatch problem is high as well among youth who find jobs. For workers in the 15-29 age group, 37% were mismatched for their jobs in terms of field of study and literacy skills (Figure 28).

Figure 26. **Increased female employment would mitigate the impact of demographic change**



1. The participation rates for men and women are assumed to remain at their current levels for each age group.
2. 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 calculations.

StatLink http://dx.doi.org/10.1787/888933356178

The large number of university graduates who are unable to find jobs matching their skills pushes down employment and pushes up the rate of NEETs. Korea is one of the few countries in which the rate of NEETs for tertiary graduates is higher (24.8%) than for the overall 15-29 age group (18.0%) (Figure 27). Periods of inactivity have a negative long-term effect on youth. Those who were not engaged in education or the labour market in 2000 had a lower employment rate over 2007-09 than those who were (Table 10). Moreover, those who had a period of inactivity were more likely to be non-regular workers at lower wages.

Table 10. **A period of inactivity has a long-term impact on employment and earnings**

Status in 2007-09[1] in per cent for a worker who was:

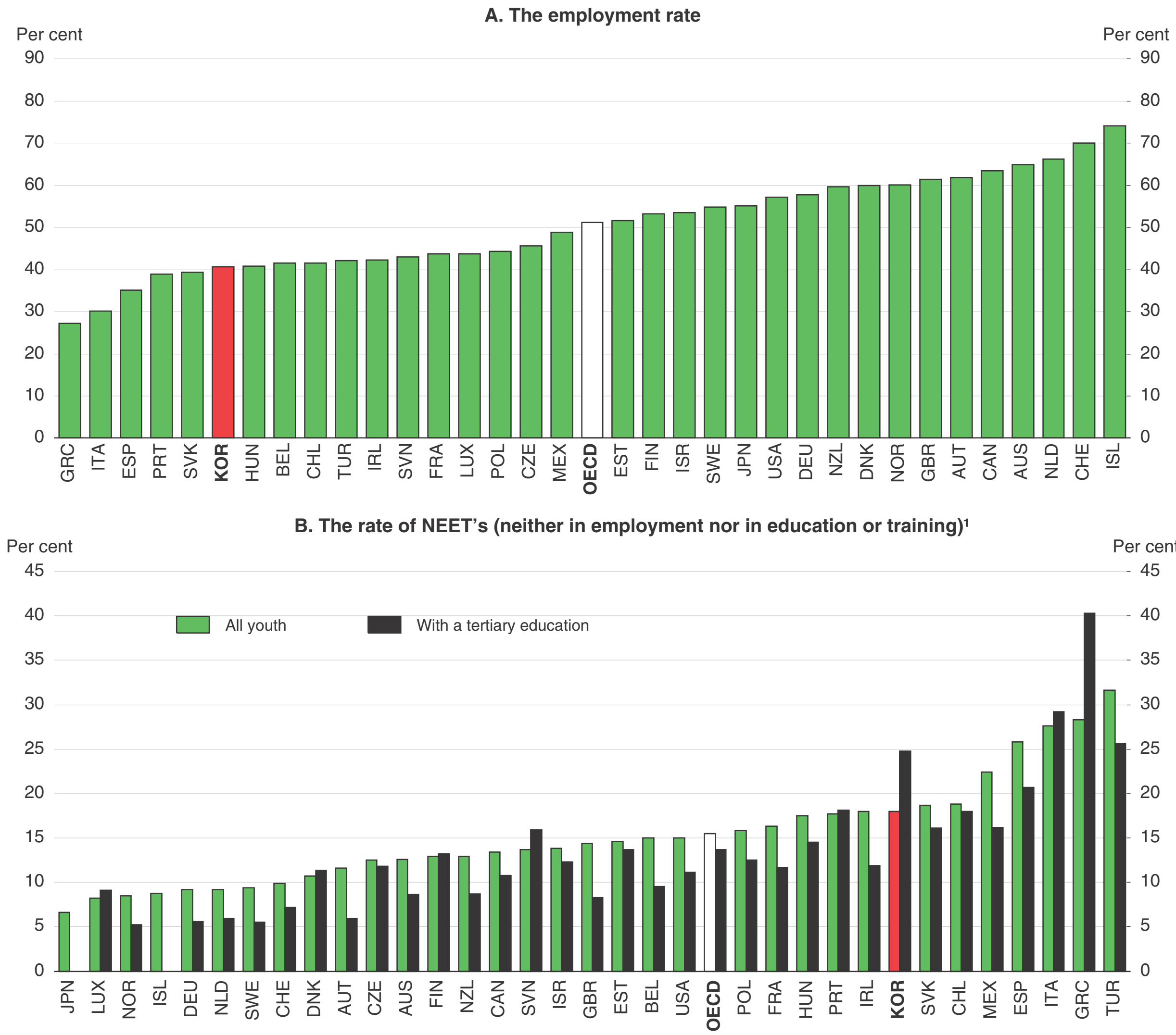
	Continuously engaged in education or the labour market	Not engaged in education or the labour market in 2000	Not engaged in education or the labour market in both 2000 and 2001
Employed	67.3	60.7	48.1
Unemployed	3.2	5.0	6.9
Economically inactive	29.5	33.8	45.0
Non-regular employee	18.8	23.0	31.6
Hourly wage[2]	100.0	85.4	78.3

1. Based on the *Korea Labour and Income Panel Survey*.
2. Wage of workers who were continuously engaged in education or the labour markets is set at 100.0.
Source: Nam and Kim (2013).

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 no job to the stigma of being a non-regular worker. Accomplishing this through a relaxation of rules on dismissals may also make firms less hesitant to hire regular workers (OECD, 2013b). *Second*, career guidance is key to helping youth make good educational choices (OECD, 2014a). *Third*, enhancing the link between education and firms is essential to address mismatch. The government launched Meister vocational schools in 2008 and a "Work-

Figure 27. **Korea's youth employment rate is below the OECD average and the number of NEETs is high**

For the 15-29 age group



1. 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 (2015), *Labour Force Statistics*; OECD (2015a), *Education at a Glance 2015*.

StatLink http://dx.doi.org/10.1787/888933356567

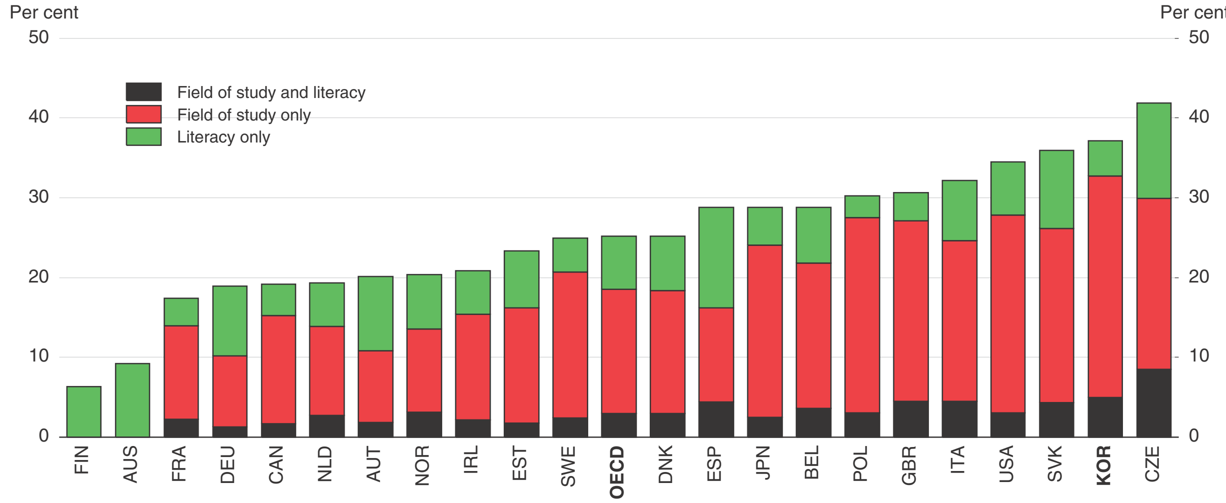
Learning Dual System" in 2013. However, the two initiatives cover only 5.6% of vocational high school students, who account for a fifth of the total number of high school students, suggesting the need for further expansion.

Making better use of older workers to promote inclusion and reduce poverty

The employment rate in Korea for the 50-64 age group, at 70% in 2014, was the eighth highest in the OECD. Yet their poverty rate was the second highest at 15.5%, nearly one and a half times the OECD average (Figure 29). The main problem, therefore, is the quality of jobs for older workers rather than the employment rate. The mandatory retirement age set by firms is 58 on average, but workers leave at 53 on average as firms push out employees, particularly those with non-regular status. Many become self-employed, contributing to

Figure 28. **Korea has a relatively high rate of mismatch among young people**

Mismatch among youth (16-29) by type of mismatch as a percentage of all youth employment



Source: OECD (2014c).

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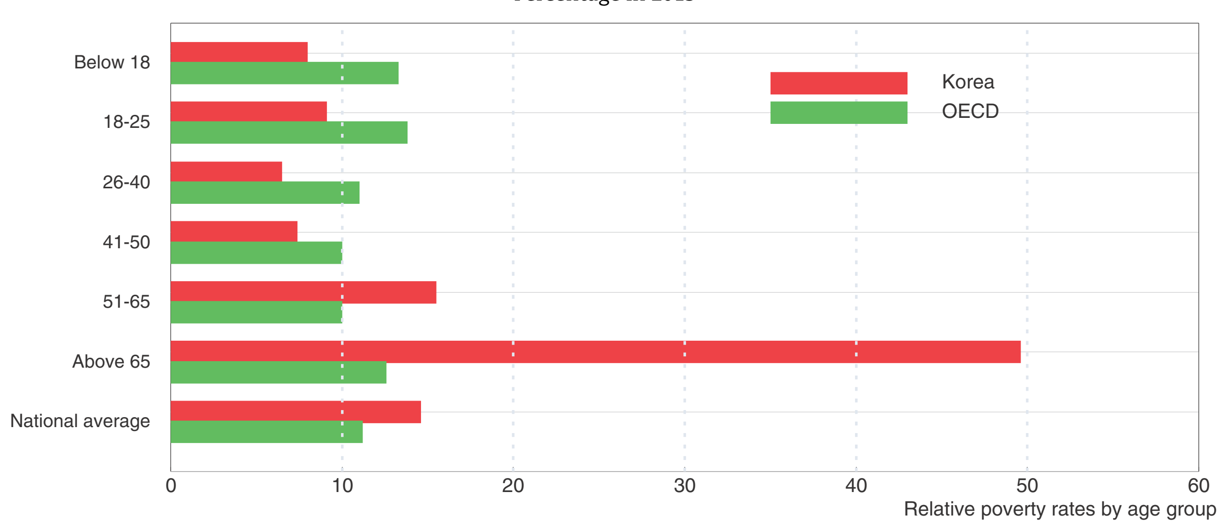
low productivity in the service sector. In Korea, around a quarter of workers aged 55-64 have less than six months of job tenure compared to less than 6% in the OECD, reflecting the high share of temporary employment. Wages thus fall significantly with age.

Figure 29. **Relative poverty rates for persons over 50 are very high in Korea**

Percentage in 2013[1]



1. Relative poverty is measured by reference to median income, not taking into account household assets and liabilities.

Source: OECD Income Distribution and Poverty Database.

StatLink http://dx.doi.org/10.1787/888933356197

The concentration of older workers in low-quality jobs reflects their lack of education and skills compared to younger people (Figure 18). Low education and skills, combined with the seniority-based pay system, creates a significant gap between wages and productivity as workers age, leading to a culture of early retirement. A recent government survey among people aged 20-50 found that 56% were afraid that they will have to leave their main job before age 55. It also reported that 82% of respondents would like to work until at least age 65.

Beginning in 2016, the mandatory retirement age at firms with over 300 workers must be at least 60 and this floor will be extended to smaller companies in 2017. But later retirement, to the extent that the new law is respected, will further widen the gap between productivity and wages. Resolving this problem will require enhancing wage flexibility by moving away from the seniority-based wage system. According to a 2012 government survey, all firms use seniority in setting wages, although 60% to 70% also use other criteria, such as individual performance and job status. The "wage peak" system, which freezes or gradually reduces workers' wages during their last few years prior to the mandatory retirement age, would be 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 21% in 2015, slowed by opposition by workers, who prefer seniority-based wages. While the wage peak system is an appropriate short-term response to the retirement age hike, the ultimate objective should be a flexible wage system based on performance and job category, while abolishing firms' use of mandatory retirement to discriminate against older people.

Increasing the human capital of older workers by investing in life-long 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, well below the 30% OECD average. 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 results in second-class treatment of older workers, and to reduce working time to help workers continue their careers.

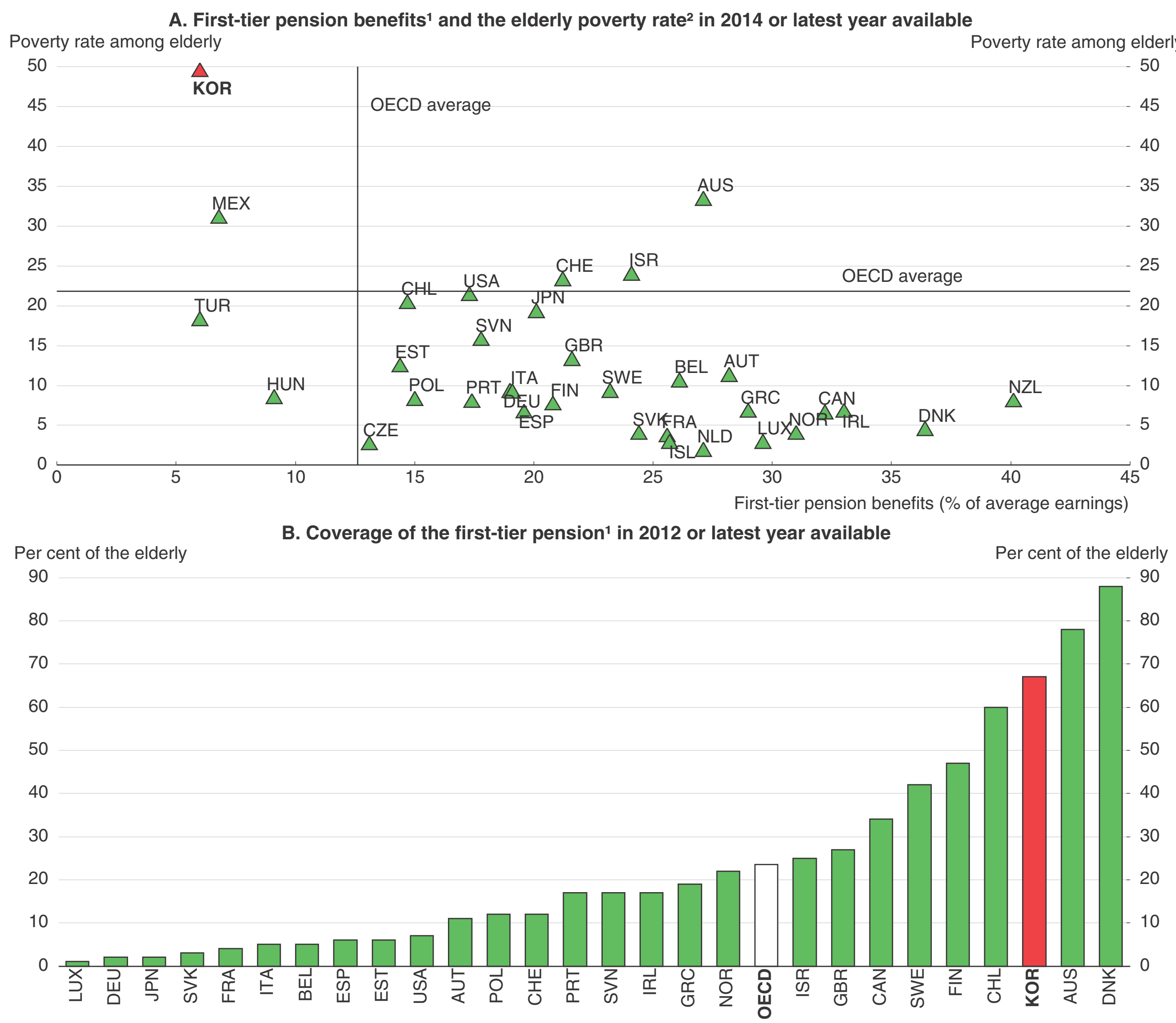
Longer careers at their main jobs would reduce poverty among older persons, both while they are working and after retirement, in part by lengthening their pension contribution period. However, more needs to be done to reduce the relative poverty rate among the elderly, which was 49.6% in 2013 for the over-65 age group, four times higher than the OECD average of 12.6% (Figure 29). Their absolute poverty rate – defined as the share with an income below the minimum cost of living – was 30% in 2014. Rising poverty contributed to a high elderly suicide rate, which rose from 35 (per 100 000 persons) in 2000 to 82 in 2010, far above the OECD average of 22. Financial difficulty is the major cause, according to a government survey (Statistics Korea, 2010). The rate fell to 55.5 in 2014, against the backdrop of greater government focus on the issue. In addition, 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%. In the United States, the ratio was around 20% (J. Kim, 2015).

The high elderly poverty rate reflects both the decline in family support and the weakness of other private and public sources of old-age income support:

- The NPS, which was introduced in 1988, provided old-age pension benefits to only 32.1% of the elderly in 2015. Moreover, pension benefits were only 23.5% of the average wage.
- The Basic Pension was doubled to KRW 200 000 (6.2% of the average wage) in 2014 (Figure 30). It is given to around 70% of the elderly – a very high coverage compared to 24% for safety-net pensions in the OECD (Panel B). It thus spreads resources very thinly over a large segment of the older population.

- The BLSP eligibility criteria, which exclude elderly with the possibility of assistance from family members, were relaxed in 2015, boosting the share of elderly receiving benefits from 6.3% to 6.8%.
- The company pension system created in 2005 covers 15% of the working-age population.

Figure 30. **The first-tier pension benefit 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.

Source: OECD (2015g), *Pensions at a Glance* 2015.

StatLink http://dx.doi.org/10.1787/888933356204

The introduction of the Basic Pension in 2014 reduced the relative poverty rate of the elderly to 44% (according to the Korean statistics for age 66 and above) and the government recently established a goal of cutting it to 39% by 2020. Even if the target were achieved, however, relative poverty of the elderly would still be three times higher than the OECD average of 13%. Moreover, rapid population ageing and the rising number of single elderly persons will exacerbate poverty. The immediate priority is well-targeted social spending to ensure an adequate minimum level of income for all elderly to reduce poverty more rapidly. The government should focus the Basic Pension on the lowest-income elderly to ensure that they escape from absolute poverty (2014 *OECD Economic Survey of Korea*; OECD, 2015g). Countries with low safety-net pensions tend to have high poverty rates (Figure 30, Panel A). A second option would be to further relax the eligibility criteria for the BLSP to support the elderly. In addition, given that most of the elderly's assets are in real estate, developing schemes to turn those into liquid assets would provide additional income (Jones and Urasawa 2014).

A three-pronged approach would make the NPS more effective in reducing poverty in the long run. *First,* the number of contributors should be increased. In 2015, insured persons paying contributions to the NPS amounted to 54% of the population aged 18-59, well below the rate in other advanced countries (Lee, 2012). *Second,* the average contribution period, which the NPS projects to average 20.6 years in 2040, should be lengthened to ensure adequate retirement income. *Third,* the targeted NPS replacement rate, should remain at its current 46% (excluding the Basic Pension, which has a replacement rate of 5%), rather than cut to 40% as planned. With an average of 20.6 years of contributions through 2040, the replacement rate would be below 20%, which would be too low to reduce elderly poverty.

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 rise steadily, over-taking revenues by 2044 (Figure 8). It is necessary, therefore, to raise revenues to pay for higher pension outlays. This could be accomplished by raising 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.

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ANNEX A1

The impact of reform on the Korean economy

The estimation of the impact of reforms shown in Table 1 is based on the following measures, some of which have already been implemented.

Product market reforms	The government is introducing a "cost-in, cost-out" approach, which seeks to cap the total cost of regulations. A new regulation can be adopted only when an existing one with an equivalent cost is identified and removed. The government revised the Framework Act on Administrative Regulations in 2014, and the cost-in, cost-out approach was used in 15 ministries by 2015.
	The government introduced a simplified export declaration process for e-commerce in the second half of 2014 to boost online markets. The reform takes into account the nature of e-commerce trade, in which traded goods are small in volume and high in diversity.
	The government has changed its regulatory standards for public verification to a negative-list approach and diversified e-transaction verification methods. The Electronic Financial Transaction Act was revised for this purpose in May 2014.
	Regulation-related information will be made accessible to the public via the "Government Regulation Information Portal". Through this website, people will be informed about all regulations, including government efforts to ease regulations. The Portal will also provide information on the results from the cost-in, cost-out initiative.
	The government will develop a procedure to allow enterprises to request information on regulations, such as a confirmation of applicable regulations and the interpretation of related legislation, from the responsible agencies.
	The government is taking follow-up measures to ensure that the Agreement on Trade Facilitation comes into effect as scheduled.
	The government is facilitating parallel imports by allowing customs clearance certification for a greater diversity of trade. Around 200 firms were expected to be eligible for such certification by 2015.
	The government is increasing the number of items for streamlined import declaration from only six to all consumer goods (with a few exceptions, such as medicine) to improve the convenience of overseas direct online shopping. The government will also simplify the customs refund system for returning imported goods.
	In accordance with free trade agreements (FTAs), the legal and accounting consultancy markets will be opened step-by-step to foreign competition. The legal consultancy market will be opened in three phases: i) foreign law firms will be allowed to set up office in Korea and foreign legal consultants will be able to provide legal advice on foreign laws; ii) the government will allow partial partnerships and profit sharing between Korean and foreign law firms; and iii) foreign law firms will be able to hire Korean lawyers and provide legal advice in all areas except for litigation, legal cases concerning government agencies, family affairs and inheritances.
	The accounting consultancy market will be opened in two steps: i) foreign accounting firms will be allowed in and qualified foreign CPAs will be able to provide services related to foreign accounting standards; and ii) foreign accounting firms will be allowed to acquire shares of Korean accounting firms.
	The third stage of legal market opening will take place in July 2016, according to the revised draft of the Foreign Legal Consultant Act. For the accounting market, the second stage will begin in July 2016 based on the Certified Public Accountant Act.
	The government is promoting competition in the mobile communications market by modifying the procedure for obtaining business licenses so as to attract new entrants into the market.
	The government is allowing medical corporations to establish subsidiaries that will be able to expand into limited areas of related business, such as R&D for pharmaceuticals and medical devices.
	The government will allow greater autonomy for international educational institutions. For-profit international schools were allowed to pay dividends out of accounting surpluses from 2014 and run foreign language camps during school vacation periods.
R&D and innovation	The government is taking steps to increase R&D expenditure from 4.3% of GDP in 2013 to 5% in 2017. To promote private investment in R&D, the government is establishing "Investment Promotion Centres" that will address difficulties in R&D.
Childcare	The government is establishing more public childcare services and diversifying childcare service availability to include early morning and night. It is also launching part-time childcare services.
Active labour market policies	The government plans to establish more local job centres to meet the demand for employment services. It will also seek to enhance the competency of counsellors and increase their number to improve the quality of employment services.
Unemployment benefits	The government will cut the lower limit of job-seeking benefits from 90% to 80% of the minimum wage to enhance work incentives.

Tax reform	The government is introducing the "Three Tax Schemes" to support household income and thereby boost domestic consumption. The initiative includes the following: ● Providing a 10% tax credit for firms (5% for conglomerates) that have granted a wage increase that is higher than the average of the preceding three years. ● Cutting the tax rate on dividends from 14% to 9%, with an aim to revitalise the stock market. ● To encourage companies to increase investment, wages and dividends, an additional tax of 10% is levied on those companies in which investment, wage payments and dividends do not reach a certain level.

Quantification method

The quantification is based on the OECD's *Going for Growth* framework of policy indicators and empirical studies of the links between structural policies and economic outcomes. This is founded on an extensive research programme over many years to understand these relationships, including the reforms underway in Korea: i) product market regulation; ii) R&D and innovation; iii) childcare; iv) active labour market policies and unemployment benefits; and v) tax reform.

Reforms of product market regulation

Reforming product market regulations (PMR) so as to enhance competition can speed up the pace of convergence in productivity levels to the most technologically-advanced economies. More competition encourages firms to pursue efficiency and invest in innovation and knowledge-based capital. Lowering barriers to entrepreneurship facilitates the entry of firms that experiment with new ideas and technologies. PMR reforms can also boost aggregate productivity by raising the capacity of the economy to allocate capital and labour resources to fast-growing sectors.

An important tool for the impact analysis of product market reforms is the OECD PMR indicator that was introduced in 1998 and has been updated every five years. While the PMR indicator is intended to capture economy-wide barriers to competition, entrepreneurship and trade and FDI, a strong emphasis is on regulations in upstream non-manufacturing sectors. This is because stringent PMRs in upstream sectors – typically network industries – create stronger market power that raises the price of intermediate inputs. This curbs multifactor productivity growth and competitiveness in downstream sectors and reduces their incentive to innovate. Estimates of the potential impacts of product market reform based on the PMR indicators point to a strong pay-off, with long-term gains in living standards (Bourlès et al., 2010).

R&D spending

Research and development, resulting in new goods, processes and knowledge, is a major source of technological change. In turn, technological change has been identified as the major source of productivity growth in the long run. R&D performed by companies results in new goods and services, in higher quality of output and in new production processes.

Studies of R&D spending provide ample empirical evidence of the strength of increasing returns and knowledge spillover mechanisms associated with ideas (Andrews and de Serres, 2012). The evidence for developed economies over the past several decades points to positive and strong effects of R&D investment on productivity, with private rates of return often found to be in the range of 20-30%, which is higher than those generally estimated for physical capital. There is also evidence that R&D investment matters not only for state-of-the-art or frontier innovation but also for facilitating technological catch up through absorptive capacity.

The estimates for Korea do not take into account potential productivity gains from the growth at the frontier. The estimates do include spillovers from the frontier thanks to R&D, which depend on a country's degree of international connectedness, ability to allocate skills efficiently and investments in knowledge-based capital, including managerial capital and R&D. Productivity growth, via more effective learning from the global frontier, is supported by a policy framework that promotes efficient resource allocation – including lower barriers to entrepreneurship, efficient judicial systems and bankruptcy laws that do not overly penalise failure – and fosters the creation of markets for seed and early stage finance. Innovation policies that support basic research and facilitate the absorption of external knowledge for firms – including via university-industry R&D collaboration – also enhance spillovers from the global productivity frontier, and consequently, productivity growth.

Childcare

A high proportion of women are largely excluded from the labour market. Family-friendly policies and working conditions which enable fathers and mothers to balance their working hours and their family responsibilities facilitate women's labour force participation or longer working hours. In particular, increases in public childcare spending are found to increase female labour participation (Jaumotte, 2004).

Active labour market policies and unemployment benefits

Reforms in labour markets contribute not only to raising labour force participation and employment but also productivity. Well-designed activation policies can offset to some extent the detrimental employment effects of high and long-lasting benefits on job-search incentives and also reduce unemployment directly by improving the job-matching process. Activation includes public spending on various active labour market policies, such as providing public employment services with adequate resources to cope with existing caseloads, financing (re)training programmes and subsidising jobs. In addition, unemployment benefits that are too high or last too long reduce job-search incentives and may push wages up, thereby potentially increasing structural unemployment.

Tax reform

Tax systems affect the decisions of households to save, supply labour and invest in human capital, the decisions of firms to produce, create jobs, invest and innovate, as well as investors' choice of savings and asset channels. What matters for these decisions is not only the level of taxes but also the way in which different tax instruments are designed and combined to generate revenues. The reform of the tax structure can impact economic growth not only via labour utilisation but also through private investment and productivity, thereby helping to determine living standards (Arnold et al., 2011; Bouis et al., 2012).

ANNEX A2

Key elements of the Three-year Plan for Economic Innovation

Area	Actions taken
1. Public sector reform a. Root out lax management in the public sector and strengthen public debt management b. Strengthen the efficiency of fiscal expenditure by reforming both the occupational pension system and the subsidy scheme	All 313 public institutions adopted the wage peak system by December 2015. The debt ratio of major public institutions has been lowered by 38 percentage points of GDP since 2012. The government employee and teachers' pension schemes were reformed. Fiscal efficiency was improved by eliminating 689 similar and overlapping budget programmes.
2. A disciplined market economy a. Remove unfair business practices between conglomerates and SMEs b. Alleviate the dualism of the labour market c. Improve the protection and use of intellectual property rights	The Subcontract Act was revised to reward informants who report unfair practices. The government established a subsidy system to encourage companies to convert non-regular employees into regular ones and has created a labour market reform bill based on a tripartite agreement.
3. Secure the social safety net a. Strengthen the safety net for vulnerable groups b. Strengthen employment support	The government has increased health and welfare spending, revised the customised benefit for the Basic Livelihood Security Programme (BLSP) and introduced the Basic Pension. The minimum wage has been increased by 32% since 2012 and the Earned Income Tax Credit has been extended to all self-employed.
4. Realise the creative economy and increase investment a. Establish Centres for Creative Economy and Innovation (CCEIs) b. Increase the total amount of R&D investment c. Strengthen competitiveness of SMEs d. Promote new industries, including in the energy sector, to achieve convergence to high-income countries	Seventeen CCEIs have been established. The government created a one-stop system for supporting start-ups, increased tax exemptions on investments in start-ups and built infrastructure to support start-ups. Korea invested 4.3% of its GDP on R&D in 2014, up from 4.0% in 2012. The government set up an integrated support system for SMEs and focused R&D investment on them. It also designated 19 future growth engines and launched an emissions trading system in 2015.
5. Facilitate the overseas expansion of companies through: a. Strategic utilisation of FTAs b. Setting up a system to provide firm-specific support for overseas marketing	Korea has FTAs with 15 countries, which together account for 73% of global GDP. The government set up a system to nurture "300 hidden champions" into competitive global players under the so-called World Class 300 Project.
6. Secure favourable investment conditions a. Improve the regulatory reform system b. Promote service industries including healthcare, education, tourism, finance and software	The government launched a pilot project of "cost-in, cost-out" to cap the regulatory burden. The National Assembly revised the Tourism Promotion Act, enacted the Crowdfunding bill and passed preliminary approval for Internet-only banks.
7. Expand domestic demand and increase youth and female employment a. Improve the household debt structure b. Normalise the housing sales market and stabilise the rental market	The government launched "Comprehensive Measures on Household Debt" to increase the share of mortgage loans that are fixed-rate and amortised. The government revitalised the housing sales market and stabilised the rental market by easing excess regulations on the price ceiling on pre-sales and increasing the supply of public rental houses to a record breaking level.

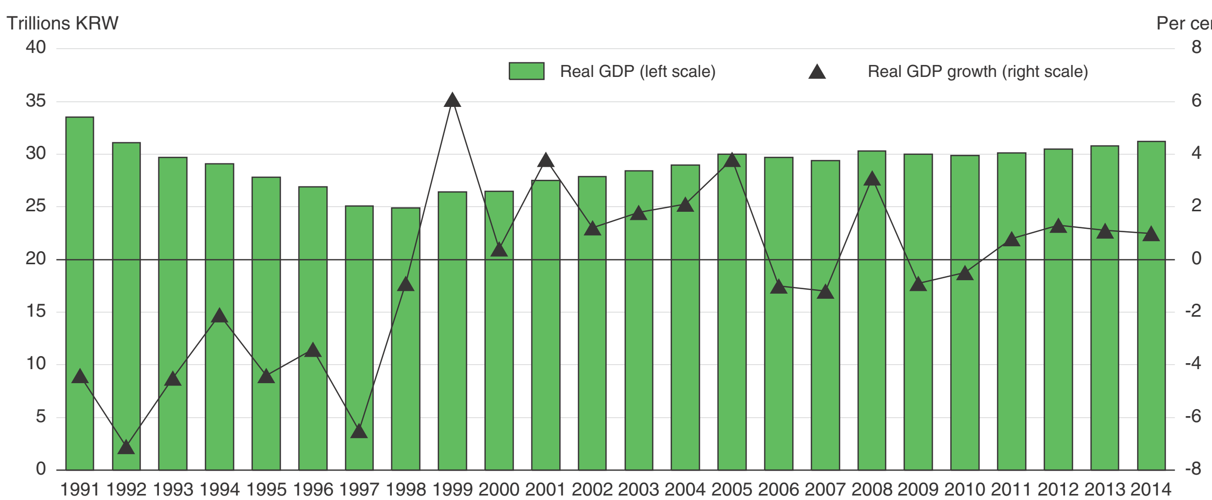
Source: Government of Korea.

ANNEX A3

Economic co-operation with North Korea

The North Korean economy maintained modest growth over 2011-14 (Figure A3.1), thanks primarily to a rebound in agriculture, which accounts for a quarter of GDP. The increasing marketisation of the North Korean economy is also playing a positive role. According to South Korea's Presidential Committee for Unification Preparation, around 70% of household income now comes from the non-official economy (LIEDRN 2015). However, output growth remains weak compared to the early 2000s, further expanding the already enormous gap between the two Koreas. Indeed, South Korea's economy was 43.7 times larger than the North's in 2014 and 21.4 times larger on a per capita income basis, raising concern about the potential cost of economic rapprochement (Table A3.1).

Figure A3.1. **North Korean growth remains modest**



Source: Bank of Korea (Seoul).

StatLink http://dx.doi.org/10.1787/888933356608

Inter-Korean trade has been volatile due to political tensions (Figure A3.2). The sinking of a South Korean warship in 2010 prompted the South to suspend investment in the North and inter-Korean trade, excluding that related to the Gaesung Industrial Complex. Consequently, general commercial trade, which had peaked at USD 0.8 billion in 2008, ceased in 2011. The Gaesung Industrial Complex, which was home to 124 South Korean SMEs and employed more than 54 000 North Korean workers, was the last remaining symbol of inter-Korean reconciliation and the focus of inter-Korean trade. Although the

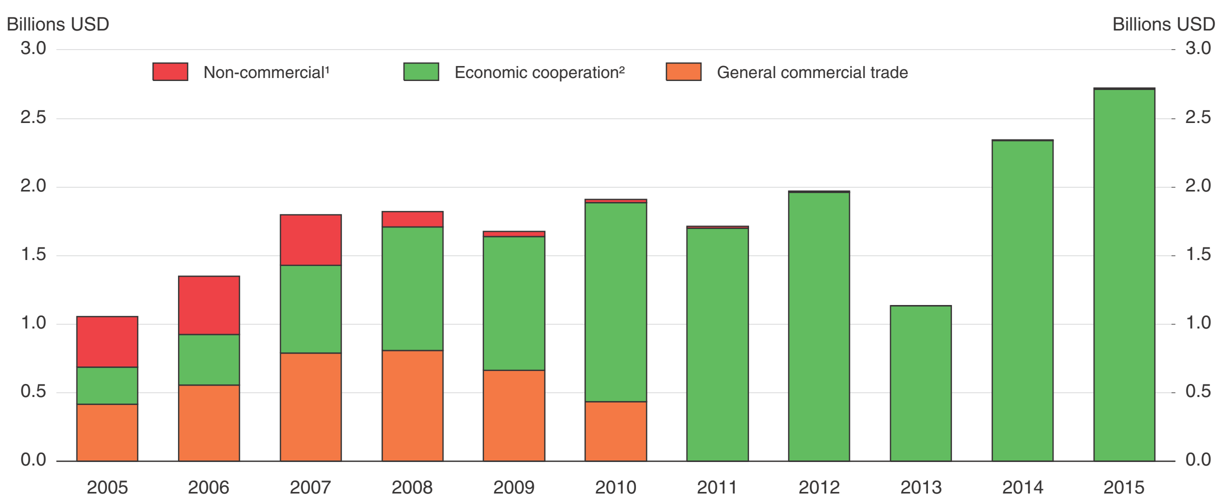
Table A3.1. **Comparison of North and South Korea in 2014**

	(A)	(B)	Ratio (B/A)
	North Korea	South Korea	
Population (millions)	24.7	50.4	2.0
Gross National Income (trillion won)	34.2	1 496.6	43.7
Gross National Income per capita (million won)	1.4	29.7	21.4
Total trade (USD billion)	7.6	1 098.2	144.3
Exports	3.2	572.7	181.2
Imports	4.5	525.5	118.1
Of which: inter-Korean exports[1]	1.2	1.1	0.9
Industrial statistics			
Power generation (billion kWh)	21.6	522.0	24.2
Steel production (million tonnes)	1.2	71.5	58.6
Cement production (million tonnes)	6.7	47.0	7.0
Agricultural production			
Rice (million tonnes)	2.2	4.2	2.0
Fertiliser (million tonnes)	0.5	2.3	4.6

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

North's closure of Gaesung for five months in mid-2013 sharply reduced trade related to economic co-operation, it rebounded to a record USD 2.7 billion in 2015.

Figure A3.2. **Inter-Korean trade rebounded in 2014-15 thanks to the Gaesung Industrial Complex**

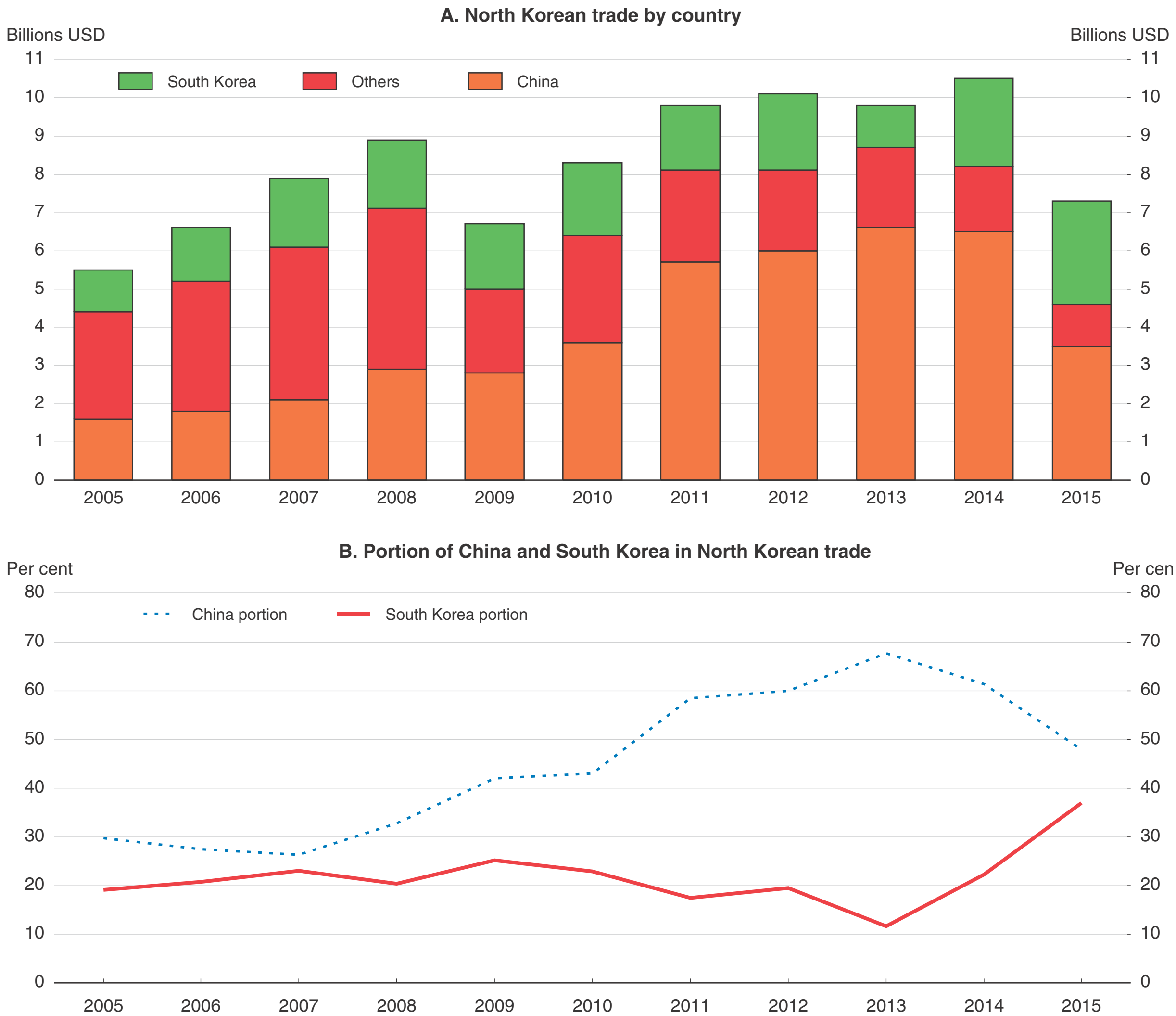


1. Primarily humanitarian aid.
2. Includes special projects, such as the Mount Geumgang resort, which was closed in 2008, and the Gaesung Industrial Complex. The operation of the Complex was suspended in February.
Source: Statistics Korea (Daejeon).

StatLink http://dx.doi.org/10.1787/888933356618

While North Korea's trade with the South stagnated, commerce with China expanded significantly (Figure A3.3). In 2007, South Korea and China each accounted for about 40% of North Korea's trade. By 2013, China's share had risen to 68% while South Korea's fell to 12%, although it rebounded in 2014-15 (Panel B). The rise in North Korea's trade with China was driven by exports of coal and iron ore, which account for two-thirds of the total. In addition

Figure A3.3. **Trends in North Korean trade**



Source: Korea Trade-Investment Promotion Agency (Seoul); *Statistics Korea* (Daejeon).

StatLink http://dx.doi.org/10.1787/888933356623

to expanding trade, the North Korean government has pursued a number of economic co-operation projects with China. For example, it is creating special economic zones on Hwanggumpyong Island, a border city that handles three-quarters of the trade between North Korea and China, and Raseon, a city on the eastern coast of North Korea, just 20 kilometres from the border with China. Growing economic ties between North Korea and China create concern that it would crowd out inter-Korean economic cooperation. The South Korean government established the Presidential Committee for Unification Preparation in 2014 to: i) set out a blueprint and roadmap for unification; ii) to build a national consensus on unification; and iii) to establish a system of co-operation among government agencies and NGOs in the South.

Following North Korea's fourth nuclear test on 6 January 2016, and a long-range missile launch a month later, South Korea announced the suspension of operations at the Gaesong Industrial Complex. The following day, North Korea said that it will expel all

South Korean nationals from the complex and freeze all assets of South Korean firms operating there in retaliation. The suspension of the Gaesong closes an important source of revenue for the North. Since its creation in 2002, the complex has brought USD 560 million to the North and USD 120 million in 2015 alone. At the same time, North Korea is experiencing a sharp decline in trade with China. In 2015, the value of its exports to China fell by 42%, reflecting falling prices of coal and iron ore. In addition, North Korean imports fell by 48% over the same period. Consequently, China's share of North Korean trade has fallen below half, while South Korea's portion has risen to 37% (Figure A3.3, Panel B).

ANNEX A4

Progress in structural reform

This Table reviews action taken on key recommendations from the 2014 *Survey*. Recommendations that are new in this *Survey* are listed at the end of the relevant chapter.

Recommendations in the 2014 *Survey*	Action taken since June 2014
I. *Fostering a creative economy to drive Korean growth*	
A. *Upgrade the innovation system*	
Improve universities and expand their co-operation with the business sector in R&D, while increasing the contribution of government research institutes.	The number of technology transfers from 30 major universities (through the Technology Licensing Offices funded by the government) to the business sector increased from 1 605 in 2014 to more than 1 800 in 2015, while the value rose from KRW 40.1 billion to more than KRW 46 billion (USD 40 million). The budget of government-funded research institutes that support SMEs increased from KRW 114.6 billion in 2014 to KRW 147.2 billion (USD 129 million) in 2016.
Expand Korea's international linkages in science and innovation from their current low level.	Government policies to promote joint research with overseas research institutes helped raise the share of R&D in Korea that was financed from abroad from 0.3% in 2013 to 0.7% in 2014.
B. *Improve framework conditions to accelerate the implementation of innovation*	
Liberalise product market regulations and reduce obstacles to international competition to promote an efficient allocation of resources in favour of innovative firms.	Around 10% of economic regulations were abolished during the year to January 2015 and a "cost-in, cost-out" system was launched to cap the regulatory burden on firms. Nearly a third of the more than 10 000 regulatory reform suggestions made through the Shinmungo since March 2014 have been accepted for consideration, leading to the amendment of laws underpinning 2 377 regulations. The Thorn under the Nails, Regulatory Guillotine, and Regulatory Reform Ministerial Meeting have examined 796 regulations.
Enhance labour market flexibility to expand the ability of innovative firms to grow and implement their ideas.	The government is encouraging the shift from seniority-based wage systems to job- or performance-based ones. It is also creating and improving systems to promote flexible work arrangements.
C. *Promote the venture buisness sector and new start-ups*	
Make the new KONEX a key player in funding start-ups, while ensuring adequate investor protection in KONEX and for crowd-funding.	The government launched a strategy in 2015 to revitalise KONEX by expanding incentives for individual investors, other than professional investors, strengthening investor protection through designated advisors, and easing listing requirements for SMEs by replacing quantitative standards with qualitative indicators. The government allowed equity crowdfunding in January 2016. Firms are allowed to raise up to KRW 0.7 billion (USD 611 000) through crowdfunding. Limits for non-professional investors are set at KRW 2 million per company (USD 1 747) and KRW 5 million in total.
Activate the market for M&As by addressing the obstacles that have kept it small.	Restrictions on private equity funds' M&A activities were relaxed and the M&A fund in the Growth Ladder Fund is being expanded to meet the M&A needs of mid-sized firms. The criteria for tax support for M&As aimed at acquiring technology were relaxed and the deadline extended from 2015 to 2018. The number of M&As rose from 73 in 2013 to 97 in 2014.

C. *Promote the venture buisness sector and new start-ups*	
Avoid excessive public funding of venture capital investment that would crowd out private investment, rely on a "fund-of-funds" approach and focus public support on the early stage of a firm's development when attracting private investors is most difficult.	The government launched an "Expert Angel Designation System" in July 2014 and increased the income tax deduction for angel investment from 50% of an investment less than KRW 50 million to 100% for one less than KRW 15 million. The government allocated KRW 269.3 billion in 2015 for investment in early-stage firms through a fund-of-funds approach. The share of fund-of-funds investment in firms at an early stage of development was 44.8%.
Develop the demand side of the venture capital market, in part by using public institutions to enhance the quality of investment projects.	To increase the number of technology-based start-ups, the government in 2014 launched the Tech Incubator Programme for Start-ups, which was modelled after Israel's Technological Incubator. It provides start-ups with R&D grants from the private and public sectors. R&D grants for promising start-ups with high-level technologies increased from KRW 141.4 billion in 2014 to KRW 188.8 billion (USD 165 million) in 2016.
Foster an environment that allows failed entrepreneurs to have second chances to launch start-ups.	The government established measures for failed entrepreneurs in 2015, including an improved joint guarantee system, expanded consultation procedures, and measures to facilitate access to loans.
D. *Make SMEs part of the creative economy*	
Target public loans and credit guarantees on young firms and start-ups, which struggle to obtain market financing, introduce a graduation system to prevent firms from receiving long-term support and reduce public credit guarantees to firms with a credit rating high enough to obtain market financing by themselves.	In the new directions announced in late 2015, the government expanded funding support for start-ups, with assistance limited to firms with a credit rating of over BB and listed firms. At the same time, support for firms more than five years old is being limited. For example, firms over five years old cannot receive government policy funds more than twice in one year.
Strengthen the market orientation of SME programmes by: i) raising interest rates on public SME loans closer to market levels; ii) lowering the coverage ratio of the guarantees; and iii) more clearly differentiating the price of guarantees based on their length and size.	In 2015, the government decided that in the case of companies that have received guarantees for more than ten years, banks (rather than the guarantee institution) are to set the guarantee ratio, which should be 50%-85%. The rate for early-stage firms was raised from 85% to 90%.
Improve the selection of SMEs that receive public support by focusing on firms with the potential to upgrade their performance by analysing their competitiveness and technological capacity.	The 2015 plan to foster Korean "hidden champions" to transform "high potential enterprises" into globalised enterprises chooses firms based on their competitiveness and technological capacity.
Use the government's expertise to enhance the infrastructure for credit evaluation of SMEs by private financial institutions. Develop the infrastructure for using non-tangible collateral, including intellectual property, for private-sector loans.	The government launched an initiative in July 2014 to promote loans based on technology for start-ups without collateral. Four institutions designated as Technology Credit Bureaus launched a technology database service. Technology-based lending was KRW 51.5 trillion (6.7% of bank lending to the corporate sector) in the fourth quarter of 2015.
Encourage a larger role for local non-bank financial institutions, such as saving banks and credit unions, in lending to viable SMEs.	Eligibility requirements to act as a financial intermediary for Korea Development Bank's on-lending scheme have been expanded to include non-bank financial institutions.
Reduce the generosity of SME support to weaken the disincentives for small firms to grow out of the SME category, thereby increasing their productivity through economies of scale.	The government is promoting the growth of SMEs into "high potential enterprises" by providing support for exports, financing, R&D, etc. Their growth into globalised enterprises is promoted through a 2015 plan to foster Korean "hidden champions". The plan, "Implementing World Class 300 Project", included 186 firms in 2015.
Gradually reduce the number of SME programmes through stronger *ex post* evaluation of programmes to focus the budget on those that are most effective and expand prior consultations among ministries before introducing new programmes.	A task force in the Office for Government Policy Coordination abolished 10 projects and merged 13 over 2014-15, resulting in savings of KRW 55 billion (USD 48 million).
Use the "Comprehensive Management System" to co-ordinate SME programmes between ministries and prevent SMEs from benefiting from multiple programmes.	In 2014, the Ministry of Interior launched an indicator in its evaluation of local governments to prevent SMEs from benefiting from multiple programmes.
Improve SMEs' human resources by reducing labour market mismatches through greater emphasis on vocational education.	The number of Meister school was increased from 35 in 2014 to 41 in 2015 and six more are planned for 2016-17 and the fields of study have been expanded. The Work-Study Dual System launched in 2013 now includes more than 2 000 firms and nearly 13 000 students. The 887 National Competency Standards (NCS) are being used to set the curriculum for vocational education and training.
Facilitate the use of the Internet to enhance the growth of SMEs by ensuring an appropriate regulatory framework and ICT skills.	The "Production Digitalisation System" is promoting manufacturing and process management based on IT for small firms dependent on manual labour. The government spent about KRW 8 billion (USD 7 million) in both 2014 and 2015 to assist around 145 SMEs.
Enforce fair trading rules to avoid unfair treatment of SMEs by *chaebols* and improve *chaebols*' corporate governance, while phasing out restrictions that reserve certain sectors to SMEs.	A 2016 amendment to the Fair Transactions and Subcontracting Act introduced a system that rewards an informant who reports unfair practices against mid-sized companies that are subcontractors and the KFTC stepped up its monitoring against unfair subcontracting behaviour. The Monopoly Regulation and Fair Trade Act was amended in 2014 to prohibit new circular Investment among *chaebol*-affiliated firms.

II. ***Reducing income inequality and poverty and promoting social mobility***	
A. *Labour market reform*	
Break down dualism by reducing effective employment protection for regular workers, by expanding the coverage of non-regular workers through the social safety net and by increasing their access to vocational training.	Public subsidies for non-regular workers who are currently employed and participating in government-provided training increased from KRW 75 billion in 2014 to KRW 83 billion in 2015 (USD 73 million).
Extend the time limit on fixed-term contracts from two years.	In September 2015, the government proposed an amendment to the labour law that would allow fixed-term contracts to be extended by another two years for employees aged 35 or older and wanting an extension.
Boost employment, particularly for women, youth and the elderly by breaking down dualism, reducing labour market mismatches, especially for youth through improved vocational education and training, and by extending older workers' careers in firms.	The "Stepping-stone-to-employment programme", in which major firms offer education and training in promising areas to 15-34 year-olds, was launched in January 2016 and is to be expanded.
	The government expanded the subsidy programme for the wage peak system and launched consulting services to encourage companies to adopt it and thereby increase employment of older workers. The number of Job Hope Centres, which provide specialised employment services to middle-aged and older people, was increased from 28 in 2014 to 31 in 2015.
	Co-operation between Local Job Centres (run by the Ministry of Employment and Labour) and New Job Centres (Ministry of Gender Equality and Family) was strengthened from January 2016.
B. *Increase the effectiveness of social welfare programmes in reducing income inequlaity and poverty*	
Expand the Basic Livelihood Security Programme (BLSP) by further easing eligibility criteria and enforcing work requirements.	In July 2015, the Customised Benefit System, which sets different eligibility criteria for livelihood, medical services, housing and education benefits under the BLSP, was introduced and the criteria for persons with support obligations were relaxed.
Make the EITC more effective in reducing poverty by extending its coverage to more self-employed, as transparency about their income increases, and extending the phase-out range to avoid reducing work incentives.	The restriction that limited the coverage of the self-employed to certain types of businesses was repealed and the upper-limit of the phase-out range for a couple with one child was increased from KRW 17 million to KRW 21 million (USD 18 000).
C. *Enhance the contribution of education to social cohesion*	
Raise the quality of childcare to ensure that households at all income levels have access to high-quality pre-school education.	Childcare centres were provided with assistant teachers in 2015 and teacher training was reformed in 2016.
Reduce reliance on private tutoring by developing the "school record system" for university admission, raising the quality and diversity of secondary schools and reducing the over-emphasis on higher education by improving vocational education.	The use of the "school record system" increased by 54.9% in 2015 and 57.4% in 2016. A law was enacted in September 2014 to prevent private tutoring institutions from introducing subjects ahead of the school curriculum. The curriculum for vocational high schools was revised in line with National Competency Standards in 2016. The Work-Study Dual System now includes more than 2 000 firms and nearly 13 000 students.
D. *Reduce poverty among the elderly*	
Target the Basic Old-Age Pension on lowest-income elderly to ensure that they escape from absolute poverty.	Following the introduction of the Basic Pension in July 2014, 70% of the elderly continue to receive the Basic Pension. It doubled the amount paid by the Basic Old-Age Pension from KRW 99 000 per month to KRW 200 000 (USD 175). The share of the elderly in absolute poverty (an income below the minimum cost of living) fell from 34% in 2013Q4 to 30% in 2014Q4, while the share in relative poverty declined from 48% to 44%.
Use the Basic Livelihood Security Programme (BLSP) to top up the income of the recipients of the Basic Pension by further relaxing eligibility requirements.	The introduction of the Customised Benefit System in 2015 and the relaxation of eligibility criteria increased BLSP payments across all age groups.
Make the NPS more effective in reducing poverty by expanding its coverage, focusing on improved compliance among non-regular and self-employed workers, lengthening average contribution periods and maintaining the NPS replacement at around 50%, keeping it close to the OECD average.	In 2015, 390 000 non-regular workers (6% of the total) were enrolled in the NPS by their employers, based on income documents shared by the National Tax Service and the Ministry of Employment and Labour. Two programmes were launched in 2016 to increase NPS enrolment among people with unstable employment status: i) firms will enrol their part-time workers; and ii) the pension contributions of persons who become unemployed will be paid for up to one year.
Begin as soon as possible to raise the NPS contribution rate to a level sufficient to ensure its long-run sustainability	In 2015, the National Assembly Special Committee on Public Pension and Social Organisation was established to discuss the contribution and benefit levels for the NPS. In 2016, a Committee on Establishing the Long-Term Financial Goals for the NPS will be formed to start discussions on such issues.
Accelerate the introduction of company pensions, in part by further revising the tax treatment of the lump-sum retirement allowance.	Following the tax code revision in 2015, if a person receives the amount of money deposited in his/her individual retirement pension account in the form of an annuity, the tax is 30% less than if it were received as a lump-sum payment.

D. *Reduce poverty among the elderly*	
Make Individual Pension Accounts a more important source of retirement income by measures to discourage their premature termination and develop the market for reverse mortgages.	The government is increasing the retention rate by permitting tax deferment when transferring money between private pension accounts and giving discounts for long-term pension holders.
E. *Address the social implications of household debt*	
Ensure the long-run viability of preferential loan programmes by granting loans only to those who are capable and willing to service their loans. For others, replace preferential loans with an expanded social safety net.	Loan assessment criteria have been further enhanced recently to make these programmes sustainable. For example, the debt-to-income ratio is now applied to all Sunshine loans rather than just those above KRW 10 million (USD 8 250). In addition, contingent livelihood loans are given to those who had been faithfully making repayments.
Avoid additional programmes offering large write-offs of principal and interest so as to avoid moral hazard.	No such programmes are under consideration at present.
Discourage excessive lending to households by financial institutions through appropriate prudential supervision and promote financial education for households to prevent over-borrowing.	"Measures for Enhancing Financial Education" were announced in October 2015 to provide expanded opportunities for financial education to consumers and improve the quality of financial education programmes.

Thematic chapters

Chapter 1

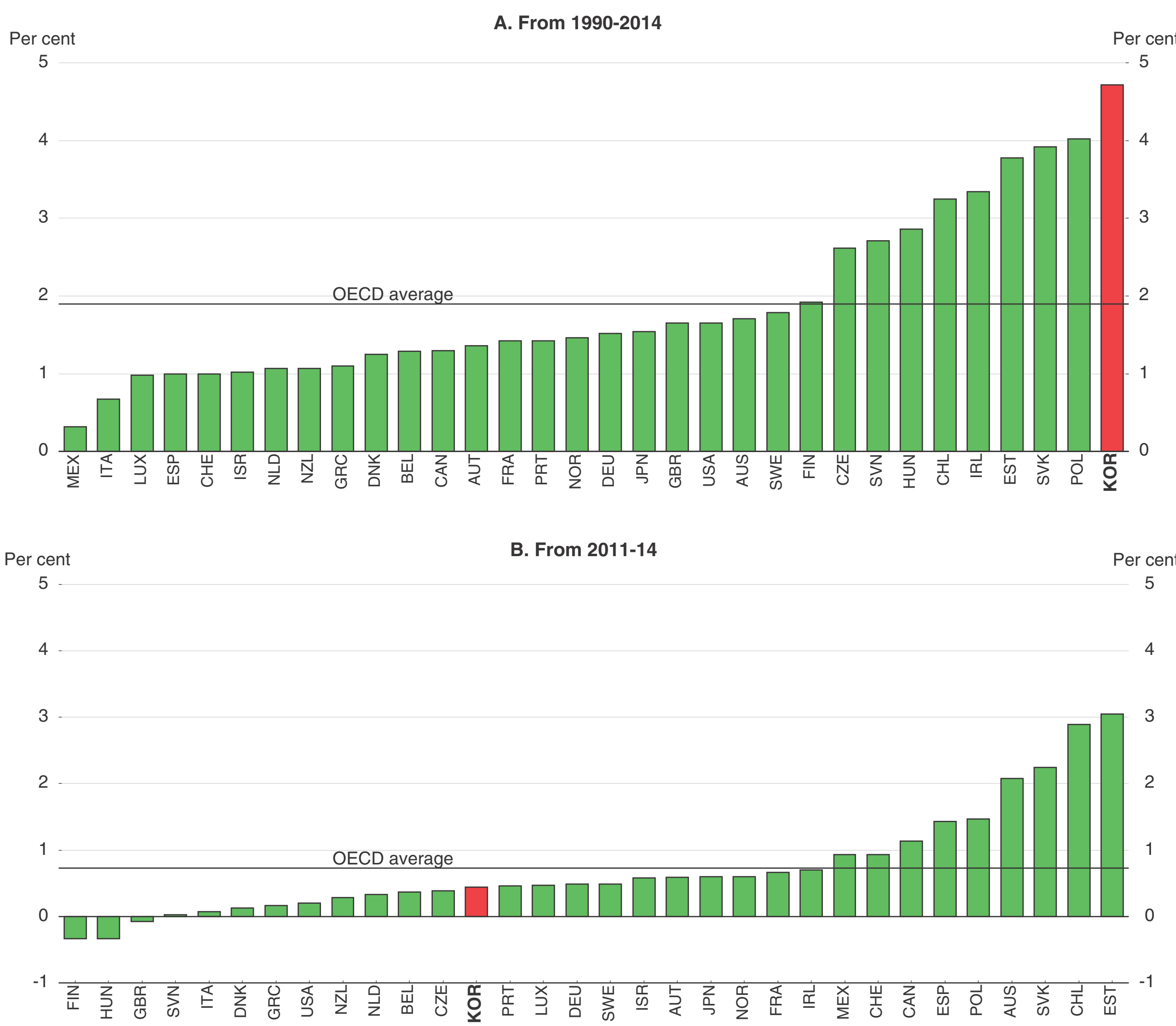
Raising Korea's productivity through innovation and structural reform

Raising productivity requires addressing a wide range of policies that affect resource allocation, the creation and diffusion of technology, human capital and the creation and financing of start-ups. The greatest gains can be achieved in the service sector and in SMEs, where productivity has fallen to less than a third of large firms. Regulatory reform, increased international openness and labour flexibility would support such reallocation and technology diffusion. Korea's large investment in R&D and education should be leveraged to raise productivity by enhancing university and public research and strengthening its links with the business sector and global innovation networks. To take advantage of innovation, the relatively low skill levels of workers above age 35 calls for increased lifelong learning. Perhaps most important, it is essential to shift SME policies away from promoting the survival of firms and towards productivity gains. Given market failures in indirect financing, developing capital markets, including venture capital investment, is a priority to boost firm creation.

Productivity growth in Korea during the past 25 years has been the fastest in the OECD area (Figure 1.1), helping to lift per capita income from 39% of the average of the top half of OECD countries in 1991 to 75% by 2014. However, in recent years, Korea has been facing strong competition in global markets with emerging economies, notably China. Meanwhile, high household debt, stagnant service sector productivity and struggling SMEs

Figure 1.1. **Korea's labour productivity growth has been the fastest in the OECD despite a recent slowdown**

Percentage change at an annual rate in GDP per hour worked in 2010 prices



Source: OECD Productivity Database.

StatLink http://dx.doi.org/10.1787/888933356219

have constrained domestic demand. Output growth slowed from a 4¼ per cent annual pace over 2001-11 to 2¾ per cent since 2011, in the context of a deceleration of world trade growth. Productivity growth fell below the OECD average over 2011-14 (Panel B).

Korea needs sustained growth to achieve convergence to the highest-income countries and to cope with rapid population ageing and the potential cost of economic rapprochement with North Korea. However, labour inputs will fall significantly due to population ageing, which is projected to be the fastest in the OECD. Indeed, Korea's population, currently the fourth youngest in the OECD, is projected to be the third oldest by 2050. The working-age population will peak in 2016, implying a sharp decline in the number of workers supporting those in retirement. Policies to reduce obstacles to the employment of women, youth and older persons would slow the decline in the labour force (see Chapter 2). Even with a rise in labour participation, productivity remains the ultimate growth engine for Korea. Recognising the weaknesses of Korea's traditional growth model, the government launched an initiative in 2013 to foster a "creative economy" centred on innovation, in which start-ups and high-growth small businesses play a key role. In early 2016, the government announced a plan to inject KRW 80 trillion (5% of GDP) of public funds to nurture new growth engines, including smart cars. The President stated that the government has to support promising sectors, including cultural content, bio health, tourism and information technology.

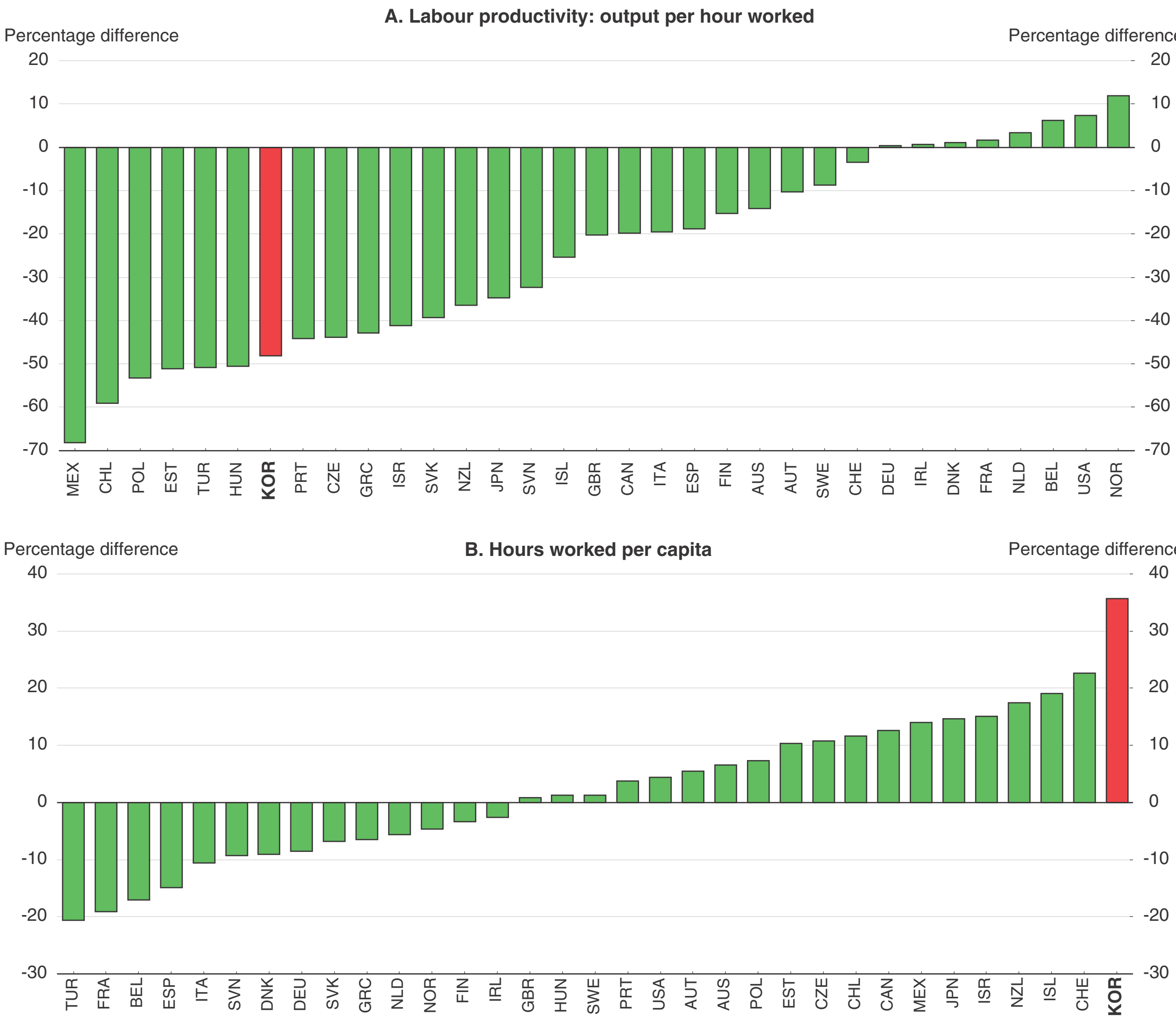
This chapter focuses on policies to raise productivity, emphasising the importance of narrowing the productivity gaps between manufacturing and services and between large and small firms. After an overview of Korea's productivity performance, the following section considers framework conditions to promote technology diffusion and resource reallocation, particularly through regulatory reform. The third section examines the innovation system and how it could contribute more to productivity growth and is followed by a discussion of human capital. The fifth section discusses policies related to SMEs. Venture capital investment, a key to the creation and growth of innovative firms, is examined in the final section. Policy recommendations are summarised at the end of this chapter.

An overview of Korea's productivity performance

Labour productivity in Korea has increased at an annual average pace of 4.7% since 1990, compared to an OECD average of 1.9% (Figure 1.1). Moreover, total factor productivity (TFP) growth, which measures the growth of GDP above the combined contributions of total hours, workforce skills, machinery and structures and ICT capital, has contributed an average of 1¾ percentage points to GDP growth per year since 1990, compared to ½ percentage point in the United States. Rapid productivity growth reflected Korea's large scope for convergence to high-income countries. Similarly, productivity growth has slowed as Korea moved toward the global knowledge frontier. Nevertheless, the deceleration since 2011, while Korea's labour productivity per hour worked still ranks near the bottom among OECD countries (Figure 1.2), is worrisome, particularly as Korea's labour inputs (Panel B) are expected to shrink.

The OECD estimates that Korea's potential growth rate has slowed from over 9% in the early 1990s to around 3¼ per cent, matching the Bank of Korea's current estimate (Figure 1.3). The decline is due to two factors; i) the contribution of labour inputs fell as the growth of the working-age population decelerated and working hours declined; and

Figure 1.2. **Korea's labour productivity remains far below the top half of OECD countries**



Note: Each country's performance relative to the top 17 OECD countries in 2014 using 2010 PPP exchange rates. Luxembourg, where labour productivity is 62% above the top 17 OECD countries and hours worked are 2% below, is not shown in the figure.
Source: *OECD Going for Growth Database.*

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ii) trend labour productivity has fallen from around 6% to a little more than 2%, reflecting in part Korea's convergence toward high-income countries.

Productivity is low in the service sector and in SMEs

The gap in the productivity level between Korea and the top half of OECD countries (Figure 1.2) is largely explained by low labour productivity in services, which was 45% of that in manufacturing in 2014, compared to an average of 90% in the OECD (Figure 1.4). Services accounted for 59.2% of Korean GDP, well below the OECD average, as export-led development has siphoned capital, talent and other resources away from services and toward manufacturing (Jones, 2009). This has contributed to weak TFP growth in services. Indeed, TFP made a negative 1.0 percentage-point contribution to service-sector growth over 2001-09, compared to a positive contribution of 1.7 points in manufacturing

Figure 1.3. **Korea's potential GDP growth has fallen sharply since 1990**

Source: *OECD STEP 99 Database.*

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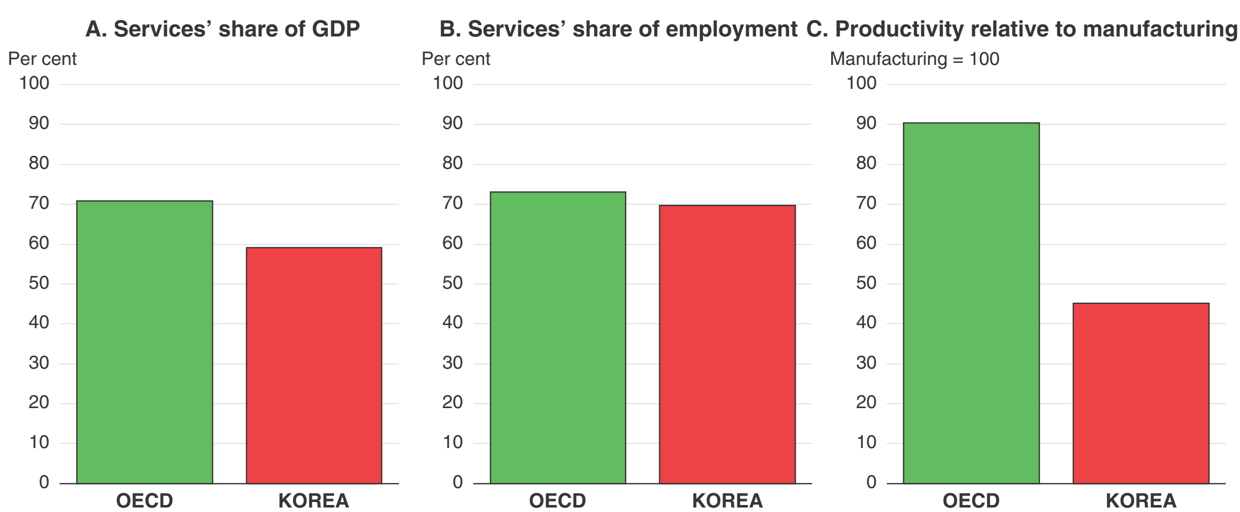
(Figure 1.5). In the United States, Germany and the United Kingdom, TFP made a positive contribution to both sectors. Low service productivity relative to manufacturing is due in part to weaker competitive pressures and relatively stringent regulations, resulting in a less efficient use of resources (OECD, 2015f). In addition, R&D investment is lower in services than in manufacturing. These factors are discussed below.

Service productivity is also weakened by a few special factors specific to Korea. *First*, the service sector has low capital intensity: capital stock per employee was well below the most advanced economies (Figure 1.6, Panel A), thereby holding back productivity (Baek and Joo, 2014a). *Second*, the links between services and other sectors are weak. The share of

Figure 1.4. **Service sector productivity is low in Korea**

Value added in 2014 based on 2010 prices



Source: *OECD National Accounts Database; OECD STI Database.*

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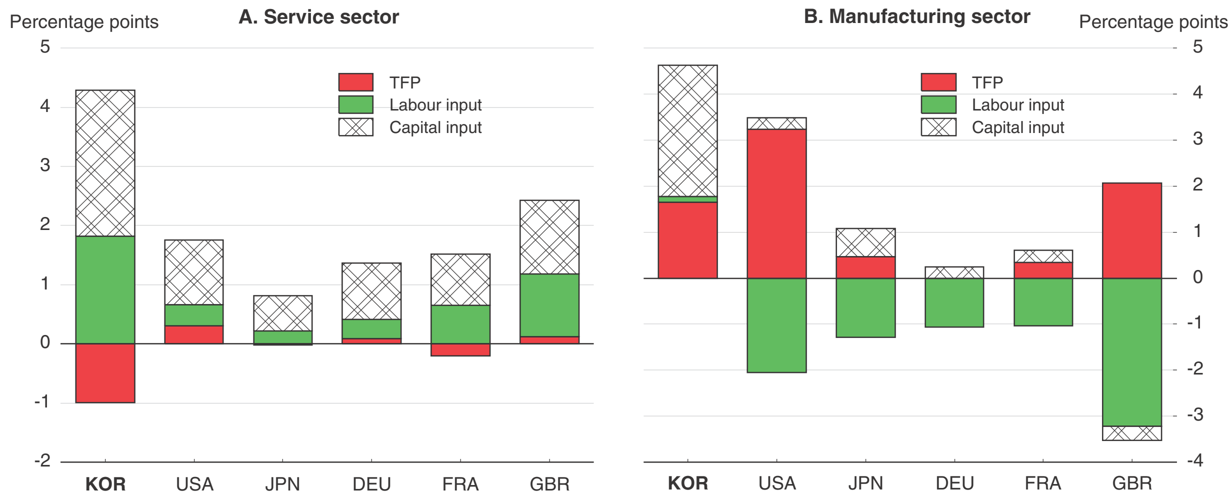
Figure 1.5. **Total factor productivity growth in Korea's service sector has been negative**

Contribution to value-added growth in percentage points in the 2000s[1]



1. 2001-10 for the United States and 2001-09 for the other countries.
Source: Korea Productivity Centre (2014).

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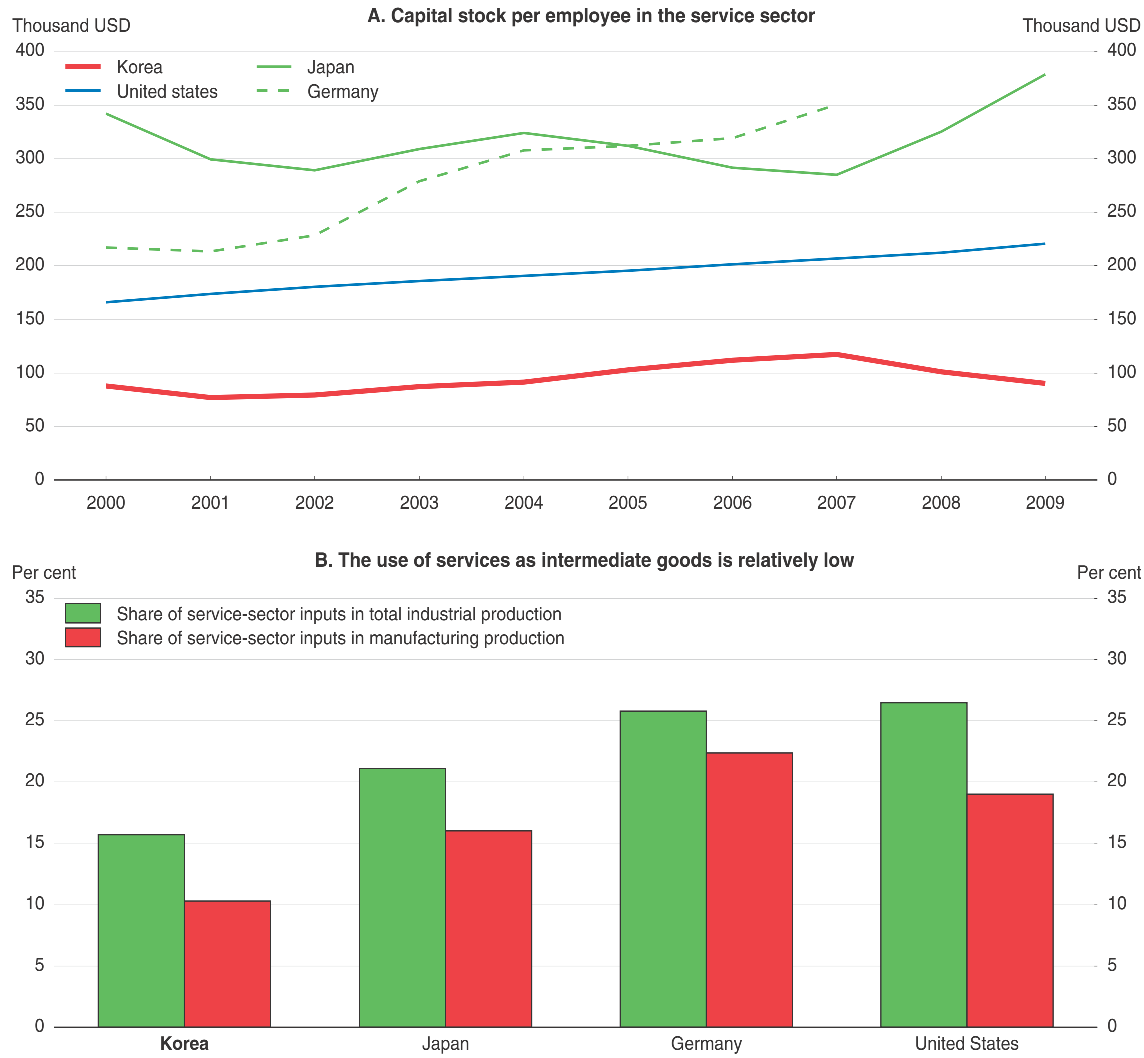
services as intermediate goods in all industries was only 16% in Korea in 2011 compared to around 26% in the United States and Germany (Panel B). Their share as intermediate inputs for manufacturing in Korea was particularly low. Moreover, domestic services accounted for only 25% of Korea's value-added in exports, the third-lowest share in the OECD (OECD, 2015a). This may partially reflect the fact that the vertically-integrated conglomerates that account for a large share of exports tend to perform services in-house rather than contracting out. Korea also exports fewer services compared to other OECD countries. The service industry's share in Korea's exports in 2012 was only 2.5% compared to 14.5% in the United States and 3.3% in Japan.

To promote the service sector, the government launched the "2013 Service Industry Policy Directions and Measures", which aim to: i) ensure equal tax treatment between services and manufacturing; ii) improve financial support from the public sector; iii) enhance the social image of services; iv) foster human capital in services; and v) provide support for service-sector start-ups. Ending discrimination is certainly needed for efficient resource allocation. The development of the service sector also depends on framework conditions to promote competition.

The service sector is dominated by SMEs, which account for around 90% of service-sector employment and operating profits. For the whole economy, SMEs accounted for 77.5% of workers, whose average pay was 42% of those in large firms (Table 1.1). Workers in "core SMEs", in turn, are paid 3.7 times more on average than those in micro-firms; 36% of micro-firms are created by "necessity-driven" entrepreneurs who have no other option for work (Global Entrepreneurship Monitor, 2012). This share is high compared to other OECD countries, reflecting the fact that workers leave firms at age 53 on average and have little retirement income (Chapter 2). Productivity in the SME sector as a whole has fallen from 53.8% of that in large companies in 1988 to only 30.5% in 2014, as large enterprises scaled up investment in labour-saving technology following Korea's democratisation in 1987, which resulted in large-scale wage increases. In the wholesale and retail trade sector, the labour

Figure 1.6. **The service sector has a low capital stock and its links to manufacturing are weak**



Source: Baek and Joo (2014a).

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productivity of medium-sized firms (50-299 employees) was only 62% of large firms (Figure 1.7). In contrast, medium-sized firms in most OECD countries outperform large ones. This large productivity gap between large firms and SMEs limits Korea's economic growth.

Appropriate framework conditions are needed to increase productivity

The widening gap between Korea's large firms, which include many major exporters and world leaders, and small firms suggests a problem of diffusion and resource reallocation. Indeed, productivity growth depends as much on improved resource allocation as on technological progress and innovation (Andrews et al., 2015). Productivity is increased by the expansion or entry of high-productivity firms and the contraction or exit of low-productivity ones. Young firms play an important role as they often have a comparative advantage in commercialising innovations. Firms less than five years old, regardless of their size, accounted for less than a fifth of total non-financial business

Table 1.1. **A comparison of SMEs and large firms in Korea in 2010**

	Large firms	SMEs	Of which: Core SMEs	Of which: Micro-firms[1]	Total
Number of enterprises[2]	4.8	3 152.9	244.5	2 908.3	3 157.7
Per cent	0.2	99.8	7.7	92.1	100.0
Number of workers[2]	3 803.2	13 131.6	6 349.4	6 782.2	16 934.8
Per cent	22.5	77.5	37.5	40.0	100.0
Operating profit[3]	181.2	113.5	54.4	59.1	294.7
Per cent	61.5	38.5	18.5	20.1	100.0
Operating profit per firm[4]	37 609.0	36.0	222.5	20.3	93.3
Average wage[5]	36.5	15.2	24.5	6.6	20.0

1. Firms with less than five workers in services and less than ten in other sectors.
2. Thousands.
3. Trillion KRW.
4. Billion KRW.
5. Million KRW.

Source: Statistics Korea *2010 Economic Census*.

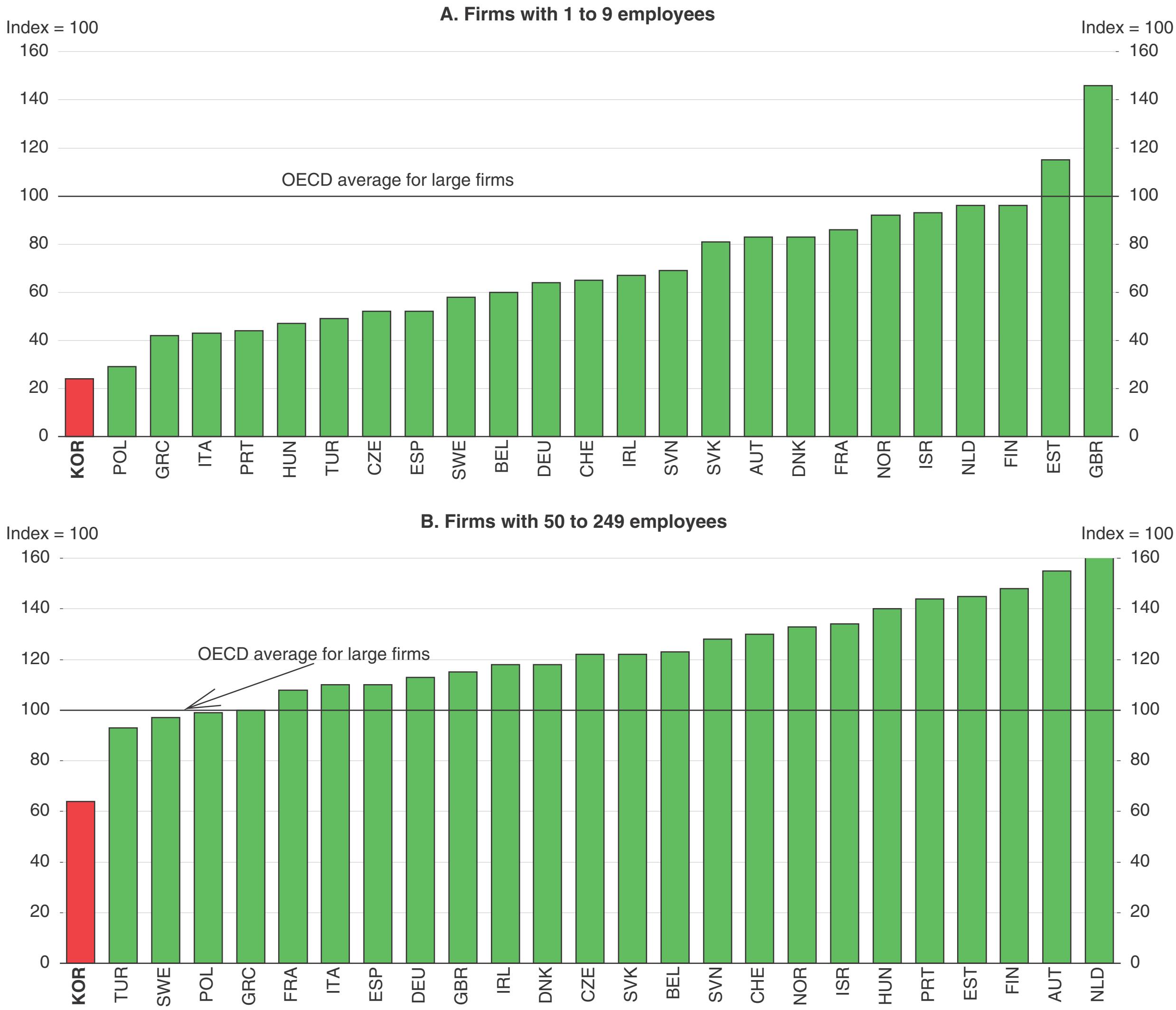
employment in the OECD but generated half of all new jobs over 2001-11 (OECD 2013b). The success of Korea's creative economy strategy thus depends to a large extent on raising the rate of both business creation and the rate of exit, as a long tail of unproductive firms can slow down aggregate productivity growth. However, the entry and exit rates in both manufacturing and services – a measure of economic dynamism – have slowed markedly between 2001 and 2013, although they increased somewhat in 2014-15 (Figure 1.8). Creative destruction and resource reallocation can be impeded by regulations and public support for weak companies. Limiting the entry of new companies to protect existing ones results in huge opportunity costs in terms of foregone productivity gains.

Regulation is an essential instrument used by governments to achieve policy objectives, such as economic growth, social welfare and environmental protection. It includes: i) economic regulation intended to improve the efficiency of markets in delivering goods and services; ii) social regulation aimed at protecting the environment and the safety and health of society; and iii) administrative regulation to ensure government oversight of private-sector activities (OECD, 2015c). However, when poorly conceived, regulations can be ineffective in achieving their objectives while imposing unnecessary costs on citizens and businesses. In particular, the regulatory framework has an important impact on innovation. Stringent product market regulations tend to discourage entry by new firms and the effective diffusion of knowledge, while reducing private investment in innovation. Moreover, restrictive regulations make it difficult for firms to attract the resources needed to implement and commercialise new ideas (Westmore, 2013).

Productivity can vary widely between industries depending on the regulatory framework. A study of five service industries in Korea found that productivity growth ranged from 18% in retail trade to minus 9% in personal services (Figure 1.9). In retail, regulation is relatively low compared to other OECD countries (Panel B), thanks to significant deregulation during the 1990s. Consequently, the impact of entry and exit and reallocation of resources to high-productivity firms and away from low-productivity firms accounted for 14 percentage points of the productivity gain. Competition from new entrants was also a factor in the productivity contribution from existing firms (the "within effect").

Figure 1.7. **Korea has a wide labour productivity gap between SMEs and large firms**

Labour productivity in wholesale and retail trade:[1] labour productivity for large firms (250+ employees) is set at 100[2]



1. In 2012. Includes the repair of motor vehicles and motorcycles.
2. For Korea, the size class "50-249" refers to "50-299" and the size class "250+" refers to "300+".

Source: Source: OECD (2015d).

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In Korea, SMEs which achieved rapid TFP growth over 2007-11 did not have a higher share of output in 2011 (Chang, 2015). The failure of successful enterprises to expand indicates problems in resource allocation. Moreover, only 0.01% of small companies grew into medium-sized companies over 2011-14. This section focuses on product market regulation, a top government priority, in addition to international openness and labour mobility, which also affect resource reallocation.

Regulatory reform to boost competition and productivity

Regulations are realtively stringent, especially in the service and SME sectors

In the wake of the 1997 crisis, Korea launched a regulatory reform programme that reduced the number of registered regulations at the central government level from more

Figure 1.8. **Entry and exit rates have fallen in both the manufacturing and service sectors**

Source: Ahn (2015).

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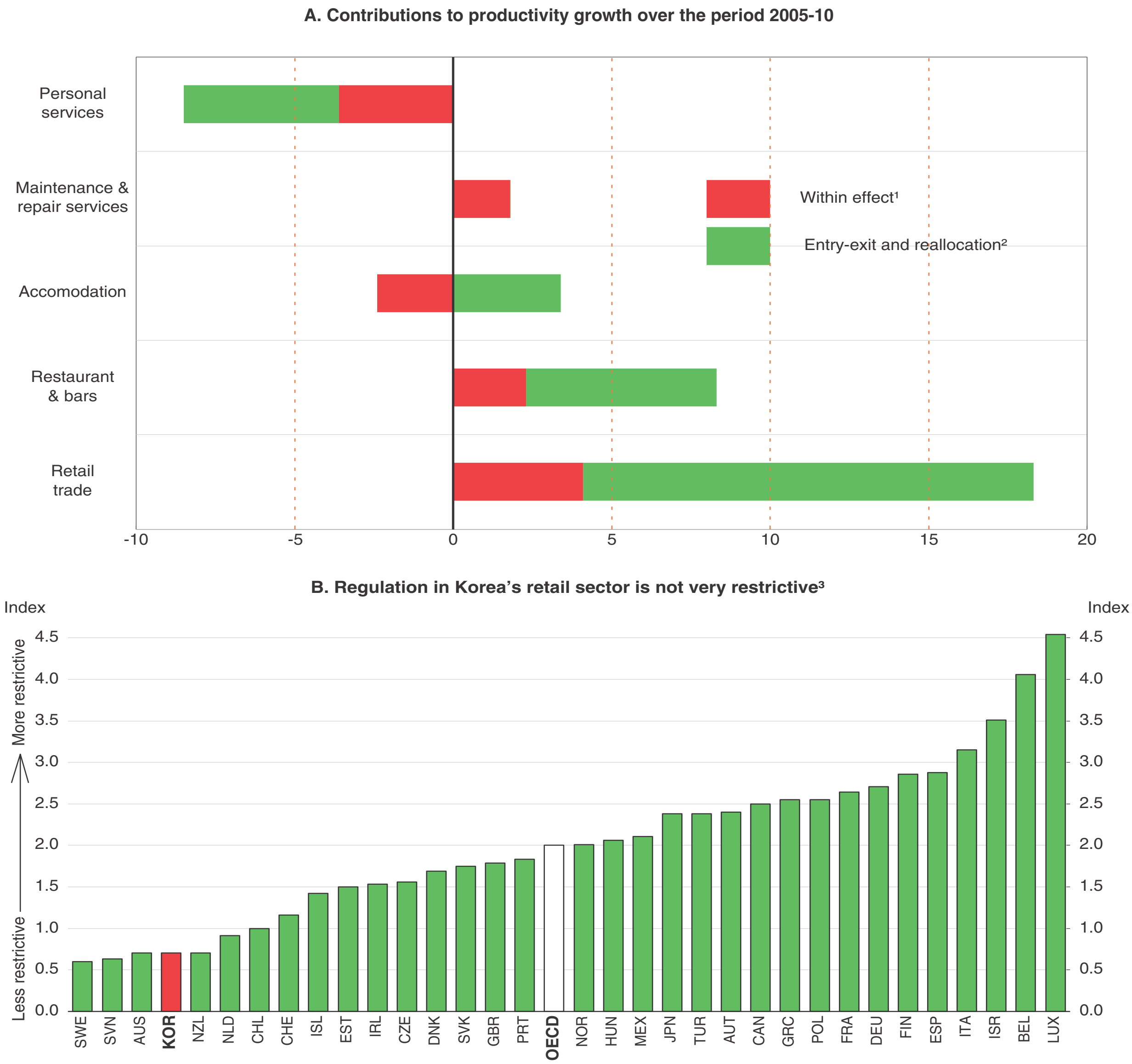
than 10 000 in 1998 to less than 7 000 within two years (Figure 1.10). In 2004, the government started the "Total Regulation Control System", which aimed to limit the annual increase in the number of regulations by each ministry to 2%. However, this approach allowed ministries to replace minor regulations with significant ones or to combine two regulations into one. Lacking support from ministries, this system only lasted for two years. The number of regulations more than doubled to more than 15 000 by 2013. In addition, Korea has nearly 5 000 unlisted regulations based on law. At the local government level, a central government study in 2014 found 6 440 regulations in 11 major sectors based on local ordinances and rules.

In addition to the high level of regulation, the Sewol Ferry tragedy in 2014 highlighted problems in regulatory governance, including corruption and incompetence (Lim, 2014). Another concern is the widespread use of administrative guidance, which is inconsistent with a transparent and predictable regulatory framework. Administrative guidance is defined as

Figure 1.9. **Productivity growth in service industries varies widely**



1. The with-in effect shows the productivity change in firms that remain in the industry.
2. The entry-exit effect shows the productivity effect from the entry of new firms and exit of existing firms. The reallocation effect shows the impact of the expansion of productive firms and the contraction of less-productive firms.
3. Based on the OECD Indicators of Product Market Regulation, a comprehensive and internationally-comparable set of indicators that measure the degree to which policies promote or inhibit competition.

Source: Choe et al. (2014); Koske et al. (2015); *OECD Product Market Regulation Database*.

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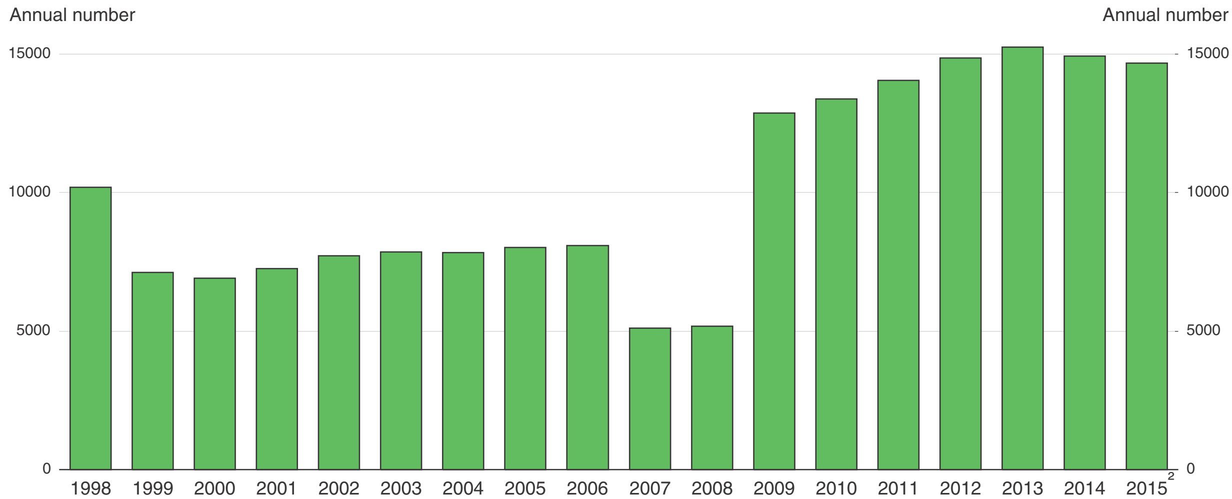
advice, recommendations, discretionary application of licensing criteria or other actions by regulatory bodies that do not have binding legal force, but are intended to affect actions and behaviour. It has long been a concern for both domestic and foreign companies in Korea, where the government has played an active role in economic activities (OECD, 2007).

Administrative guidance has been a major issue in the financial sector, where the supervisory authority has been involved in the activities of private financial institutions in

Figure 1.10. **The number of regulations rose quickly until 2013**[1]



1. The number at year-end. The numbers reported for 2007-08 are affected by a change in the method of counting regulations.
2. In June 2015, the government has stopped releasing data on the number of regulations as it shifts to a goal of capping the regulatory burden.

Source: Park (2015a).

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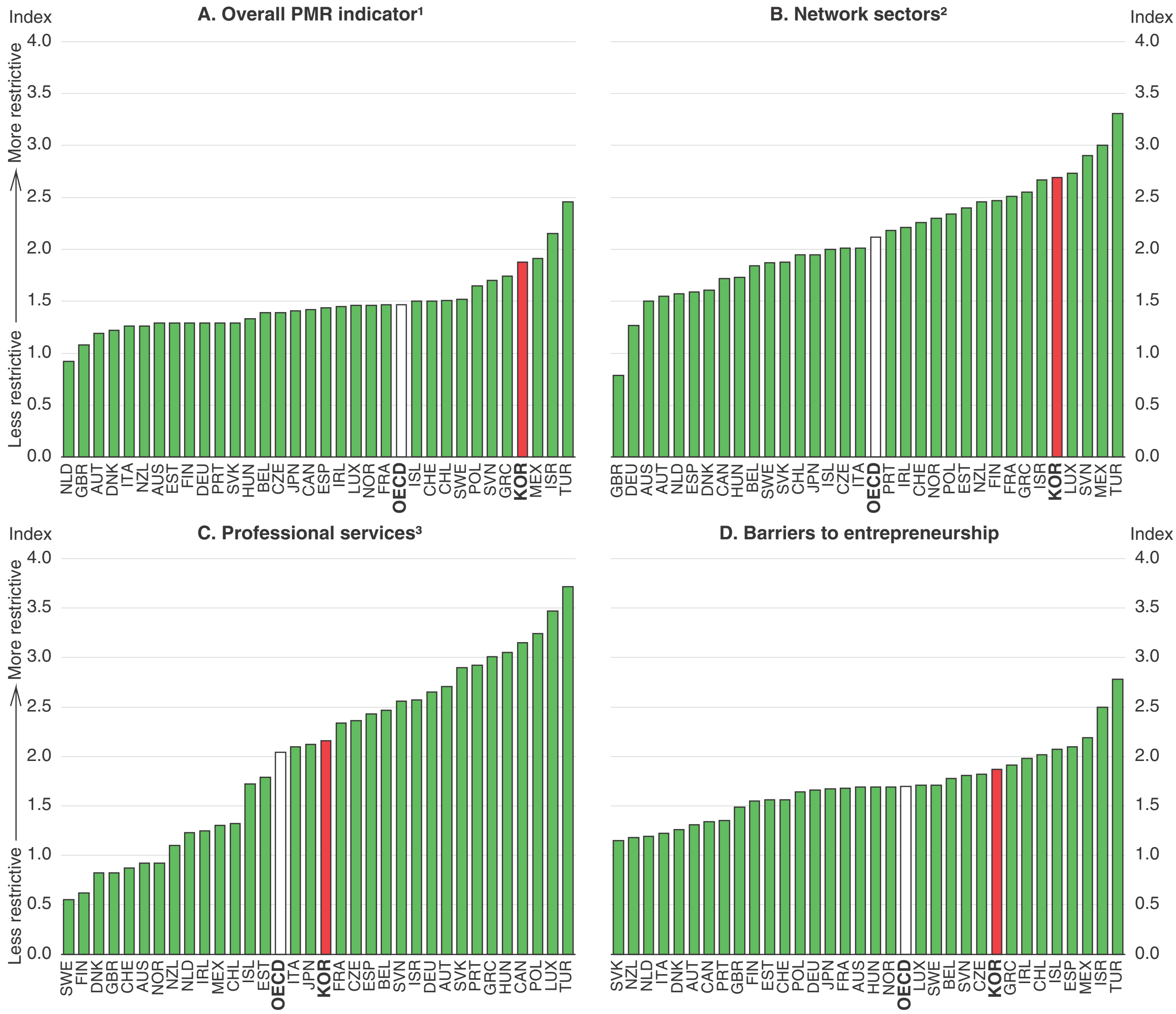
the guise of prudential regulation. For example, the supervisors have advised financial institutions on dividend payments and the setting of fees and interest rates. A 2014 review found almost 2 000 shadow regulations – administrative guidance and best practices. Such interference has reduced incentives to develop creative financing and led to a uniform structure across financial institutions (Kim, 2015). Since 2014, the government has pursued extensive regulatory reform, including improving administrative guidance.

Korea's product market regulation (PMR) indicator was the fourth most stringent in the OECD in 2013 (Figure 1.11). The service sector is particuarly regulated; by 2013, it was subject to 4 336 regulations, four times higher than in manufacturing (Park et al., 2014). This included 3 660 "core regulations" (which exclude secondary measures related to the implementation of core regulations), ten times more than in manufacturing. The concentration of regulations in services is reflected in the OECD's PMR indicator in seven key network industries, which ranks Korean regulation as the fifth most stringent in the OECD (Panel B). Korea ranks close to the OECD average for professional services (Panel C).

Barriers to entrepreneurship in Korea were the seventh highest in the OECD area in 2013 (Figure 1.11, Panel D). Entry barriers impede the creative destruction needed to boost productivity growth. A study covering 23 sectors in Korea found that entry regulations reduce both entry and exit rates. In addition, relaxing entry barriers raises employment and TFP growth, while exit also boosts TFP growth (Ahn, 2015; OECD, 2015f).

The PMR has a significant relationship with aggregate productivity across OECD countries; more restrictive regulation leads to lower aggregate productivity (Koske et al., 2015). Reducing Korea's PMR would stimulate private investment in innovative activities, the diffusion of knowledge, improved managerial performance and entry by new firms. The impact of regulation is greatest in the service sector. Several studies have found a significant negative relationship in Korea between the level of regulation and TFP growth in services

Figure 1.11. **Korea's product market regulations are relatively stringent**



1. 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.
2. Includes electricity, gas, telecom, postal services, rail, airlines and road transport.
3. Includes accounting, legal, architecture and engineering.

Source: OECD Product Market Regulation Database; Koske et al. (2015).

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(Park et al., 2014; Han and Inn, 2008). Moreover, regulatory reform has had a significantly positive effect on TFP in services such as finance, healthcare and professional services.

Because SMEs dominate services, the number of regulations applied to SMEs is large. In 2013, it was estimated that 8 921 regulations – 59% of the total number – applied to SMEs (Table 1.2). Economic regulations covering entry, price, trading and quality, which distort the functioning of markets, accounted for about one-third of SME regulations. Another third were social regulations on environment, industrial accidents, consumer safety and social discrimination. While such regulations are important to achieve non-economic objectives, they tend to have a heavier impact on smaller firms.

Table 1.2. There are a large number of economic regulations on SMEs[1]

In June 2013

Type of regulation		Number of regulations	Percentage 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**

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

Source: Cho and Kim (2013).

SME regulations can also be classified by firms' stage of development (Table 1.3). There are nearly 2 000 regulations applied to the creation of enterprises. Business activity regulations, focusing on administration and production, account for three-quarters of regulations facing SMEs. In sum, the creation of SMEs and their business activities have long been hindered by a large number of regulations.

Table 1.3. Economic regulations on SMEs by type of activity

In June 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 and company clean-up		89	1.1
Total		**8 291**	**100.0**

Source: Cho and Kim (2013).

Regulation is still an important issue in the manufacturing sector. Entry and exit barriers weaken competition in manufacturing, slowing the process of creative destruction, which is key to productivity growth (B. Lee, 2014). Indeed, the entry rate in manufacturing fell significantly from 22.7% in 2001 to 15.3% in 2011. In industries where the entry rate is below average, such as beverages (10.1%) and medical devices (10.4%), TFP growth was negative. In contrast, in industries with above-average entry rates, such as apparel (16.7%) and electronic equipment (16.4%), TFP growth was positive. Lowering entry barriers, therefore, would boost productivity.

Recent regulatory reform initiatives by the government

Regulatory reform has long been stymied by conflicts between competing interest groups and excessive reliance on regulation as the best way to resolve problems. For example, some reforms, such as allowing telemedicine for patients in rural areas, have been pending for a decade. Moreover, legislation intended to reform the service sector, such as the "Service Sector Development Framework Act" submitted in 2012, is still pending in the National Assembly. Opposition to reform of social services, such as health, reflect concerns that it will undermine the public provision of such services. In addition, some fear that regulatory reform will open the door to further expansion by the *chaebols*. Two key regulations that large firms find most onerous – restrictions on their activities in certain sectors in order to protect SMEs and limits on construction in the Seoul metropolitan area – have strong political support to achieve non-economic objectives. Perhaps most importantly, the Sewol Ferry tragedy is casting a long shadow over debates on regulatory reform.

The government launched a comprehensive regulatory reform effort in 2013 based on two priorities: i) promoting the development of a creative economy and encouraging investment in the service sector; and ii) strengthening regulations related to safety, the environment and consumer protection to assuage public concerns. In 2014, this was supplemented by two additional objectives:

- Concentrating regulatory reform in promising service industries (see below);
- Focusing reform on core regulations that hinder business activities.

To achieve these objectives, the government pledged to reduce the number of economic regulations, which totalled around 10 000 in 2014, by 10% by January 2015. To accelerate regulatory reform, it also introduced a range of new initiatives (Box 1.1).

However, the economic burden of regulation depends more on the quality of regulation than on their number. The government's focus thus shifted in 2014 from quantitative to qualitative targets. It launched the "cost-in, cost-out" (CICO) system. This approach, a type of regulatory budget, is similar to the approach of the United Kingdom; any new regulation that is expected to impose a direct incremental net cost on business must be offset by measures that provide savings that are at least equal to that amount. Estimates of the costs and savings are found in the Regulatory Impact Assessments (RIAs) that have been required by law since 1988. Certain regulations, such as those related to protecting people's lives and safety, are exempted. CICO was introduced on a pilot basis in eight ministries and agencies in July 2014 and expanded to 15 in April 2015. If the system is judged to be a success, it will be extended to most other ministries in 2016.

The government announced a package of "Measures to Stimulate Investment: Fostering Promising Service Industries" in August 2014 (MOSF 2014). Seven service

Box 1.1. **Regulatory reform initiatives**

The Regulatory Reform Committee (RRC), established in 1998, has set the direction for regulatory reform. The RRC, which consists of 19 private-sector experts and six government ministers, is responsible for responding to public opinion, reviewing new and amended regulations and evaluating each ministry's efforts to improve regulations. Given the renewed priority attached to regulatory reform, the government has launched a range of initiatives to supplement the work of the RRC:

- *The Regulatory Reform Ministerial Meeting*, which is chaired by the President, includes relevant ministers, directors of major economic organisations, academic experts and the general public. The meetings, which began in March 2014, focus on priorities for job creation and economic revitalisation via regulatory reform. Thus far, four meetings have been held.
- *The Regulatory Guillotine* solicits reform ideas from major business organisations. Of the 329 proposals made during the first and second rounds, 189 regulations were improved or eliminated by the end of 2015. However, of the 112 regulations improved or eliminated during the first round, the government estimated that only 18 will boost investment and employment.
- *The Thorn under the Nails* initiative aims at addressing chronic regulatory problems that are burdensome to small firms. Of the 426 proposals received, 386 had been resolved by the end of 2015.
- *The Regulatory Reform Sinmungo*, which was introduced in March 2014, allows citizens to directly propose regulatory reforms. Once an idea is submitted, the relevant ministry has two weeks to determine whether to pursue the reform. If so, it must be resolved within three months. Even if the proposed reform is not accepted, the Office for Government Policy Co-ordination (OPC) has to consider the merits of the proposal. Finally, the RRC can recommend that the regulation be improved. In addition to the three-part approach, this system is unique in several aspects. *First*, ministry officials must respond to citizens' proposals using their own name, leading to increased accountability and transparency. *Second*, it created a single window for receiving regulatory reform ideas to ensure that proposals are not lost in the wrong ministry. The number of citizen requests for specific regulatory reform increased from 300 in 2013 to 7 963 (excluding overlapping proposals) since the launch of Sinmungo in 2014. Moreover, the acceptance rate for such proposals rose from 8% in 2013 to 38%.
- A *change in regulatory reform principles:* The government is expanding the sunset rule, moving from *ex ante* to *ex post* regulation and reviewing all economic regulations from a zero base. In addition, Korea is shifting from a positive-list regulatory system, which specifies which activities are allowed, to a negative-list approach, which specifies the activities that are prohibited.
- *Regulatory information disclosure*: The establishment of a regulatory information portal allows the public to follow regulatory developments in real time.

industries were selected based on their expected ability to create jobs and enhance Korea's growth potential (Box 1.2). Regulatory reforms in these industries are aimed at promoting market competition and pioneering new export markets. The emphasis on overseas markets is aimed at expanding the size of the service sector while limiting the need for domestic reforms that would produce winners and losers. Regulatory reform should play an important role as nearly half of the regulations covering the service sector are applied to the seven promising industries. Given that past initiatives to target specific services for growth have not had a significant impact on the service sector, it is important to focus on framework conditions, the innovation system, human capital and SME policies to increase productivity in the entire service sector.

Box 1.2. **Current government's policy direction for regulatory reform in the service industry**

Reform measures for services are decided by the "service-sector advancement committee" that is controlled by the Ministry of Strategy and Finance (MOSF). Its 2014 initiative established quantitative targets for 2017 in each of the seven promising sectors (Table 1.4). To achieve these targets, 135 tasks were outlined, which aim to create new markets, provide customised government support and promote the growth of successful sectors. Progress toward the 2017 targets was achieved in four of the promising sectors in 2014. The main policies include:

- *Medical care*: i) enable hospitals and other healthcare providers to establish for-profit hospital subsidiaries; ii) ease regulations to allow the establishment of foreign-owned hospitals in Jeju island and in the Free Economic Zones; iii) attract foreign patients and make Korea the premier medical tourist destination in Asia by enacting the "Special Act for International Medical Care"; and iv) promote the establishment of Korean medical institutions overseas to promote exports of medical technology.
- *Tourism and culture*: i) expand tourism infrastructure in order to capitalise on the increasing popularity of Korean culture (the Korean wave); ii) reform regulations related to the construction of resort complexes; iii) attract global theme parks by establishing incentives and relaxing regulations; and iv) promote tourism in mountainous areas.
- *Education*: i) eliminate regulations and discrimination in order to encourage foreign universities to open campuses in Korea; and ii) increase the number of foreign students studying in Korea.
- *Finance*: i) create a service industry support fund with KRW 3 trillion (USD 2.6 billion) of public money over the next three years; and ii) promote the listing on stock markets of enterprises with strong growth potential by increasing incentives and revising regulations.
- *Logistics*: i) increase the number of logistics parks; ii) develop the Incheon International Airport Free Trade Zone as a global logistics hub by introducing high-speed freight trains and attracting global distribution centres; and iii) allow freight vehicles to use an electronic toll payment system.
- *Software*: i) encourage private-sector investment in software industries and ICT by establishing high-technology communities in Busan, Pangyo and Songdo in 2014; ii) approve the launch of new TV home shopping channels; and iii) expand overseas market opportunities for software companies.

Table 1.4. **Policy goals for the expansion of promising service industries**

Industry	Goal	2013 outcome	2014 outcome	2017 goal
Medical care	Boost number of foreign patients (thousand persons)	210.0	266.5	500.0
Tourism and culture	Increase number of foreign tourists (million persons)	12.0	14.2	20.0
Education	Attract world-class foreign universities	0.0	0.0	3.0
Finance	Raise the financial sector's share of value-added (%)[1]	6.7	n/a	8.0
Logistics	Increase sales of the logistics sector (trillion KRW)	92.0	91.7	135.0
Software	Exports of software (billion USD)	4.0	5.3	7.0

1. The data in the 2013 column are for 2012. Data for 2013-14 are not yet available.
Source: Ministry of Strategy and Finance (2014).

Initial results from the recent regulatory reform initiatives

The government achieved its goal of cutting the number of economic regulations (9 876) by 10% in the year to January 2015. Moreover, nearly a third of the more than 10 000 regulatory reform suggestions made through the Regulatory Reform Shinmungo since March 2014 have been accepted for consideration, leading to the amendment of laws underpinning 2 377 regulations. In addition, the Thorn under the Nails, Regulatory Guillotine, and Regulatory Reform Ministerial Meeting (along with other meetings chaired by the president), have examined 796 regulations (Table 1.5). However, less than a third were in the service sector. Of the 245 service-sector reforms addressed, reviews of 189 have been "completed", which means that they were left unchanged, improved or abolished. The number of service-sector regulations examined amounted to only 5.7% of the total number of regulations in services. Of those reviews, around three-quarters have been completed. Regulatory reform in services, where the productivity gains are estimated to be the greatest, has thus lagged behind. Meanwhile, 247 new regulations covering services have been registered since 2013, with the largest share (91) in the finance and insurance sector. In sum, the net number of regulations covering the service sector has increased.

Progress in regulatory reform has also been achieved at the local level. Of the 6 440 regulations based on local ordinances and rules that were identified in 2014, around half have been improved. Information on the progress of reform is available on the regulation information portal. The site also has maps showing the progress of local governments in improving regulation. The ranking of 243 local governments by their progress has sparked competition among them.

Table 1.5. **The service sector accounts for less than one-third of regulations that have been examined**

Between February 2013 and December 2015

					Status of service-sector reforms	
		Total (A)	Services (B)	Services' share (B/A) %	Review completed (C)	Per cent (C/B)
Meetings chaired by the president	Regulatory Reform Ministerial Meeting (1st-4th)	90	41	45.6	32	78.0
	Trade and Investment Promotion Organisation	22	17	77.3	13	76.5
	National Science and Technology Advisory Council	6	0	0.0	0	n.a.
	National Economic Advisory Council	4	0	0.0	0	n.a.
	Sub-total	122	58	47.5	45	77.6
On-site meetings		9	3	33.3	2	66.7
Thorn under the Nails (1st-4th)		428	94	22.0	79	84.0
Regulatory Guillotine (1st-2nd)		237	90	38.0	63	70.0
Total[1]		796	245	30.8	189	77.1

1. Excludes regulatory reforms taken through the Regulatory Reform Shinmungo.
Source: Data in the government's Regulatory Information Portal, re-classified and calculated by Park (2015b) and the OECD.

In June 2013, the government identified 1 845 regulations on business activity and found that only 21.3% were negative-list regulations, which prohibit certain activities (Table 1.6). After reviewing the positive-list regulations, which allow certain activities, 204 were transformed into negative-list regulations, bringing their share to 32.4%, thereby reducing the burden of regulations on firms. Another 228 positive-list regulations were improved by expanding the scope of activities that they allow. Nevertheless, about two-thirds of regulations on business activity remain positive-list regulations.

The government has made significant progress in expanding the use of a sunset rule. The initial rule introduced in 1997 stated that when a new regulation is created or an existing one reinforced, the government can: i) specify the date when the regulation will automatically expire; or ii) specify a date for its review within five years. Most regulations, though, are excluded from the sunset rule. At the end of 2013, the sunset rule covered 15.2% of the 15 265 registered regulations, with only 57 in the category of automatic expiration. At the beginning of 2014, the sunset rule was extended to existing regulations

Table 1.6. **The number of negative-list regulations on business activity has increased**

	Total regulations on business activity	Number of negative-list regulations in June 2013	Number of negative-list regulations after reform	Positive-list regulations that were improved
Total	1 845 (100.0%)	393 (21.3%)	597 (32.4%)	228 (12.4%)
Entry requirement[1]	746 (100.0%)	118 (15.8%)	298 (39.9%)	103 (13.8%)
Business management[2]	1 099 (100.0%)	275 (25.0%)	299 (27.2%)	125 (11.4%)

1. Includes regulations on location of businesses, their funding and procedures for creating new firms and hiring workers.
2. Includes regulations on firms' technology, business administration and logistics, the health of their workers, the environment and other aspects of business activity.

Source: Office for Government Policy Co-ordination (2013).

and the government set a goal of increasing its coverage to at least 30% by end-2014 and to 50% by end-2017. The first goal was met as the number of regulations covered by the sunset rule more than doubled to 32% by end-2014. However, only 70 of the 4 767 regulations now covered are subject to automatic expiration.

Directions for regulatory reform

Any reform undertaken in Korea must begin with the government. As the government stated in launching the "Key Policy Directions for Financial Regulatory Reform" in 2015, the financial supervisor must change its role from coach to referee, who ensures an appropriate framework to promote competition (FSC, 2015b). This should apply to all regulations. Presidential administrations typically begin with ambitious goals for reform, but subsequently find their plans blocked by the bureaucracy, which defends its control over the economy. Consequently, the fundamental priority is to change the role of the ministries in the economy (Park, Lee and Kim, 2015). Korea's traditional industrial policy and government-led growth is increasingly less effective in a mature economy competing in a globalised world driven by technological change (OECD, 2007).

OECD experience shows that achieving progress in regulatory reform in the face of strong opposition from diverse interest groups requires continuous effort by the government to ensure that the regulatory framework adjusts rapidly to changing conditions. Experience in OECD countries also shows that regulatory reform is most successful when (OECD, 2010):

- The authorities have a clear mandate for change and the capability to implement that change.
- The government demonstrates the need for change and the desirability of their proposed solutions to the public and key stakeholders.
- The government provides strong evidence and analysis underlying the arguments for reform.
- There are institutions in place that can manage the reform effectively, from design to implementation.
- The reform has clearly identifiable "owners" and "champions", in terms of both politicians and institutions responsible for taking it forward.

- There is a clear timeframe for design, adoption and implementation.
- There is a strategy for engaging those opposing reform or threatened by it, either to persuade them to support the measures or to overcome their objections, including through compensation.

In the case of Korea, there is scope for progress in each of these areas. As in many other countries, the government does not systematically carry out estimates of the economic gains from planned reforms. Providing strong evidence of the benefits from reform would lead to faster progress in regulatory reform.

As discussed above, the government's main objective is to prevent any further increase in the regulatory burden through the CICO system that is being gradually introduced since 2014. However, to promote productivity growth, it is important to reduce the regulatory burden from its currently high level, according to the OECD's PMR index. Regulatory reform should focus on the core measures that hinder the reallocation of resources, including through the entry and exit of companies and other regulations that are not market-friendly. An assessment of the impact of reform on competition is a useful tool is this regard.

Achieving the government's objective of capping or even reducing the regulatory burden requires making the CICO as comprehensive as possible. *First*, it should be extended to all 41 ministries and agencies. *Second*, all regulations should be listed and covered by the CICO. *Third*, it should cover local government regulations to the extent possible. More generally, giving local governments a larger role in setting regulation may reduce its burden, as local authorities are closer to the people affected by the burden and have an incentive to increase the competitiveness of their jurisdiction.

The effectiveness of CICO depends crucially on accurate estimates of the cost of new regulations and the gains from those that are eliminated. Since 1998, ministries have been required to submit RIAs to the RRC for any new or strengthened regulation. The RIA must include the rationale for the regulation, a review of options, a cost-benefit analysis and an assessment of its expected effectiveness. However, around 80% of RIAs have poor cost-benefit analysis according to a 2011 study by the National Assembly Budget Office. The success of CICO depends on making RIAs an effective tool for policymaking, in part by increasing the economic staff at each ministry to raise their quality (Lim, 2015).

Regulatory quality in Korea lags behind the highest-scoring countries in the implementation of key regulatory quality tools. In particular, Korea needs an explicit and mandatory methodology for developing new laws and regulations. Over 2011-13, only 16% of new laws and regulations were initiated by the executive branch and thus subject to quality control measures, such as RIAs and public consultation (OECD, 2015c). Similar standards should be applied to laws and regulations initiated by the National Assembly. Moreover, competition assessments by the Korea Fair Trade Commission (KFTC) are mandatory for new or amended proposals by the executive branch, but legislation initiated by the National Assembly is exempted. This loophole should be eliminated.

Careful review of regulations to ensure that they are clear and transparent could help reduce the role of administrative guidance. In 2005, the government published a guideline aimed at improving legislation that is vague and thus creates opportunities for guidance. In addition, the decision to ban informal administrative guidance in the financial sector could be extended to other sectors. The first step would be to make clear that firms that do not follow administrative guidance will not be punished.

Shifting from positive-list regulations to a negative-list approach would also reduce the scope for administrative guidance by making clear what actions are not allowed. With two-thirds of regulations on business activity still using a positive-list approach, the scope for improvement is large in this regard. In addition, the coverage of the sunset rule should continue to be expanded, in line with the government's target, while including the number subject to automatic expiration from its current level. The clause requiring that regulations be periodically reviewed should be applied to nearly all regulations.

Other aspects of framework conditions to promote productivity growth

Openness to international competition

The liberalisation of barriers to international trade and investment broadens the scope for knowledge diffusion and technological transfer across borders, thus allowing firms to tap into innovation by firms at the global frontier. In addition, it facilitates participation in global value chains (GVCs), which promote the diffusion of technology (OECD, 2015f). International openness also encourages more efficient resource allocation; firms that cannot compete in the global market downsize, while those that can, expand production. The increase in the capital stock in a firm that experienced a 10% increase in patents ranged from 1.7% to 3.6% depending on the strictness of trade and investment barriers (Andrews et al., 2014). Countries that are open to trade and investment can benefit more from foreign R&D and new technologies, spurring domestic innovation (Jaumotte and Pain, 2005). These benefits are maximised by pro-competition PMRs, which intensify incentives for firms to incorporate foreign technologies.

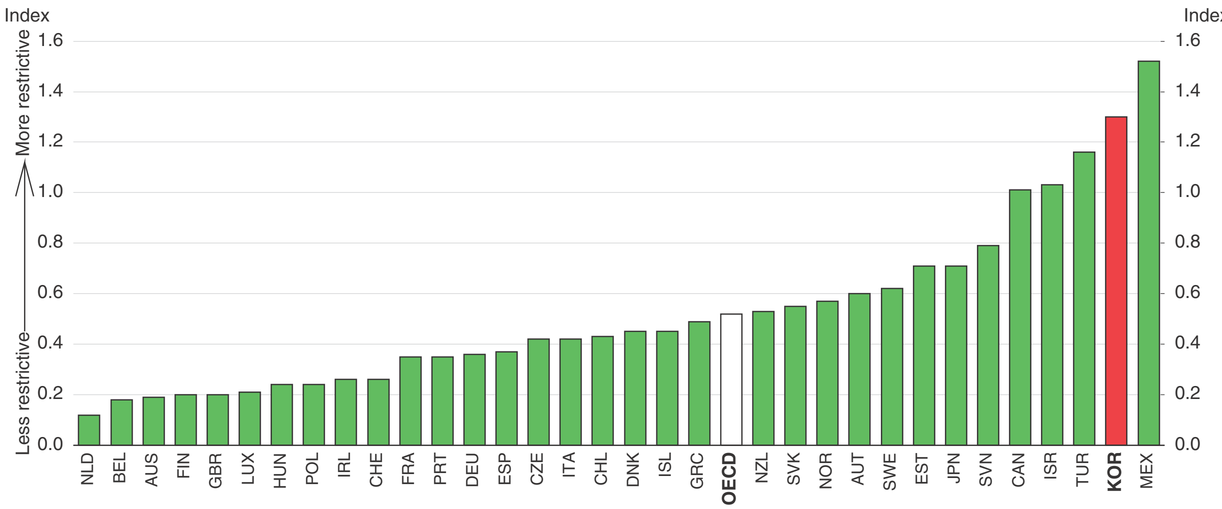
Korea has pursued trade liberalisation through free trade agreements, notably with the European Union (2011), the United States (2012), Australia (2014), Canada (2014), New Zealand (2014), Turkey (2015), China (2015) and Vietnam (2015). The agreement with China should increase Korea's integration within "Factory Asia" and in GVCs. Indeed, the foreign content of Korean exports was 42% in 2011, the highest among G20 countries (OECD, 2015a). At the same time, Korea's index of barriers to trade and investment was the second highest in the OECD area in 2013 (Figure 1.12). Relaxing trade barriers on key service and network industries would yield significant productivity benefits. Korea's service trade restrictiveness index is below the OECD average in 11 of the 18 sectors, but still above the OECD average in some sectors that play a key role in global value chains, such as maritime and air transport, courier services and legal services (Figure 1.13). Barriers to foreign entry include equity restrictions in sectors such as telecoms and air transport. Some sectors are also less competitive because of state control of major firms, such as the Korea Railway Corporation. Barriers to trade and investment help to explain why the stock of FDI as a share of GDP in Korea was the third lowest in the OECD area, at 13% in 2014. In addition to explicit barriers, the low stock of FDI reflects the business environment and other domestic restrictions, making regulatory reform key to attracting more FDI.

Labour market flexibility

Innovation requires continuous reallocation of labour and other resources within and across firms and sectors. There is considerable evidence that employment protection has a major impact on labour flows (Martin and Scarpetta, 2012). Low levels of protection allow resources to flow to their most productive uses, benefiting firms that undertake innovations

Figure 1.12. **Korea's barriers to trade and investment are the second highest in the OECD**

In 2013[1]



1. From the *OECD Indicators of Product Market Regulation*, a comprehensive and internationally-comparable set of indicators.
Source: *OECD Product Market Regulation Database*; Koske et al. (2015).

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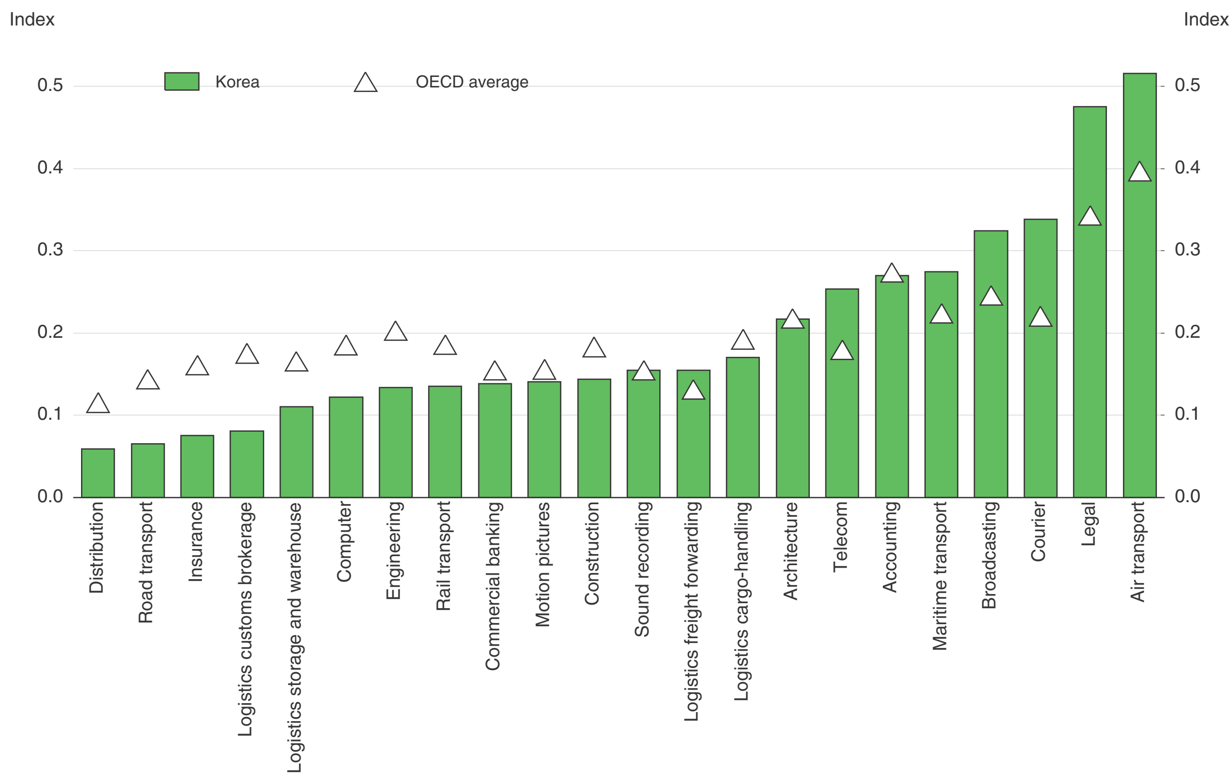
that require large employment adjustments. In contrast, employment protection has negative impacts on innovation:

- It lowers R&D expenditure, particularly in innovative sectors (Andrews and Criscuolo, 2013). Firms in industries characterised by rapid technological change place a high value on flexibility, given their tendency to experiment with uncertain technologies. By raising exit costs, stringent employment protection makes experimentation less attractive.
- It reduces the ability of innovative firms to attract the resources needed to implement and commercialise new ideas. The increase in the work force in a firm that experienced a 10% increase in patents ranged from 0.3% and 2.2% depending on the strictness of employment protection, while the increase in capital ranged from 0.9% to 3.3% (Andrews et al., 2014). Moreover, the negative effect of employment protection falls disproportionately on young firms.
- It discourages investment in technologically-advanced innovation by multinational enterprises.

In Korea, employment protection has been a key reason for the rise in the share of non-regular workers, such as fixed-term, dispatched and part-time workers, to around a third of employment (Chapter 2). Firms hire non-regular workers in large part to enhance employment flexibility and avoid the cost of laying off regular workers, who receive high employment protection as a result of government policies, business practices, social customs and labour unions (Koh et al., 2010). Consequently, the share of temporary workers in Korea in 2014 was 22%, double the OECD average. The 2014 World Economic Forum Global Competitiveness Report ranked Korea 106th in its flexibility in hiring and firing (World Economic Forum, 2015). Relaxing employment protection would increase R&D investment in innovative sectors and enable innovative firms to attract the resources necessary to commercialise new ideas, thereby promoting higher productivity and output growth. In addition, reducing temporary employment would encourage firm-based training and human capital accumulation, thereby enhancing innovation.

Figure 1.13. **Korea's service trade restrictiveness is relatively high in some sectors**

In 2015 or latest year



Note: The STRI indices take values between zero and one, one being the most restrictive. They are calculated from the STRI regulatory database which contains information on the 34 OECD countries and some emerging economies. The STRI database records measures taken on a "Most Favoured Nation" basis while excluding preferential trade agreements. Air transport and road freight cover only commercial establishments. The data have been peer reviewed by OECD member countries.

Source: OECD (2016b).

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Upgrading the innovation system

Korea is the world's most R&D-intensive country, investing 4.3% of GDP in R&D in 2014. Moreover, the business sector accounts for three-quarters of the outlays, one of the highest shares in the OECD area. Government support for business R&D as a share of GDP is the highest in the OECD. The emphasis on education and R&D has made Korea a top player in 11 of the top 20 fastest accelerating technologies (OECD, 2015d). Korea's Third Science and Technology (S&T) Basic Plan (2013-17) seeks to diversify the Korean economy by orienting policies towards a wider range of sectors and technologies. To increase productivity, it is necessary to fully leverage Korea's large investment in innovation by increasing the role of SMEs and services in innovation.

Expanding the role of the service sector and SMEs in innovation

Large manufacturing conglomerates in Korea are the main source of business R&D, while the service sector, SMEs and young firms play much smaller roles. Over 2011-13, only 28% of service firms in Korea introduced some type of innovation, the lowest in the OECD (OECD, 2015d). The manufacturing sector accounted for 90% of R&D, compared to only 7% in services, far below the OECD average of 38%. Only 6.4% of Korea's service-sector firms were engaged in R&D activity in 2014, compared to about one-quarter in manufacturing,

Table 1.7. **Service firms are less active in R&D and innovation than those in the manufacturing sector**

Percentage of all firms over 2011-13[1]

	Service sector	Manufacturing sector
R&D activity rate	6.4	22.3
Innovation activity rate in four areas	27.0	30.9
Product innovation	5.2	17.1
Process innovation	3.7	7.4
Organisational innovation	16.9	16.4
Marketing innovation	13.9	12.1

1. The R&D and innovation activity rates are the number of firms taking part in each activity divided by the total number of firms. The lower rate for services reflects to some extent the fact that their nature is different from manufacturing.

Source: Cho et al. (2014).

according to a government survey (Table 1.7). Moreover, the share of service firms engaged in product and process innovation is relatively low, although services do match manufacturing in organisation and marketing innovation. Some studies show that low R&D is a key explanation of low productivity in services (Baek and Joo, 2014b).

Large firms account for more than two-thirds of R&D in Korea, with core SMEs (excluding micro-firms, those with less than five workers) accounting for another 30%. R&D per large firm in 2010 was more than 100 times greater than in core SMEs. The small role of SMEs reflects their weaker financial position and limited technological capacity. Moreover, their incentive to invest in R&D and take risks is weakened by the fears that any efficiency gains will only improve the profit margins of larger companies, who force subcontractors to lower prices in order to sustain the profit margins of large companies.

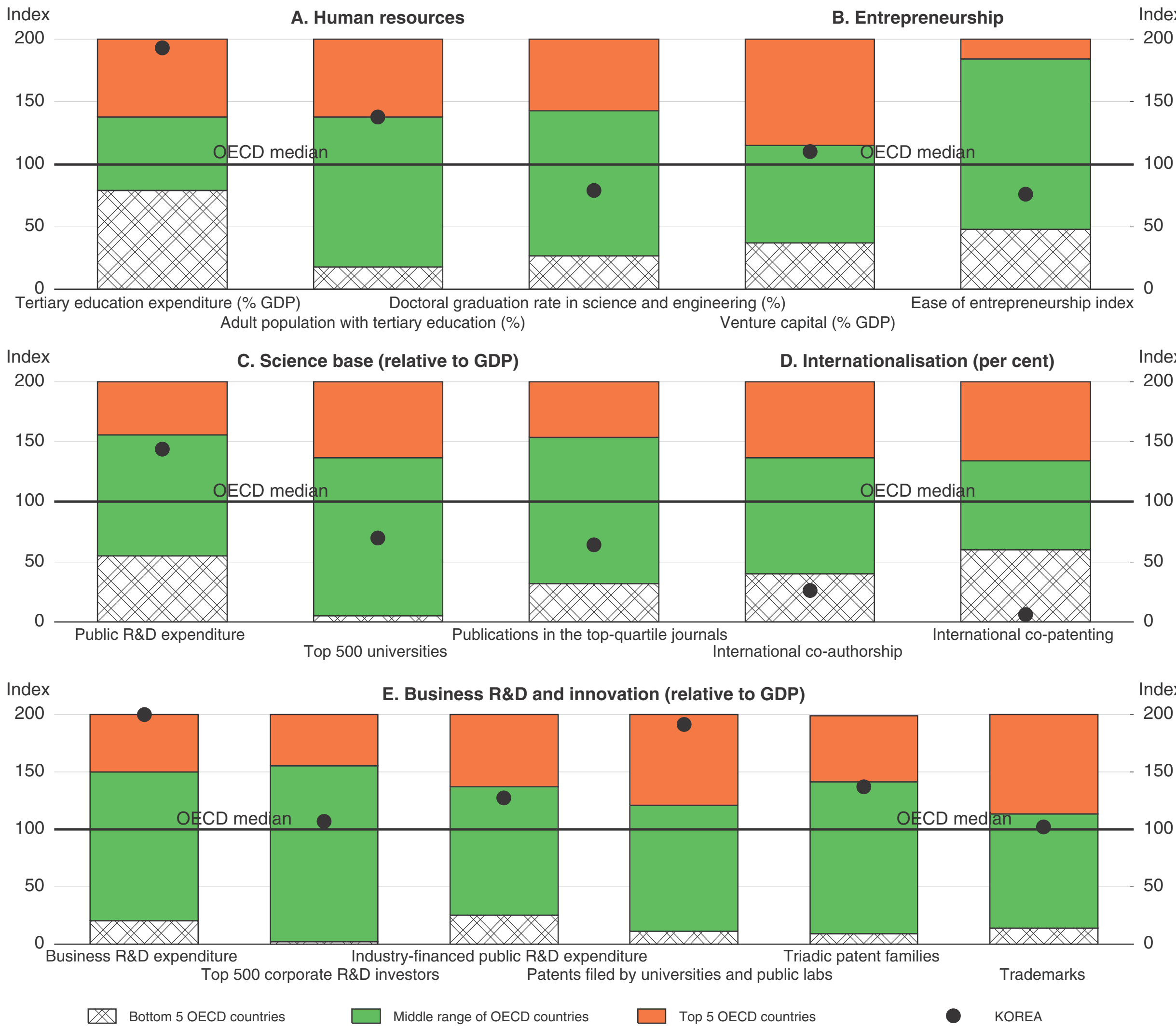
Given the obstacles to R&D by SMEs, the government has launched a number of initiatives, including: i) increasing the share of SMEs in publicly-financed R&D from 12.4% in 2011 to 18.0% in 2017; ii) requiring government research institutes to raise the share of their budgets devoted to SMEs from 7% in 2012 to 15% by 2017; and iii) strengthening technological assistance for SMEs through extension programmes and innovation vouchers. Increased public spending on R&D related to SMEs and services could act as a catalyst to induce more private-sector R&D. Moreover, R&D incentives should not discriminate against certain service industries. For example, R&D tax credits, which are limited to "knowledge-based services", should be extended to the entire sector, as is the case in manufacturing. Furthermore, Korea's sizeable R&D tax credit, at 9.6% of total national tax credits in 2014, is not well tailored to the needs of young firms. In particular, the lack of carry-over provisions or cash refunds inhibits the use of this credit by young and small firms, as such businesses typically lose money in the early years of an R&D project. The design of these incentives should be reviewed to increase their effectiveness in stimulating innovative entrepreneurship (OECD, 2014a).

Improving the quality of universities and government research institutes (GRIs)

Korea is well-known for its high university graduation rates and total spending at the tertiary level in 2012 was 2.3% of GDP, one of the highest in the OECD. The share of high school graduates advancing to tertiary education peaked at 83% in 2008, suggesting an over-emphasis on higher education. Korea still has few world-class universities and produces few high-impact publications by OECD standards (Figure 1.14, Panel C). While universities employ around three-quarters of PhDs in Korea, they performed only 9.2% of

Figure 1.14. **An overview of Korea's national science and innovation system**

Normalised index of performance relative to the median values in the OECD area in 2014 (Index median = 100)



Note: Normalised index of performance relative to the median values in the OECD area, which are set at 100. The top performer is set at 200 and the lowest at zero. The fifth-highest performer in the case of the "Top 500 universities" had a score of 137 relative to the OECD median, while the fifth lowest had a score of 5. Korea, with a score of 70, was in the middle range.

Source: OECD (2014c).

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R&D in 2014 (Table 1.8), about half of the OECD average. A greater university role in R&D would also enhance basic research, which is the key to breakthrough innovations, such as the Internet and aerospace. In Korea, only about 20% of basic research takes place in universities compared to 50% to 75% in other countries (OECD, 2015d).

The share of high school graduates advancing to tertiary education fell to 71% in 2013. Moreover, the number of high school graduates will fall below the current admission quotas for tertiary institutions by 2020. Korea has too many tertiary institutions and those outside of Seoul struggle to fill their student quotas (OECD 2009). Most institutions run operating deficits. It is essential, therefore, to consolidate the tertiary sector while raising quality. However, only six of Korea's approximately 200 universities have been closed since 2010. Enhancing the autonomy of tertiary institutions and promoting transparency

Table 1.8. **Flows of R&D funds in 2014**

A. R&D funding

Source of funding	Allocation of R&D spending by sector performing it				
	Share of total R&D spending	Government	Universities	Business enterprises	Total
Government[1]	23.3	51.1	31.6	17.3	100.0
Universities	0.7	3.6	92.8	3.6	100.0
Business enterprises	75.3	0.8	1.3	97.9	100.0
Foreign sources	0.7	28.1	9.2	62.7	100.0

B. Sector performing R&D

Sector performing R&D	Funding source for R&D performed					
	Share of total R&D performed	Government	Universities	Business enterprises	Foreign sources	Total
Government[1]	12.7	93.6	0.2	4.7	1.6	100.0
Universities	9.0	81.3	6.7	11.2	0.7	100.0
Business enterprises	78.2	5.2	0.0	94.2	0.6	100.0

1. Includes private non-profit institutes.
Source: OECD R&D Statistics Database.

and competition would help ensure that consolidation at the university level is accomplished through the closure of poorly-performing institutions. *First*, it is important to cut public funding of poorly-performing tertiary institutions, ensure a well-functioning accreditation system and enhance transparency about each institution's educational performance to promote consolidation. *Second*, the top-down system of regulation should be relaxed to encourage autonomy, innovation and flexibility. In particular, the government should eliminate the quotas that it imposes on each tertiary institution's student enrolment to facilitate consolidation (Jones, 2013).

One reason why Korea produces few high-impact publications is because public research has been skewed towards applied and development-oriented research performed largely in GRIs. With the government committed to expand public R&D to KRW 92 trillion (6.2% of 2014 GDP) over five years, it is important to take steps to upgrade the efficiency of public R&D investment by improving the evaluation of the performance of GRIs and national R&D programmes. In 2011, there were 41 619 government-funded R&D projects, with total spending exceeding 1% of GDP. Of the total, more than a third went to the 27 GRIs, whose performance has been criticised (OECD, 2014a). GRIs have failed to meet private-sector expectations. It is important to clearly define the role of GRIs and improve their steering and incentives. GRIs may have a role to play with SMEs and the service sector, where R&D is low.

Links between universities, GRIs and enterprises have traditionally been underdeveloped, and efforts are required to strengthen these relationships to improve technology transfer and commercialisation. For example, 97.9% of the R&D financed by enterprises was performed in the business sector in 2014, compared to only 1.3% at universities and 0.8% at GRIs, indicating weak linkages in the R&D system. Although Technology Licensing Offices have increased the transfer of technology from the 30 major universities to industry, only 5% of company patents cite university-developed technology, compared to around 9% in Canada and the United States (OECD, 2014a). Increased emphasis on university research should be accompanied by greater university-business co-operation in a range of areas, including accreditation and curriculum (Jones, 2013).

Establishing an eco-system for co-operation among GRIs, universities and industry to promote wider use of public R&D results is essential. Current initiatives, such as the programme to support exchanges of researchers between universities and GRIs, and the plan to establish several joint industry-university-GRI R&D centres, are helpful in this regard. A fundamental goal should be to reorient GRIs' research towards areas where it can be productively used, particularly by SMEs and service-sector firms, as noted above.

Expanding international collaboration in research and patenting

Better integration with global science and innovation networks is a priority. Only 0.7% of R&D performed in Korea was funded from abroad (Table 1.8). Korea's levels of international co-authorship and co-patenting are among the lowest in the OECD (Figure 1.14, Panel D). A traditionally strong focus on applied research performed largely in GRIs and the weak internationalisation of Korean universities explain the low level of international co-authorship. The low level of patent applications with foreign co-inventors is partly due to Korea's conglomerate industrial structure, which tends to retain technology development within the group.

As Korea looks to build its fundamental research capacity and its firms work increasingly at technological frontiers, it needs to better tap into global science and innovation networks. Such an approach allows access to broader pools of knowledge at lower costs and allows firms to share risk (OECD, 2015d). 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.

Ensuring the effectiveness of government support

Direct government support for R&D creates risks associated with "picking winners". Given such risks, direct R&D support in the OECD area has fallen in recent decades. In Korea, direct support for business R&D is one of the highest in the OECD at 0.2% of GDP (OECD, 2015d). To prevent wasteful outlays, the allocation of direct support should be based on a competitive, objective and transparent selection process. Although this boosts administrative and compliance costs, subsidies allocated on a selective basis have a larger impact on firm productivity than automatic subsidies (Colombo et al., 2011), in part because they send a quality signal to private firms receiving public R&D support (Kleer, 2010). In Korea, 34 ministries and agencies run R&D programmes, each with their own selection process. Finally, it is essential to constantly evaluate the effectiveness of R&D policies to ensure good value for money.

Going digital to boost productivity

Building on its position as a world-leader in the provision of ICT goods and benefiting from extensive broadband deployment, Korea has great scope to harness the potential of the digital economy to drive productivity. Indeed, Korea has the highest number of broadband subscriptions (relative to population) with 100 Mbps or higher download speeds. In terms of total fixed broadband penetration, Korea ranks fifth among OECD countries. Korea's creative economy initiative calls for "combining science, technology and ICT to energise existing industries" and "developing new industries based on software and the Internet" (2014 *OECD Economic Survey of Korea*). Improved access to data and greater use of data can lead to greater economic value creation.

One of the goals of the creative economy strategy is to increase ICT adoption within SMEs. In Korea, only 15.3% of firms were engaged in sales via e-commerce in 2013, below the OECD average of 20.8%. While 34% of large companies (more than 250 employees) sold online, this was the case for only 15% of smaller companies (10-49 employees) (OECD, 2015d). In addition, cloud computing deserves special attention, as it can transform business operations by providing easier, more flexible and on-demand access to applications and computing power. The potential is particularly great for smaller firms. In 2014, more than 22% of businesses used cloud computing services in the OECD area. In Korea, however, the use of cloud computing is relatively low, particularly among small companies (Figure 1.15). The Internet of Things (IoT) is another area where Korea has great potential. In sum, a more pervasive and intensive use of digital technologies can increase efficiency in SMEs and improve their capacity to adapt to rapidly changing markets, thereby reducing the large labour productivity gap relative to big enterprises (OECD, 2015a).

Developing human capital to raise productivity

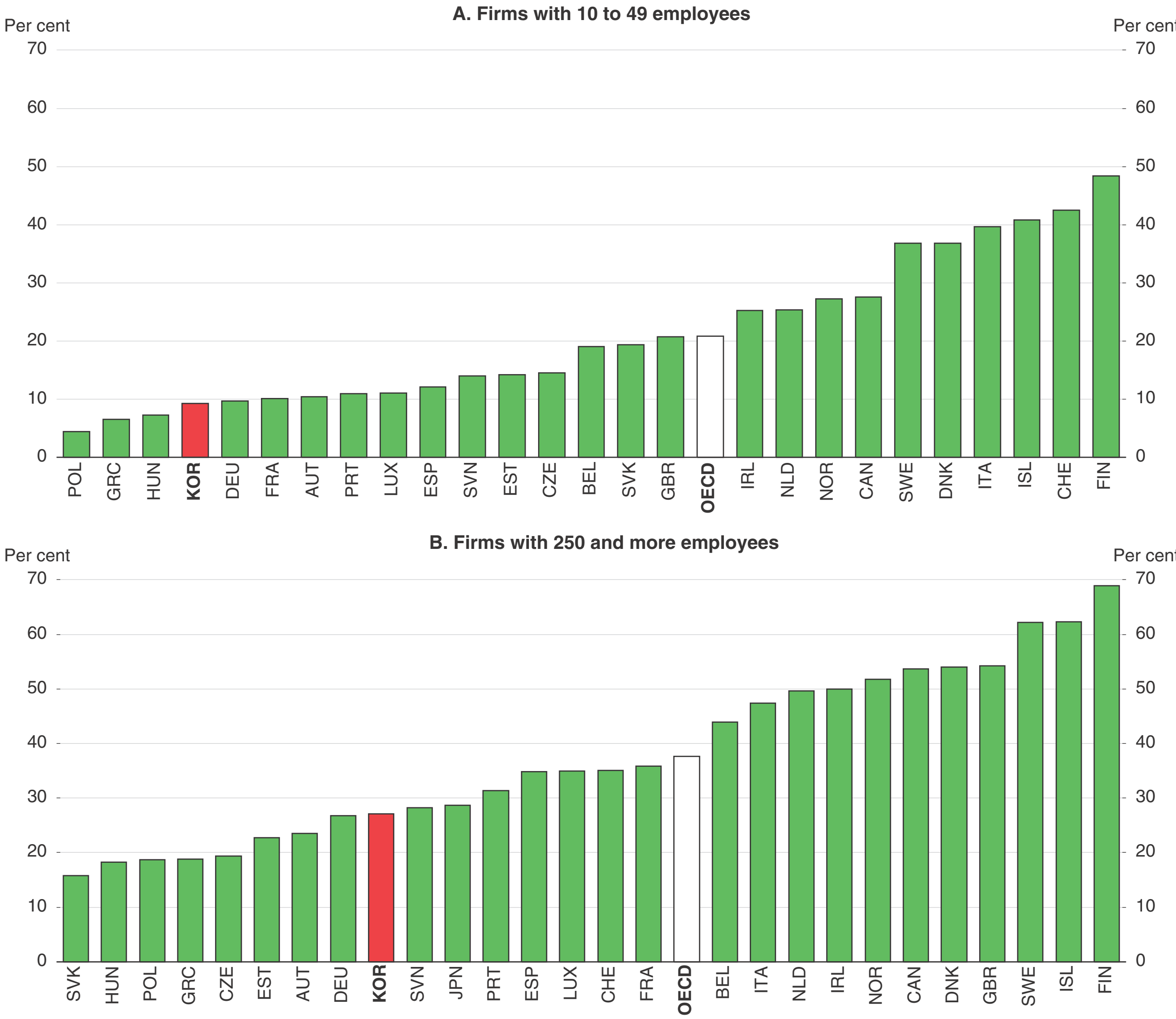
In the OECD PISA tests on reading, science and mathematics, an international comparison of 15 year-olds across countries, Korea is consistently near the top. Moreover, the performance of young adults (16-34) in the *OECD Survey of Adult Skills* (PIAAC) is also outstanding (OECD, 2013c), as the share of youth with tertiary education is the highest in the OECD. However, the gap between young adults and older persons is the largest in the OECD in terms of tertiary graduation rates and skill levels (Chapter 2). For the 35-44 age cohort, literacy proficiency is close to the OECD average, but then drops well below it from age 45 (Figure 1.16). Adult education and learning has been shown to have a large impact on literacy proficiency in Korea (OECD, 2015e). However, the participation rate in education and learning is lowest among the adults with the lowest skill levels, suggesting that Korea could reap significant gains by expanding such opportunities.

The low skill level of older workers holds back productivity in services and SMEs, given that once workers leave their careers at around age 50, a large share ends up in SMEs or in self-employment in the service sector. Indeed, 28% of those employed in 2011 were self-employed, one of the highest rates in the OECD and well above the average of 16%. Among the under-age 30 cohort, the self-employment rate is only 5% but for those over 50, it is 34%.

Korea is developing National Competency Standards (NCS), which identify the knowledge, skills and attitudes necessary to perform tasks by sector and level of industry. Thus far, 847 out of 887 NCSs have been completed and the standards will be continuously updated to ensure that they remain relevant. The NCS provides a strong basis for education and training, as junior colleges and vocational high schools are being supported in adopting NCS-based curricula. NCS have a key role to play in reducing the overemphasis on higher education (Jones, 2013), while providing a strong foundation for adult education and lifelong learning. Achieving these goals requires a whole-of-government approach that is explained in the *OECD Skills Strategy for Korea* (OECD, 2015e).

Figure 1.15. **The use of cloud computing services is low in Korea**

As a percentage of enterprises in each employment size class in 2014



Source: OECD (2015b).

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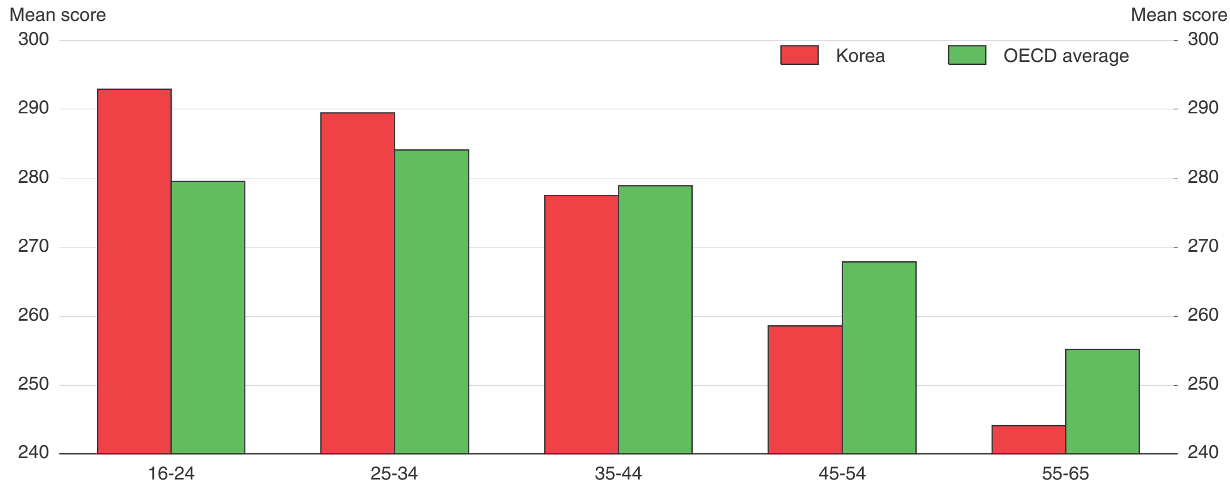
Another educational priority is developing skills necessary for entrepreneurship. The share of Koreans with a favourable view of entrepreneurship is one of the lowest in the OECD (Figure 1.17). In Korea, entrepreneurship is most often driven by necessity, reflecting the high share of older workers starting businesses compared to youth. Indeed, the number of start-ups founded by adults under the age of 30 accounted for less than 10% of all start-ups in Korea in 2014. Young people interested in starting new businesses often have to overcome the negative perception of parents, teachers and society in general, not to mention an adverse business and financial environment. Moreover, survey data indicate that Koreans perceive fewer entrepreneurial opportunities and are more fearful of failure. Government initiatives to make it easier for failed entrepreneurs to obtain loans should help reduce the fear of failure.

Figure 1.16. **Skills of older workers in Korea are well below the OECD average**



Source: OECD (2013c).

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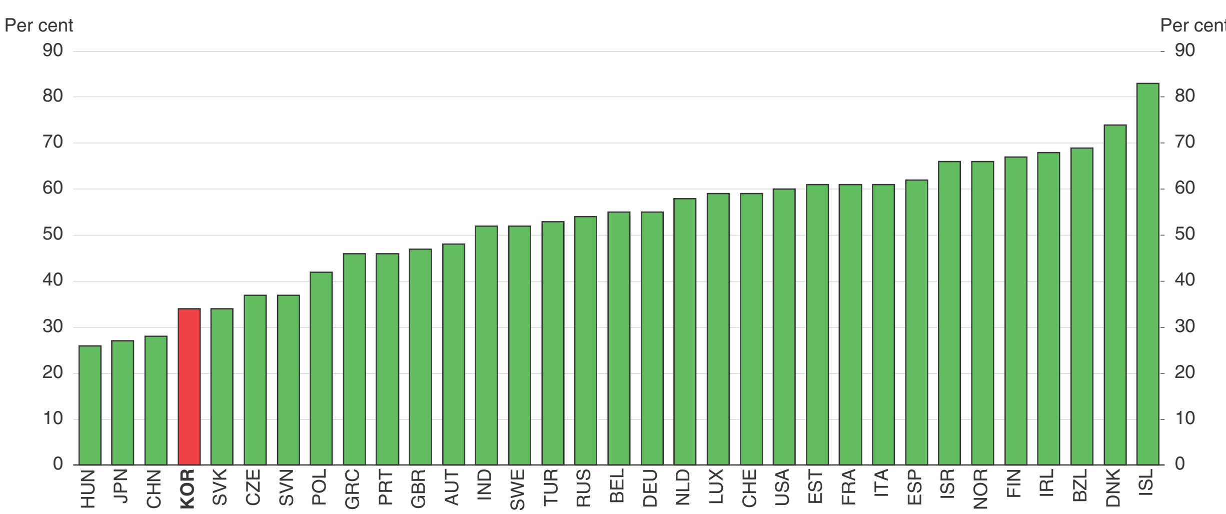
In addition, Koreans find themselves less capable of becoming entrepreneurs than in most other countries; only 40% of adults agree that school education provided the skills and know-how needed to run a business (OECD, 2015e). Schools need to provide more practical training for potential entrepreneurs in areas such as business management, negotiation and marketing skills, financing skills and an understanding of legal and regulatory frameworks. Korea is moving rapidly to address such weakness: from 2018, primary, middle and high schools will provide mandatory entrepreneurship education (M. Lee, 2015).

Figure 1.17. **Entrepreneurship education is needed in Korea to improve the image and skills of entrepreneurs**

Share of respondents with a broadly favourable image of entrepreneurs



Source: OECD (2013a).

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Policies to promote SMEs' productivity through innovation

The 2013 Creative Economy Action Plan aims to expand the role of SMEs. The government has long provided large-scale support to SMEs through public funds, credit guarantees and around 1 300 programmes. In addition, SMEs are assisted through: i) preferential treatment in public procurement; ii) lower tax rates at both the central and local government levels; iii) protection from the Korea Fair Trade Commission against market power abuses; iv) the right to hire foreign workers; and v) discounted prices for water and electricity. Despite such support, SME performance has deteriorated relative to large firms.

SME policies promote the survival of low-productivity small firms

There is considerable evidence that government support does not improve SME performance. A comparison of firms that received public financial support over 2003-09 with firms that did not found little difference in the performance of the two groups in terms of profitability and growth (KDI et al., 2011). Another study found that SMEs that received government support had higher survival rates in 2011 and, in some cases, higher sales and employment than firms not receiving support. However, their profits and wages did not improve and in some cases fell. Most importantly, TFP in firms receiving support was significantly less on average than in firms not receiving public support, suggesting that public subsidies fail to boost productivity (Chang et al., 2014). Meanwhile, another study found that SMEs receiving public support recorded improved financial performance such as higher revenue and operating profit ratios than firms without support (Nam et al., 2015).

Government policies that increase survival rates of low-productivity firms are detrimental to long-run efficiency. Focusing on the survival of existing SMEs works against market forces, which can lead to better outcomes. Slower output growth in 2008-09 contributed to the exit of 25 236 firms (Table 1.9). The more efficient firms (32 964 in total), which continued in business, expanded by taking over the resources of exiting firms. In addition, new firms entered the market, resulting in a slight net increase in the number of firms. Consqeuently, there were large increases in sales and profits over 2008-11.

Table 1.9. **Creative destruction in Korea's manufacturing and mining sectors**

	2008			2011			2008-11 percentage change in total
	Firms that continued through 2008-11	Firms that exited between 2009-11	Total	Firms that continued through 2008-11	Firms that entered between 2009-11	Total	
Number of establishments	32 964	25 236	58 200	32 964	25 419	58 383	0.3
Sales[1]	792.8	419.7	1 209.5	1 144.7	296.7	1 441.5	19.2
Profits	69.9	48.1	118.0	108.5	23.1	131.6	11.5
Employment[2]	1 578.2	839.1	2 417.3	1 761.6	766.7	2 528.3	4.6
Payment	55.8	25.8	81.7	70.2	19.8	90.0	10.2
Average wage[3]	35.4	30.8	33.8	39.9	25.8	35.6	5.4

1. Trillion KRW.
2. Thousand workers.
3. Million KRW.
Source: Chang (2015).

The emphasis on the survival of exisiting firms reflects the role of SME policy as a social safety net. The early departure of employees at firms – at age 53 on average – prompts a large number to invest their retirement allowance in small firms to provide income. Policy should instead focus on increasing productivity in SMEs to promote long-term growth (Chang, 2016), while reforming the labour market to extend the careers of workers and developing a social saftey net (Chapter 2). This requires an SME policy that corrects market failures, such as information asymmetries and abuses of market power (Chang, 2015). Achieving efficiency goals would also be promoted through other reforms to SME policy. In 2013, 14 central government ministries ran 201 programmes, while the 16 provincial governments and 130 SME-related organisations administered another 1 101 programmes, resulting in duplication and waste. *First*, a policy evaluation and feedback system is needed to improve the efficiency of SME programmes. *Second*, policy co-ordination is necessary to reduce the duplication of programmes. While the Small and Medium Business Administration plays the role of control tower, it is not impartial as it runs many programmes of its own. A higher level body should instead play this role. A government task force abolished 10 projects in 2014-15 and its efforts should be accelerated. *Third*, it is necessary to set limits on the number, duration and size of government programmes to encourage the long-run self-reliance of SMEs. The generosity of support to SMEs should be reduced.

Policies to improve SME financing

The government role is expanding, while problems remain in private-sector lending

SME policy is particularly focused on providing financing, given market failures that limit market-based funding (Jones and Kim, 2014). Financing of SMEs can be classified into three categories: indirect financing from financial institutions; direct financing from capital markets; and government financing (Table 1.10). Government financing increased 42% in 2009, in the wake of the 2008 financial crisis, boosting it to 11.4% of total SME financing, from 8.7% in 2008. Its share has continued to rise, reaching 14.9% in 2013 (Figure 1.18). This amounts to around 6% of GDP, which is high compared to other countries. Indeed, government guarantees amounted to 5% of GDP in Korea in 2014, one of the highest figures in the OECD (Panel C).

However, public support through direct credit and guarantees to SMEs has many negative effects:

- It 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).
- The coverage ratio of guarantees was set at 85%, compared to 75-80% in most OECD countries, until November 2015. The high ratio discouraged financial institutions from actively monitoring the credit risk of outstanding loans.
- Government intervention often supports non-viable SMEs. Once loans are given to a firm, financial institutions and credit guarantee providers 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 "zombie firms", and lowers Korea's growth potential (Box 1.3).
- High levels of government support and its long duration discourage companies from expanding and thereby achieving economies of scale (the so-called "Peter Pan syndrome"). Only 0.01% of small firms in 2011 had grown into mid-sized firms by 2014.

Table 1.10. **SME reliance on government financing has increased since 2009**

In trillion KRW in the top row for each year; as a percentage of total financing in the bottom row

	Indirect financing			Direct financing				Government financing				Total
	Bank loans[1]	Non-bank loans[2]	Sub-total[3]	Bonds[4]	Stocks[5]	Venture capital	Sub-total	On-lending[6]	Policy funds[7]	Guarantee balance[8]	Sub-total	
2005	256.5	82.5	293.6	0.3	3.0	3.4	6.7	-	3.2	45.4	48.6	348.8
	73.5	23.7	84.2	0.1	0.9	1.0	1.9	0.0	0.9	13.0	13.9	100.0
2007	369.9	101.4	427.0	0.8	4.6	3.6	8.9	-	2.8	44.4	47.2	483.1
	76.6	21.0	88.4	0.2	1.0	0.7	1.8	0.0	0.6	9.2	9.8	100.0
2009	443.4	121.8	497.5	1.1	4.5	3.9	9.5	0.2	5.9	67.7	73.8	580.8
	76.3	21.0	85.7	0.2	0.8	0.7	1.6	0.0	1.0	11.7	12.7	100.0
2011	454.9	97.5	482.5	0.9	1.8	4.8	7.6	4.3	3.4	69.9	77.6	567.7
	80.1	17.2	85.0	0.2	0.3	0.9	1.3	0.8	0.6	12.3	13.7	100.0
2013	489.2	-	489.2	0.1	0.8	6.4	7.2	6.7	4.9	75.5	87.1	583.5
	83.8	0.0	83.8	0.0	0.1	1.1	1.2	1.1	0.8	12.9	14.9	100.0

1. Includes general banks and specialised banks.
2. Includes loans of mutual savings banks, credit associations, mutual finance companies and Saemaeul finance firms. No data are available for 2013.
3. The sub-total excludes the government's guarantee balance, except in 2013, as the share of guarantees applied to bank loans is unkown.
4. Excludes ABS and financial bonds.
5. Stock issuance through IPOs and paid-in capital increases.
6. A public institution (Korea Finance Corporation) provides 40% of the loan to financial institutions On-lending is the Korea Finance Corporation's policy loan balance.
7. The balance of the Small and Medium Business Associations' policy loans.
8. The sum of the guarantee balances in the Korea Credit Guarantee Fund (KODIT), the Korea Technology Finance Corporation (KIBO), and local KODIT.

Source: Koo et al. (2015).

- More than half of government guarantees were given to highly-rated companies more than ten years old. Moreover, a quarter of guarantees are for more than ten years. Such a composition crowds out support for start-ups and highly innovative young firms. 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% (FSC, 2015a).

In November 2015, the government announced policy directions for a new guarantee system (Table 1.11). The objective of reducing guarantees to mature SMEs to focus more on

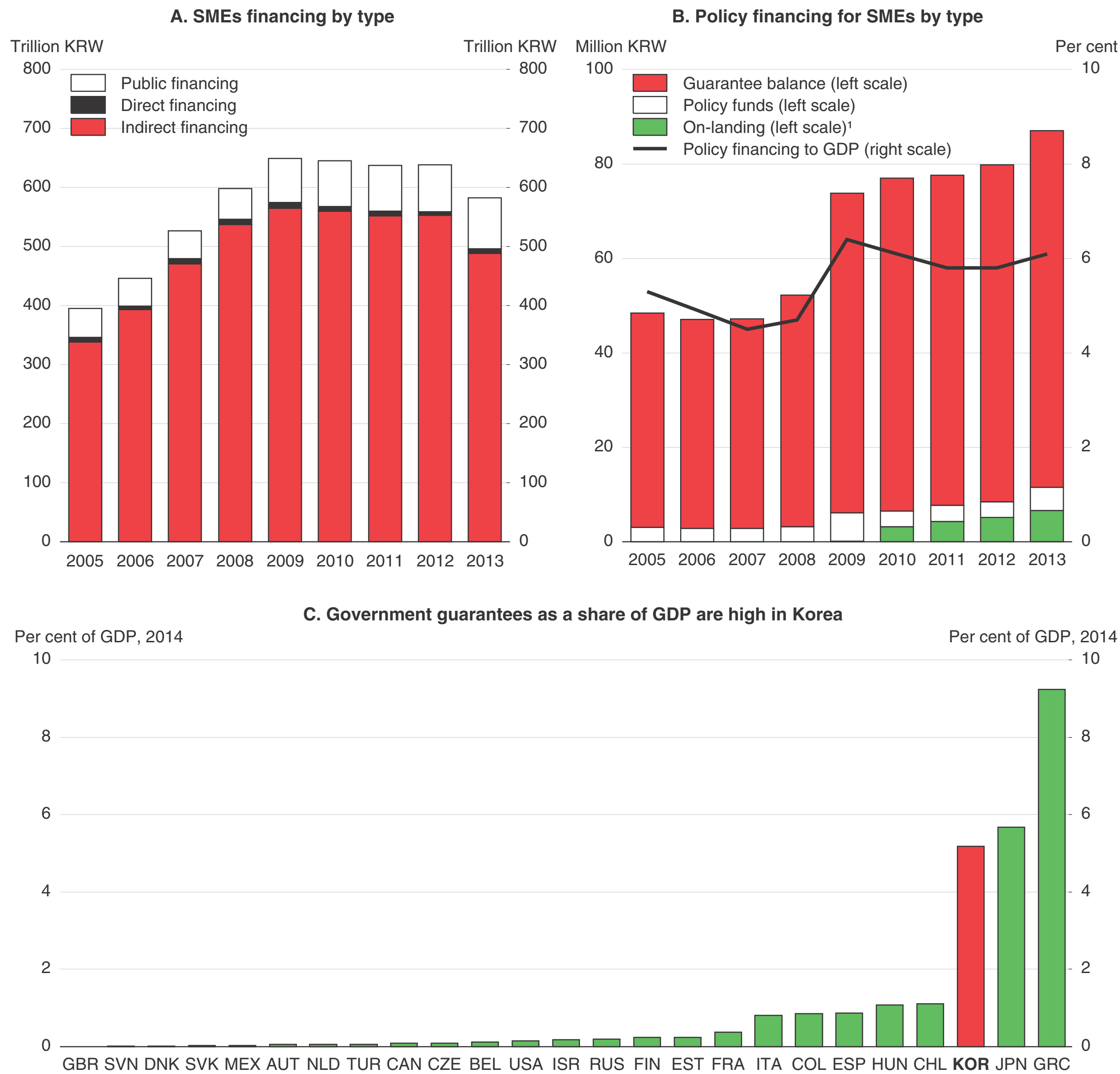
Table 1.11. **Basic policy direction to build a new guarantee system for SMEs**

Strategy	Projects
1. Expand guarantee support for start-ups and SMEs at an early stage	Expand efforts to discover and support SMEs at an early stage Minimise the burden on SMEs of using guarantees by shifting from annual inspections to once every 5-8 years and raising the guarantee rate to 90% The requirement that firms have joint guarantors will be abolished for all firms Diversify the funding path of start-ups and early-stage SMEs
2. Streamline the usage of guarantees by mature SMEs	Respond to the demand of mature SMEs for credit guarantees Allow banks, rather than public agencies, to choose which firms receive guarantees Set the guarantee ratio at 50-85% for mature firms Support the establishment of an organisation in the public agencies providing guarantees to support IPOs by mature SMEs
3. Increase efficiency of the guarantee supply system	Differentiate the roles of the different public credit guarantee agencies Expand the guarantee system to make it more effective in stabilising the economy Introduce a guarantee system specialised by the age of SMEs[1]

1. Until November 2015, credit guarantees covered a uniform 85% of the value of the loan. A differentiated approach is now in place: i) start-up stage (100% the first year, then 90%; ii) growth stage (85%); and iii) mature stage (50-85%, based on the credit rating).

Source: Financial Services Commission (2015a).

Figure 1.18. **Public financing for SMEs is high compared to other major advanced countries**



1. A public institution (Korea Finance Corporation) provides 40% of the loan to financial institutions, which supply the rest of the loan.
Source: Small and Medium Business Administration; Korea Finance Corporation; *Statistics Korea*; OECD (2016a).

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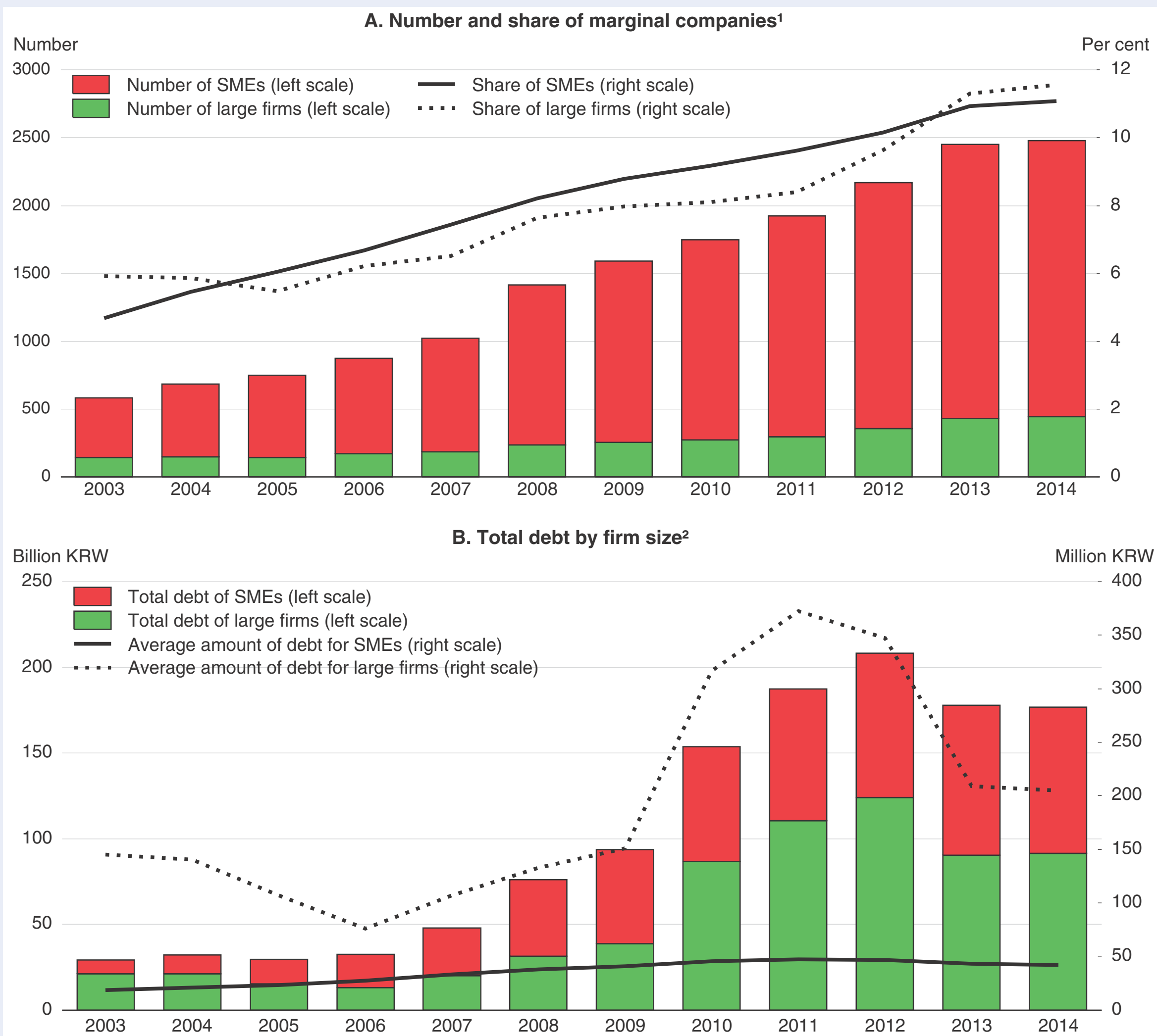
start-ups and early-stage SMEs, where the difficulty of securing market financing is greatest, is in line with past OECD recommendations (2014 *OECD Economic Survey of Korea*). However, the objective of reducing the burden of using guarantees and reviewing them every five to eight years rather than annually would seem to promote long-term guarantees. In addition, the new policy directions seem aimed at increasing the use of guarantees. For example, making credit guarantees more effective in promoting economic stability would suggest a large expansion from their already-high level. In particular, the new coverage ratio of guarantees is still relatively high, except for some mature SMEs. The high level discourages banks from actively monitoring credit risks. Rather than expanding

Box 1.3. Non-viable companies are a major concern in Korea

The share of non-viable companies (often referred to as "zombie companies") – defined as those with negative operating profits over three years – has increased steadily over the past decade, rising from 4.7% in 2003 to 11.1% in 2014 for SMEs (Figure 1.19). The share for large companies also increased and is now higher than that of SMEs, reflecting the slowdown in export growth and problems in a few major industries. The share of marginal companies in Korea is significantly higher than in major economies, including Japan (2%), the euro area (4%) and the United States (7%). The number and share of marginal companies has risen despite a fall in the average amount of debt in large firms (Panel B).

Figure 1.19. **The number of non-viable companies is increasing**



1. Number of companies with negative operating profits for at least three consecutive years. Data from the National Information and Credit Evaluation (NICE) and *Korea Enterprise Data (KED) Database*.
2. Corporate debt is based on the total liabilities in the financial statements.

Source: Shin (2015).

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Box 1.3. **Non-viable companies are a major concern in Korea** *(cont.)*

Non-viable companies' operating margins are smaller than average while their debt level is higher and has risen rapidly. The increasing concentration of bank lending on highly-rated SMEs (Table 1.12) has aggravated the shortage of funding for marginal firms (Bank of Korea 2014). To ensure adequate start-up financing, a number of reforms are needed:

- The government's credit guarantee programme should focus on early-stage, innovative companies, in part by enhancing its capability to analyse technology.
- Improve direct financing opportunities for start-ups and early-stage SMEs by developing capital markets, thereby reducing reliance on indirect financing.
- Promote continuous structural reform of marginal companies based on the credit assessment by creditor banks, rather than by government intervention. Pre-emptive corporate restructuring is more efficient than work-outs of failed firms.

Table 1.12. **Lending to SMEs is increasingly backed by collateral and concentrated among highly-rated firms**

A. Lending to SMEs by type of loan (in per cent)

	2009	2011	2013[1]
Credit loans[2]	49.0	46.3	43.7
Collateralised loans[3]	37.5	40.6	43.1
Guaranteed by government	13.5	13.1	13.2
Total	100.0	100.0	100.0

B. The share of outstanding loans by SMEs' credit rating (in per cent)

Credit ratings[4]	2009	2011	2013[1]
1-3	11.2	13.3	13.9
4-5	42.6	46.1	47.4
6	19.9	15.9	15.0
7-10	4.9	4.6	4.1
Others	21.5	20.1	19.6
Total	100.0	100.0	100.0

1. First quarter.
2. Loans from private financial institutions that are not guaranteed by a public institution or collateralised.
3. Loans backed by collateral, usually real estate.
4. The system is based on a ten-point scale with 1 representing the best credit rating.

Source: Financial Services Commission (2013).

guarantees, it is important to focus on developing the infrastructure for market-based SME financing, including the framework for credit evaluation.

The government directed banks to roll over SME loans automatically to prevent the default of sound SMEs in the wake of the 2008 global crisis (2014 *OECD Economic Survey of Korea*). The decline in the share of "credit loans" – loans from private financial institutions that are not guaranteed by a public institution or collateralised – since 2009 was matched by a rise in the share of collateralised loans (Table 1.12), suggesting that financial institutions saw greater risk in SME lending. In addition, the share of SME lending to firms with high credit ratings (1-5) increased from 53.7% in 2009 to 61.3% in 2013 (Panel B). Financial institutions' heightened awareness of credit risk is a natural response to the sharp downturn in the wake of the 2008 crisis and subdued output growth since 2011. However, reduced lending to start-ups and early-stage SMEs, which typically have lower credit ratings, may slow innovation and productivity growth.

The government launched an initiative in July 2014 to promote loans based on technology to provide greater financing for start-ups without collateral. Four institutions, including the Korea Technology Finance Corporation (KTFC), were designated as Technology Credit Bureaus (TCBs), and launched a technology database service. According to a government survey, technology-based lending reached KRW 51.5 trillion (6.7% of bank lending to the corporate sector) in the fourth quarter of 2015. The average interest rate on technology loans, at around 4%, was lower than the overall average rate of 4.3%. However, the technology system has some weaknesses. *First*, it focuses too much on existing firms wishing to expand, rather than on start-ups. *Second*, the time necessary to evaluate technology is too long, rising from 12.5 days in July 2014 to 45.7 days in March 2015. This boosts the cost of evaluation to one million KRW (around USD 875 000), suggesting a need for new experts to analyse technology. *Third*, the procedures and documentation are not consistent. *Fourth*, different evaluation models and grading procedures between the four TCBs undermines the credibility of the system.

Developing venture capital and other forms of capital-market financing

Problems faced by new start-ups and small firms in obtaining lending could be overcome by enhancing their access to capital markets. Investments are more suitable than loans for financing high-risk, high-return firms at an early stage. However, SME financing through the stock market fell from 1.5% of total SME financing in 2009 to 1.2% in 2013 (Table 1.10). Indeed, bond issuance by SMEs has practically ceased in the absence of a junk bond market. According to the FSS, SMEs' share of financing through bonds and equities fell from 9.0% in 2009 to 5.2% in 2015 (Table 1.13). A survey by a public-sector bank in 2015 reported that only 0.04% of SMEs have received financing through capital markets, primarily due to their inability to meet the requirements for issuing stocks and bonds, complicated issuance procedures and high issuance costs (Figure 1.20). In addition, some entrepreneurs prefer loans to receiving investments, as the processing time for a loan is shorter than the investment process and allows them to maintain more control over their firms. To weaken the preference for loans, government support for SMEs should shift away from direct lending and credit guarantees and put more weight on providing advice on financial, legal and taxation issues related to investment.

Table 1.13. **The SMEs' share of financing through stocks and bonds has fallen sharply**

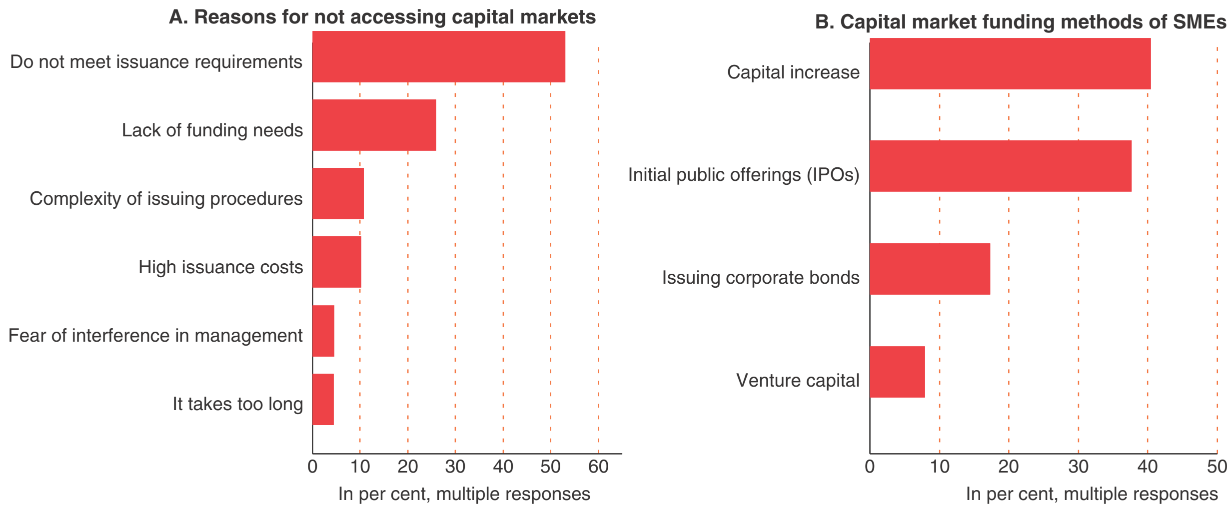
In per cent[1]

	2009	2011	2013	2015
Stocks	39.1	13.9	15.3	28.9
Bonds	1.7	1.1	0.1	0.6
Stocks and bonds	9.0	3.3	1.8	5.2

1. Excludes ABS, bank debentures and bank bonds.

Source: Financial Supervisory Service (2016).

Figure 1.20. **SMEs and capital markets**



Source: Industrial Bank of Korea (2015).

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For SMEs that are able to access capital markets, the main methods are issuing new stocks and initial public offerings (IPOs) (Figure 1.20, Panel B). Nearly 98% of such activities occurred in the KOSDAQ market, established in 1996 with the goal of facilitating IPOs. Issuance of corporate bonds (17.3%) and venture capital (7.9%) are used less by SMEs.

Korea's creative economy initiative emphasises the role of venture capital

The financing gap resulting from problems in indirect funding and traditional capital markets might be bridged by venture capitalists and business angels, who are willing to accept high risk for high returns. Such investors address information asymmetries by scrutinising new firms before providing capital and monitoring them afterwards. In Korea, the government jump-started the venture capital market in 1998 through a direct infusion of equity capital, generous tax incentives and credit guarantees. However, these policies fuelled a bubble in the KOSDAQ, the secondary stock market. With the collapse of the IT bubble, the KOSDAQ fell 90% from its peak. The contraction in venture capital investment continued through the 2008 global financial crisis (Figure 1.21).

However, venture capital investment is increasing, strengthened by the government's 2013 "Measures to improve the venture start-up ecosystem" (2014 *OECD Economic Survey of Korea*). The stock of venture capital investment rose from 0.24% of GDP in 2010 to 0.35% in 2015 (Figure 1.21), while the number of venture investment companies increased from 110 in 2010 to 124 in 2015. A growing share of venture capital investment is in new fields, such as bio-technology, culture and services (Table 1.14). The enthusiasm over venture capital is reflected in a jump in the number of entrepreneurship clubs in

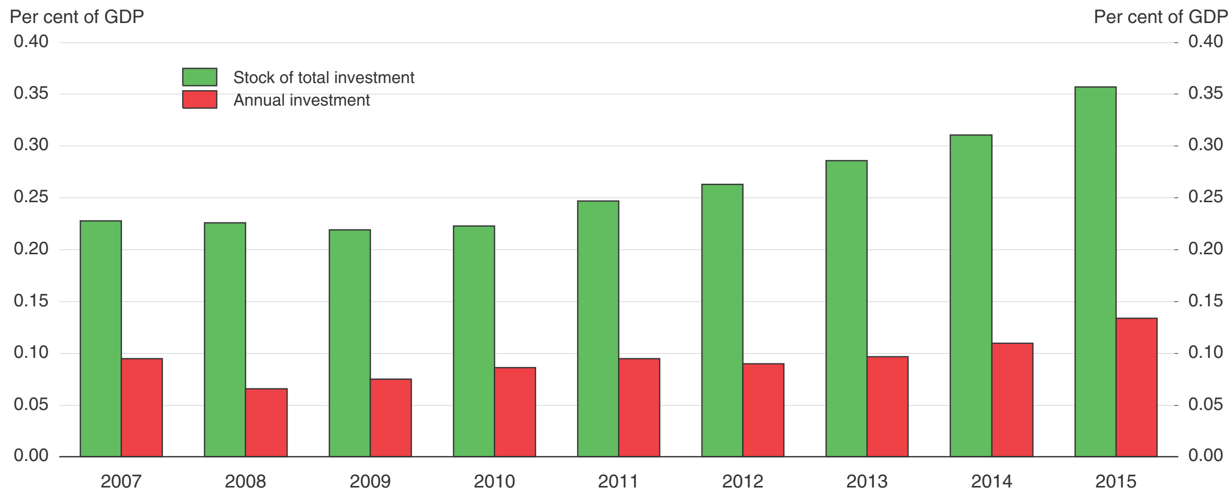
Table 1.14. **Venture capital is increasing in new sectors**

Percentage of total venture capital investment

	Telecommunications	Manufacturing	Bio-tech	Culture	Other services	Other	Total
2013	35	23	11	21	8	3	100
2014	26	14	18	27	12	2	100

Source: FSC (2015c).

Figure 1.21. **Venture capital investment has been increasing since 2011**



Source: Korea Venture Capital Association.

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universities from fewer than 2 000 in 2013 to nearly 3 000 in 2014. Rising venture capital investment led to a parallel increase in the number of "venture businesses" from 24 645 in 2010 to 31 260 in 2015. However, less than 1 000 of these firms have received venture capital investment (Lee, 2016). The remainder were designated based on government evaluation of their technology, thereby qualifying for preferential tax treatment.

Making venture capital investment a driver of innovation

Despite the upward trend, venture investment accounted for only 1.1% of SME financing in 2013 (Table 1.10). Establishing a vibrant venture capital market requires addressing a number of challenges.

Increasing the focus on start-ups and firms at an early stage of development

Venture capital investment is not sufficiently focused on start-ups and early-stage firms; 68.9% of the total in 2015 was invested in firms more than three years old and 26.7% was in firms that are more than seven years old (Figure 1.23). Firms less than three years old thus received less than a third of the investment, but accounted for 47.2% of the companies receiving investment. However, for firms more than seven years old, investment per firm is 2.3 times larger than in firms in their initial stages (Panel B). The concentration of venture capital in older firms creates a risk for young firms that is referred to as "Death Valley", in which many start-ups fail to survive despite their success in developing technology.

Enabling venture capitalists to recover their investments

The biggest obstacle to expanding Korea's venture capital investment system is the difficulty that venture capitalists face in recovering their investments. The concentration of venture capitalist investment in older firms reflects the fact that investors find it easier to recover their investments in older firms that are preparing for an IPO in the KOSDAQ

Box 1.4. **Expanding the role of capital markets**

In 2015, the government launched a plan to improve capital markets that was differentiated by the age of firms (Table 1.15). For firms in the start-up stage (0-3 years), the over-the-counter (OTC) market will be expanded. The OTC market began as the Free Board created in 2000 to enable SMEs that were unable to meet the listing requirements of the two securities exchanges (KOSPI and KOSDAQ) to trade their stocks and receive financing. It has been ineffective, though, due to strict regulation, a high tax on securities transactions, limited participation by KOSDAQ-listed firms, and the absence of accurate corporate information (Jung, 2012). Moreover, the opening of the KONEX market in 2013 further marginalised the OTC. In 2014, the Free Board was re-organised as a two-tier market: i) K-OTC, a primary market for trading unlisted stocks of blue-chip companies, has tighter screening requirements and mandatory disclosure; and ii) K-OTC BB (Korea Over-The-Counter Bulletin Board), a secondary market for all non-listed SME stocks. Since the launch of K-OTC, the number of firms trading in the OTC market increased from 48 to 116 and daily average transaction amount increased from KRW 90 million to KRW 1.8 billion (USD 1.6 million). The success of the K-OTC depends on its ability to act as a bridge for start-ups and early-stage SMEs trying to reach the KOSDAQ.

Table 1.15. **The role of capital markets for each stage of the business life cycle**

	Start-up stage (0-3 years)	Growth stage (4-9 years)	Mature stage (10-15 years)
Investment risk	**Very high investment risk** ● Angel investors ● Venture capital	**Relatively high investment risk** ● Professional investors ● High risk takers	**Moderate investment risk** ● General investors
Role & features of capital markets	**Over-the-counter market**	**KONEX market**	**KOSDAQ market**
1. Features	● No investor protection measures ● One-on-one contract solely dependent on each investor's intention	● Relatively relaxed investor protection ● Listing based on an evaluation of a company's growth potential, rather than quantitative factors	● Strong investor protection measures in place ● A trading platform for financially stable companies
2. Role	● Facilitate secondary investment in start-ups and divestment of initial investment for investors	● Enable divestment of initial investment for investors and direct financing for companies	● Raise a larger amount of funds through public offering
3. Listing requirements		● Sign an advisory service contract with a brokerage firm ● Receive a TCB technology rating and attract investment by institutional investors	● Firms with equity capital of KRW 1.5 billion and net profit of KRW 1 billion or sales volume of KRW 5 billion ● Firms with promising technologies are exempt from listing requirements (other than equity capital of KRW 1 billion)

Source: FSC (2015d).

The Korea New Exchange (KONEX) was launched in 2013 to help SMEs and venture businesses obtain direct financing from the capital market. KOSDAQ had been created in 1996 with this objective, but strict investor protection reduced the number of new companies listing on KOSDAQ from 171 in 2001 to only 21 in 2012. To make it more effective than KOSDAQ, KONEX is similar to the Alternative Investment Market (AIM) created in 1995 in the United Kingdom and the TSX-Venture Exchange that began in Canada in 1999:

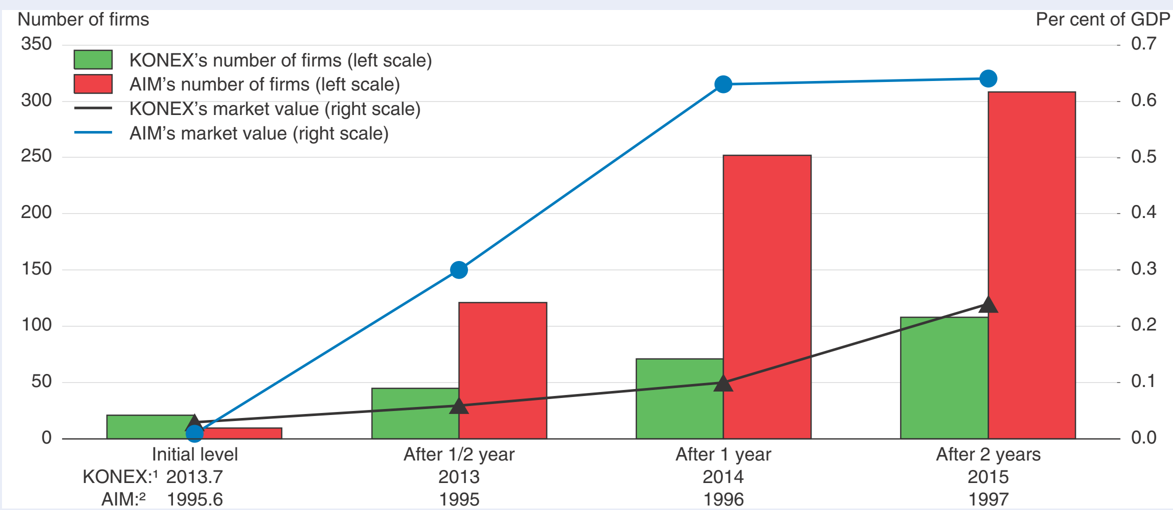
- KONEX substantially eased market entry and reduced the burden of information disclosures, compared to KOSDAQ, which imposes quantitative conditions. KONEX is limited to professional investors, including venture capital, institutional investors, and retail investors with a deposit of KRW 300 million (USD 262 000) or more. AIM also features short listing procedures (10 days) and low fees.
- KONEX adopted a designated advisor system in 2015 that is similar to the "nominated advisers" (nomad) in AIM. Each company must sign a contract with a securities company that acts as its designated advisor

Box 1.4. **Expanding the role of capital markets** *(cont.)*

to facilitate their access to the stock exchange and strengthen investor protection. The designated advisor identifies companies to be listed, judges their qualifications, provides guidance on regulatory observance, and serves as a contact point between the company and the stock exchange.

KONEX increased from 21 listed companies at its start in July 2013 to 89 by end-2015, while market capitalisation reached KRW 3.7 trillion (0.2% of GDP) (Figure 1.22). However, it has failed to achieve the rapid growth of AIM, which had 308 companies after two years of operation and market capitalisation of 0.6% of GDP. Moreover, the average age of firms listing on the KONEX is around 12 years, similar to KOSDAQ. The government announced a strategy in 2015 to revitalise KONEX by encouraging the listing of more start-ups and attracting more venture capital. In addition to the designated advisor system to strengthen investor protection, this is to be accomplished by expanding incentives for individual investors, and easing listing requirements for SMEs by abolishing quantitative standards and replacing them with qualitative indicators. In addition, stronger incentives should be given to designated advisors to fulfil their roles (Kim, 2014).

Figure 1.22. **Comparison of the development of KONEX and AIM**



1. KONEX was created in July 2013.
2. AIM was created in June 1996.

Source: Korea Exchange (2016); London Stock Exchange Group (2015).

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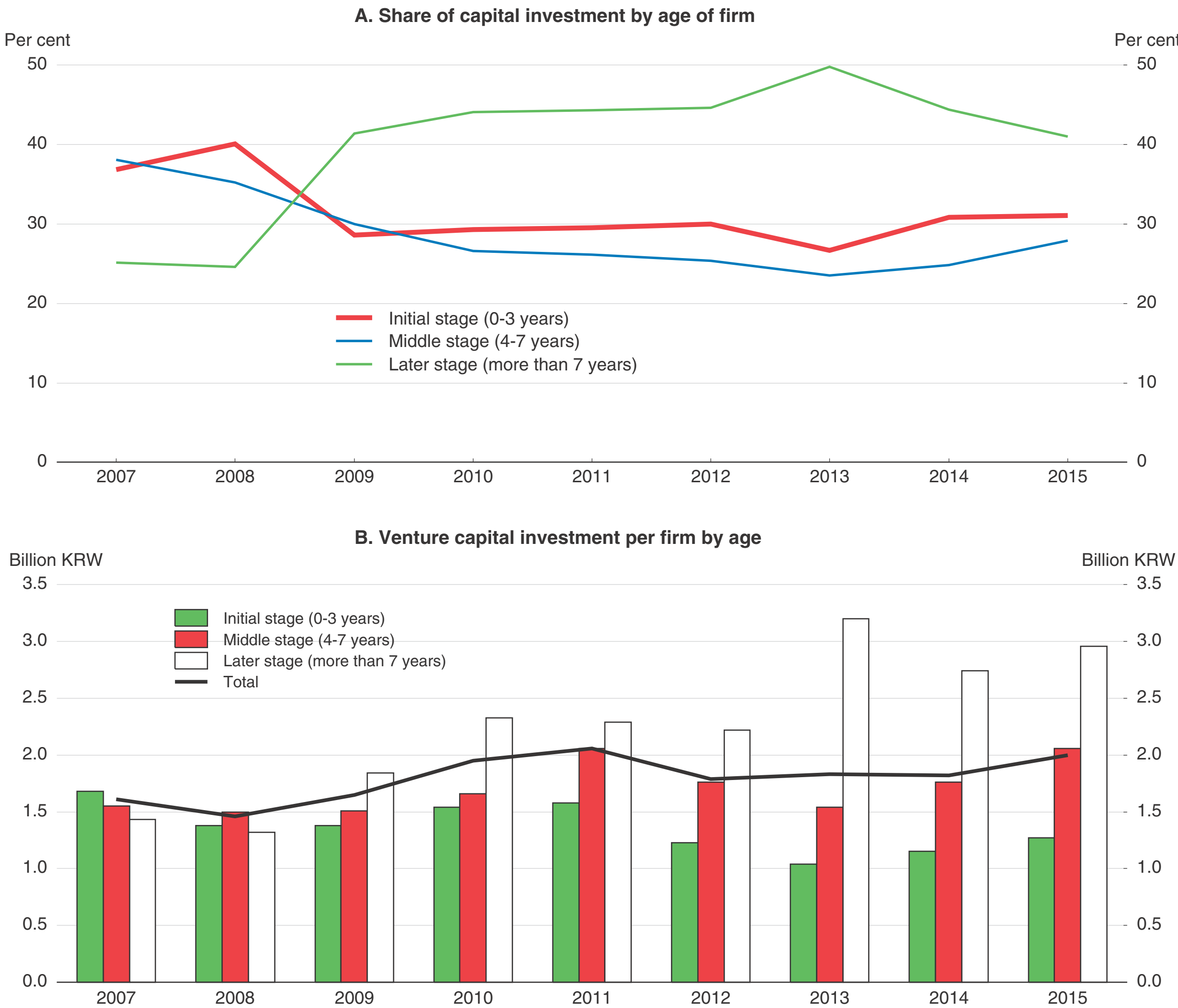
KOSDAQ remains the key exchange for IPOs and capital increases. The government also plans to expand listing opportunities for young firms on KOSDAQ and to foster competition between exchanges. The recent decision to separate the management of KOSDAQ and KOSPI, which is the major exchange for large firms, is intended to change the culture of KOSDAQ in favour of SMEs. As in the case of KONEX, the challenge is to carefully balance investor protection with the objective of facilitating IPOs.

market. Given the listing requirements, which include sales and total capital, the time required for a start-up to become eligible for listing was 12.2 years on average in 2015. IPOs play a particularly important role in enabling venture capitalists to recover their investments, given that M&As, which account for about 80% of the paybacks in the United States, are virtually non-existent in Korea. Expanding the M&A markets, combined with other measures to improve capital markets (Box 1.4), is essential to promote venture capital investment in Korea.

Figure 1.23. **Venture capital investment is overly focused on mature firms**



Source: Korea Venture Capital Association.

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The low level of M&A activity reflects a number of factors. *First*, small firms rely primarily on loans, thus reducing the potential scale of the market. *Second*, entrepreneurs are reluctant to sell their firms, leading to a shortage of supply in the M&A market; indeed, in Korea, M&As have long been associated with bankruptcy proceedings. *Third*, active participation of buyers, such as private equity funds and strategic investors, is limited. *Fourth*, regulations on M&As restrict the market. For example, for listed companies, the merger price has to be within 10% of the market value, the M&A methods are restricted and many M&As have to be approved by a general meeting of shareholders. The government launched a plan in 2014 to activate the M&A market by: i) easing restrictions on investors in order to attract potential buyers; ii) providing financial support for sellers; and iii) reducing restrictions on M&As procedures and providing tax incentives.

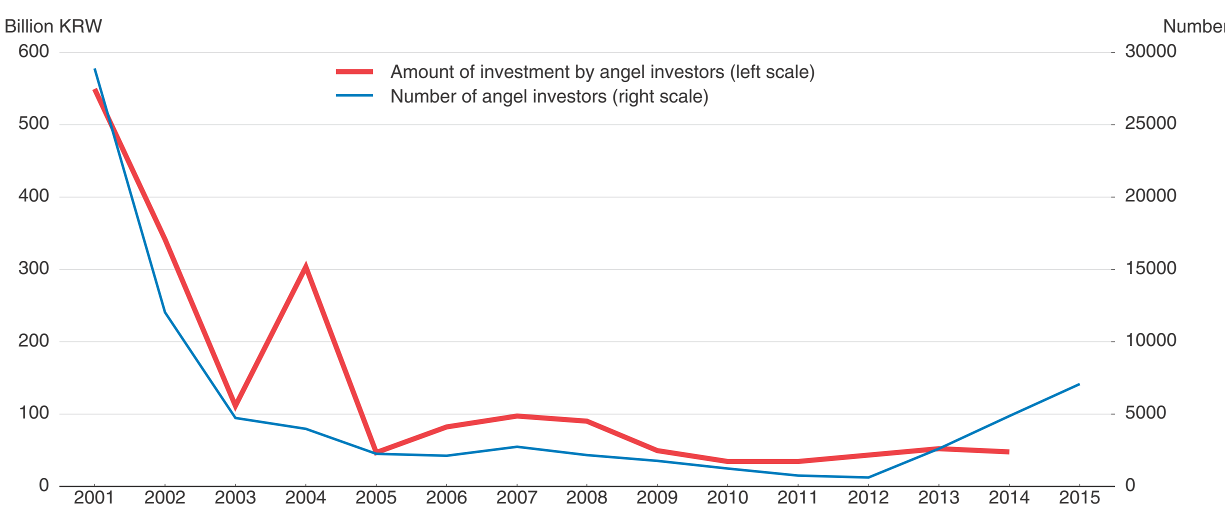
Reducing the high level of government funding

The venture capital market depends heavily on the government, which risks crowding out private investors. Public funds accounted for 30.3% of venture funds in 2012, with an additional 3.7% share for public pension funds. The government launched a plan in 2015 to shift away from public funding of venture capital funds in favour of private funding. Previously, some private venture capital funds had to accept public financing, which resulted in government supervision and burdens on the funds. That requirement has been waived to allow the creation of funds limited to private financing, thereby enhancing their autonomy and creativity. In addition, the growth ladder fund (a fund of funds) will offer more favourable terms for sharing profits and absorbing losses to encourage private investment in venture capital funds.

Expanding the role of angel investors and crowd-funding

Business angels play an important role in private financing and mentoring firms during their initial start-up. However, following the bursting of the IT bubble in 2000, the number of angel investors fell sharply from nearly 29 000 to only 619 in 2011 (Figure 1.24). In addition, the amount of angel investment in 2011 was only 8% of it 2000 peak. While the number of business angels has been rising since 2011, the amount of investment has remained stagnant, amounting to only 0.002% of GDP, compared to 0.15% in the United States. The government is trying to spark greater angel investment by increasing their tax deductibility, creating an "Angel Investment Support Centre" to facilitate matchmaking between angel investors and young ventures, and the establishment of a matching fund. Finally, the government gave the green light to equity crowd-funding in January 2016, which allows entrepreneurs to raise money from the general public, although this mechanism does not always provide the guidance and networks provided by seasoned angel investors. Firms will be able to raise a maximum of KRW 0.7 billion (USD 612 000) per year through crowd-funding. Given the problems of investor protection, limits for non-professional investors are set at KRW 2 million per company (USD 1 750) and KRW 5 million in total.

Figure 1.24. **The amount of investment by business angels collapsed following the bursting of the IT bubble**



Source: Angel Investor Association; Korea Venture Capital Association; Small and Medium Business Administration.

StatLink http://dx.doi.org/10.1787/888933356389

Summary of recommendations to increase productivity

Key recommendations

- Use the new "cost-in, cost-out" system to reduce the regulatory burden based on accurate Regulatory Impact Assessments.
- Phase out positive-list regulations.
- Focus venture capital on start-ups by facilitating early-stage IPOs in the KOSDAQ and KONEX markets.
- Take further steps to jumpstart the M&A market through regulatory reform.
- Relax barriers to trade and investment to help firms better connect to global innovation networks.
- Strengthen R&D links between academia, business and government by promoting the mobility of researchers.

Other recommendations

- Lower the share of loans to SMEs that are guaranteed by the government and put time limits on their length.
- 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.
- 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.

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Chapter 2

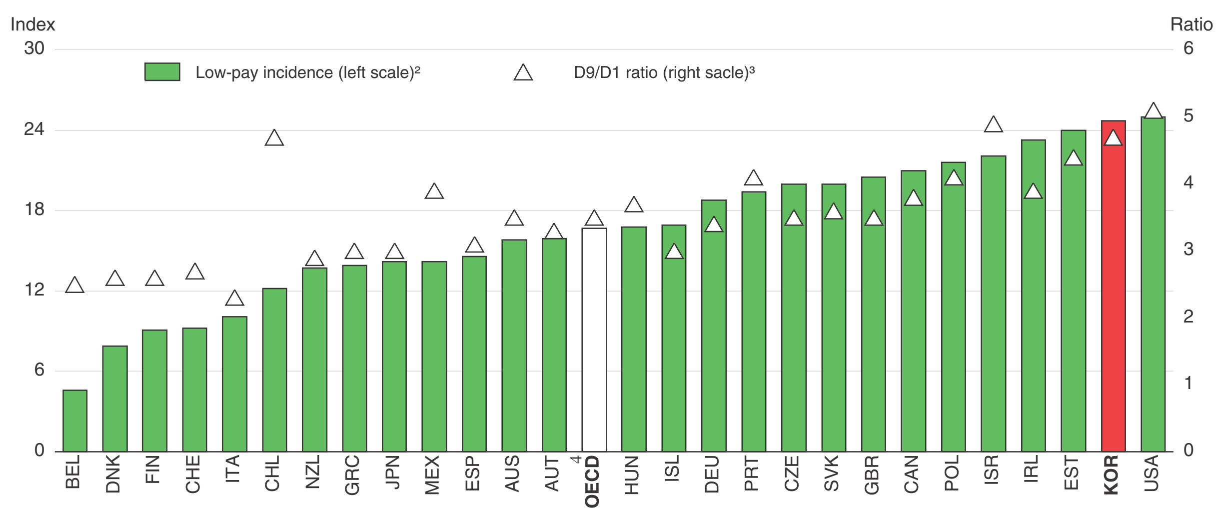
Labour market reforms to promote inclusive growth

Labour market reforms are essential to promote social cohesion by removing obstacles to employment, particularly for women, youth and older persons. In addition to reducing income inequality and poverty, such reforms would also sustain economic growth as Korea's working-age population begins to decline in 2017. Breaking down labour market duality is crucial to reduce the wide wage disparity. Better conditions for non-regular workers would in turn promote greater labour participation. Increasing the take-up of maternity and parental leave, expanding the availability of high-quality childcare, reducing working time, narrowing the large gender wage gap and eliminating discrimination would also increase opportunities for women. Boosting youth employment from its current low level requires addressing labour market mismatch by better aligning the skills learned in school with those demanded by employers. Reducing the emphasis on seniority in setting wages by moving to more flexible systems and expanding training to improve the skills of older persons would allow them to extend their careers, thereby reducing old-age poverty.

Korea has a track record of rapid output and employment growth. Since 2001, output growth has averaged nearly 4% per year, while the unemployment rate remained below 4%. However, faced with slowing growth and higher inequality and relative poverty, Korea launched an initiative in 2013 to shift from its traditional model of export-led growth driven by large manufacturing firms affiliated with *chaebols* toward a creative economy propelled by knowledge, information, and services (Chapter 1). However, the labour market, which was shaped by the era of rapid growth, is inadequate to meet this challenge. Labour market reforms are needed to promote flexibility and job creation, particularly for youth. It is also essential to address wage inequality: almost a quarter of full-time workers in 2013 earned less than two-thirds of the median wage, the second-highest share in the OECD, and wage dispersion was one of the highest (Figure 2.1). To cope with these challenges, the government, workers and employers announced a Tripartite Agreement on Structural Reforms of the Labour Market in September 2015 "to remove uncertainties and enhance efficiency in the labour market" (Box 2.1).

Figure 2.1. **Korea has wide wage dispersion and a high share of low-wage workers**

In 2013 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 Income Distribution Database.

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One of the goals of the Agreement is to address entrenched labour market dualism, as the large wage gap between regular and non-regular workers is the major cause of wage inequality and relative poverty (Figure 2.1). Labour market dualism has a number of other negative implications for non-regular workers: i) less coverage by the social safety net;

Box 2.1. **The Tripartite Agreement on Structural Reforms of the Labour Market**

The Economic and Social Development Commission (ESDC) established a special committee for structural reforms of the labour market in September 2014. The committee included representatives of workers, employers and the government, as well as public interest groups. Labour was represented by the Federation of Korea Trade Unions (FKTU), while the second major confederation, the Korea Confederation of Trade Unions, which includes about 40% of unionised workers, refused to participate. The committee agreed to the Tripartite Agreement in September 2015 to:

1. Increase youth employment

- Large firms and public enterprises will expand hiring of youth, with the government providing support.
- A youth employment promotion council will be created, including relevant ministries and private experts.

2. Alleviate the dual structure of the labour market

- Promote shared growth through win-win co-operation between primary contractors and subcontractors, and large and small companies. The government will provide tax benefits to firms that establish welfare funds to improve the working conditions of their subcontractors.
- Improve non-regular employment practices and measures to prevent discrimination.
- Activate the labour market through policies to protect job security and clarify the standards and procedures for terminating employment contracts.

3. Expand the social safety net

- Improve the coverage and efficiency of social insurance, including unemployment benefits.
- Improve employment support programmes for vulnerable groups and increase protection for them to raise their income.
- Gradually raise the minimum wage rate and increase compliance with the system.
- Provide stronger support for work-family balance.
- Tailor employment and welfare services to customers' needs.
- Promote skill development programmes to build a competency-based society.

4. Eliminate uncertainties by addressing three key issues

- Clarify the definition of the ordinary wage (which now includes most bonus payments following a court ruling).
- Modify laws and institutions to help reduce actual working hours.
- Improve the wage system, in part through increased use of the wage peak system, to cope with the higher mandatory retirement age.

The planned measures in many of these areas will be discussed in this chapter. However, as noted in the Agreement, "The tripartite partners shall have further discussions [...] to clarify this Agreement". Consequently, the "Tripartite Agreement is not the end but simply the beginning of structural reforms in the labour market" (Economic and Social Development Commission, 2015). However, the FKTU renounced the Agreement in January 2016. According to the ESDC, the FKTU's decision does not nullify the Agreement and the government vows to press ahead with legislation to reform the labour market.

ii) precarious employment and the highest rate of worker turnover in the OECD; iii) less access to training, which has negative implications for output growth; and iv) less chance of marriage, leading to a lower fertility rate. The limited mobility between regular and non-regular employment (OECD, 2013b) reinforces the negative effect of dualism on social cohesion. Perhaps most importantly, dualism limits employment opportunities for major segments of the population.

In 2013, Korea announced a roadmap to boost employment, which was 64.2% of the working-age population in 2012, to 70% by 2017 (Table 2.1) to strengthen the middle class and respond to low fertility and demographic change. The government is concerned about ageing, which is projected to be the most rapid in the OECD. If participation rates were to remain at their current levels for each age group and gender, the labour force would peak at 27.3 million in 2021 and then fall by 21%, to around 21.6 million, by mid-century (Figure 2.2). By that point, there would be only 1.4 persons in the labour force per elderly person, compared with 5.1 in 2015, imposing a heavy burden on workers. 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 25.5 million, 18% higher than in the case of unchanged participation rates. The roadmap includes four strategies: i) job creation by fostering a creative economy; ii) mobilising untapped human resources by increasing the employment of women, youth and older persons; iii) reducing working hours and reforming work arrangements by expanding decent part-time work and promoting flexible work arrangements; and iv) strengthening social responsibility and co-operation between employers, workers and the government (MOEL, 2015). The employment rate rose by 1.5 percentage points between 2012 and 2015, despite sluggish economic growth.

Table 2.1. **The employment rate targets set by the roadmap**

As a percentage of the working-age population

	2000	2012	2014	2015	**2017 target**	Gap	OECD average (2014)
Total	61.5	64.2	65.3	65.7	**70.0**	4.3	65.8
Women	50.0	53.5	54.9	55.7	**61.3**	5.6	58.0
Youth (15 to 29)	43.4	40.4	40.7	41.5	**46.6**	5.1	51.2
Adults (30 to 54)	73.7	75.6	76.7	77.0	**81.2**	4.2	76.9
Older persons (55 to 64)	57.8	63.1	65.6	65.9	**69.3**	3.4	57.3

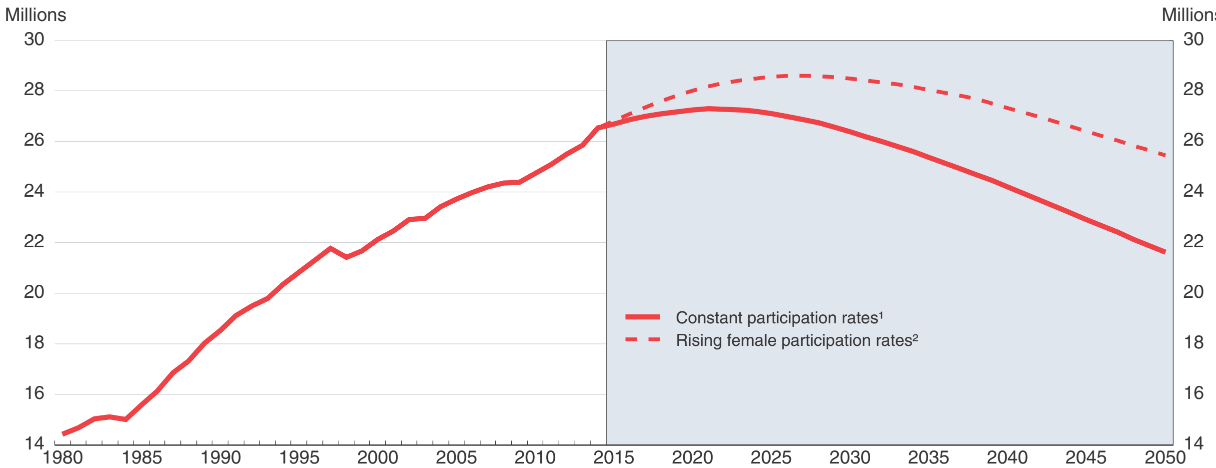
Source: Government of Korea; *OECD Employment Outlook Database*.

This chapter first addresses the issue of labour market dualism, which has a major impact on inequality and social cohesion, as well as on labour force participation, and then discusses the scope for expanding the social safety net. The following sections examine policies to expand career opportunities for women, youth and older persons. The chapter concludes with a set of recommendations.

Breaking down labour market dualism

Despite the growing impact of the tax and benefit system, income inequality and relative poverty among the urban population increased significantly between 1996 and 2009, before declining during the past few years (Figure 2.3). While ageing accounted for 32% of the overall rise in inequality over 1996-2011, increased inequality among the working-age population was the main factor, accounting for 54% (Chang and Lee, 2013). Indeed, the Gini coefficient for the labour income of urban households that have labour income rose from 0.33 in 1996 to 0.38 in 2010 (Choi, 2014). On a nationwide basis, the overall Gini coefficient (after-tax) was 0.302 in 2013, close to the OECD average. Nevertheless, the ratio of the 90th income percentile to the 10th is the seventh highest in the OECD. In addition, Korea's rate of relative poverty in 2013 was the eighth highest in the OECD.

Figure 2.2. **Increased female employment would mitigate the impact of demographic change**



1. The participation rates for men and women are assumed to remain at their current levels for each age group.
2. 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 calculations.

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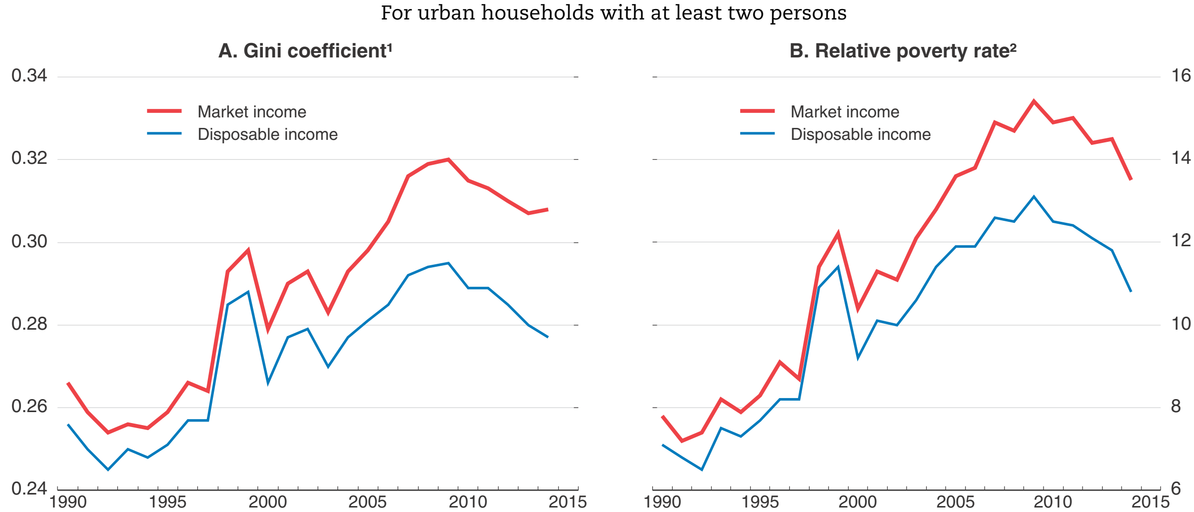
Labour market dualism in Korea is exceptionally strong. Non-regular employees, such as fixed-term, part-time and dispatched workers, have accounted for around a third of dependent employment during the past decade (Table 2.2). The share of temporary workers among employees (22%), who account for a majority of non-regular workers in Korea, was the fourth highest in the OECD area in 2014 and more than double the OECD average. However, their share has fallen while the share of part-time and other types of non-regular workers, who are paid less, has risen (Panel B). Consequently, the changing

Figure 2.3. **Income inequality and relative poverty have declined in recent years, but remain high**

For urban households with at least two persons



1. The Gini coefficient can range from 0 (perfect equality) to 1 (perfect inequality).
2. Relative poverty is defined as the percentage of the population with an income less than half of the national median.

Source: Statistics Korea.

StatLink http://dx.doi.org/10.1787/888933356408

Table 2.2. **Non-regular workers account for about a third of employees and earn much less**

A. Employed persons by status

	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	%	%	%	%	%
2003	14 149	4 606	32.6	2 403	52.2	13.3	20.2	2.1	34.3
2005	14 968	5 483	36.6	2 728	49.8	16.2	19.0	2.2	32.6
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	12.1	24.8	2.9	36.8
2011	17 510	5 995	34.2	2 668	44.5	13.0	28.4	3.3	37.2
2014	18 776	6 077	32.4	2 749	45.2	12.6	33.4	3.2	31.6

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

	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
2003	100.0	71.6	70.7	69.1	85.1	68.0	n.a.
2005	100.0	70.5	74.5	66.0	76.7	76.1	n.a.
2007	100.0	70.9	76.3	75.4	66.6	70.8	n.a.
2009	100.0	61.5	65.5	58.2	56.2	69.7	n.a.
2011	100.0	65.3	69.0	70.5	59.3	66.5	n.a.
2014	100.0	64.3	67.8	67.5	54.0	60.8	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, *Economically Active Population Survey*.

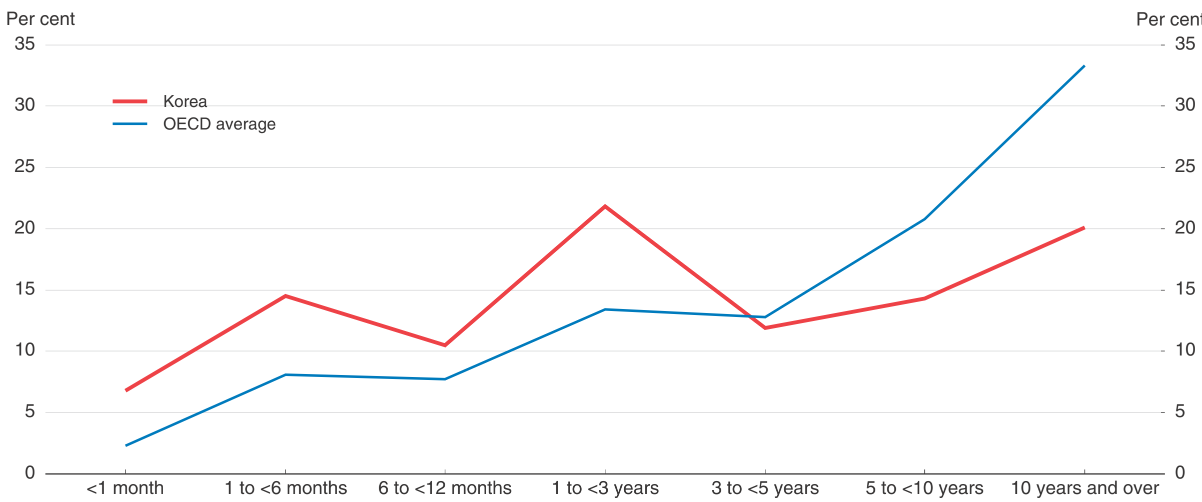
composition of non-regular employment has worsened inequality. According to surveys, firms hire non-regular workers to enhance employment flexibility and avoid the cost of laying off regular workers, who receive high employment protection as a result of labour laws and court decisions, and to reduce labour costs. According to a 2011 government survey, more than half of non-regular workers would prefer regular employment and are thus involuntarily employed as non-regular workers (OECD, 2013b), indicating that dualism is a result of labour market distortions.

Non-regular workers fare poorly in terms of income, consumption and marriage

Dualism is a major source of inequality, as non-regular workers were paid 36% less than regular workers in 2014 on an hourly basis. The large gap is inconsistent with employees' skill levels. According to the OECD study on the skills of adults, the literacy skills of temporary workers in Korea were equivalent to those of permanent prime-age workers (25 to 54) and even higher in the 16-24 age group (OECD, 2013c). However, temporary workers are penalised by their relatively short tenure because of the strong link between tenure and wages in Korea. Indeed, the average tenure of non-regular workers in 2014 was only 30 months, compared to 85 months for regular workers. The large share of temporary workers lowers the overall job tenure in Korea: 54% of workers in 2014 had worked less than three years for their firm, compared to an average of 32% in the OECD area (Figure 2.4). Short tenure discourages employee training, thus slowing the accumulation of human capital and productivity growth. Non-regular employment is most prevalent among youth and older workers, women, the less educated, workers in services and construction and employees of small firms (Table 2.3).

Figure 2.4. **Job tenure in Korea is relatively short due to the high share of temporary workers**

Percentage of employment by job tenure intervals in 2014



Source: *OECD Employment, Labour and Social Affairs Database.*

StatLink http://dx.doi.org/10.1787/888933356411

Lower wages result in lower income in households headed by a non-regular worker (Figure 2.5). Pre-tax income in a household headed by a regular worker in his or her 40s was 49% higher than in one headed by a non-regular worker and the gap rose to 88% for those aged 55-59. Most of the gap is explained by the difference in the income of the household head. For the population over age 60, the median annual income of non-regular households (after-tax on an equivalised basis) was KRW 12 million (around USD 10 500), which is just 8% above the relative poverty line. Marriage rates also show a marked difference. For non-regular households headed by a person in his or her 40s, nearly 15% were single, more than double the share in a household headed by a regular worker. The

Table 2.3. **A comparison of regular and non-regular workers**

Incidence of non-regular employment in each category in August 2015

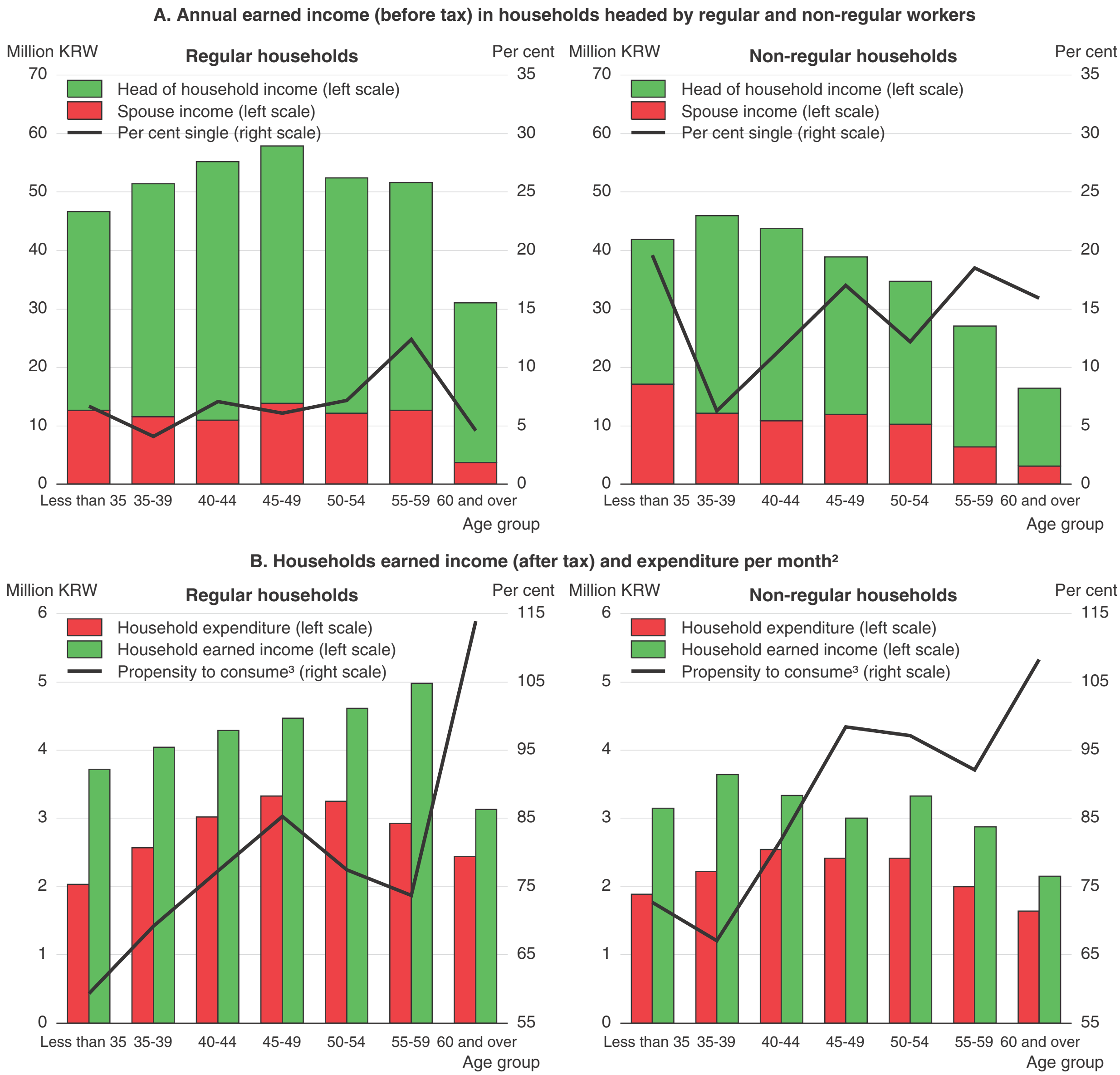
A. Age	Under age 30 35.0	30 to 59 26.8	Over age 60 67.4
B. Gender	Male 26.5	Female 40.2	
C. Education[1]	Middle school or less 59.9	High school 37.1	Tertiary 21.4
D. Sector	Manufacturing 13.7	Wholesale and retail 28.9	Construction 52.3
E. Size of establishment	Less than 5 47.5	5 to 299 31.7	More than 300 14.0

1. Ratio of temporary workers to wage workers.

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

Figure 2.5. **The gap in income and expenditure between regular and non-regular workers is large**

Households with two or more persons in 2011[1]



1. Based on the *Korean Labour and Income Panel Survey* (KLIPS), an annual household survey since 1998 that consists of about 6 000 households (13 000 individuals). Non-regular workers are identified using the official definition of non-regular workers, the same definition used in *Strengthening Social Cohesion in Korea* (OECD, 2013b). Job status and age category is that of the household head.
2. Contributions to the National Pension Scheme and National Health Insurance are included in expenditures. Household earned income equals annual income after taxes, divided by 12.
3. Propensity to consume is the ratio of household expenditure to household earned income after tax.

Source: Korea Labour Institute, *Korean Labour and Income Panel Survey (KLIPS)*; OECD calculations.

StatLink http://dx.doi.org/10.1787/888933356147

low income and precarious status of non-regular workers discourages family creation and fertility, as only 2% of children are born outside of marriage, the lowest share in the OECD.

The large income gap is reflected, in turn, in a large disparity in spending. Disposable earned income in a household headed by a non-regular worker was 22-42% less than in a household headed by a regular worker for those over 40 (Panel B). Low income squeezes family budgets: the propensity to consume was 94% in households headed by a non-regular worker, compared to 76% in regular households. The low saving rate contributes to the household debt problem and slows the accumulation of savings for retirement. Despite the high propensity to consume, the level of consumption in non-regular households was 19-49% below that in regular households for each age group above 40.

Poverty among the working-age population is closely linked to employment status. The relative poverty rate is much higher in households headed by a non-regular worker, at 16%, compared to 5% in those headed by a regular worker or a self-employed worker (Figure 2.6). Moreover, the relative poverty rate is lower in households with one regular worker (7%) than in those with two non-regular workers (8%) (Panel B). The poverty rate rises to 22% for households with only one non-regular worker.

Labour market dualism has important equity implications for future generations. Spending on education in households headed by a non-regular worker is only 60% of that of regular households (Figure 2.7). For families with children under the age of 18, spending per child in households headed by a non-regular worker is 24% less than in those headed by a regular worker (Panel B). The gap is 34% in the case of private tutoring, including *hagwons*. Given the key role of private education in gaining entrance to top universities leading to high-paying jobs, children in non-regular households face a serious disadvantage.

The limited mobility between regular and non-regular employment in Korea exacerbates inequality. In Korea, non-regular employment is rarely a stepping stone to regular employment: the probability of moving from temporary to permanent employment over a one-year period was only 11.1%, as against over 50% in a number of European countries (OECD, 2013b). 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 according to a survey (OECD, 2015b). Moreover, the shift to regular status is often reversed: over a ten-year period, 70% of workers who shifted from non-regular to regular jobs lost their regular status within four years (Kim and Lee, 2013). The long-term implications of labour market dualism make it even more important to break down dualism.

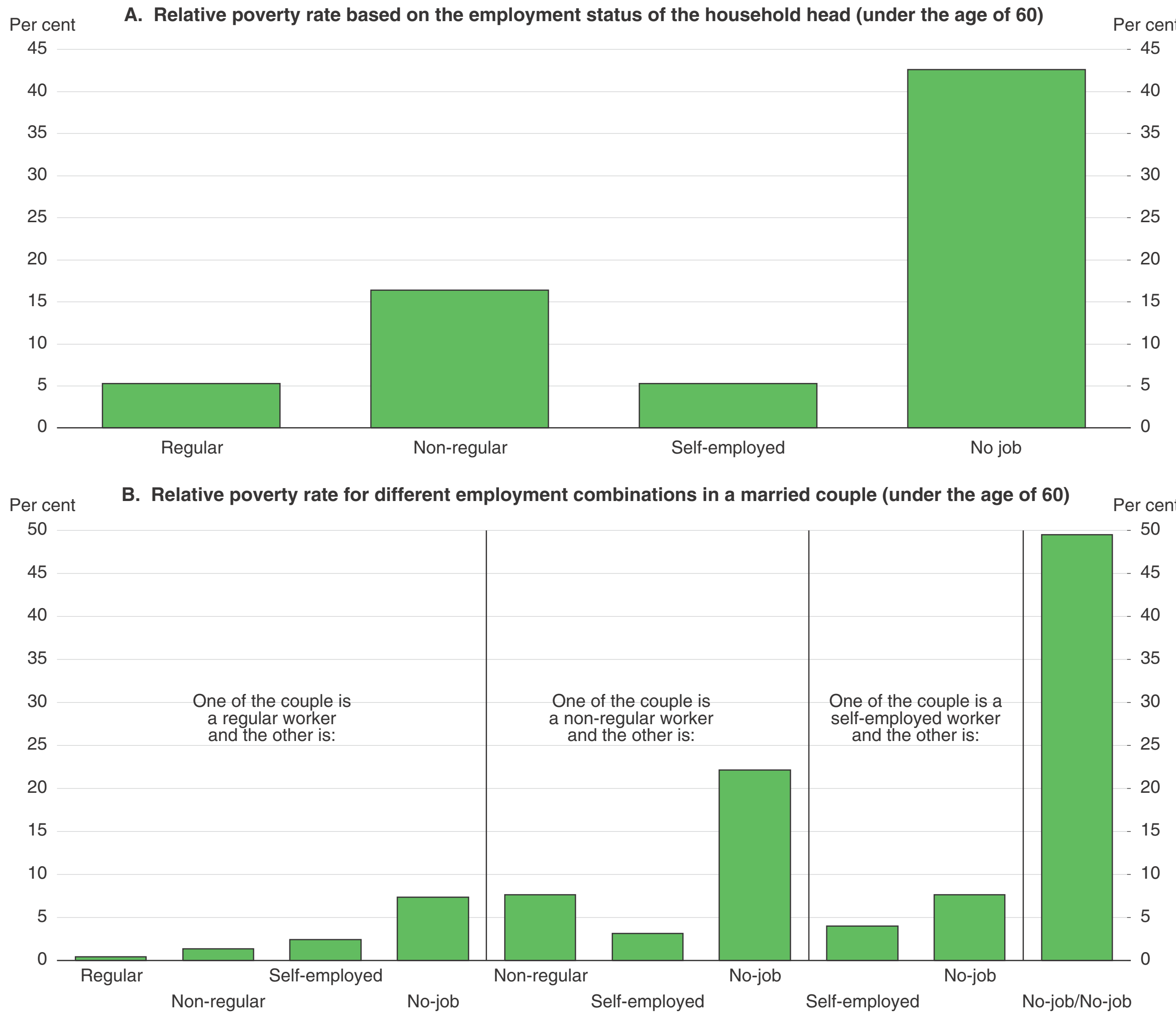
Policies to break down labour market dualism

The objective should be to implement the principle of equal pay for equal work by ending the segmentation of the labour market. Korea's emphasis on protecting jobs has failed to deliver employment stability and income security, as a large share of the labour force is in non-regular employment. The government has introduced a number of policies during the past ten years to address this issue (Box 2.2). Nevertheless, the share of employees in non-regular employment in 2014 was close to the 2003 level of one-third, while the wage gap between regular and non-regular workers has widened.

The 2007 reform that limits fixed-term contracts to two years (with some exceptions) has been counterproductive as it increased job precariousness. Over 2010-13, around one-half of employees on fixed-term contracts who had worked at least 18 months left their firm when their contract expired. The proportion was 66% at firms with more than 300 employees (2014 *OECD Economic Survey of Korea*). Meanwhile, less than one-third of workers were converted to regular status, which was the objective of the law. Firms tend to prefer to hire a new non-regular worker rather than convert a current non-regular worker to regular status. The government has proposed that the limit on fixed-term contracts be

Figure 2.6. **The relative poverty rate[1] is much higher in non-regular households[2]**

Households with two or more persons in 2011



1. Relative poverty is defined as the percentage of the population with an income less than half of the national median.
2. Based on the *Korean Labour and Income Panel Survey* (KLIPS), an annual household survey since 1998 that consists of about 6 000 households (13 000 individuals). Non-regular workers are identified using the official definition of non-regular workers, the same definition used in *Strengthening Social Cohesion in Korea* (OECD 2013b). Job status and age category is that of the household head.
3. Income is based on total income, which includes earned income (after tax and social insurance contributions), financial income, real estate income and social benefits.

Source: Korea Labour Institute, *Korean Labour and Income Panel Survey (KLIPS)*; OECD calculations.

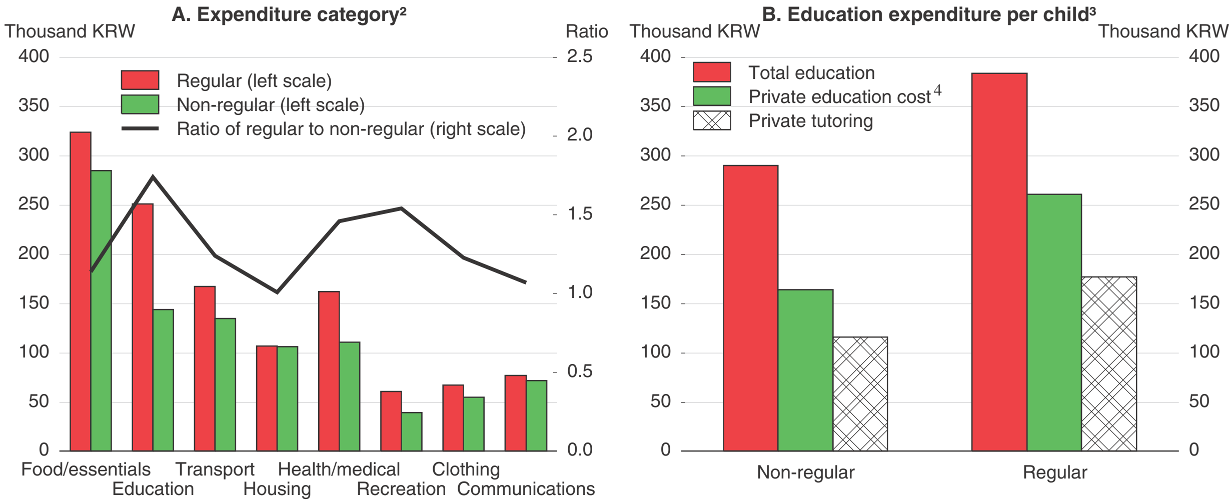
StatLink http://dx.doi.org/10.1787/888933356425

extended to four years for employees above age 35. However, this proposal is not accepted by labour unions.

The 2007 reform also outlawed "unreasonable discrimination", in terms of wages and working conditions, against non-regular workers who perform tasks similar to regular workers in the same firm. Korea is exceptional in this regard, as few other OECD countries have laws that explicitly require that temporary workers be paid the same wages as equivalent permanent workers. In practice, however, it is difficult to prove the existence of discriminatory treatment. Moreover, workers are hesitant to file complaints, fearing a negative reaction from management. With only 2 529 discrimination cases filed

Figure 2.7. **Spending on education is much higher in households headed by regular workers**

Households with two or more persons in 2011[1]



1. Based on the *Korean Labour and Income Panel Survey* (KLIPS), an annual household survey since 1998 that consists of about 6 000 households (13 000 individuals). Non-regular workers are identified using the official definition of non-regular workers, the same definition used in *Strengthening Social Cohesion in Korea* (OECD 2013b). Job status and age category is that of the household head.
2. The data are on an equivalised based to take account of the size of the household (household expenditure divided by the square root of the number of persons in the household).
3. Up to age 18.
4. Private education cost includes private tutoring institutions (*hagwons*), private tutors, and early childhood education and care.

Source: Korea Labour Institute, *Korean Labour and Income Panel Survey (KLIPS)*; OECD calculations.

StatLink http://dx.doi.org/10.1787/888933356433

Box 2.2. **Policies implemented or proposed to break down labour market dualism**

The 2007 reform of the labour law

After five years of discussion with the social partners, the labour law was reformed in 2007 to:

1. Limit non-regular workers' employment in a firm to a maximum of two years and support their transition to regular status.
2. Prohibit "unreasonable discrimination", in wages and working conditions, between non-regular and regular workers who work in similar jobs in the same firm.

The Comprehensive Non-regular Workers Initiative (September 2011)

This initiative aimed at strengthening the social safety net and enhancing equal treatment for non-regular workers by:

1. Subsidising SME contributions to social insurance systems to expand the coverage of their employees, including non-regular workers.
2. Broadening the coverage of social insurance to include special types of employment.
3. Better enforcing the minimum wage.
4. Upgrading inspection of labour conditions to promote balanced treatment of regular and non-regular workers.
5. Expanding vocational training opportunities for non-regular workers and promoting their shift to regular jobs.

Comprehensive Measures for Non-regular Workers (December 2014)

The government proposal, which was launched when the tripartite negotiations stalled, included:

1. Clarifying the rules and procedures for terminating the labour contracts of regular workers, based on a fair assessment and clear criteria.

Box 2.2. **Policies implemented or proposed to break down labour market dualism** *(cont.)*

2. Paying SMEs that convert non-regular workers to regular status a one-year subsidy equal to half of the wage increase resulting from the conversion.
3. Allowing fixed-term employees above age 35 to extend contracts to four years rather than being restricted to the two-year limit under the current law.
4. Permitting labour unions to request the correction of discriminatory treatment against non-regular workers.
5. Allowing non-regular workers to join decision-making bodies, such as the ESDC.
6. Promoting the shift of non-regular workers in the government to regular status.

The Tripartite Agreement (September 2015)

The Agreement, which is outlined in Box 2.1, contains a number of measures targeted at labour market dualism:

1. Company-based welfare funds will be used to assist non-regular workers; employees in the top 10% income bracket will voluntarily refrain from seeking wage increases to provide more resources for non-regular workers.
2. The tripartite partners shall prohibit unreasonable discrimination against non-regular workers and "strive to not overuse non-regular workers simply for the purpose of reducing labour costs".
3. The government will convert more non-regular workers in permanent roles in the public sector to regular status than they had originally planned (about a quarter of its non-regular employees) over 2013-15.
4. The government will make the discrimination correction system more effective by expanding the coverage of correction orders and awarding punitive damages.
5. Firms and workers will take action to improve the job security and working conditions of non-regular workers.
6. Firms and workers shall create a culture of regular and direct employment, and work together to set up reasonable principles to guarantee job security for incumbent employees and employ more young workers.
7. The tripartite partners will clarify the standards and procedures for employment contract termination.
8. When employment adjustments are required for managerial reasons, firms shall attempt to minimise workforce reductions by adjusting wages and working hours, relocating employees, suspending business temporarily, or giving employees leaves of absence or vocational training.
9. The tripartite partners shall ensure that the measures that employers are required to take to avoid dismissals for managerial reasons are specifically spelled out in the Labour Standards Act.

over 2007-12, the law was revised in 2012 to require labour inspectors to encourage firms to correct any discrimination, even in the absence of complaints. In 2014, 343 workplaces were inspected and 48 were found to have discriminatory practices. Under the Tripartite Agreement, the government will make the system more effective by awarding punitive damages.

The measures limiting fixed-term contracts and prohibiting discrimination have had limited effect on dualism. Breaking down dualism instead requires reducing the incentives that encourage firms to hire non-regular workers, notably to enhance employment flexibility and reduce labour costs. While wages are set by management and workers, the government can reduce the gap in labour costs by increasing non-regular workers' coverage by social insurance. By law, the three major social insurance schemes – the National Pension Scheme (NPS), National Health Insurance (NHI) and the Employment Insurance System (EIS) – should cover nearly all private-sector workers.

While coverage of regular workers is nearly universal, the coverage of non-regular workers by the three major schemes averaged 54.1% in 2015 (Table 2.4). The lower EIS coverage of non-regular workers (63.0%) is particularly problematic, given their precarious employment. Hiring a non-regular worker who is not covered by any of the three schemes cuts a firm's labour cost by 8-9% compared to a regular worker who is covered.

Table 2.4. **Non-regular workers receive less social insurance and company-based benefits**

Percentage of employed persons by status in 2015

	National Pension Scheme	National Health Insurance	Employment Insurance System	Average for social insurance[1]	Retirement allowance[2]	Bonus payments[3]
Total	87.6	87.5	88.5	87.9	81.2	58.1
Regular	97.6	97.8	95.4	96.9	93.1	69.4
Non-regular	48.2	51.2	63.0	54.1	45.1	23.8
Of which:						
Part-time	48.5	50.4	58.4	52.4	33.3	16.0
Atypical	30.6	35.1	58.6	41.4	33.6	12.7

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

Source: Ministry of Employment and Labour, *Survey on Labour Conditions by Employment Type* 2015.

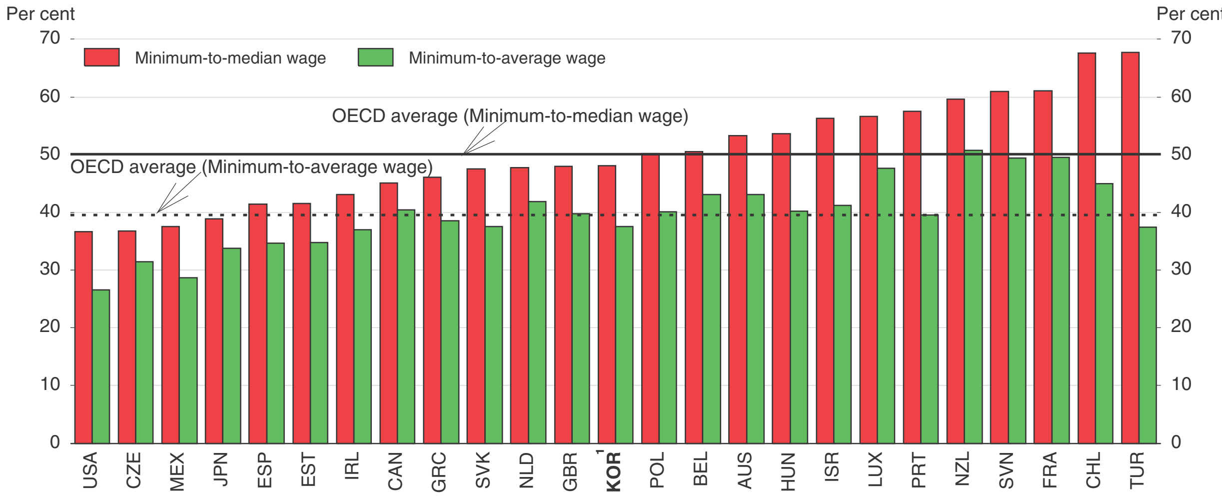
In 2012, the government introduced a subsidy for social insurance contributions. It now covers half of the contribution (employers and employees combined) for workers earning less than KRW 1.4 million per month (about USD 1 223) in workplaces with fewer than ten employees. The number of subsidised workplaces has reached 0.7 million (around one-fifth of firms with less than ten employees). However, the subsidy may discourage firms from expanding and surpassing the limit of ten employees. It is essential to increase compliance with social insurance systems to weaken incentives to hire non-regular workers and enhance the welfare of such workers. At present, the NHI is responsible for collecting all social insurance contributions. Giving the National Tax Service a larger role in supporting the collection of contributions and stricter enforcement of penalties for non-compliance could increase coverage for all workers.

In addition, workers with less than one year of tenure are not entitled to the retirement allowance, which mandates one month of salary per year of work, giving firms an additional incentive to hire workers on contracts of less than one year. Consequently, less than half of non-regular workers receive the retirement allowance (Table 2.4). Moreover, less than a quarter receive bonus payments, which account for around a quarter of annual employee earnings.

The Tripartite Agreement stated that the minimum wage will be gradually increased and the government will promote compliance by tightening sanctions on violations and expanding labour inspections to prevent and detect such violations. Over the past decade, Korea's minimum wage has risen at a 7% annual average rate, far outstripping overall wage gains of less than 3% per year. By 2015, the minimum wage was nearly half of the median wage, matching the OECD average (Figure 2.8). In 2016, the minimum wage will be increased by another 8.1%, the largest increase since 2008, in part to boost domestic demand. The government expects that the 2016 hike will affect the pay of 18% of employees.

Figure 2.8. **The minimum wage relative to the median wage in Korea is near the OECD average**

In 2014 or latest year



1. For Korea, the data are for 2015.

Source: OECD Earnings Distribution Database.

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Korea could benefit from a moderate increase in its minimum wage, given its wide wage dispersion and high relative poverty rate. A household with children and one worker earning the minimum wage would have an income below the relative poverty line. Raising the minimum wage would boost the income of some non-regular workers and narrow the distribution of labour income. However, if set too high, the minimum wage could reduce employment, which would dampen its inequality-reducing effect. In Korea, 10% of workers are paid the minimum wage or less (Yoo, 2013). Around 70% of such workers were employed in small firms with less than ten workers and around one-third were in households in relative poverty. Raising the minimum wage too fast could undermine employment in micro firms and increase poverty. It is also important to improve compliance with the Minimum Wage Act, given weak enforcement and a lack of penalties for violations. Of the nearly 20 000 cases in 2011 alleging violations, only 11 resulted in a legal ruling against the employer and most of these only requested "corrective measures" (OECD, 2013b). The government has introduced a bill aiming at better monitoring and enforcement of compliance with the minimum wage.

Breaking down dualism also requires addressing employment protection for regular workers, which has prompted firms to hire non-regular workers to enhance employment flexibility (2014 *OECD Economic Survey of Korea*). Regular workers receive high employment protection 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 inconveniences for firms: consultations with workers, implementation of measures to avoid or minimise layoffs, and strict selection criteria for selecting the employees to be dismissed. 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 are difficult to predict for employers, but they can be very high due to long and complex court rulings. Furthermore, dismissals for incompetence or negligence of duty are likely to be rejected by courts. In short, dismissal costs are high (Lee, 2015).

The cost, uncertainty and time necessary to meet the conditions necessary for laying off regular workers increase incentives for firms to hire non-regular workers. International evidence suggests that temporary jobs are a common response by firms to high costs of reducing permanent jobs (Kahn, 2010). The Tripartite Agreement acknowledged the importance of reform, stating that it will "clarify the standards and procedures for terminating employment contracts" (Box 2.2). Relaxing employment protection would boost productivity and output growth by enabling innovative firms to attract the human resources necessary to commercialise new ideas and encouraging firm-based training as reliance on temporary workers declines (2014 *OECD Economic Survey of Korea*). However, relaxing employment protection is strongly opposed by regular workers. To break down dualism, Korea needs a comprehensive strategy of relaxing employment protection for regular workers and making it more transparent, raising the minimum wage and increasing social insurance coverage and upgrading training for non-regular workers. One option would be to introduce reduced employment protection for new employees, while current employees retain their protection under a grandfather clause. This approach appears to have been successful in Italy and Spain. However, such an approach in Korea would further penalise youth, who already face difficult labour market conditions. Measures to expand protection by the social safety net, as stated in the Tripartite Agreement, may facilitate a significant reduction in employment protection for regular workers.

Strengthening the social safety net

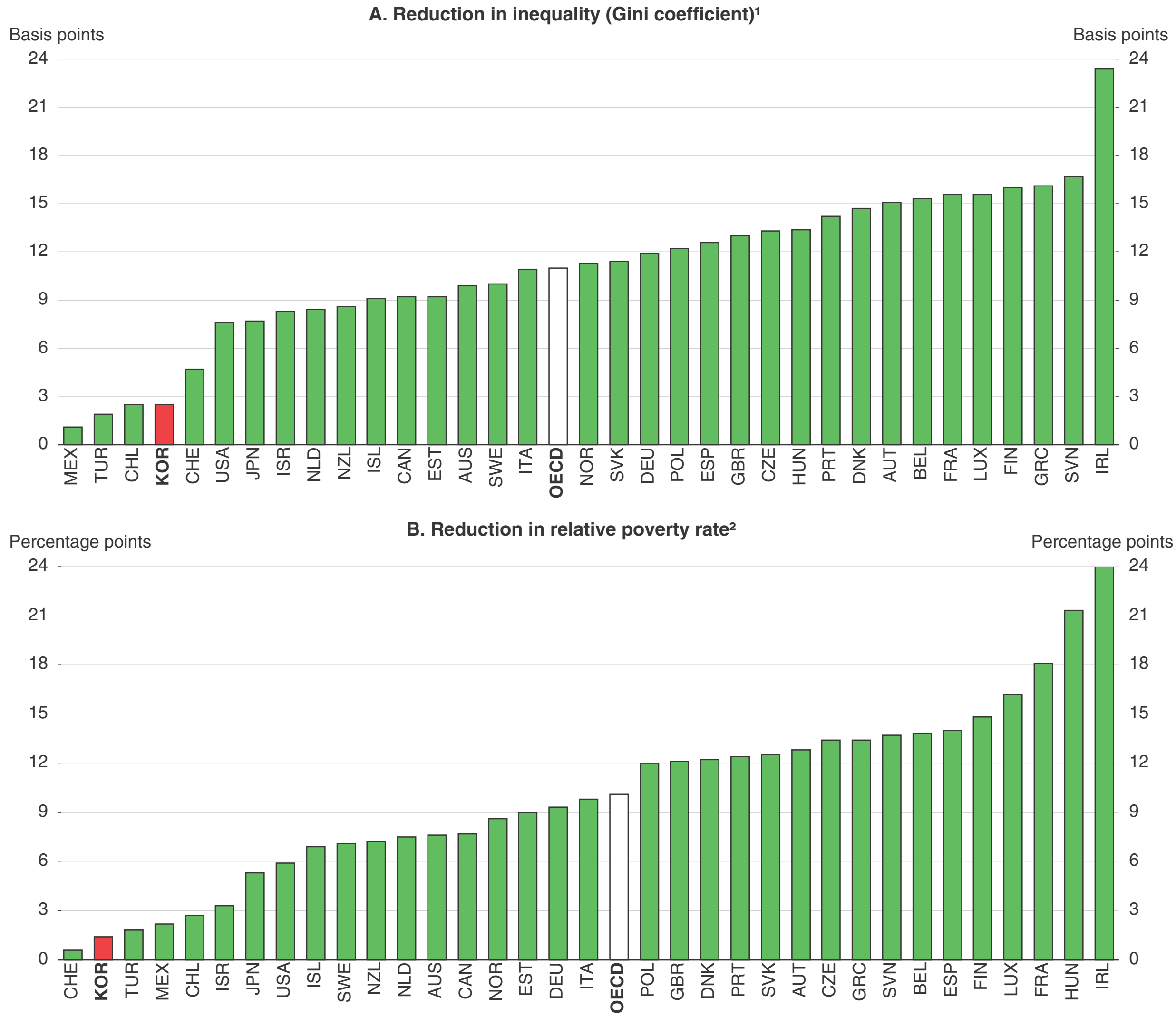
Korea needs to shift from protecting jobs to protecting individuals. The redistributive impact of the tax and transfer system on income inequality and relative poverty is one of the weakest in the OECD (Figure 2.9), although it has increased in recent years. The redistributive impact is limited by the low level of public spending at 10.6% of GDP in 2014, less than half of the 22% OECD average, while the tax and social security contribution burden, at 33% of GDP, is well below the OECD average of 42%. Moreover, the progressivity of the tax and benefit system is limited (2014 *OECD Economic Survey of Korea*). Korea's high level of wage inequality and relative poverty makes it essential to make the tax and transfer system more effective in redistribution. OECD research suggests that redistribution does not necessarily harm output growth (OECD, 2015b). An international survey found that the Korean population ranked second among 14 OECD countries in its support for income redistribution (World Values Survey, 2015).

Employment insurance, the in-work earned income tax credit (EITC) and the Basic Livelihood Security Programme (BLSP) are the major social welfare programmes for the working-age population. Unemployment benefits are relatively low at 50% of the person's daily wage before losing their job, compared to the OECD average of nearly 70%. In addition, the duration is relatively short, limited to 180 to 240 days depending on age. In contrast, the average duration in the OECD area is 2.3 years. The key concern with Korea's employment insurance, though, is the number of people ineligible for unemployment benefits as they are not covered. It is estimated that more than one-third of non-regular workers are not covered by employment insurance.

The EITC was initially introduced in 2008 for employed persons with children and expanded to childless couples and some self-employed workers in 2012 and to single people in 2014. The benefit level in 2014 for households with children was 6-8% of the average wage, which is comparable to New Zealand, although below US and UK levels. However, coverage was limited to 8% of households in 2015, in part due to eligibility

Figure 2.9. **The impact of taxes and transfers on income inequality and poverty is weak in Korea**

Working-age population in 2013 or latest year



1. The Gini coefficient can range from 0 (perfect equality) to 1 (perfect inequality).
2. 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.

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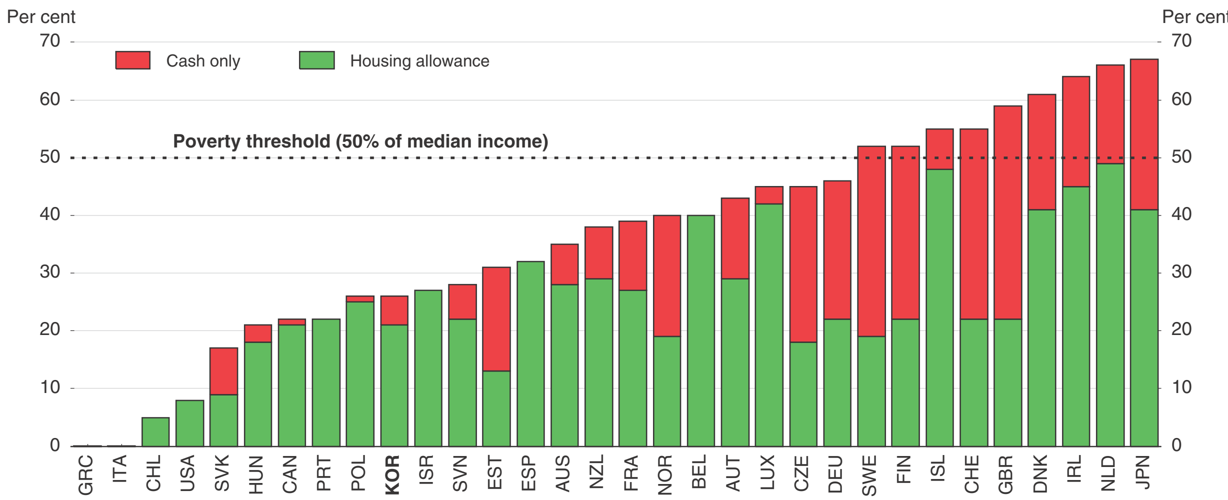
criteria, such as the limit on the value of housing owned by recipients to KRW 140 million (USD 122 320) (OECD, 2015f). Spending on the EITC was only 0.1% of GDP in 2015. Further expanding the coverage, while extending the income level at which EITC payments are phased out, currently set at 33% to 68% of the average wage, would help low-income families (OECD, 2013b).

The BLSP provides a cash benefit and in-kind support, for example for health care and education, to eligible persons in absolute poverty. The maximum support was equivalent to 26% of the average income in 2013, putting it in the bottom third of OECD countries (Figure 2.10). BLSP support has been limited to about 3% of the population by strict eligibility criteria on asset ownership and the "family support obligation rule". In 2015, the government shifted its focus from absolute poverty to relative poverty and set different

Figure 2.10. **The income level provided by cash minimum-income benefits in Korea is low**

Net income value of benefits to a single person as a percentage of average income in 2013



Source: OECD Tax and Benefit Models.

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income thresholds for receiving the cash benefit (below 29% of the national median income) and for in-kind support, such as medical services (40%), housing (43%) and education benefits (50%). In addition, eligibility criteria were relaxed. To further reduce in-work poverty and enhance incentives to work, the government allowed BLSP recipients to receive the EITC beginning in 2015. Further relaxing eligibility criteria would make the BLSP more effective in reducing poverty.

Expanding employment opportunities for women

The employment rate of women was the tenth lowest in the OECD in 2014. Moreover, it was 21 percentage points below the employment rate of Korean men in 2014 (Table 2.1), the fourth-largest gap in the OECD area. Although the employment rate for women matches that for men until age 30, it falls as women withdraw from the labour force following marriage and childbirth. Many women eventually return to the labour market, resulting in an M-shaped employment rate across age cohorts (Figure 2.11). The female employment rate is thus limited by the large share of women in the 30-40 age group who withdraw, at least temporarily, from the labour force.

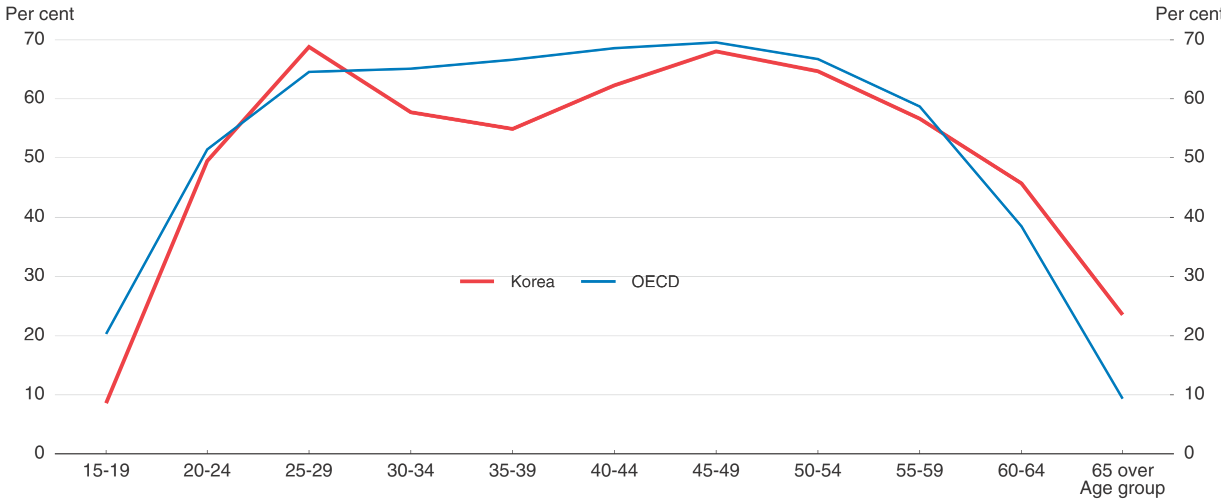
Factors that influence women's decision to leave the labour force

Women's decision to leave the labour force following marriage and childbirth is influenced by a number of factors, including: i) maternity and parental leave; ii) the availability of high-quality childcare; and iii) working time and the role of men in family responsibilities. Taxation of earned income is personal, rather than family based, and so does not penalise the second earner.

Improving the maternity and parental leave systems

The exodus of mothers out of the labour market suggests that the maternity and parental leave systems are not fully achieving their objectives. Since 2001, all women have been guaranteed 90 days of paid maternity leave. To ease the burden on firms and to limit

Figure 2.11. **Korea's female employment rate still had an M-shaped pattern in 2014**



Source: Korea National Statistical Office; *OECD Labour Market Statistics Database.*

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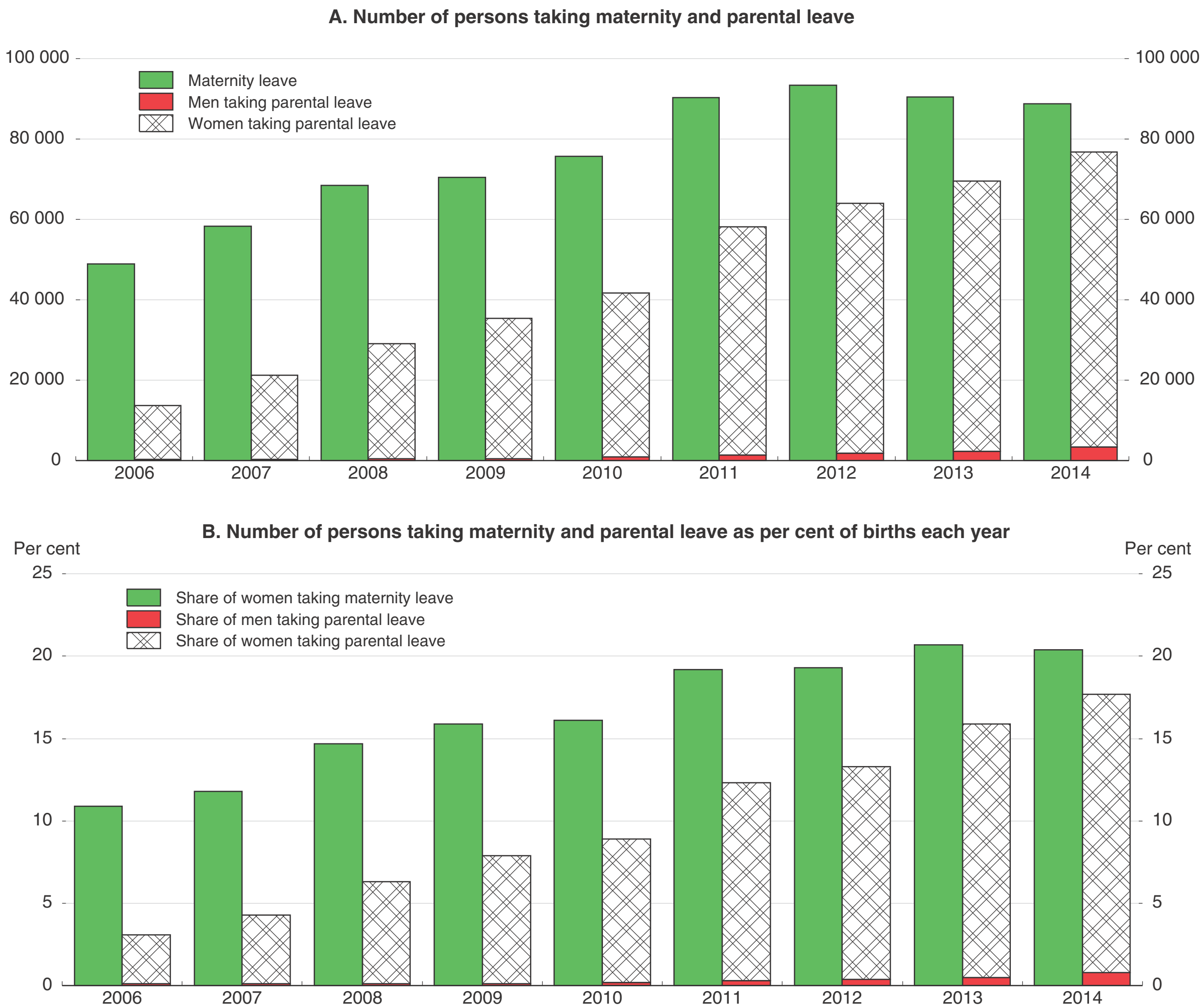
any negative effect on the hiring of women, the EIS pays one month of the leave (all three months in the case of SMEs) for private-sector employees who have contributed to the EIS for at least 180 days. The number of women in the private sector taking maternity leave nearly doubled between 2006 and 2012 before declining somewhat (Figure 2.12). The number of maternity-leave takers rose from 11% of the number of births in 2006 to 20% in 2014 (Panel B).

The small share of new mothers taking maternity leave reflects their low labour force participation. Only 35.6% of the women who gave birth in 2014 were covered by the National Health Insurance as employees, rather than dependents (Table 2.5). In contrast, the overall participation rate for women in the 25-34 age group was much higher at 62%. The large gap indicates that a substantial share of women leave the labour force before having a baby, despite the advantages of remaining employed and qualifying for three months of paid leave. The gap reflects several factors. *First*, management may encourage women's departure so as to avoid paying maternity leave (SBS News, 2014). *Second*, some firms tend to push the workload of mothers absent on maternity leave onto other employees rather than hiring more workers, thus making some women reluctant to take maternity leave (SERI, 2010).

In addition, the share of new mothers taking maternity leave (26.3% in 2014) is well below the share of new mothers who are employed at the time of giving birth (35.6%) (Table 2.5). Part of the difference is due to self-employed women, who account for 4% of new mothers and who are not eligible for maternity leave. The share of women taking maternity leave is further reduced by gaps in coverage, notably among non-regular workers and employees at SMEs, even if they are covered by the EIS. Indeed, one-fifth of new mothers employed in private firms do not receive maternity leave (Table 2.5, Panel B). Some women leave their firm soon after giving birth, thereby losing their entitlement to maternity leave. In 2011, 10.5% of new mothers covered by workplace-based health insurance at the time of giving birth were no longer covered three months later (Yoon, 2014). Moreover, some women, particularly those employed as non-regular

Figure 2.12. **Trends in maternity and parental leave**[1]



1. Data provided by the Employment Insurance System, which excludes public-sector employees.
Source: Yoon (2014).

StatLink http://dx.doi.org/10.1787/888933356480

workers, continue to work rather than take maternity leave due to job security concerns.

Ensuring the right of all new mothers to take maternity leave is thus a priority. In 2015, the government launched workplace guidance and inspection measures to improve compliance (MOEL, 2015). Effectively implementing the new monitoring and enforcement measures is essential. In addition, it is essential to break down labour market dualism, given that the take-up of maternity leave is lower among non-regular workers.

Table 2.5. **Maternity leave and employment status**

A. Employment status of women at time of giving birth (per cent)[1]

	2012	2013	2014
Employed	33.6	34.5	35.6
Employees	29.6	30.6	31.6
Public sector	6.5	6.7	6.0
Private sector	23.1	23.9	25.6
Self-employed	4.0	3.9	4.0
Not in labour force	66.4	65.5	64.4

B. Share of new mothers taking maternity leave (per cent)

	2012	2013	2014
Public-sector employees[2]	100.0	100.0	100.0
Private-sector employees	83.3	86.9	79.6
All women who work[3]	76.6	79.6	74.0
All new mothers	25.7	27.5	26.3

1. This is based on the National Health Insurance, which reports whether the mother is covered as an employee, self-employed or under the name of her husband or other family member (which means that they are not employed).
2. Assuming all women employed in the public sector at the time of giving birth take maternity leave.
3. Public and private-sector employees, plus self-employed.

Source: Ministry of Health and Welfare; National Health Insurance.

Parental leave has a positive impact on female labour participation (OECD, 2011). In Korea, parents have had the right to paid parental leave since 2001 and the system has been revised several times to encourage its use. Since 2008, parents in two-income households are each allowed up to one year of leave or reduced working time (15 to 30 hours per week) to care for children up to the age of eight. The one-year leave for fathers is the longest in the OECD. The benefit is set at 40% of the parent's basic wage up to a ceiling of KRW1 million (less than one-third of the average wage) if the parent has been enrolled in the EIS for at least 180 days. An employer cannot refuse a request for parental leave from a worker who has been at the firm for at least one year.

The number of parents taking parental leave rose more than five-fold over 2006-14 and is approaching the level of maternity leave (Figure 2.12). As with maternity leave, parental leave is concentrated among regular workers in large firms, reflecting weaker coverage by the EIS and concerns about job security among employees at SMEs and non-regular workers. The take-up of parental leave is limited by the small number of fathers using it. While the number rose from 230 in 2006 to 3 400 in 2014, men accounted for only 4.5% of parents taking the leave in 2014. In contrast, fathers took 25.5% of parental leave days in Sweden and 28.5% in Iceland in 2013. Moreover, the average length of leave taken by fathers in Korea is 8.3 months, compared to ten months for mothers.

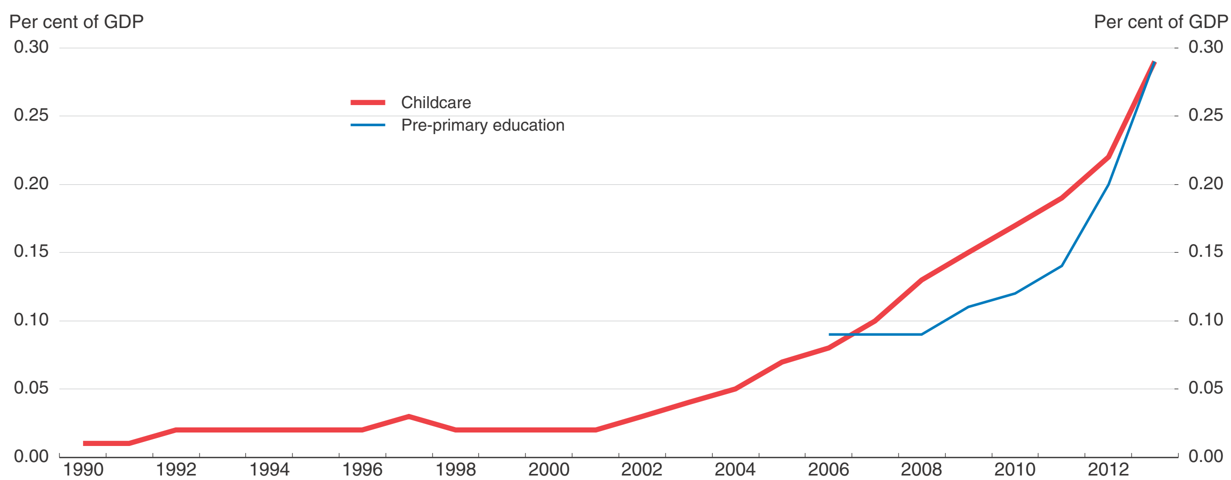
Parental leave by fathers is one of the most important measures to reduce the gender wage gap and alleviate gender discrimination in the labour market, as it facilitates women's return to employment (Cools et al., 2011). Fathers who take parental leave are more likely to engage in childcare activities. In addition, it has a positive impact on child development (Huerta et al., 2013). The small number of Korean men taking parental leave reflects concern that it will hurt their career prospects, which suggests that women's career prospects are being damaged. Another obstacle is the substantial income loss during the leave. Given the large gender wage gap in Korea (see below), it is financially advantageous in most cases that the mother, rather than the father, take the parental leave. Increasing financial support during parental leave would encourage more parents, particularly fathers, to take it. The government should also ensure that employers respect the legal right of workers to take parental leave.

In 2014, the benefit for reduced working hours during the childcare period was raised from 40% to 60% of the base wage (adjusted by the reduction in working time) and the government proposed that parents be allowed to choose up to two years of reduced working hours instead of one year of parental leave. In October 2014, the government started "Father's Month": if both parents take childcare leave successively, the childcare leave benefit for the second parent is raised to 100% of their ordinary wage (up to KRW 1.5 million) for the first month. These steps may encourage more fathers to take parental leave.

The availability of high-quality childcare

Korea has sharply increased public spending on early childhood education and care (ECEC) during the past decade. Central government outlays on childcare and pre-primary education each rose from less than 0.1% of GDP in 2006 to 0.3% in 2013 (Figure 2.13). Nevertheless, spending on pre-primary education per child in Korea in 2012 was 30% below the OECD average. The decision in 2013 to provide 12 hours per day of free childcare for all children up to age five, regardless of the employment status of the mother and family income, may further push up government outlays on childcare.

Figure 2.13. **Central government expenditures on ECEC have risen sharply**

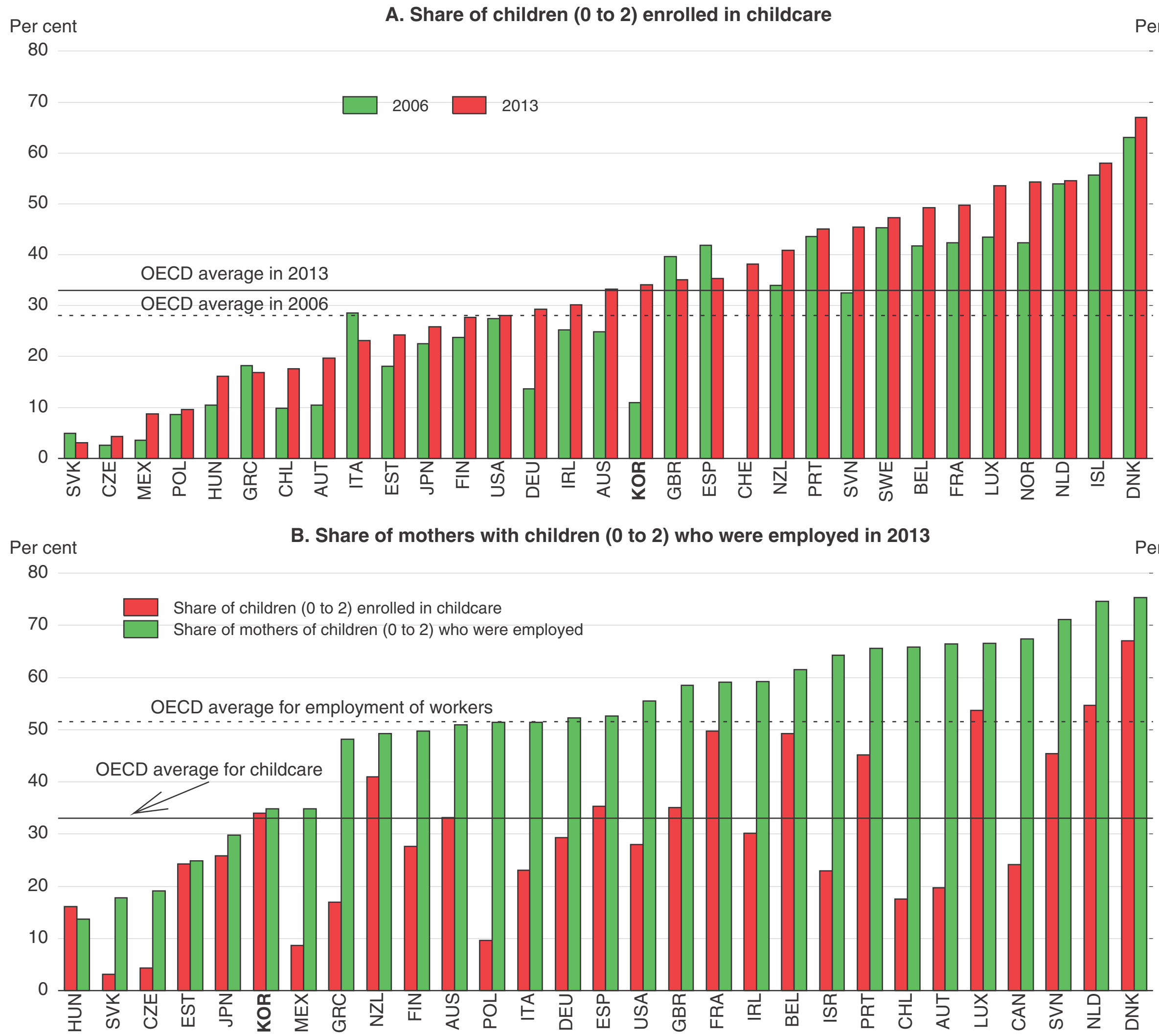


Source: Yun et al. (2014).

StatLink http://dx.doi.org/10.1787/888933356497

The share of children aged 0-2 enrolled in childcare rose from 11% in 2006 to 34% in 2013, the largest increase in the OECD during that period, putting it above the OECD average of 33% (Figure 2.14). However, the share of mothers of children aged 0-2 in Korea who were employed was 35% in 2013, far below the OECD average of 51% (Panel B), suggesting that the rise in childcare enrolment is not fully reflected in female employment. With increasing government support, the demand for childcare has outstripped supply. Ironically, the guarantee of 12 hours a day of free childcare since 2013 in Korea has not resolved childcare shortages for mothers who want to work. Instead, it has resulted in discrimination against working mothers by private childcare centres, which prefer the children of non-working

Figure 2.14. **Childcare enrolment increased sharply in Korea but the employment rate of mothers remains low**



Source: OECD Korea Policy Centre; *KIHASA Family Database.*

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mothers, who tend to pick up their children earlier than employed mothers, reflecting long working hours in Korea.

The provision of 12 hours per day of free childcare for all children up to age five, regardless of the employment status of the mother and family income was exceptionally generous. In France, for example, employed women with children aged 0-2 have a right to up to 40 hours of childcare a week, but pay a fee that varies with income. Given the high cost of universal childcare, countries tend to limit the age groups covered (for example, 3-4 in the United Kingdom, 3-5 in France, Israel, Mexico and Portugal) and the hours per day (for example, 3-5 hours in France, Israel, Mexico, Portugal and the United Kingdom) (OECD, 2013b). Korea's 2016 budget introduced some changes. The current "full-day support" (12 hours) of free childcare is limited to families that meet at least one criterion: have at least two earners or two unemployed parents, more than one child, a single parent, a mother who is pregnant, or a parent who is disabled. Around 80% of the budget will be used for full-day support for qualifying families. The remaining 20% will be used to provide six hours per day of free childcare plus 15 additional hours per month for parents not meeting one of these criteria. The government has also given working mothers priority in enrolling children in childcare to ensure that they have access to childcare.

In addition to discrimination against working mothers, parents face a shortage of high-quality ECEC. Parents need to trust the quality of care before sending their children to childcare or pre-primary education. With waiting lists for public ECEC, the number of private childcare centres increased by an average of 2 300 annually during the past five years to meet rising demand. Local governments, which licence new childcare centres, set standards for entering the market. Entry permission also depends on market conditions. If the childcare occupancy rate falls below a certain level, the local government can prevent the entry of new childcare providers to prevent excessive competition. However, entry barriers tend to weaken the competitive pressure that would otherwise force low-quality providers to exit the market. Studies show that areas with entry restrictions pay low wages to childcare staff and thus have less qualified personnel, which reduces quality (Yun et al., 2014). In addition, private childcare centres are subject to a price ceiling, which was set at KRW 270 000 (around USD 235) per month in 2012, thus limiting the quality of service. Finally, the accreditation system operated by the central government is voluntary. In November 2015, 77.8% of childcare centres had received accreditation.

The quality of public childcare is higher than private institutions, reflecting the qualifications of their teachers. For example, in public childcare centres, 35.3% of the teachers have at least a university degree, nearly double the share in private centres (Table 2.6). The gap is also evident for pre-primary education: 85.3% of the teachers in public institutions have a university degree compared to only 39.4% in private institutions.

Table 2.6. **Teacher qualifications for ECEC in 2012**

Educational attainment of teachers

	Institution type	High school	Some college	Four-year degree or higher
Childcare	State/public	6.0	58.7	35.3
	Private	20.1	61.0	18.9
	Home-based	29.8	51.4	18.7
Pre-school	State/public	0.1	14.6	85.3
	Private	0.0	60.5	39.4

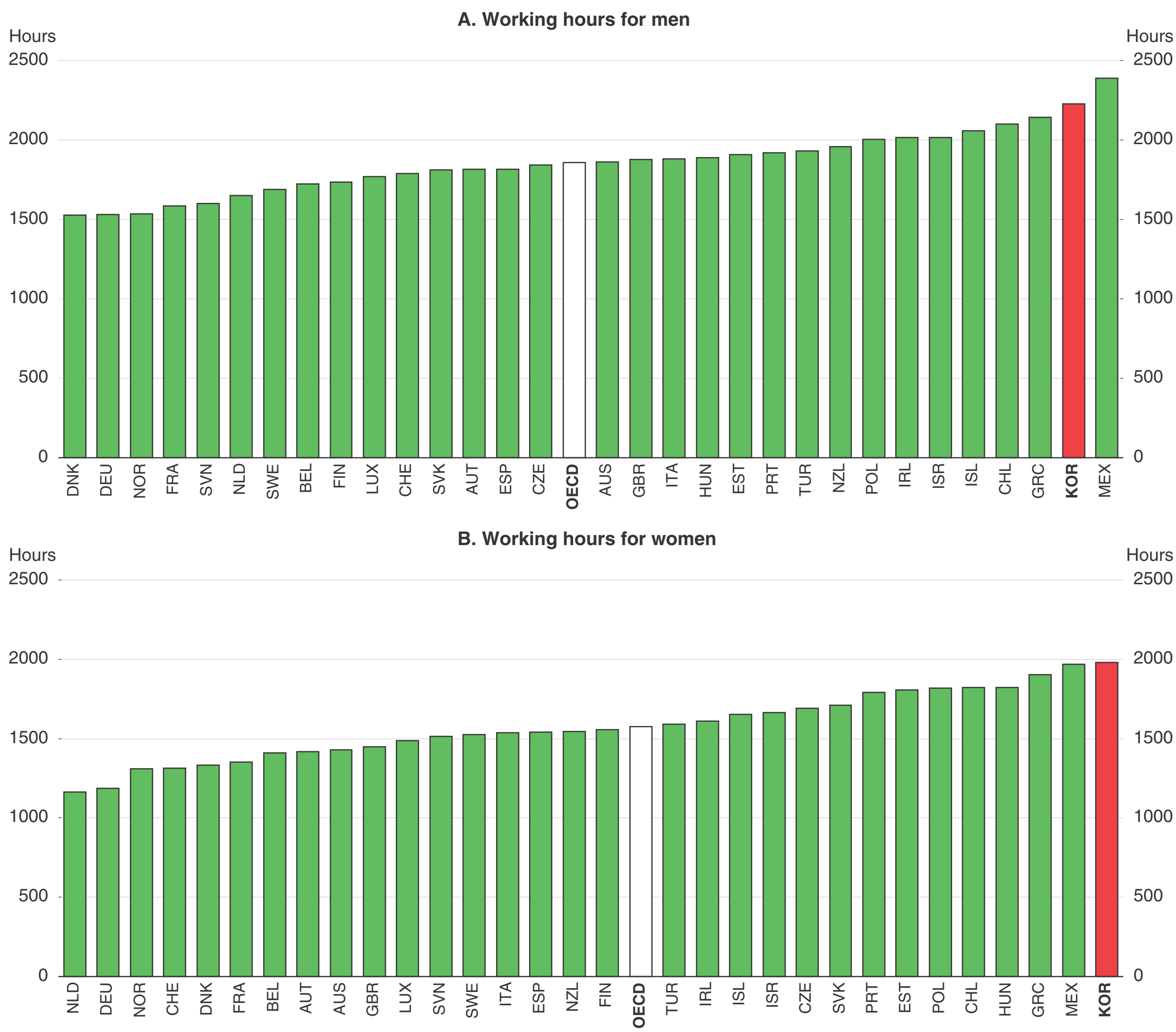
Source: Yun et al. (2014).

A number of reforms are needed to improve ECEC in Korea and facilitate female employment. *First*, the government should upgrade accreditation standards and make them mandatory for ECEC institutions. *Second,* the quality of private ECEC institutions should be improved by strengthening qualification standards for ECEC teachers and raising the pay and benefits of those in private ECEC institutions. *Third*, fee ceilings on private childcare and entry barriers should be relaxed to improve quality. In the longer run, gradually integrating childcare and pre-primary education would improve quality, while reducing costs (2014 *OECD Economic Survey of Korea*). Building on the common curriculum, the next step is to harmonise regulations between kindergartens and childcare for children aged 3-5.

Work-life balance and working time

The hard-driving corporate culture that discourages men from taking parental leave also results in long working hours for both men and women (Figure 2.15). The Roadmap to a 70% Employment Rate calls for reductions in working hours. Total working hours in Korea have fallen by 17% over 2000-11 as the standard workweek was reduced from 44 hours to 40 by 2011. However, firms with less than five employees, which account for 19% of wage earners, are exempted from this standard. In addition, employees can work up to 12 hours of overtime per week, plus an additional eight on weekends or holidays, making a total of 68 hours per week. Annual working hours in 2014 were still 17% above the OECD average, equivalent to 354 extra hours of work each year. Firms limit the number of regular workers because employment protection makes it difficult to dismiss them, and tend to meet increased demand through overtime and hiring non-regular employees. As for workers, they are attracted by the 50% wage premium for overtime work.

Figure 2.15. **Working hours in Korea were long for both men and women in 2014**



Source: OECD Family Database.

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Long working hours for Korean men is one factor limiting their unpaid work at home to only 45 minutes a day, only 18% of the total by the parents, the lowest share in the OECD. Men's long working hours and small role in family responsibilities limit the employment choices of women. For women in the labour force, working time was the longest in the OECD in 2014 (Panel B) and three-quarters work more than 40 hours per week. Long hours reduce the quality of life and the fertility rate, and discourage employment. Long hours are also a threat to the health of both men and women (Yang, 2012) and contribute to Korea's high rate of industrial accidents (Yoo, 2012).

A decline in working hours would create more family-friendly workplaces, thus enhancing the well-being of society. In 2010, the ESDC (Box 2.1), which includes the government, workers and employers, set a target of cutting working time to around 1 800 hours per year by 2020 and this objective was reaffirmed in the 2015 Tripartite Agreement. The government has stepped up efforts to enforce compliance with the legal limits on working time and provides subsidies for up to two years to SMEs that reduce working time and hire more employees.

However, government measures to reduce working hours have had only a limited effect. Moreover, the unions demand that any cuts in working time be based on the principles of no change in wage levels, labour intensity or job security (Lee, 2012). Indeed, after falling an average of 32 hours a year (1.4% annual rate) during the decade to 2010, annual working hours have since fluctuated around 2 100. The Tripartite Agreement includes a number of policies to reduce hours:

- Carrying out nationwide campaigns to improve workplace culture and increase productivity.
- Including weekend and holiday work in overtime hours, thus reducing maximum working time to 52 hours per week. This law will be phased in gradually beginning with large firms, given its impact on labour costs.
- Reducing the number of occupations excluded from working-hour regulations from 26 to 10.
- Encouraging employees to use annual leave. A 2011 government survey found that on average workers take only seven days of the 11.4 days that they are granted for annual leave.
- Providing government subsidies for investment and labour costs to help SMEs cope with business difficulties and the wage losses of their employees as working hours decline.

Achieving the government's goal of reducing working time requires addressing the underlying causes of long working hours. *First*, working hours are longest in SMEs where labour shortages force employees to work long hours. It is important to resolve the labour mismatch problem that results in such shortages (see below). *Second*, the practice of long working hours should be replaced by a productive work culture, as recognised in the Tripartite Agreement. Indeed, Korea's labour inputs (relative to its population) are the highest in the OECD while labour productivity per hour of work is only 55% of the top half of OECD countries. Long working hours are associated with low productivity in the OECD area. Firms argue that long working hours are necessary to offset low productivity, even though the law of diminishing returns makes long hours a cause of low productivity. The goal should be to raise productivity and wages, which will shift workers' preferences toward more leisure, thereby reducing working time.

In addition to reducing working time, the three-pronged approach of the Roadmap to a 70% Employment Rate includes creating "decent" part-time jobs (i.e. regular part-time jobs) and spreading flexible work arrangements. Part-time employment in Korea is relatively low, particularly for women. In 2014, 16% of female employees worked part-time compared to the OECD average of 26%. While part-time employment is attractive to those seeking to balance work with family responsibilities and education, such jobs in Korea are precarious, pay substantially lower hourly wages and provide less social protection.

The government aims to promote decent part-time jobs, which allow workers to voluntarily work fewer hours than full-time employees without facing the discrimination associated with non-regular employment. It is taking the lead with a target to hire 13 000 public-sector workers on a part-time basis by 2017. To promote part-time work in the private sector, the government has provided subsidies since 2012 that are equivalent to 50% of wages (up to KRW 0.6 million per month) for one year for employers who hire regular part-time workers. In 2014, the subsidy was extended to firms that shift full-time workers to part-time work. The government also plans to establish a pool of substitute workers to facilitate the shift from full-time to part-time work by current employees (Ministry of Employment and Labour, 2015).

The government is also promoting work practices that allow employees greater flexibility about how much, where and when they work, while assuring employees who opt for such flexibility that they will not be shunted off to low-quality jobs. Under the Tripartite Agreement, the government will extend the reference period for flexible working time from two weeks to one month and compile a list of jobs where employees should be allowed to determine their schedule. Ultimately, the private sector has a major responsibility to promote gender equality and work-life balance by making work schedules better fit family schedules and encouraging, rather than penalising, parents who take leave to care for children.

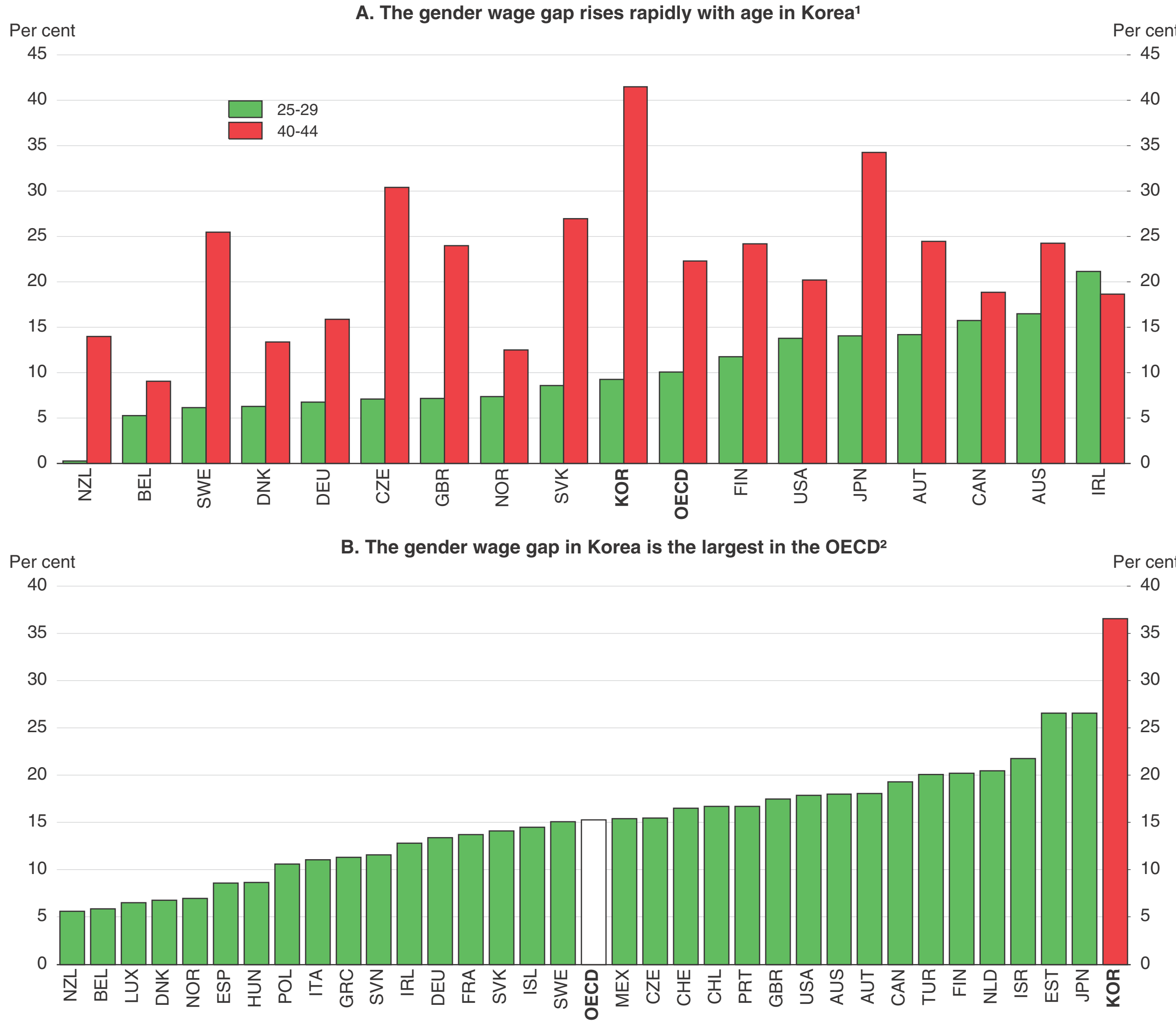
Facilitating women's return to work after an absence from the labour market

Following marriage and childbirth, women stay out of the labour force for about ten years on average (Hong and Lee, 2014). The issues discussed above that prompt their departure – notably the lack of high-quality childcare and work-life balance – delay or even prevent women's return to the labour force. Given the close link between seniority and wages, any absence from the labour market has a strong impact on earnings. Indeed, the wage gap between women with children and men is 45%, compared to only 13% for childless women (Walker, 2014). The gender wage gap for young women (aged 25-29) is close to the OECD average of around 10% (Figure 2.16), given that 30 is the average age when Korean women have their first child. For the 40-44 age group, the gap reaches 41.5%, the highest in the OECD. The overall gender wage gap for the working-age population in Korea was the largest in the OECD area at 37% in 2013 (Panel B). While the law requires equal pay for equal work, the gender wage gap is falling very gradually, from 40% in 2000 to 37%. Meanwhile, the OECD average fell from 19% to 15%. The large gap in Korea is surprising, given that the university graduation rate for women is higher than that for men among the 25 to 34 population and indeed is the highest in the OECD (Kim, 2011).

The large gender wage gap discourages women, particularly those with higher education, from returning to the labour force. Indeed, the employment rate of women in Korea with a tertiary education was the lowest in the OECD in 2014, while the rate of those with less than a high school education was above the OECD average (Figure 2.17). Given their high rate of university graduation, the low employment rate of women represents a large opportunity cost for the Korean economy.

Figure 2.16. **Korea's gender wage gap rises with age and is the largest in the OECD**

In 2013 or latest year available for full-time employees



1. The difference between male and female mean wages divided by male mean wages.
2. The difference between median earnings of men and women relative to median earnings of men, full-time employees.
Source: OECD Earnings Distribution Database.

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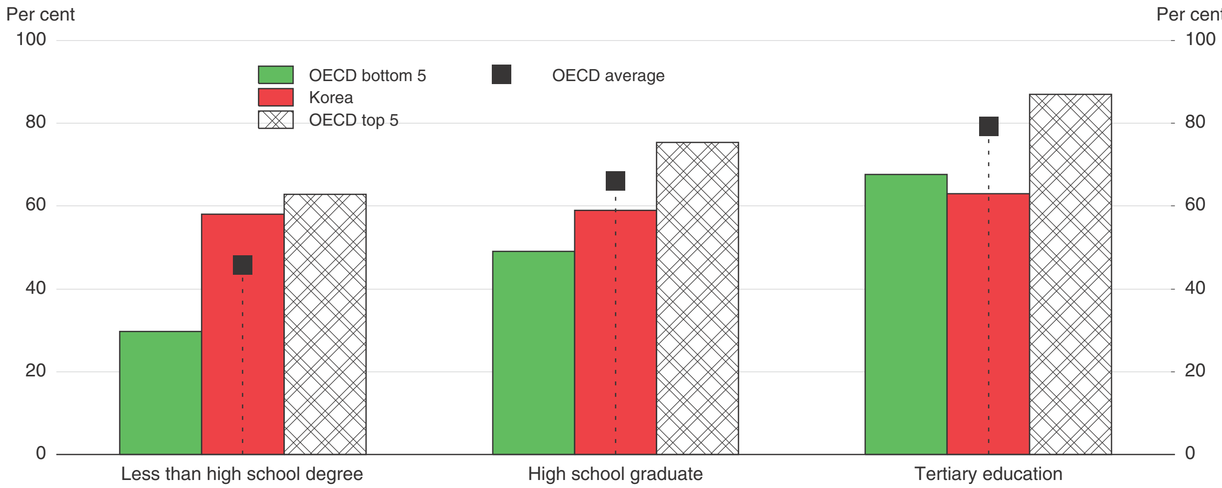
Reforming the wage system to emphasise performance and reduce the importance of seniority would help narrow the gender wage gap. The seniority-based system was suitable for the high-growth era, as firms expanded rapidly and the average tenure and age of workers were relatively low. However, as growth slowed and tenure and seniority rose, labour costs increased sharply. The government has been encouraging a shift from seniority to pay based on performance and job responsibilities. Shifting from the traditional emphasis on seniority towards a meritocratic approach emphasising performance has prompted opposition from workers (Rowley and Yang, 2009). Given the difficulty of changing the wage-setting system, it is essential to also address other issues that contribute to the large gender wage gap: i) labour market dualism; ii) the

Figure 2.17. **Educated women in Korea have a relatively low employment rate**

In 2014 or latest year available



Source: OECD (2015a), *OECD Education at a Glance 2015*.

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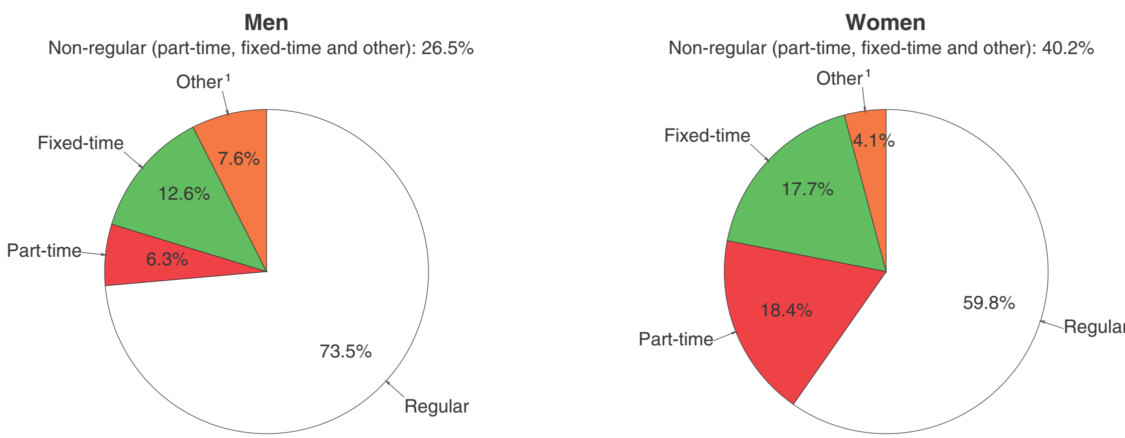
concentration of women in industries with lower wages; and iii) the small share of women in management positions.

Labour market dualism and the gender wage gap

Non-regular workers earned only 64.3% as much per hour as regular workers in 2014 (Table 2.2). The concentration of women in non-regular jobs thus contributes to the large wage gap. In 2015, 40.2% of female employees were non-regular compared to only 26.5% of men (Figure 2.18). Breaking down dualism is thus crucial to reduce the gender wage gap and promote employment opportunities for women.

Figure 2.18. **Women are concentrated in low-paying non-regular jobs**

Employees by employment status as a percentage of total employment in 2015



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

Source: Statistics Korea, *Economically Active Population Survey*, August 2015.

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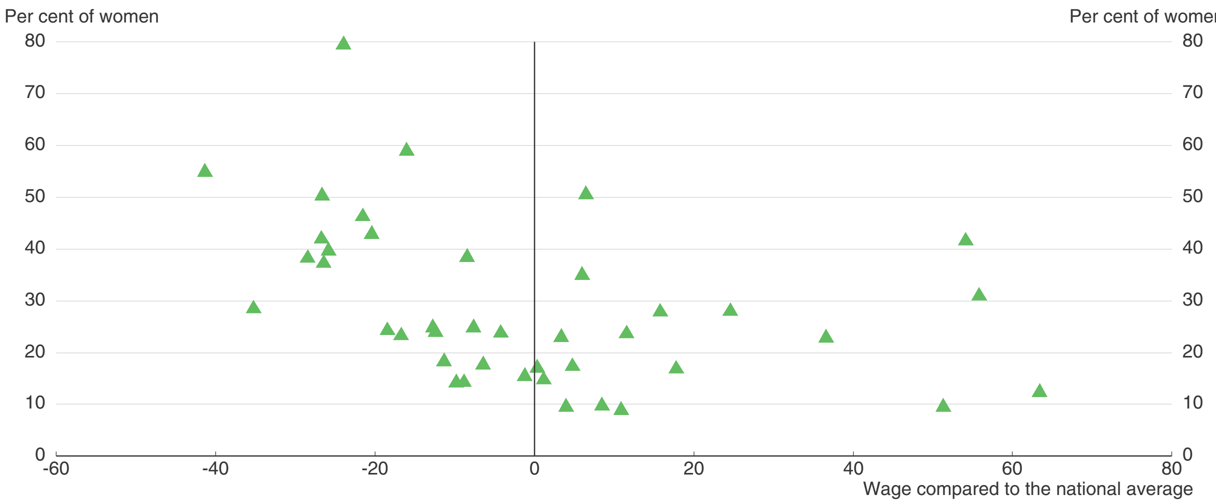
Figure 2.19. **Women are concentrated in sectors with low wages**



Note: The 41 industries cover manufacturing (24 industries), services (13 industries), agriculture, forestry and fishing, mining, utilities and construction in 2014. Includes the basic wage, overtime pay and bonus payments.
Source: Statistics Korea; OECD calculations.

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The concentration of women in low-wage industries

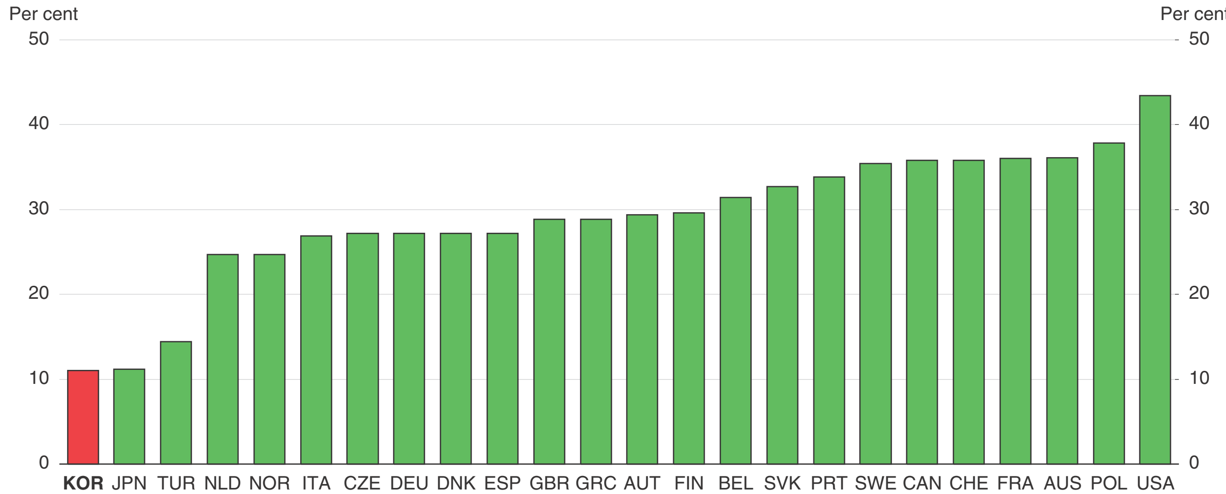
A second factor is the concentration of women in industries that pay low wages (Figure 2.19). Data for 41 industries (covering manufacturing, services, construction, mining, utilities and agriculture) in 2014 show an inverse correlation between the wage rate and the share of employees that are women. While 74% of female employees worked in the service sector, where wages are substantially below the national average, only 23% worked in manufacturing, where wages are much higher. Policies to boost productivity in the service sector (Chapter 1) would thus help narrow the gender wage gap.

It is important to address the factors that push women toward low-wage sectors. *First*, female employment is concentrated in industries with shorter working hours, suggesting that improving work-life balance and childcare could attract more women to high-wage industries. *Second*, as in many countries, women tend to follow different educational paths. For example, women in Korea account for only about 20% of tertiary degrees in computing qualifications and 24% in engineering. The small share in these fields may reflect the different level of achievement in math. While Korea scored first in math in the 2012 PISA test, there was a significant gap between boys and girls.

The lack of women in management

The long absence of women from the labour force following childbirth and their concentration in non-regular employment limit their rise up the corporate ladder. The share of women on corporate boards in Korea, at 2.1% in 2014, lagged behind other Asian economies, such as Malaysia (12.8%), Indonesia (12.2%), Hong Kong, China (11.1%), China (9.2%) and Singapore (7.4%) (Vinnicombe et al., 2015). Korea has no targets to raise the share, although it has long had quotas on candidates for the National Assembly. The share of women in management in Korea was the lowest in the OECD area at 11% in 2013 (Figure 2.20), contributing to the gender wage gap. The Equal Employment Act was

Figure 2.20. **The share of women in management in Korea was the lowest in the OECD in 2013**



Source: *OECD Family Database.*

StatLink http://dx.doi.org/10.1787/888933356549

modified in 2005 to require firms with more than 500 workers to provide data on women in management. The government gives improvement orders to those that do not reach 70% of the average share by firm size or industry. In 2014, the government decided to give preference in public procurement to firms with a higher share of women in management and publicly name companies that fall short (Ikemoto and Hang, 2014).

Integrating youth into the labour market

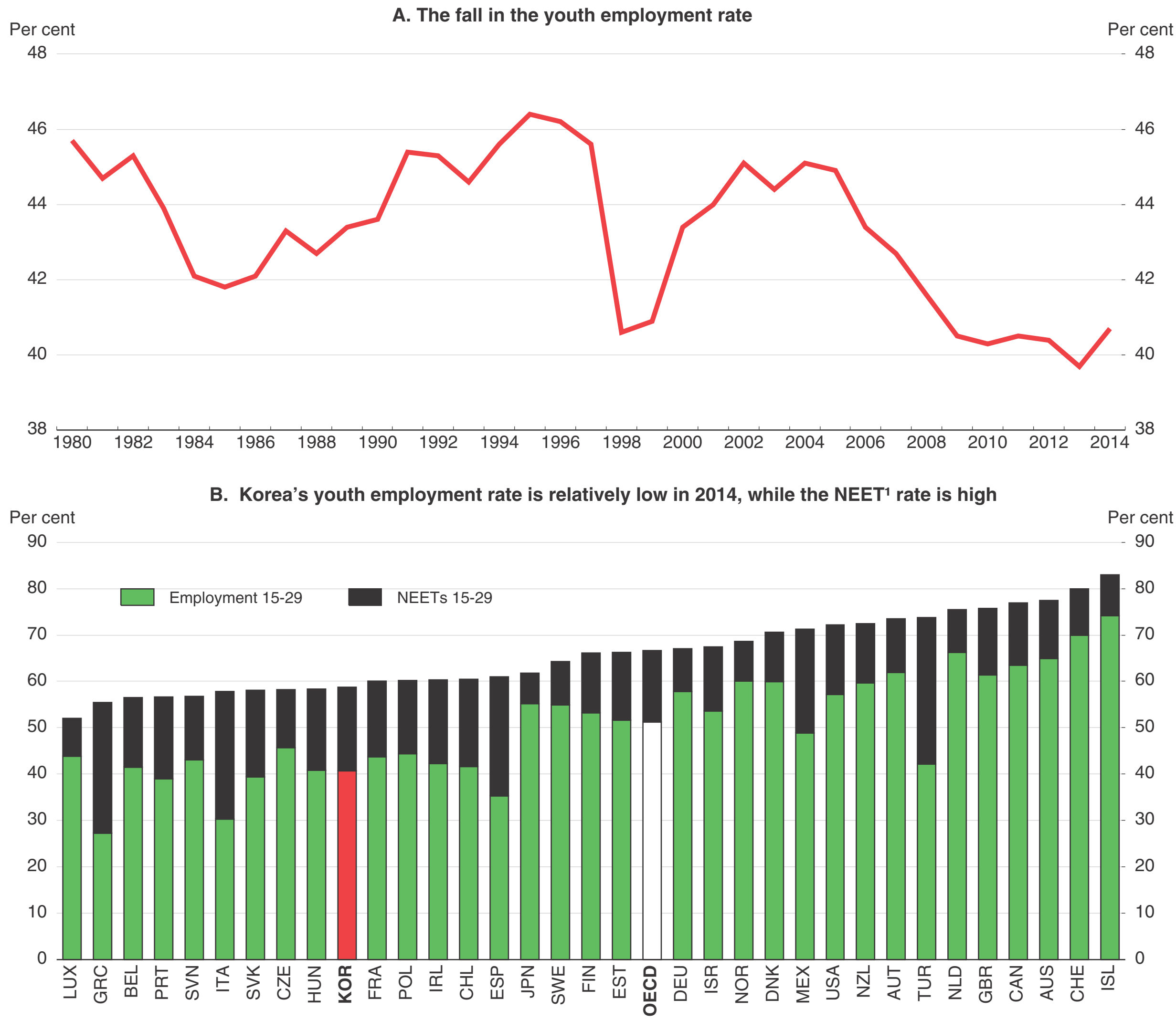
Korea's youth employment rate has fallen significantly since 2004 (Figure 2.21). Despite an upturn in 2014, it was the sixth lowest in the OECD area at 40.7%, well below the OECD average of 51.2% (Panel B). At the same time, 18% of youth were neither in employment nor in education or training – the so-called NEETs – although their number may be overestimated.

The Tripartite Agreement sets out a range of policies to boost youth employment:

- Firms that create more jobs for youth will receive greater government support though subsidies, preferential treatment in tax audits and public procurement, and investment tax credits.
- The tripartite partners will adjust wages and working hours to expand job opportunities for youth. Firms will use the money saved by adopting a wage peak system for older workers and by having highly-paid employees refrain from seeking wage hikes to create jobs for youth.
- To facilitate the entry of young people into SMEs, the tripartite partners will strive to narrow the gaps in wages and welfare benefits between large and small firms and improve the competitiveness of SMEs. The government will identify SMEs with high potential, including future-oriented "hidden champions", and provide them with more support.
- Social support will be strengthened for social enterprises, co-operatives, business start-ups, and public social service jobs, as youth prefer to work in such sectors.

Figure 2.21. **Korea's youth employment rate has fallen and is well below the OECD average**

Employment rate for the 15-29 age group



1. Data on the category ISCED 4, which captures programmes that straddle the boundary between upper secondary and post-secondary education, are not available in Korea and 11 other OECD countries. The chart therefore overestimates the number of youth who are classified as NEETS in these countries.

Source: OECD (2015), *Labour Force Statistics*; OECD (2015a), *Education at a Glance 2015*.

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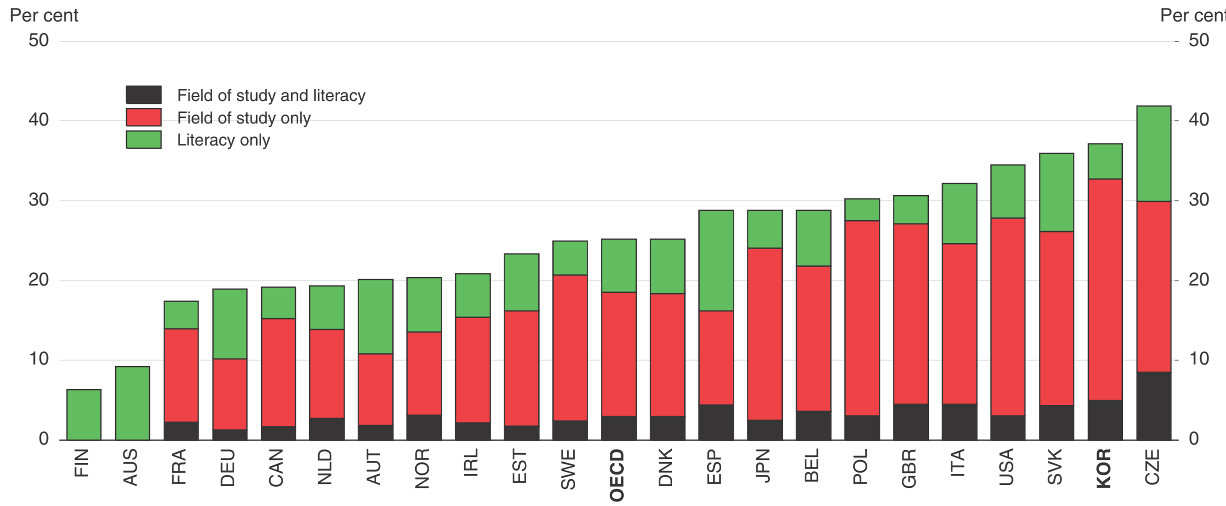
Mismatch problems in the labour market for youth

Raising youth employment requires resolving the mismatch between the skills acquired in school education and those demanded by the business sector (Y. Kim, 2015). The share of high school graduates advancing to higher education increased from 33% in 1990 to 83% in 2008, doubling the number of young people graduating from university each year. Although the rate fell to 71% in 2014, the mismatch problem is still evident, including among the youth who find jobs. Youth in the 16-24 age group who are employed are 2.2 times more likely to be over-skilled for their jobs than employees in the 25-44 age group. For the OECD area, the average ratio is 1.4 times (OECD, 2013a). For the 16-29 age group, 37% were mismatched for their jobs in terms of their field of study and literacy skills

Figure 2.22. **Korea has a relatively high rate of mismatch among young people**

Mismatch among youth (16-29) by type of mismatch as a percentage of all youth employment



Source: OECD (2014b).

StatLink http://dx.doi.org/10.1787/888933356185

(Figure 2.22), although mismatch in terms of qualifications was relatively low. Another study found that the level of mismatch in Korea is high and strongly correlated with the youth employment rate (Dao et al., 2014).

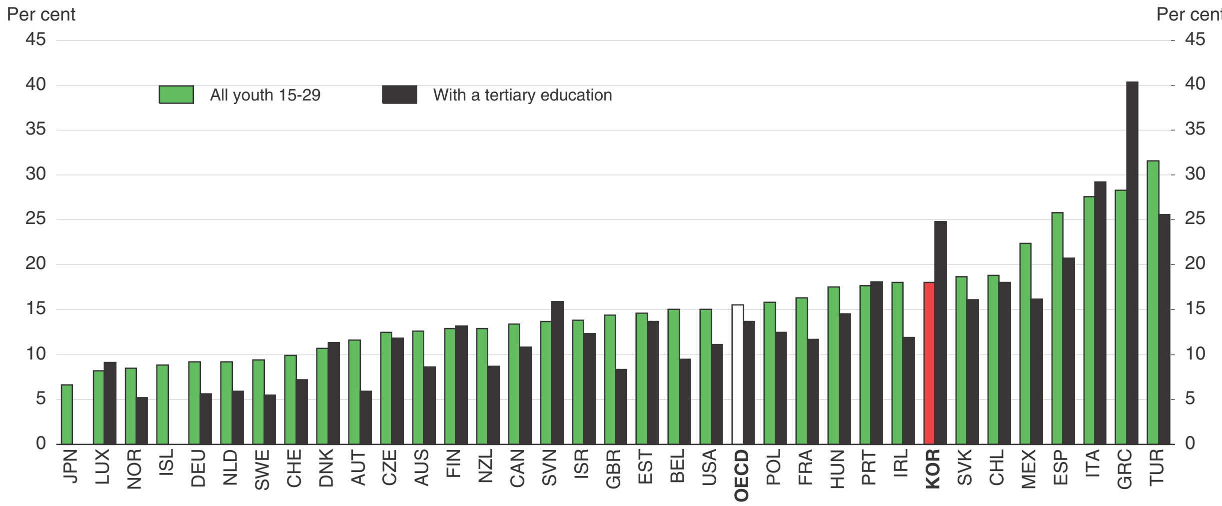
Youth with tertiary education expect to be employed as a regular worker. To many, no job is better than being trapped in non-regular employment. In addition, they want to avoid SMEs, where job security is low and wages are only about half of those in larger firms. Meanwhile, SMEs face labour shortages that are partially filled by foreign workers. Moreover, young people face social pressure to work in large firms rather than pursuing jobs based on their own preferences and uniqueness (Y. Kim, 2015).

As the rising number of university graduates has outstripped the number of new high-quality jobs, many young people pursue a wide range of preparatory activities, such as overseas language studies, to improve their employment prospects. For men, such activities come on top of around two years of mandatory military service. A 2014 study of employed university graduates found that 45% had taken a leave of absence from school to prepare for employment, suggesting that the formal education system is not adequately preparing students for the job market. However, labour market outcomes, such as employability, productivity and wage levels, do not suggest that such outside activities are effective in building human capital. Indeed, wage levels are not connected to the length of the absence from formal education (Kim and Jeon, 2014). In addition, some students delay graduation, as they are more likely to find a job while still in school (Yang, 2015). The individual and social benefits of such preparatory activities do not justify the additional delay in entering the labour market. The late entry into the labour market, combined with the early age of retirement (see below), shortens careers and contributes to the high rate of poverty among the elderly.

The large number of university graduates who are unable to find jobs matching their skill levels pushes down the youth employment rate and pushes up the rate of NEETs (Figure 2.22). Consequently, Korea is one of the few countries in which the rate of NEETs for tertiary graduates is higher (24.8%) than for the overall 15-29 age group (18.0%) (Figure 2.23).

Figure 2.23. **The rate of NEETs in Korea is higher for tertiary graduates**

As a share of the 15-29 age group[1]



1. Data on the category ISCED 4, which captures programmes that straddle the boundary between upper secondary and post-secondary education, are not available in Korea and 11 other OECD countries. The chart therefore overestimates the number of youth who are classified as NEETS in these countries.

Source: OECD (2015a), *Education at a Glance* 2015.

StatLink http://dx.doi.org/10.1787/888933356567

Periods of inactivity have a negative long-term effect on youth. Those who were not engaged in education or the labour market in 2000 had a lower employment rate over 2007-09 than those who were (Table 2.7). Moreover, those who had a period of inactivity were more likely to be non-regular workers at lower wages. The longer the period of inactivity, the stronger the negative impact on labour market outcomes.

Table 2.7. **A period of inactivity for youth has a long-term negative impact on labour market outcomes**

Status in 2007-09[1] in per cent for a worker who was:

	Continuously engaged in education or the labour market	Not engaged in education or the labour market in 2000	Not engaged in education or the labour market in both 2000 and 2001
Employed	67.3	60.7	48.1
Unemployed	3.2	5.0	6.9
Economically inactive	29.5	33.8	45.0
Non-regular employee	18.8	23.0	31.6
Hourly wage[2]	100.0	85.4	78.3

1. Based on the *Korea Labour and Income Panel Survey*.
2. The average wage of workers who were continuously engaged in education or the labour market is set at 100.0.

Source: Nam and Kim (2013).

Policies to expand job opportunities for youth

In the long run, changes in the production structure in line with the skills of youth will help to reduce the mismatch problem, underlining the importance of promoting innovation. In the shorter term, a range of policies are important. *First*, breaking down labour market dualism would reduce the number of educated youth who prefer no job to the stigma of being a non-regular worker. In addition, relaxing rules on dismissing workers may make firms less hesitant to hire regular workers (OECD, 2014b). *Second*, career guidance is important to provide information concerning the job market to help youth make good choices about their education. In most OECD countries, student preferences, rather than potential labour market outcomes, remain the key driver in choosing the field of study (OECD, 2014b). Improving the labour market information available to young people is thus a priority.

Academic credentialism – the emphasis on where a person studied rather than on their abilities and accomplishments – has driven the emphasis on university degrees. A 2010 government survey reported that only 6% of the parents of middle school students wanted their children to attend vocational high schools (Jones, 2013). Respect for skilled craftsmen in Korea, given its Confucianist heritage, has not been as high as in some OECD countries. The fall in the share of high school graduates advancing to tertiary education since 2008 suggests some progress in this regard.

Enhancing the link between education and the business sector is also essential to address mismatch. In particular, combining work and study helps youth develop the skills required in the labour market, thereby shortening and smoothing the transition from school to work. The share of youth combining work and study in Korea in 2012 was only 20%, about the half of the OECD average. Moreover, only 12.3% of employees gained experience as apprentices (OECD, 2014b).

Korea has launched three important initiatives to reduce labour mismatch by combining school and work experience at the secondary level. *First*, by end-2015, Korea had completed 847 out of 887 National Competency Standards (NCS), which identify the knowledge, skills and attitudes necessary to perform tasks by sector and level of industry. The NCS are playing a key role in revising training standards and setting the curriculum for vocational education. *Second*, it introduced Meister high schools, which allow students to combine work and study. *Third*, in 2013, the government launched a "Work-Learning Dual System" that includes high school students (Box 2.3). However, the two initiatives cover only 5.6% of vocational high school students, who account for a fifth of the total number of high school students, suggesting the need for further expansion.

Making better use of older workers to promote inclusive growth and reduce poverty

The employment rate in Korea for the 50-64 age group in 2014 was the eighth highest in the OECD at 70%. Yet their poverty rate was the second highest in the OECD at 15.5%, nearly 1.5 times the OECD average (Figure 2.24). Older workers face a double penalty – low-quality, low-paid jobs and little social protection. In particular, the maximum EITC benefit to households without dependent children is only 4% of the average wage. Moreover, the eligibility criteria on financial assets and "the family support obligation rule" limit assistance to older persons form the EITC and the BLSP.

The main issue, therefore, is the quality of jobs for older workers rather than the employment rate. Although the mandatory retirement age (the age at which the employment contract automatically terminates) set by firms is 58 on average, workers leave at age 53 on average as firms push workers out through incentives (bonuses for "honorary retirement") or penalties (shifting workers to undesirable jobs) (Klassen, 2012).

Box 2.3. **Policies to combine school and work experience at the secondary level**

The Vocational High-School Advancement Plan (2010-15) aimed to build vocational schools based on industrial needs and sector-specific skills, favouring employment over college admission after high-school graduation. Improving the quality and relevance of vocational education is a priority: the average employment rate of junior college graduates was just 61% and that of specialised vocational high-school graduates was 41% in 2013.

A key part of the Plan was the creation of Meister schools. There are now 41 Meister schools nationwide, with more than 16 000 students, and six more are planned for 2016-17. The job placement rate for Meister school graduates is more than 90%, compared to only 44% for traditional vocational high schools.

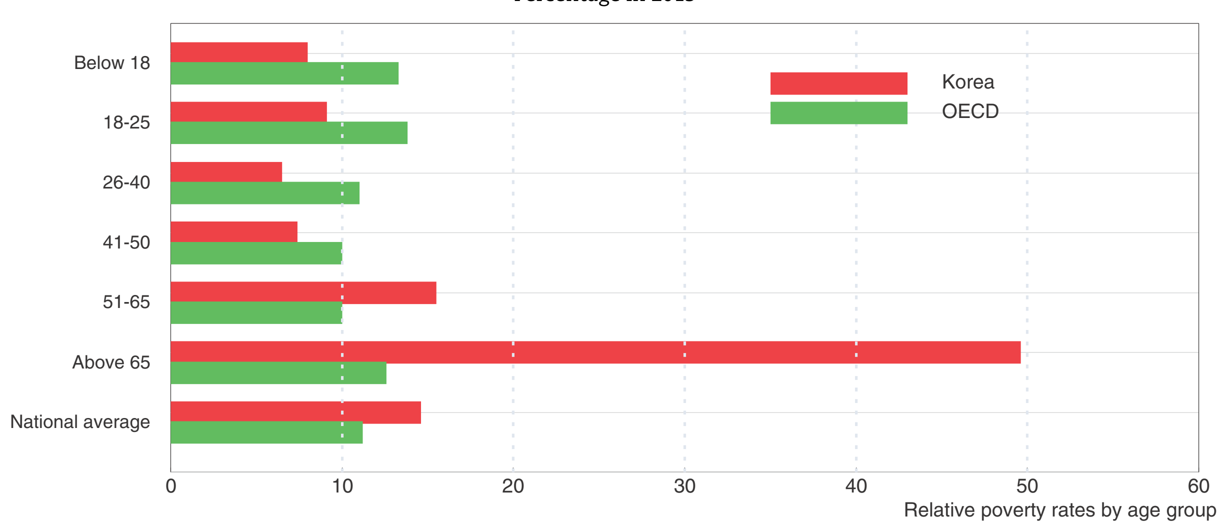
A second initiative is the Work-Study Dual System, which aims to involve 70 000 students/workers and 10 000 companies in a Korean-style appreniceship system:

- At the high school level, a pilot programme has been launched in nine schools since March 2015. By end-2017, the System is to be available in all 203 specialised vocational high schools.
- At the junior college stage, "Uni-Tech" will promote integrated high school-junior college education based on the NCS for students alternating between school-based education and in-company training.
- At the university level, "Industry Professional Practice", a system of work-study, will be introduced.

At present, 2 322 firms and nearly 13 000 students are participating in the System, focused on machinery (45%), telecommunications (21%), and electric machinery (13%). However, the System faces financial challenges as most of the participating companies are SMEs, with limited financial resources to provide training. Government subsidies are thus necessary to induce the participation of both companies and students. Without government subsidies, the cost to firms and students is estimated to exceed the benefits: the net costs were KRW 5.7 million (USD 5 000) and KRW 1.5 million, respectively (Jun and Lee, 2015; Kang et al., 2014). To limit the fiscal cost as the programme expands, it should be reformed to make it more profitable to firms and students. For example, SMEs could establish joint training centres, which could be located on the local campuses of the Korea Polytechnic University. In addition, increasing the training quality would boost the returns to both firms and students.

Figure 2.24. **Relative poverty rates for persons over 50 are very high in Korea**

Percentage in 2013[1]



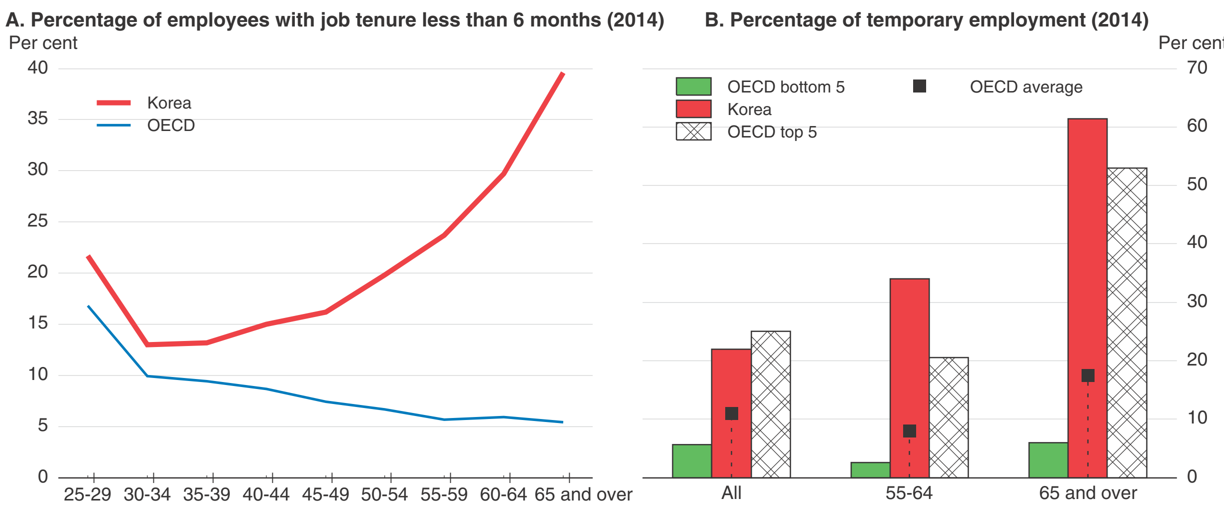
1. Relative poverty is measured by reference to median income, not taking into account household assets and liabilities.

Source: OECD Income Distribution and Poverty Database.

StatLink http://dx.doi.org/10.1787/888933356197

Many become self-employed in services, contributing to the low productivity in that sector. Of those who remain employees, many become non-regular workers, often in sectors that are unrelated to their career. In Korea, 27% of workers aged 55-64 have less than six months of job tenure compared to 5% in the OECD area (Figure 2.25). Similarly, the share of workers with job tenure of more than five years falls sharply in Korea after age 50, in contrast to the OECD area. The short tenure reflects the high share of temporary employment at 35% for the 55-64 age group in 2014 compared to an OECD average of 7% (Panel B). Wages thus fall significantly as workers age.

Figure 2.25. **Older workers in Korea are concentrated in temporary, low-paying jobs**



Source: *OECD Employment, Labour and Social Affairs Database.*

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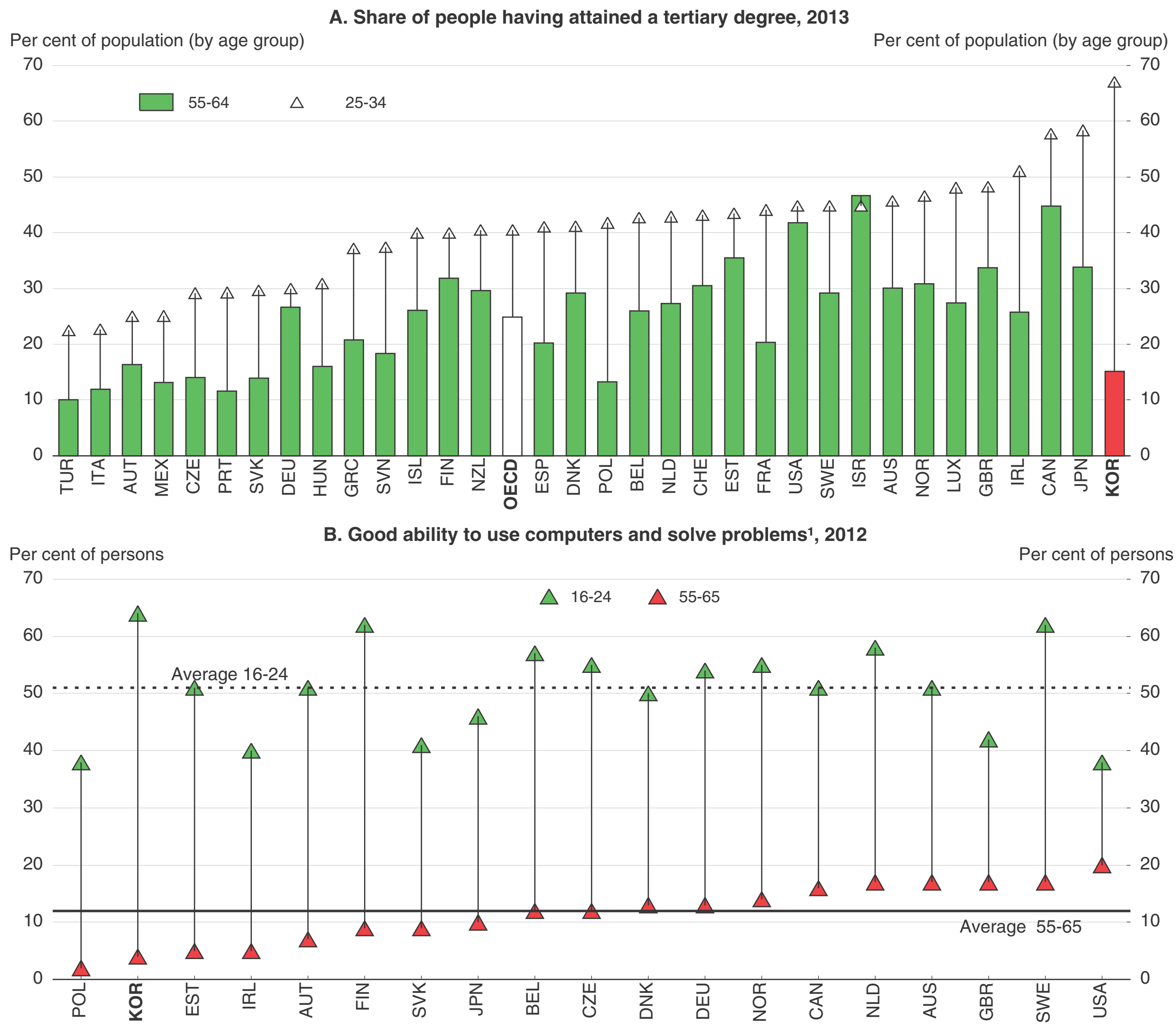
The concentration of older workers in temporary, low-paying jobs also reflects low education and skills. The education gap between youth (aged 25-34) in Korea, who have the highest share of tertiary graduates in the OECD, and older workers was the largest in the OECD in 2013 (Figure 2.26). The generational gap in skills is even larger. For example, the share of youth (aged 16-24) with a "good ability to use computers and solve problems" in Korea is the highest among OECD countries, while for older workers the share is the second lowest (Panel B).

The low skills of older workers and the seniority-based pay system result in a significant gap between wages and productivity as workers age, creating a culture of early retirement from firms. To maintain competitiveness, firms have an incentive to reduce employment of older workers. A recent survey among people aged 20-50 by Statistics Korea found that 82% of respondents are afraid that they will have to leave their main job before age 60 and 56% before age 55. Nevertheless, the seniority-based wage system is strongly supported by workers, as it guarantees a high income when they face high expenses.

Policies to promote regular jobs for older workers

The Statistics Korea survey reported that 82% of respondents would like to work until at least age 65, while 70 is the desired retirement age for 32%. Greater employment for older workers creates concern that it would reduce job opportunities for young people. However, this argument is based on the fallacy that an economy has a fixed number of jobs.

Figure 2.26. **The education and skill gap between younger and older workers in Korea is large**



Source: OECD *Education at a Glance Database*; OECD (2013c).

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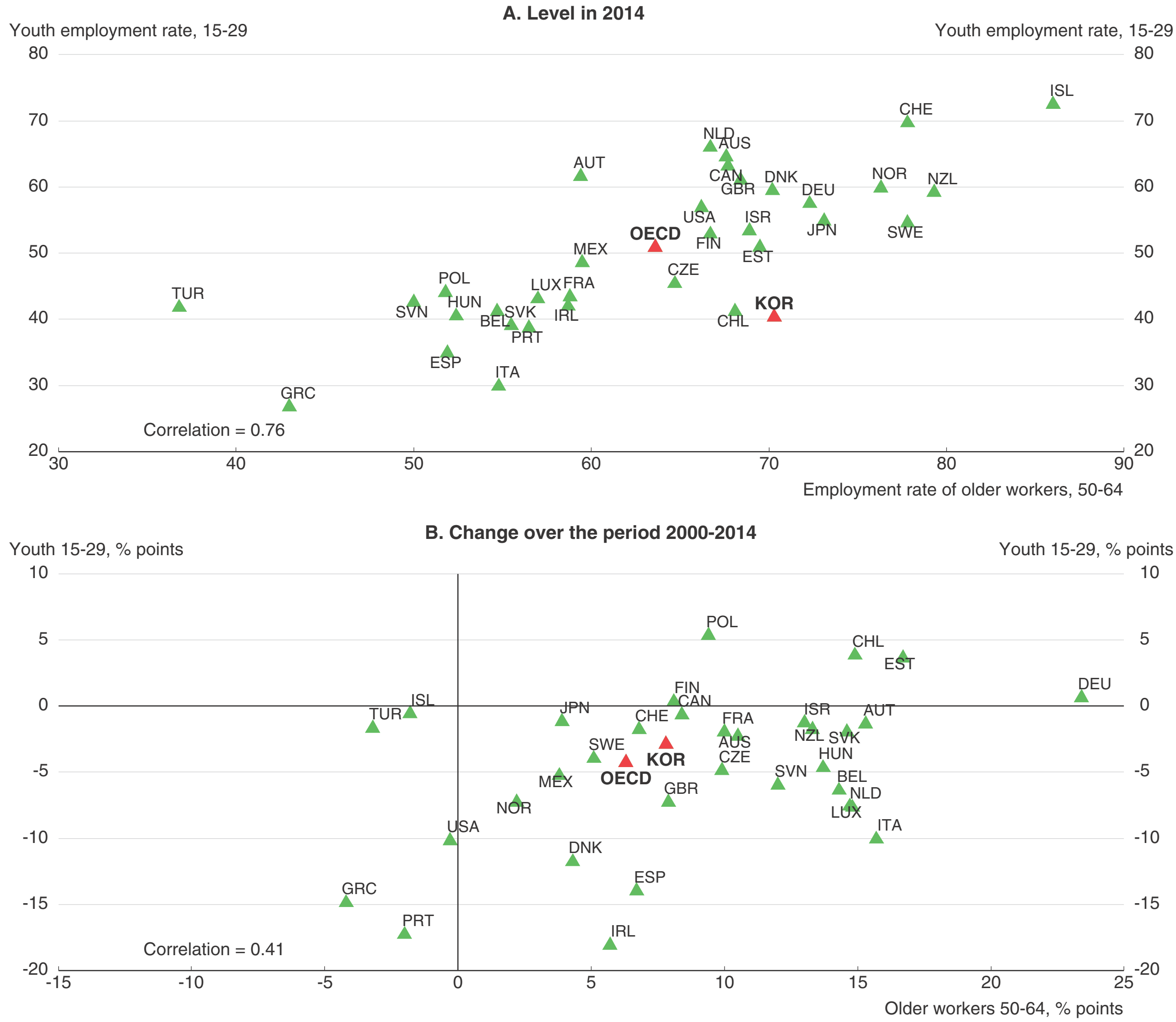
In reality, limited opportunity for older people simply decreases economic activity. Indeed, the correlation between employment rates for younger and older workers across OECD countries is strongly positive (Figure 2.27). Moreover, countries where the employment rate of older workers has increased the most over the past 15 years are those where the employment rate of youth has fallen less (Panel B). Boosting the employment of older persons is thus a positive factor for youth employment.

Beginning in 2016, firms with over 300 workers are required to set a mandatory retirement age at age 60 or above and the law will be extended to smaller firms in 2017. While this policy will help lengthen workers' careers, it places additional burdens on firms, to the extent that the higher retirement age is respected, by widening the gap between productivity and wages. To limit the negative impact, the government is paying various subsidies to maintain the employment of older workers. In addition, the new law mandates measures to accommodate the higher retirement age, notably by amending the

Figure 2.27. **Youth employment rates are positively correlated with those of older workers in the OECD**



Source: *OECD Labour Force Statistics Database.*

StatLink http://dx.doi.org/10.1787/888933356586

wage structure. Otherwise, firms would face a loss in competitiveness that would prompt them to continue pushing out older workers before the mandatory retirement age. A flexible wage structure is needed to compensate for the lack of employment flexibility.

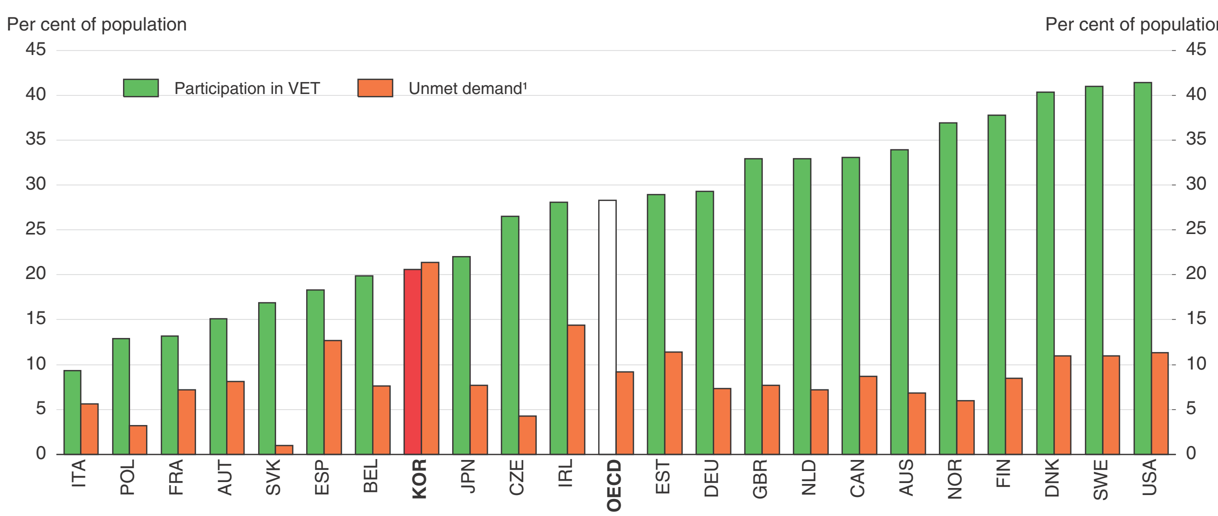
Since the 1997 crisis, the government has been encouraging the introduction of the "wage peak" system, which freezes or gradually reduces workers' wages during the few years prior to the company's retirement age, while promising workers that they will not be forced into early retirement. It thus reduces the financial burden on firms of keeping older workers, while increasing workers' lifetime earnings. The share of firms with more than 100 workers that had introduced the wage peak system rose slowly from 9.6% in 2009 to 21.0% in 2015, in the face of opposition from workers, who fear that it will undermine the seniority-based wage system. The age at which wages start to fall, the size of the reduction and the age to which early retirements are postponed must be agreed by management and workers in each firm. While firms welcome the wage peak system, its introduction has prompted strikes.

The Tripartite Agreement pledges to increase the use of the wage peak system to ensure a “soft landing” from the hike in the retirement age. The government is to contribute by providing advice and subsidies. While the wage peak system is an appropriate short-term response to the retirement age hike, the ultimate objective should be a flexible wage system that allows workers to continue their career as long as they wish, while abolishing the right of firms to set mandatory retirement ages, as has been done in a number of OECD countries. This objective would be best achieved by a performance-based wage system, which would also promote female employment.

In addition to reforming the wage system, increasing the human capital of older workers by investing in life-long learning would help bring wages and productivity into line. Lifelong vocational training is critical to ensure that workers can upgrade their core skills throughout their working life so as to reduce the practice of 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 OECD average of 28% (Figure 2.28). A similar proportion of older workers in Korea wanted to participate in such training, but were unable to do so, primarily because they were too busy at work. Although employees aged 50 and over account for a third of employees, they received only 8% of government subsidies for vocational training and education in 2014 and 12% of the funds for Individual Training Accounts. The goal should be to create a virtuous circle between lifelong learning, workers’ productivity and earnings. The NCS provide a useful framework for vocational education and training and could also help link earnings, performance and pay. The *OECD Skills Strategy for Korea* (OECD, 2015c) sets out a comprehensive approach to develop skills from childhood to adulthood.

Figure 2.28. **The share of older workers receiving vocational education and training in Korea is low**

Share of persons in the 55-64 age group in 2012



1. Persons who wanted to participate in vocational education and training but did not.
Source: OECD (2013c).

StatLink http://dx.doi.org/10.1787/888933356598

A reform of the wage-setting system and expanded opportunities for lifelong learning should be accompanied by other reforms to help workers extend their careers. *First*, as discussed above, it is essential to break down labour market dualism, which results in second-class treatment of non-regular workers. *Second*, the plan to reduce working time would facilitate regular jobs for older workers.

Reducing poverty among older persons

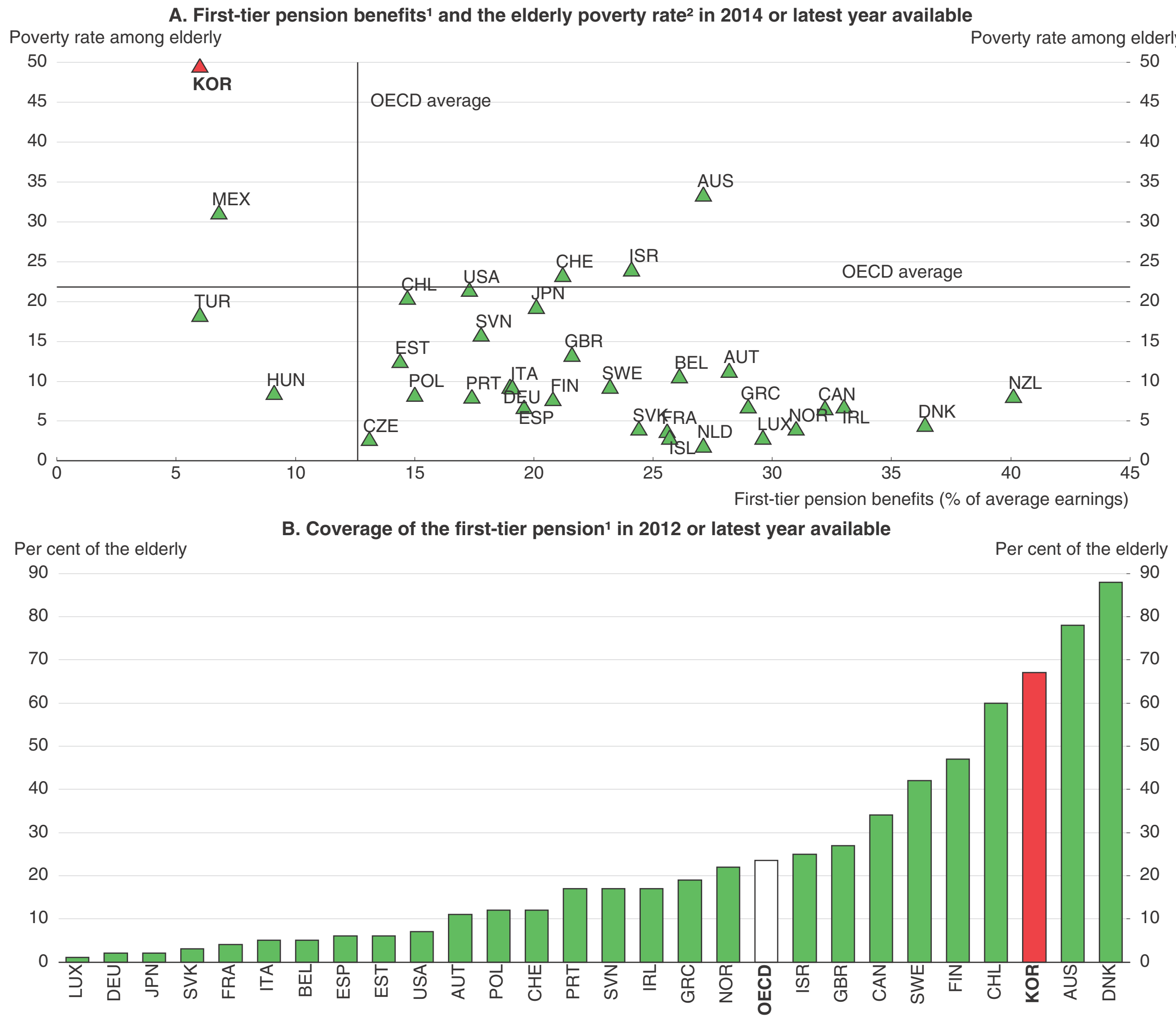
Extending the careers of older persons would also sustain output growth and reduce poverty among older persons, both while they are working and after retirement. Remaining longer in the core labour force, even at somewhat reduced wages under the wage peak system, would provide more income than non-regular jobs, self-employment or unemployment. It would also boost workers' contribution period to the NPS and company pension, resulting in larger old-age pensions, and allow them to accumulate savings for retirement.

However, more needs to be done to address Korea's most urgent social problem – the high rate of poverty among the elderly population. In 2011, 49.6% of the population over age 65 lived in relative poverty, four times higher than the OECD average of 12.6% (Figure 2.24). Moreover, the elderly poverty rate was three times greater than Korea's 15% rate for the entire population, in contrast to the OECD area, where it is almost equal. In addition, a third of the elderly in Korea are in absolute poverty, defined as an income below the minimum cost of living. Moreover, the elderly have high debt. For the over 60 age group, household debt amounted to 73% of their financial assets, compared to the national average of 64%. In Germany and the United States, the ratio was around 20% (J. Kim, 2015). High poverty contributed to a high elderly suicide rate, which rose from 35 (per 100 000 persons) in 2000 to 82 in 2010, with financial difficulty the major cause, according to a government survey (Statistics Korea, 2010). It was far above the OECD average of 22, although the Korean rate fell to 55.5 in 2014, against the backdrop of greater government focus on the issue.

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 old-age income support:

- The National Pension Scheme (NPS), created in 1988, provided old-age pension benefits to only 32.1% of the elderly in 2015. Moreover, pension benefits were only 23.5% of the average wage.
- The Basic Pension (introduced as the Basic Old-Age Pension System in 2008), was doubled to KRW 200 000 (USD 175 or 6.2% of the average wage) in 2014 (Figure 2.29). It is given to around 70% of the elderly, which is high compared to the average of 24% for first-tier safety-net pensions in the OECD (Panel B). It thus spreads resources very thinly over a large segment of the older population.
- The BLSP eligibility criteria, which exclude elderly with the possibility of assistance from family members and impose limits on asset holdings, were relaxed in 2015, boosting the share of elderly receiving benefits from 6.3% to 6.8%.
- The company pension system introduced in 2005 covered 52% of employees who had worked for at least a year (15% of the working-age population) in 2014.
- Korea ranks last in the OECD in Korea's well-being index on the question of whether people had friends or relatives to depend on in times of need.

Figure 2.29. **The first-tier pension benefit 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.

Source: OECD (2015e), *Pensions at a Glance*.

StatLink http://dx.doi.org/10.1787/888933356204

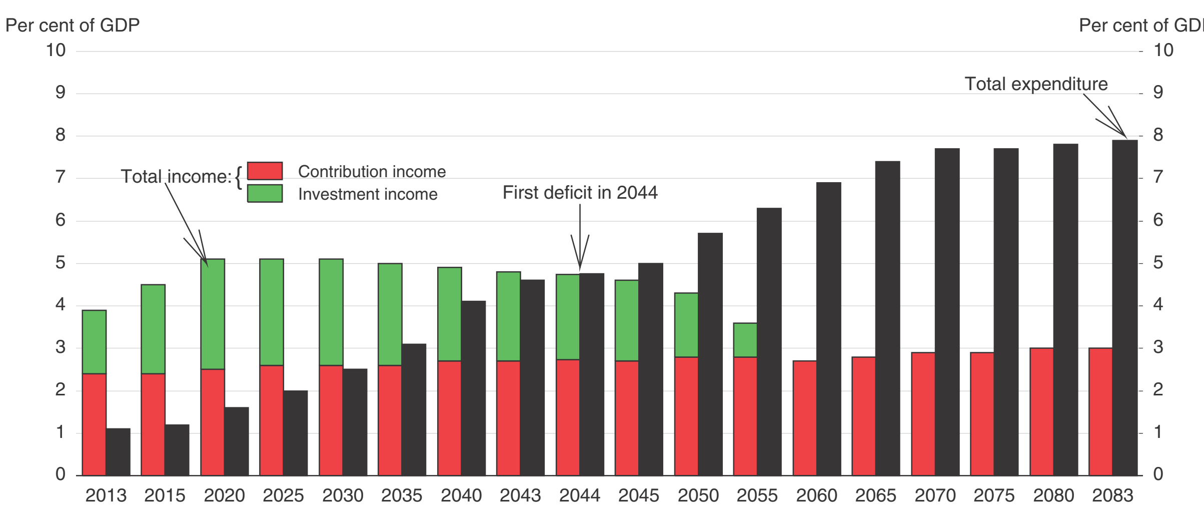
Rapid ageing, which will reduce the number of persons in the labour force from 5.1 per elderly person to 2015 to 1.5 by 2050, and the rising number of single elderly persons will tend to worsen poverty.

The government has a target to reduce the elderly poverty rate to 39% in 2020, which would still be three times the OECD average. A faster reduction in elderly poverty would require 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 at least escape from absolute poverty (OECD, 2015e; 2014 *OECD Economic Survey of Korea*). Countries with high safety-net pensions tend to have low poverty rates (Figure 2.29). In addition, further relaxing the BLSP eligibility criterion could also help reduce elderly poverty.

It is important to make the NPS more effective in reducing poverty in the long run. According to the government's 2013 projection, only 40.9% of the elderly will receive NPS pensions in 2030 and the pension amount will be kept low by the plan to reduce the targeted replacement rate for those with 40 years of contributions from 50% to 40%, well below the OECD average of 53%, by 2030 (OECD, 2015e). Moreover, the average contribution period of recipients over 2030-40 is projected to average 20.6 years, reducing the actual replacement rate to around 20%. A three-pronged approach is needed. *First,* the number of contributors should be increased. In 2012, only 37% of the working-age population paid contributions, well below the rates in other OECD countries, reflecting lower compliance by the self-employed, non-regular workers and SME employees (Y. Lee, 2012). *Second,* the average contribution period should be lengthened to increase the size of benefits. *Third,* the targeted replacement rate should be kept at its current level of 46% (excluding the Basic Pension, which has a replacement rate of 5%).

Even with the cut in the replacement rate to 40% and the planned hike in the pension eligibility age from 61 to 65 in 2033, NPS spending is set to rise much more than revenue (Figure 2.30). There are three options to sustain public pension systems: cutting benefits, raising the pension eligibility age and increasing revenue. A 40% targeted replacement rate would be too low, given the short average contribution period. A more rapid hike in the pension eligibility age, under current labour practices, would create hardship by lengthening the gap between when workers leave firms and when they receive a public pension. The best option, therefore, is to raise more revenue by raising the contribution rate from its relatively low level of 9%. The adjustment of the contribution rate should begin as soon as possible, as delays only make the necessary increase larger (2014 *OECD Economic Survey of Korea*).

Figure 2.30. **The National Pension Scheme is projected to fall into deficit in 2044**



Source: National Pension Research Institute (2013).

StatLink http://dx.doi.org/10.1787/888933356027

Achieving adequate income for the elderly requires a multi-pillar approach. In addition to reforming the NPS, it is important to increase private savings by developing the company pension system and individual pension savings. The introduction of company pensions has been hindered by workers' attachment to the so-called retirement allowance

– which requires firms to pay departing employees a lump-sum separation payment equivalent to at least one month of wages per year of work. The government has recently reduced the favourable personal income tax treatment of the retirement allowance. It will be important to assess the effectiveness of this measure in promoting the adoption of company pensions. Individual Pension Accounts should also be strengthened, in part by increasing the penalties for early withdrawal prior to retirement and providing more favourable treatment of existing contracts.

Recommendations for labour market reforms to promote inclusive growth

Key recommendations

- Break down dualism by relaxing employment protection for regular workers and making it more transparent, raising the minimum wage and increasing social insurance coverage and training for non-regular workers.
- Increase the take-up of maternity and parental leave systems by enforcing compliance and raising the benefit level for parental leave.
- Enhance childcare quality by making accreditation mandatory and strengthening competition.
- Reduce labour market mismatch for young people by expanding Meister vocational schools and the Work-Study Dual System, thereby enhancing links between schools and firms, and basing curriculum on the National Competency Standards.
- Accelerate the adoption of the wage peak system and expand education for older persons with low skills to extend their careers at companies.
- Focus the Basic Pension on the elderly with the lowest incomes to reduce the high rate of poverty among those over age 65.
- Expand the coverage of the National Pension Scheme to reduce poverty in the long run.

Other recommendations

- Extend the limit on fixed-term contract from two years to four.
- Increase the coverage and the generosity of the Earned Income Tax Credit to reduce poverty and strengthen work incentives.
- Expand company pensions and strengthen personal pension plans to create a strong multi-pillar system to ensure adequate income for the elderly.

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Estonia, January 2015
Euro area, April 2014
European Union, April 2014
Finland, January 2016
France, March 2015
Germany, April 2016
Greece, March 2016
Hungary, May 2016
Iceland, September 2015
India, November 2014
Indonesia, March 2015
Ireland, September 2015
Israel, January 2016
Italy, February 2015
Japan, April 2015
Korea, May 2016
Latvia, February 2015
Lithuania, March 2016
Luxembourg, March 2015
Mexico, January 2015
Netherlands, March 2016
New Zealand, June 2015
Norway, January 2016
Poland, March 2016
Portugal, October 2014
Russian Federation, January 2014
Slovak Republic, November 2014
Slovenia, May 2015
South Africa, July 2015
Spain, September 2014
Sweden, March 2015
Switzerland, November 2015
Turkey, July 2014
United Kingdom, February 2015
United States, June 2014

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