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OVERVIEW

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BETTER POLICIES FOR BETTER LIVES

This Overview is extracted from the 2016 Economic Survey of Korea. The 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.

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.

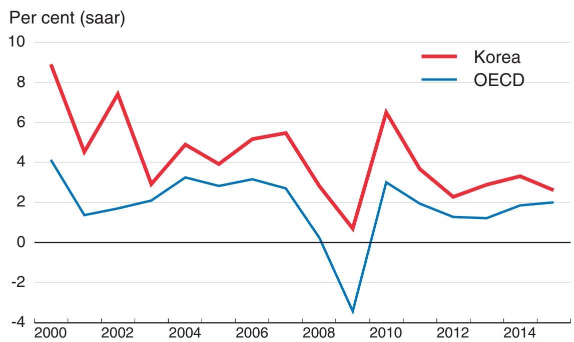
The world economy is facing a prolonged period of low growth and low inflation, highlighting the need for structural reform and increasing interest in policy areas such as social cohesion, environmental issues and regional policies. The changing atmosphere calls for the OECD to play a bigger role in 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.

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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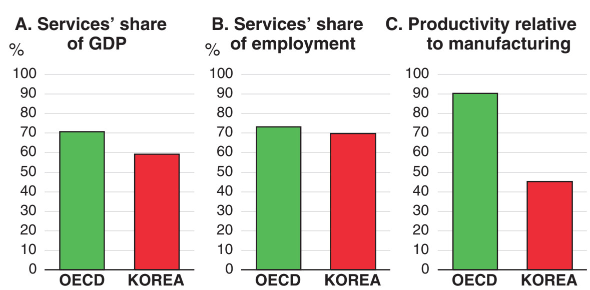
Output growth slowed to a 2¾ per cent annual rate over 2011-15, still higher than the OECD average, while inflation has remained below the central bank's target. Although export growth has been sluggish, the current account surplus has risen to nearly 8% of GDP, reflecting weak domestic demand, falling 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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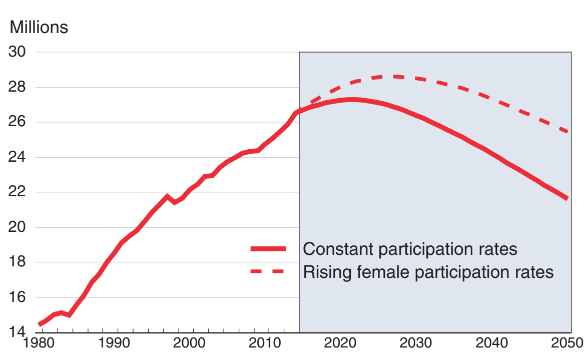
Labour productivity (output per worker) slowed to around 1% over 2011-15. The level of labour productivity in the service sector is less than half of that in manufacturing. SME policy promotes the survival of small firms, rather than higher productivity, and very few grow into medium-sized firms. Venture 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.

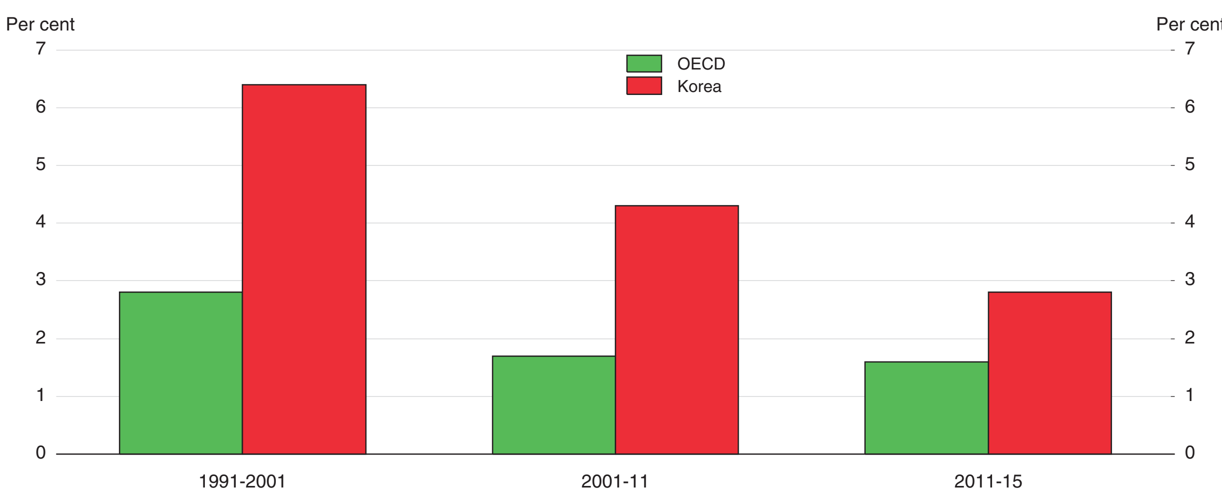
Assessment and recommendations

- *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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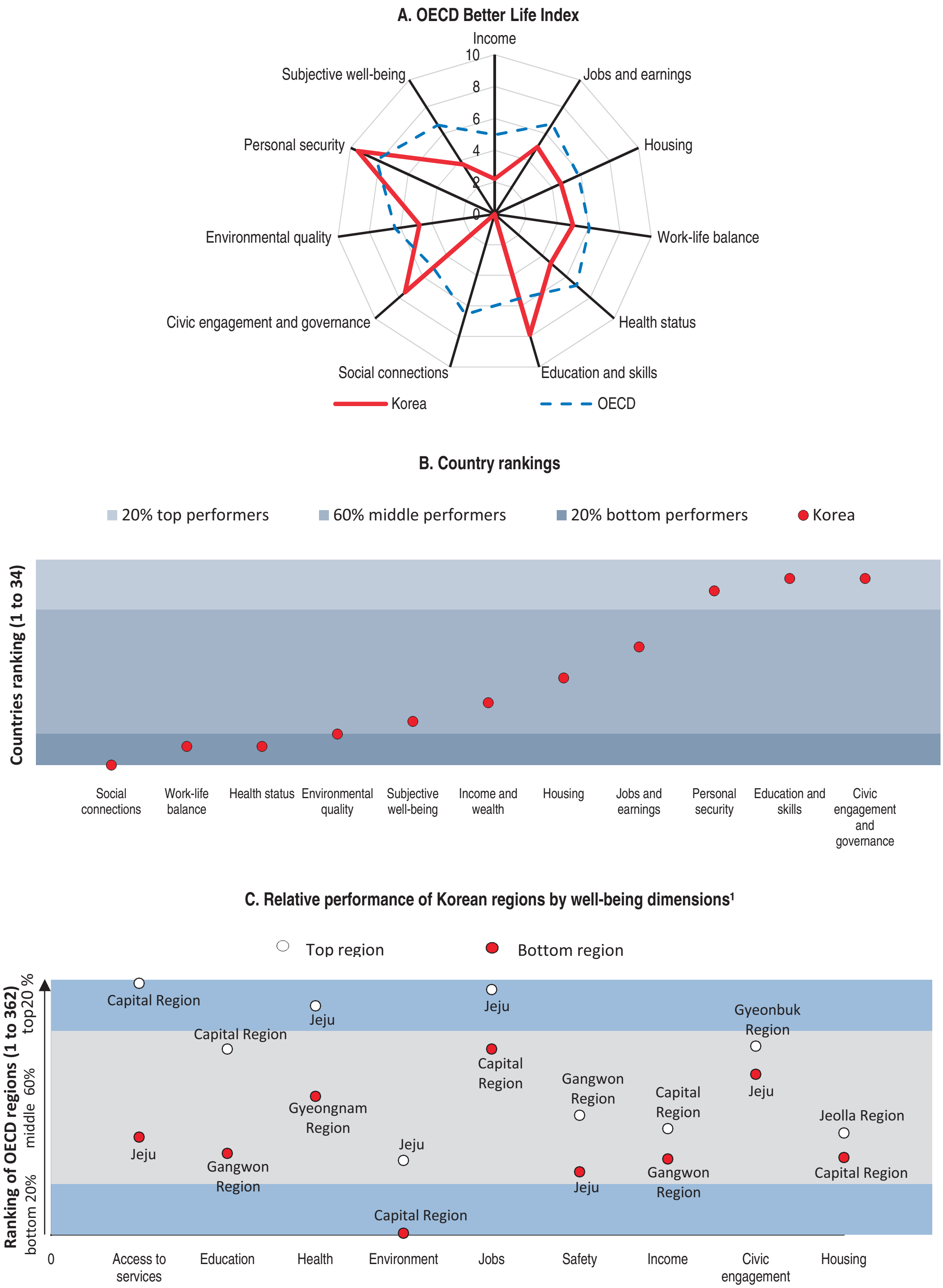
In terms of well-being, Korea has outstanding scores in personal security, education and skills and civic engagement and governance (Figure 2), but ranks poorly in social connections, work-life balance, health status and environmental quality (Panel B). In addition, subjective well-being in Korea is 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*.

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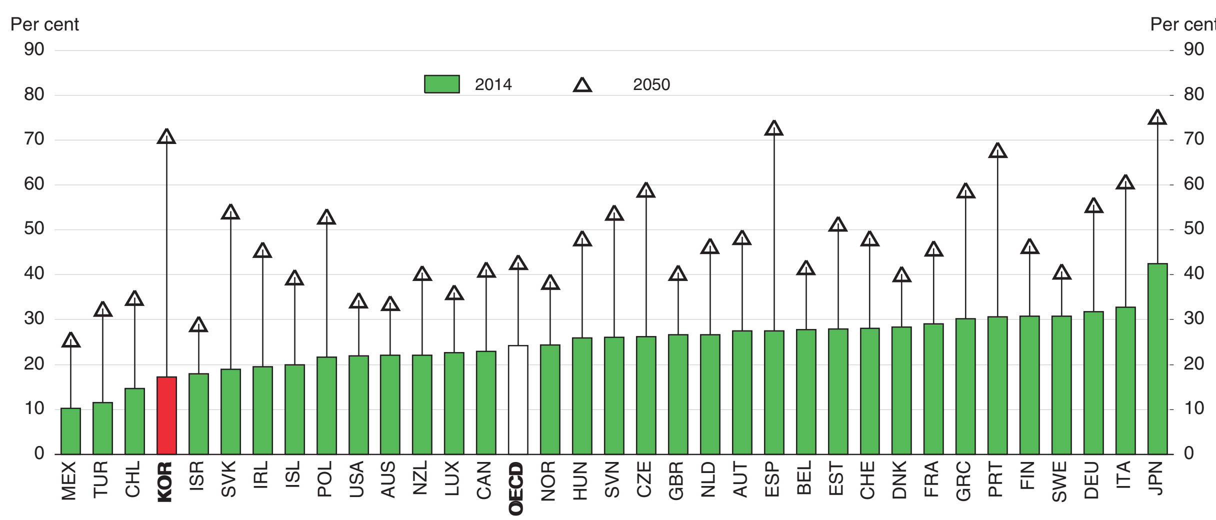
the Sustainable Development Goals, Korea ranks 23rd out of the 34 OECD countries overall and last in renewable energy use and on actions to combat climate change (Kroll, 2015).

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.

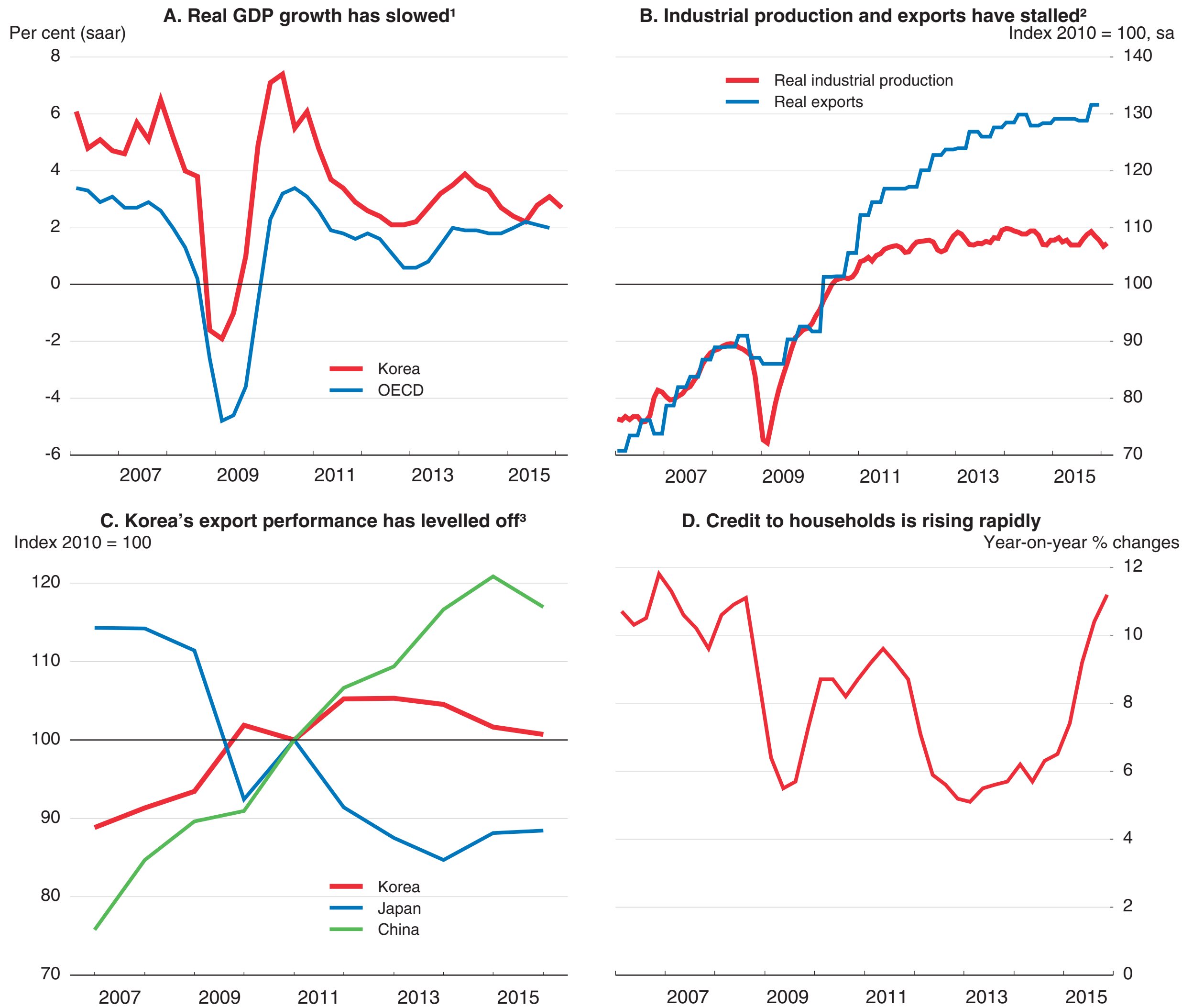
Policies to end low growth and inflation are boosting the economy

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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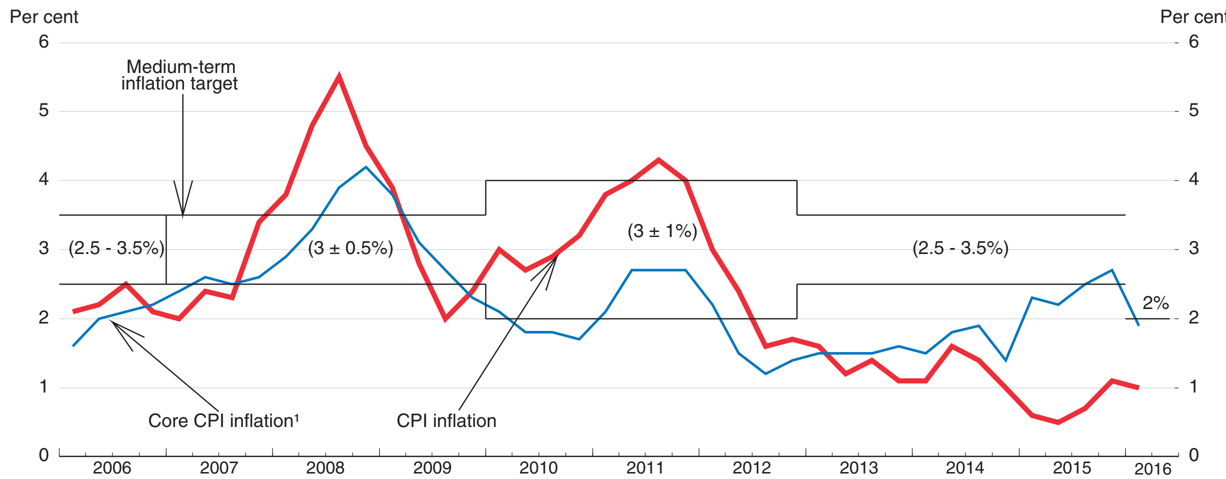
Korea's current account surplus widened sharply from 1.6% of GDP in 2011 to 7.9% in 2015, reflecting the fall in oil prices, weak domestic demand and transitory demographic factors. Oil imports declined by 4% of GDP over that period, although up to one-third of the impact may have been offset by lower 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.

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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.

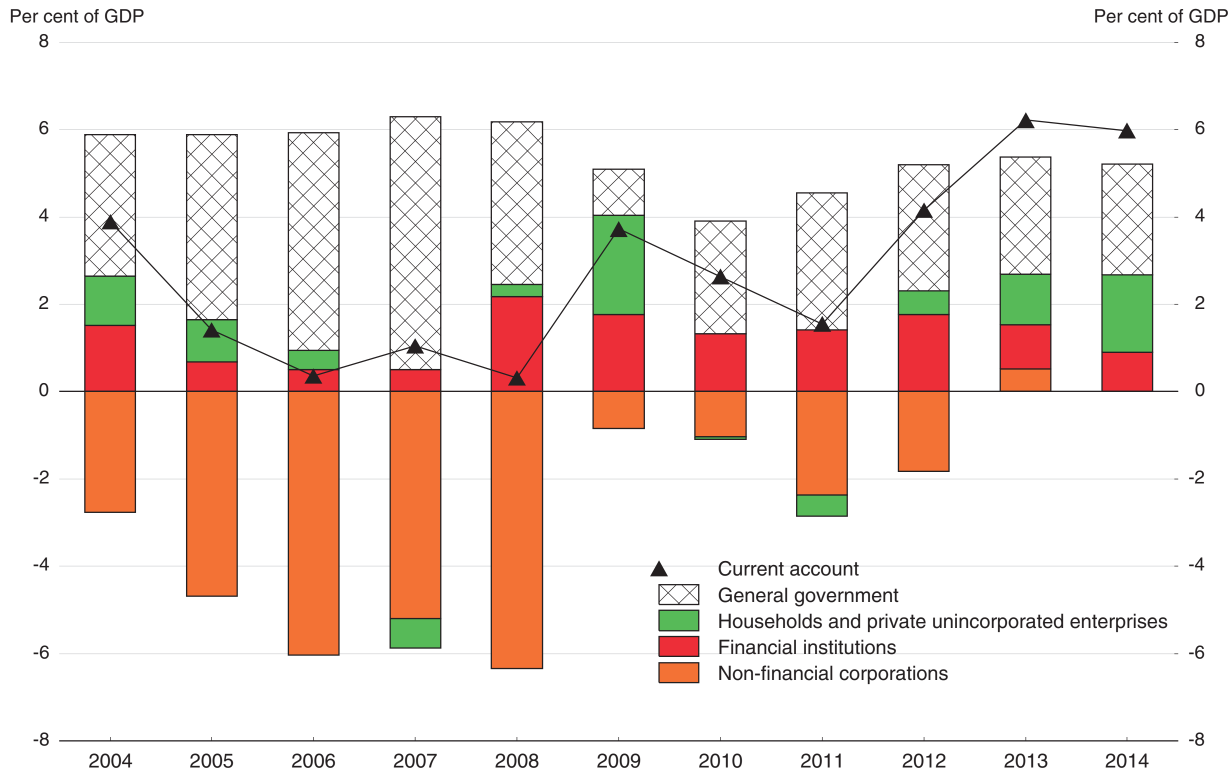
The economic outlook for 2016-17

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.

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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

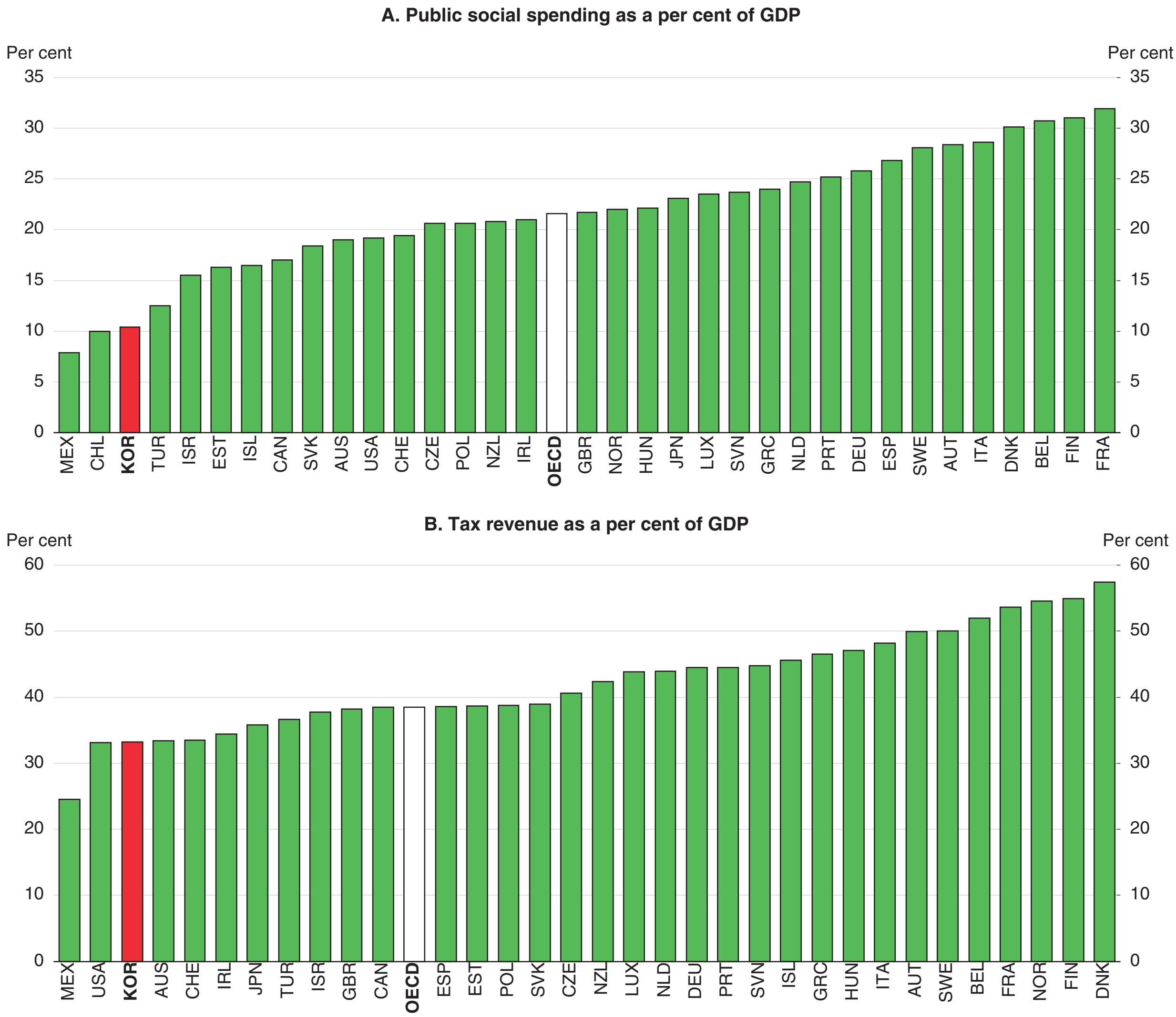
1. Historical data through 2015, based on the data announced on 26 April 2016. For 2016-17, the projections are based on those prepared for the OECD Short-term Economic Prospects meeting on 2 May 2016.
2. Contributions to changes in real GDP (percentage of real GDP in previous year).
3. As a percentage 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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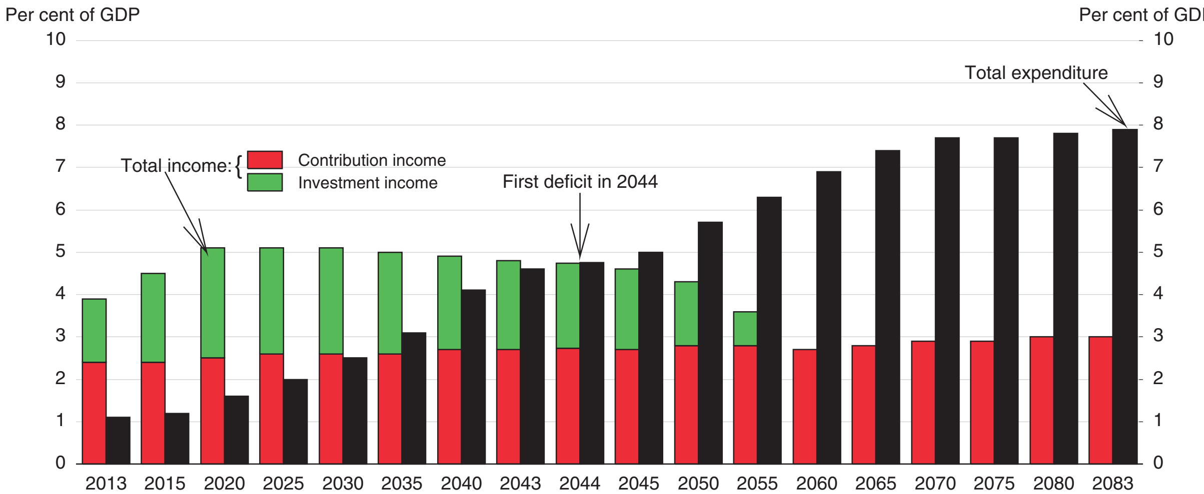
Faced with such spending pressures, it is essential to enhance public-sector efficiency, as planned in the Three-year Plan for Economic Innovation, and carefully target social welfare. A universal approach, such as the provision of free childcare since 2013 to all children under age five, regardless 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.

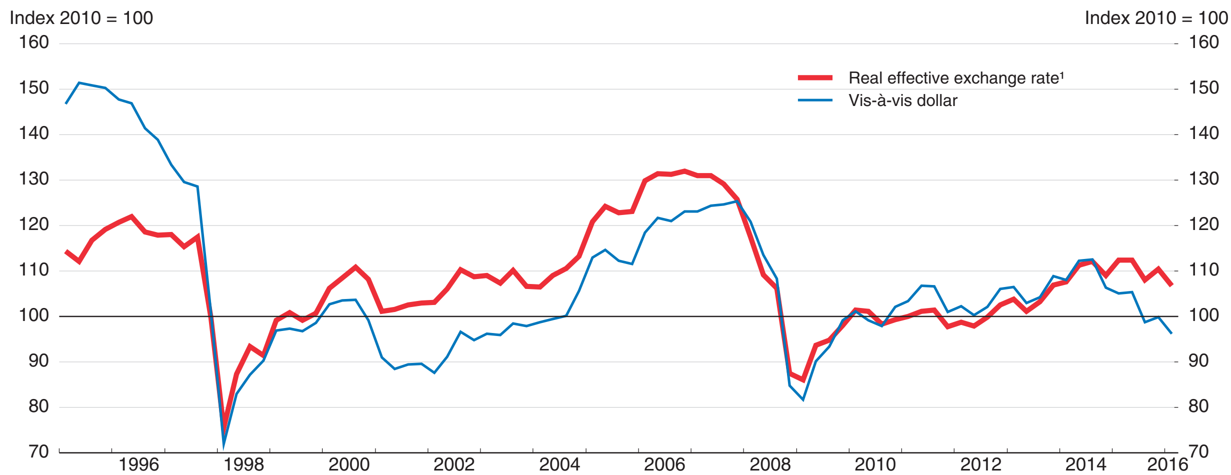
Monetary and exchange rate policy

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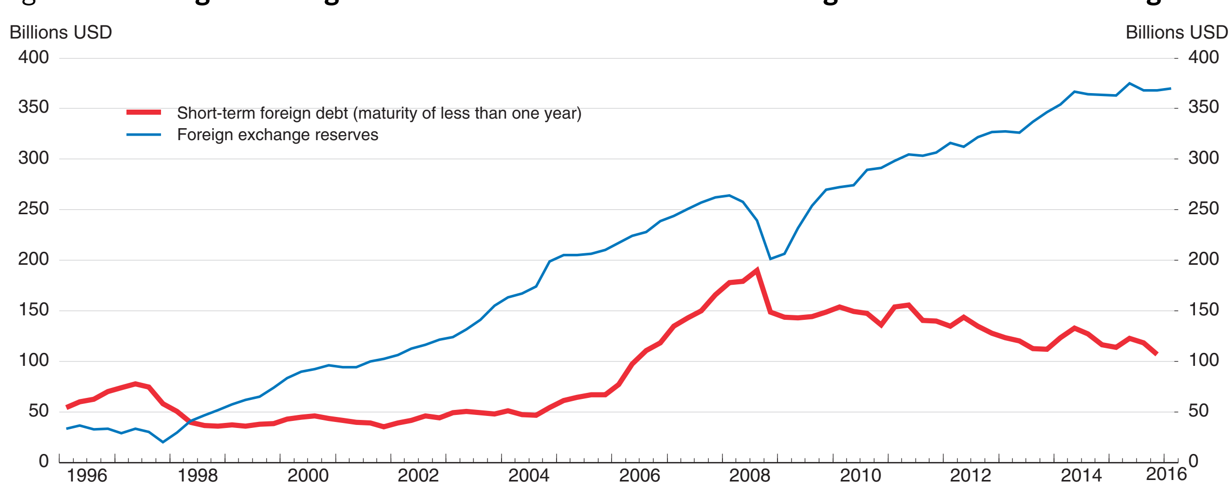
Korea is sensitive to external shocks, which caused capital flight and rapid currency depreciation in 1997 and 2008. However, Korea appears more resilient as its short-term foreign debt fell from USD 190 billion in September 2008 to USD 107 billion in December 2015 (Figure 10), reducing its share of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

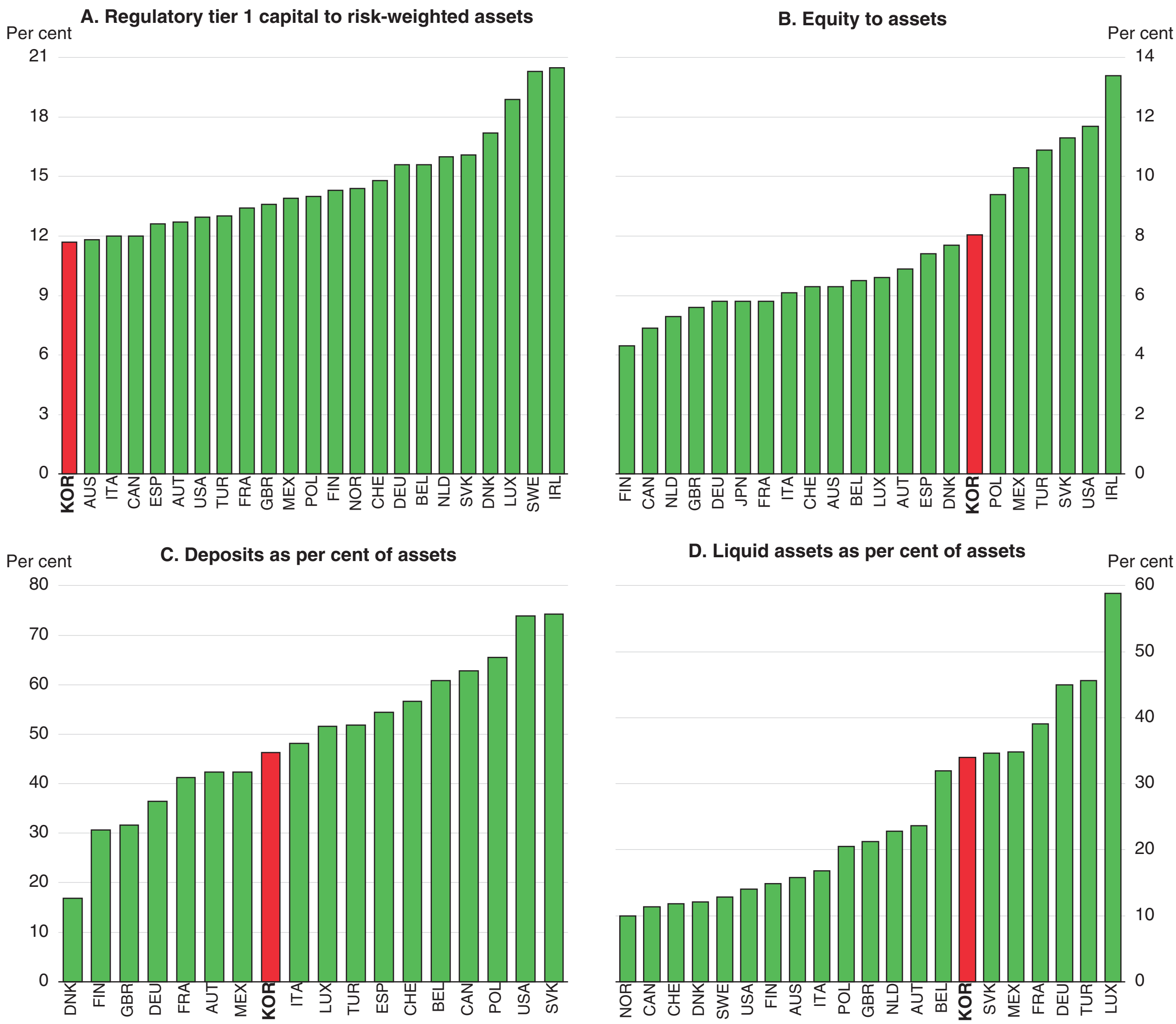
Korea's household debt was 163% of household disposable income in 2014, well above the OECD average of 137%. Older persons, self-employed and low-income workers in particular face high debt burdens, raising social cohesion concerns, as financial institutions have become increasingly reluctant to lend 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.

StatLink http://dx.doi.org/10.1787/888933356065

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.

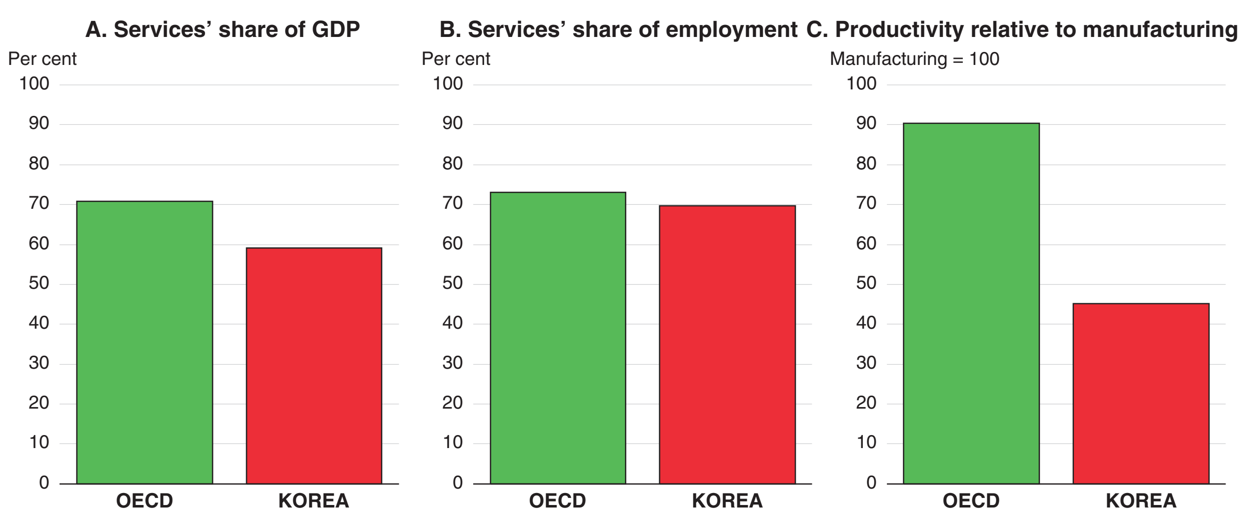
The service sector is dominated by SMEs, which account for about 90% of service-sector employment and operating profits. Productivity in SMEs fell from 53.8% of that in large enterprises in 1988 to only 30.5% in 2014, as large enterprises invested in labour-saving technology. Entry and exit rates in 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.

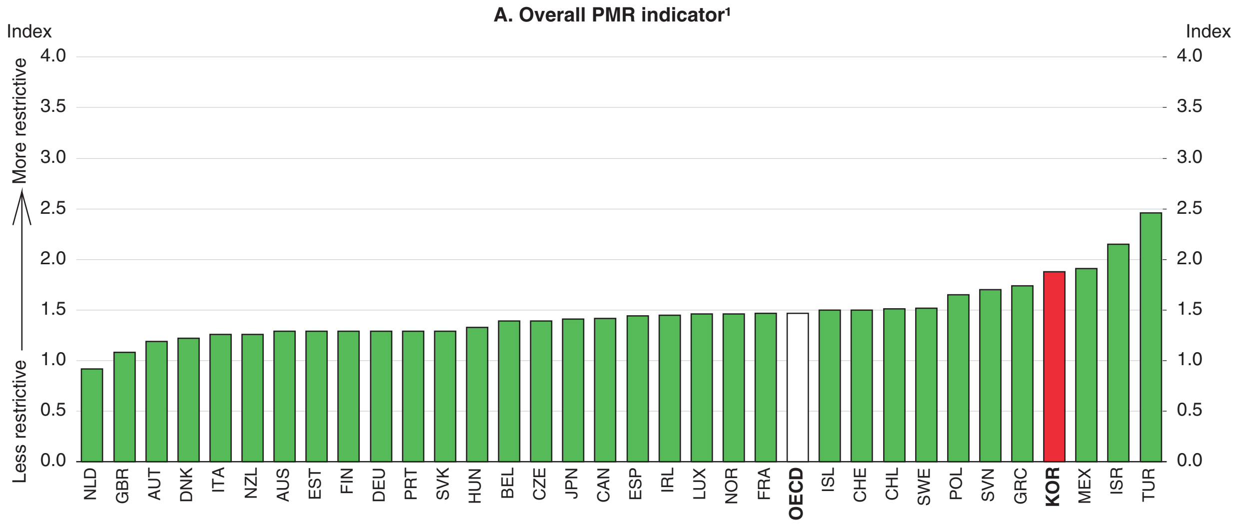
Recognising the costs of overly burdensome regulation, the government reduced the number of economic regulations, which numbered 9 876, by 10% in the year to January 2015. To cut regulations, the government has introduced several initiatives, such as the *Shinmungo*, which allows citizens to suggest 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.

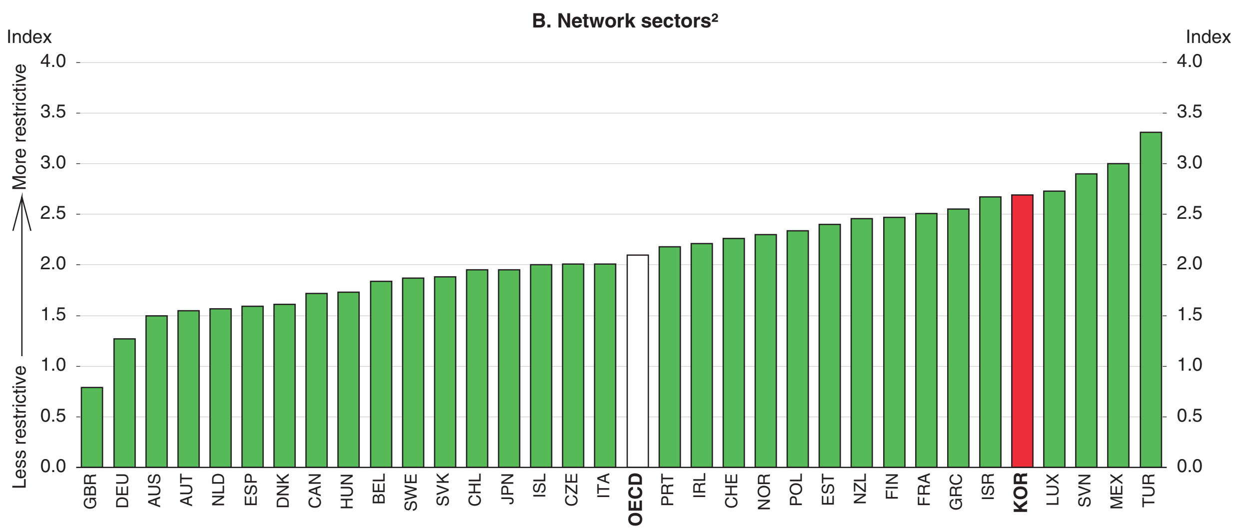
In addition, the government wants to cap the regulatory burden by introducing a "cost-in, cost-out" system, which aims to offset the costs of new regulations by abolishing or relaxing existing regulations. The system included 15 ministries in 2015 and the number may be increased depending on an evaluation 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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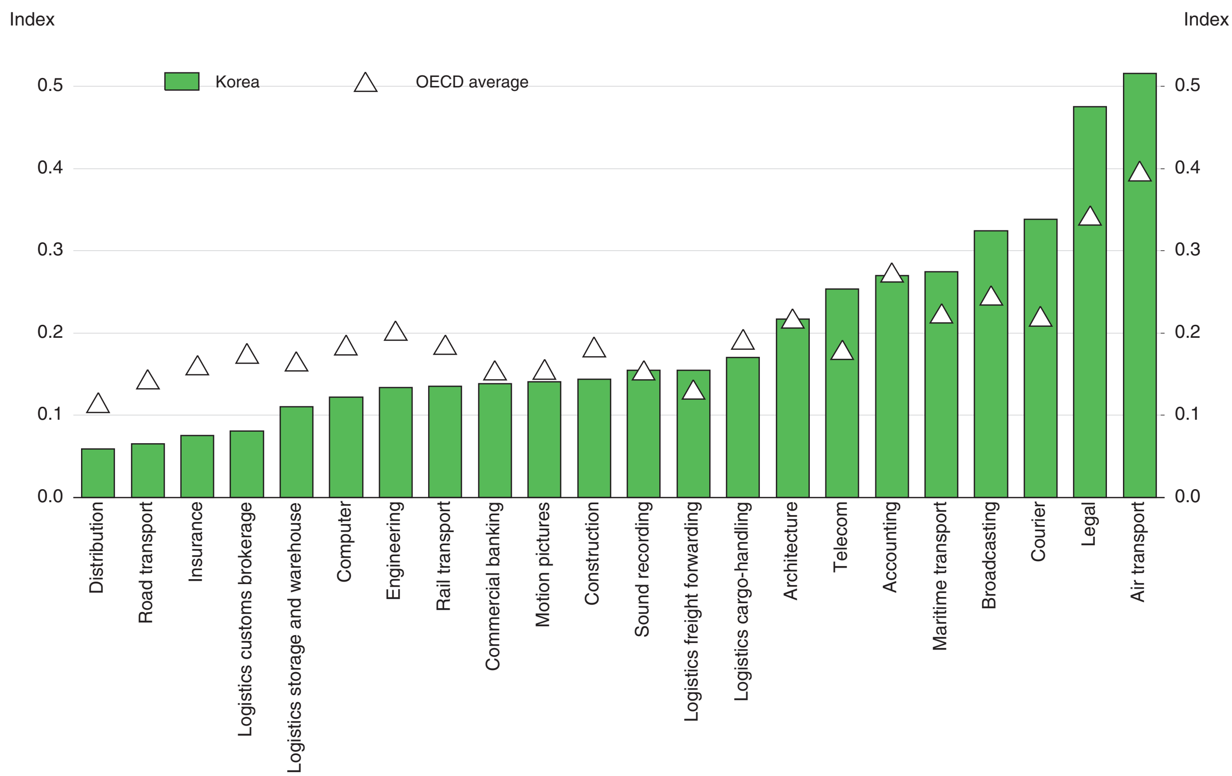
such as maritime and air transport, courier services and legal services (Figure 15). Barriers to foreign entry include equity restrictions in sectors such as telecoms and air transport. Some sectors are also less competitive because of state control of major firms, such as the Korea Railway Corporation.

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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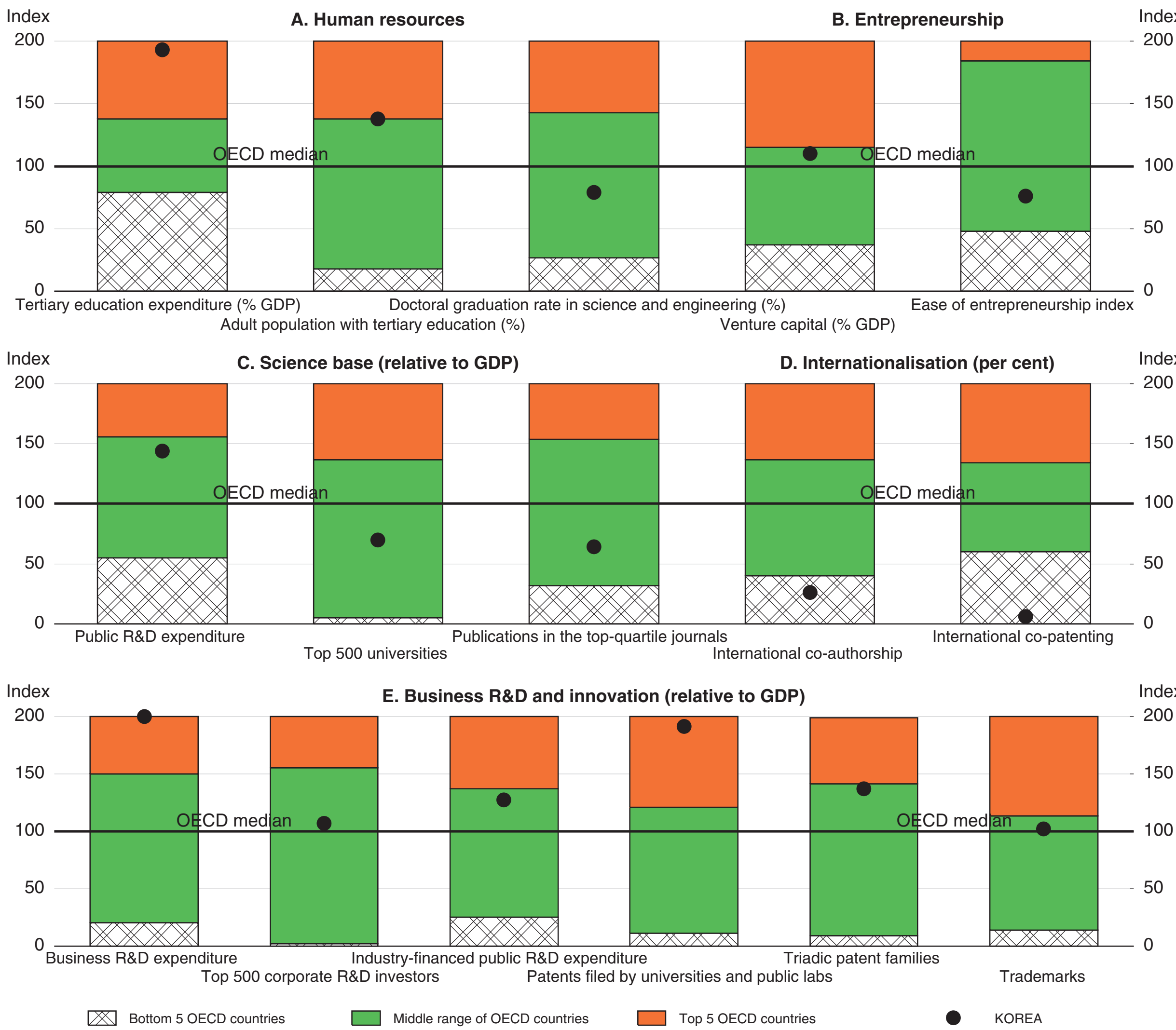
Upgrading the innovation framework

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

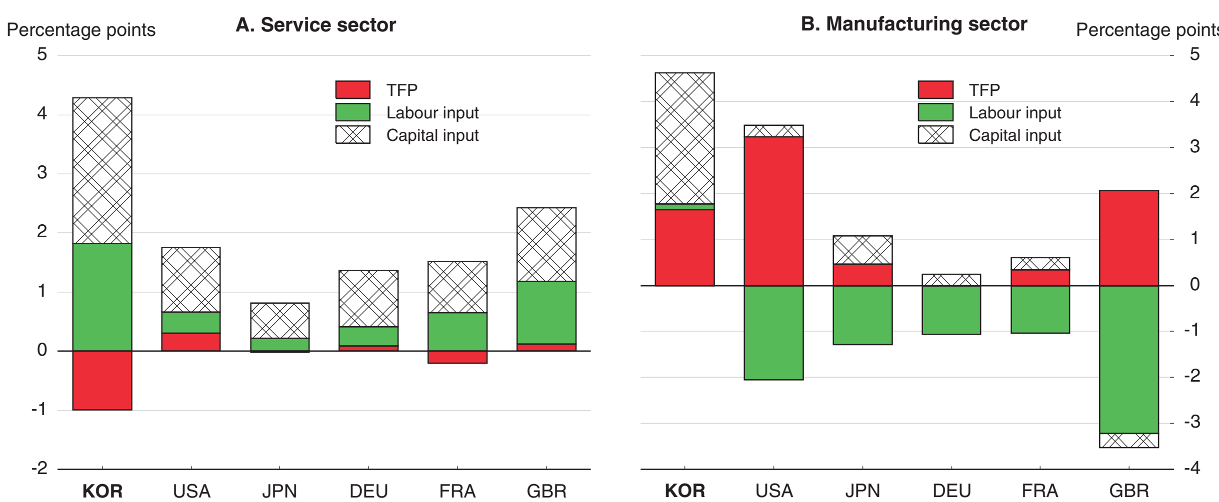
1. The R&D and innovation activity rates are the number of firms taking part in each activity divided by the total number of firms. The lower rate for services reflects to some extent their different nature than manufacturing.

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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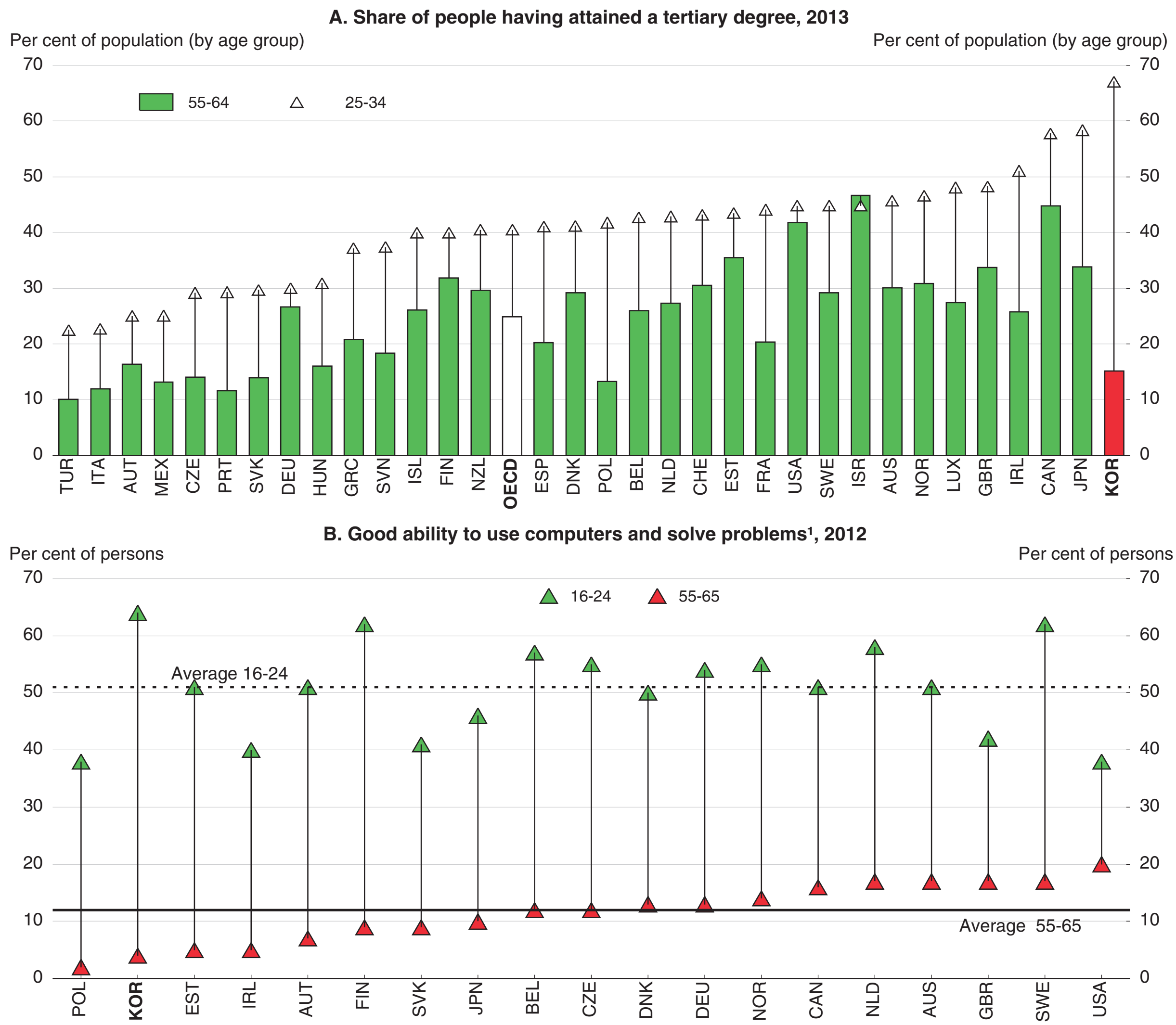
Increasing human capital

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

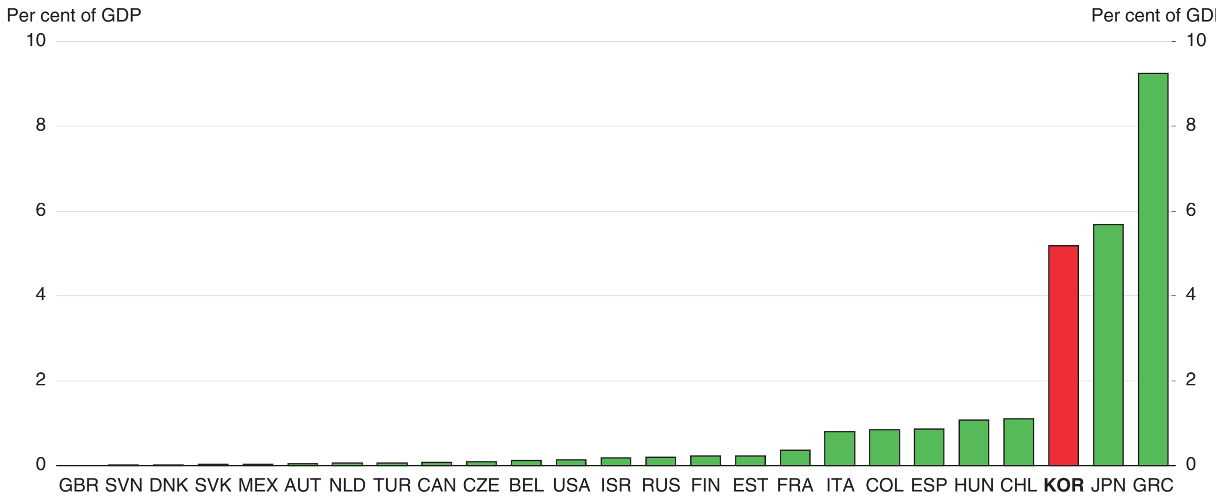
1. Incluldes general banks and specialised banks.
2. Includes loans of mutual savings bank, credit associations, mutual finance companies and Saemaeul finance firms. No data are available for 2013.
3. The sub-total excludes the government's guarantee balance, except in 2013, as the share of guarantees 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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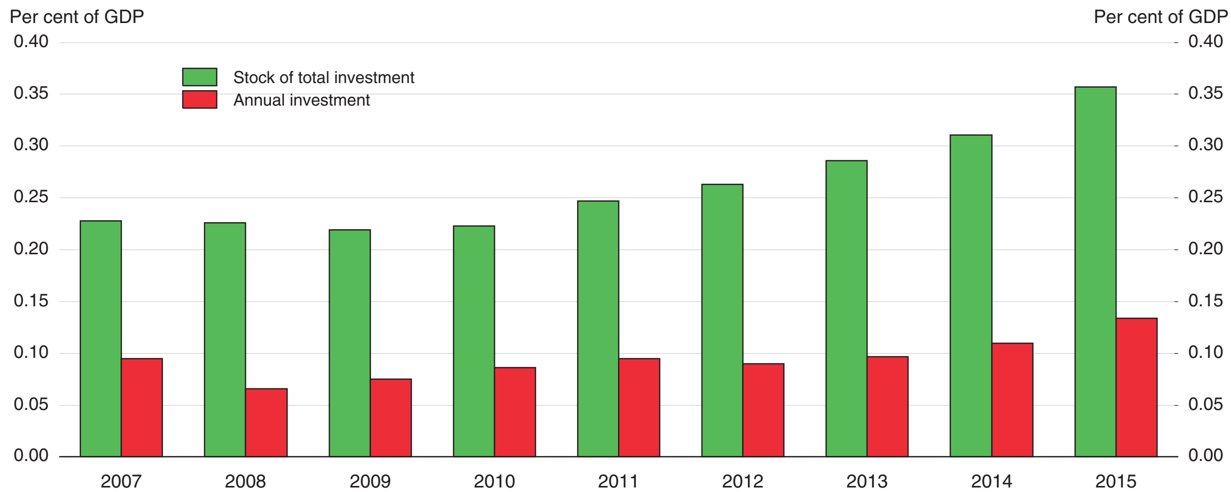
survival rates of low–productivity firms are detrimental to long-run efficiency. The generosity of support to SMEs should be reduced.

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.

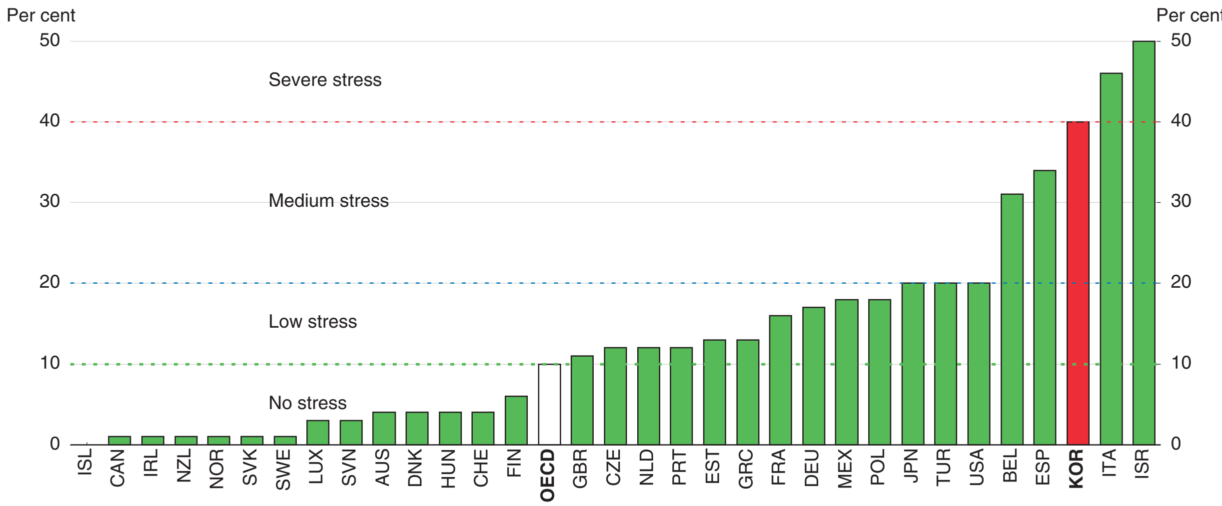
Green growth is a priority for innovation

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.

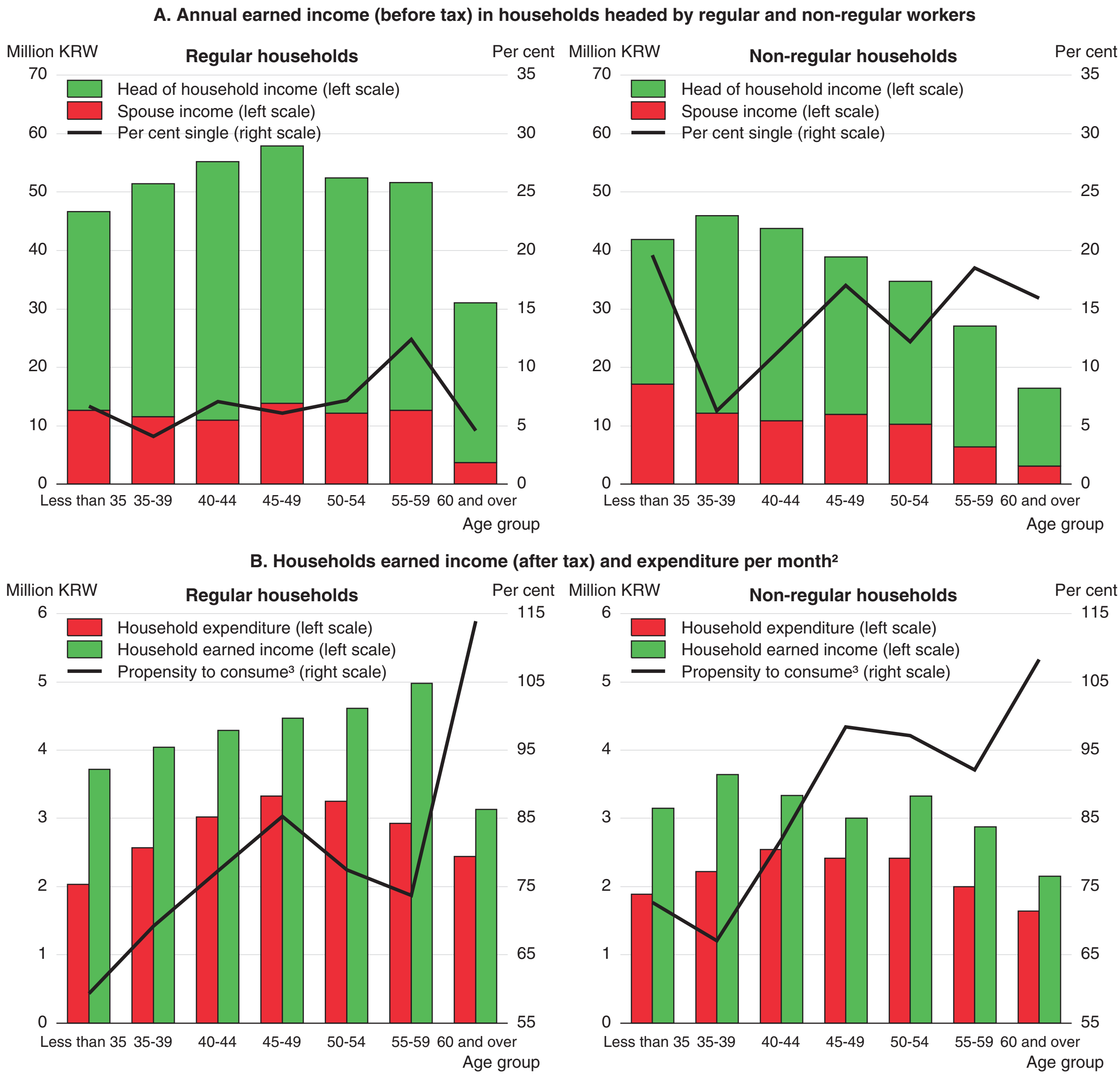
Policies to break down labour market dualism

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

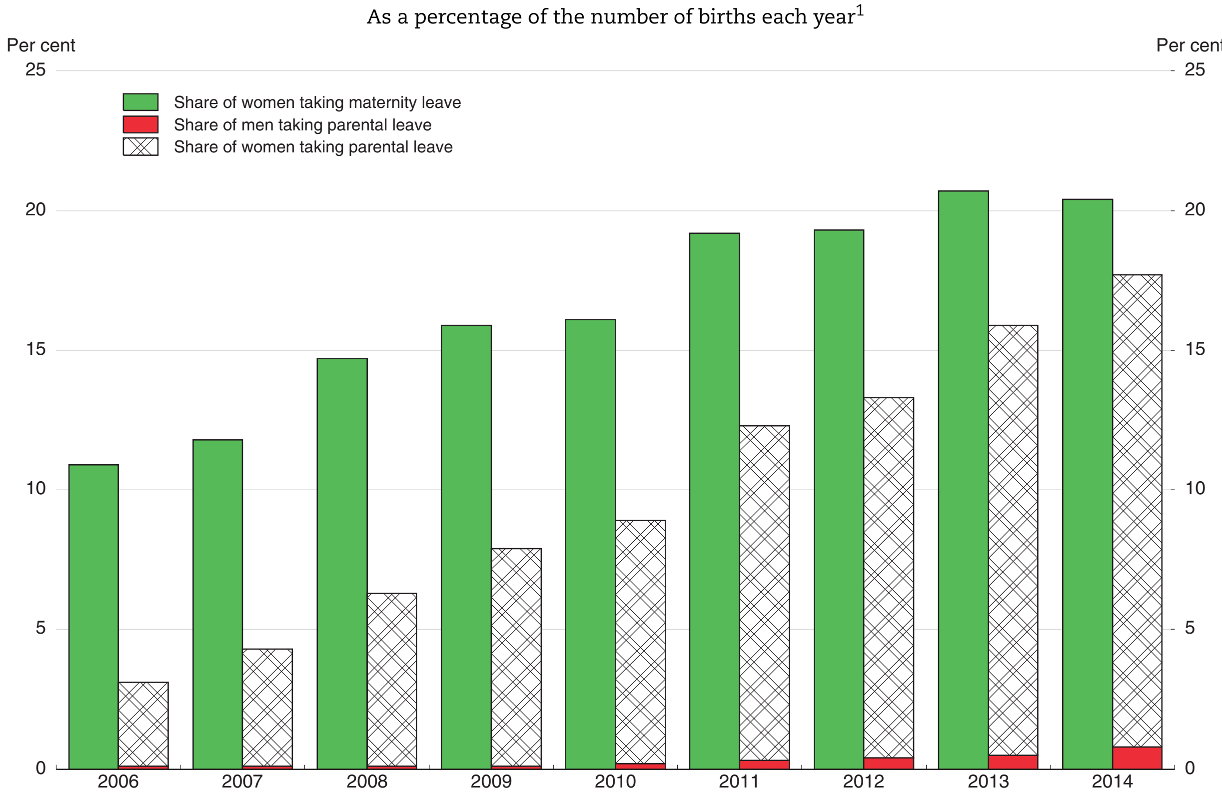
Expanding opportunities for women to work in the labour force

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.

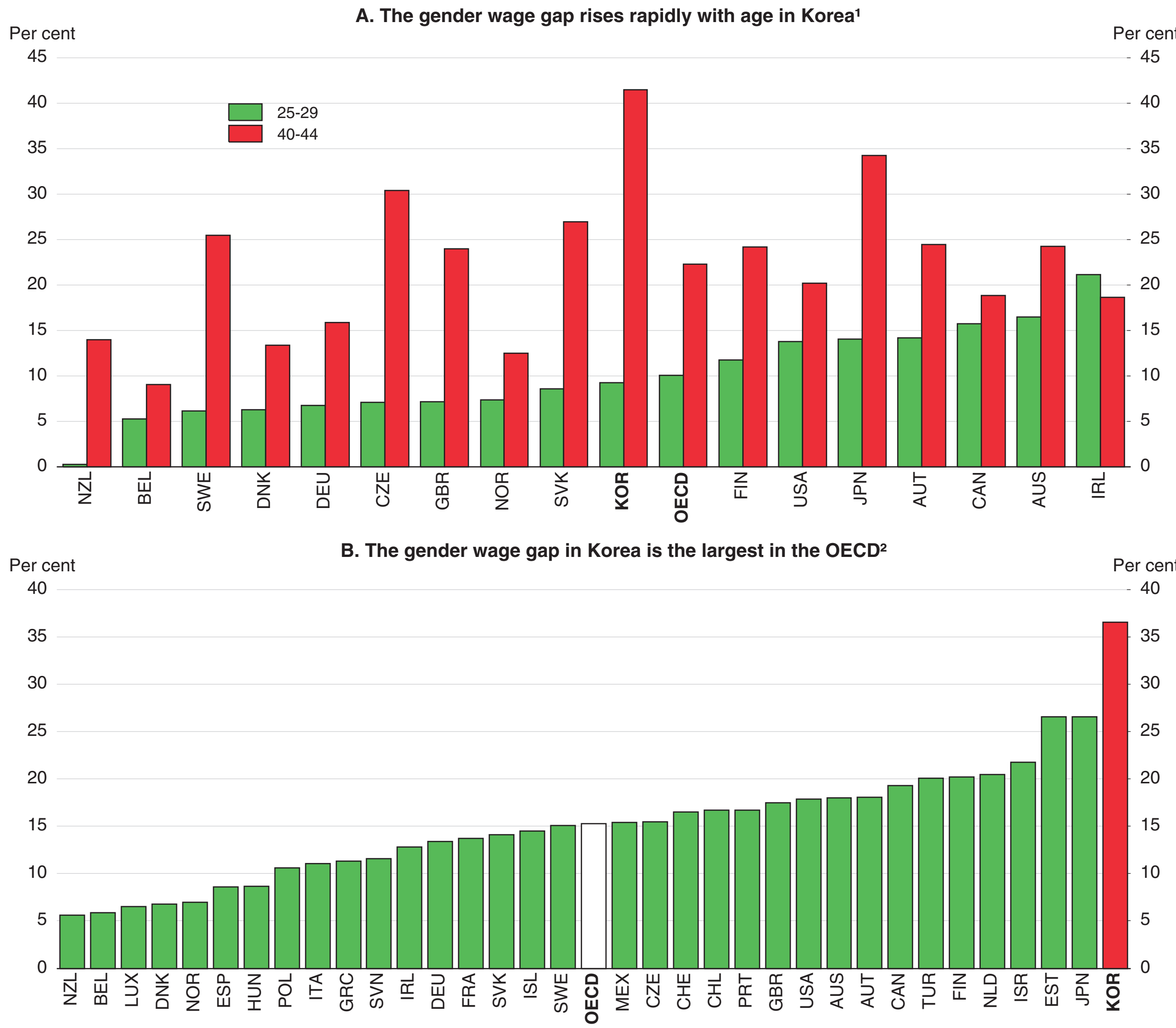
Women's absence from the labour force following childbirth and their concentration in non-regular jobs limit their rise up the corporate ladder. Women's representation on corporate boards, at 2.1% in 2014, lagged behind other Asian economies, such as Malaysia (12.8%) and Indonesia (12.2%) (Vinnicombe 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.*

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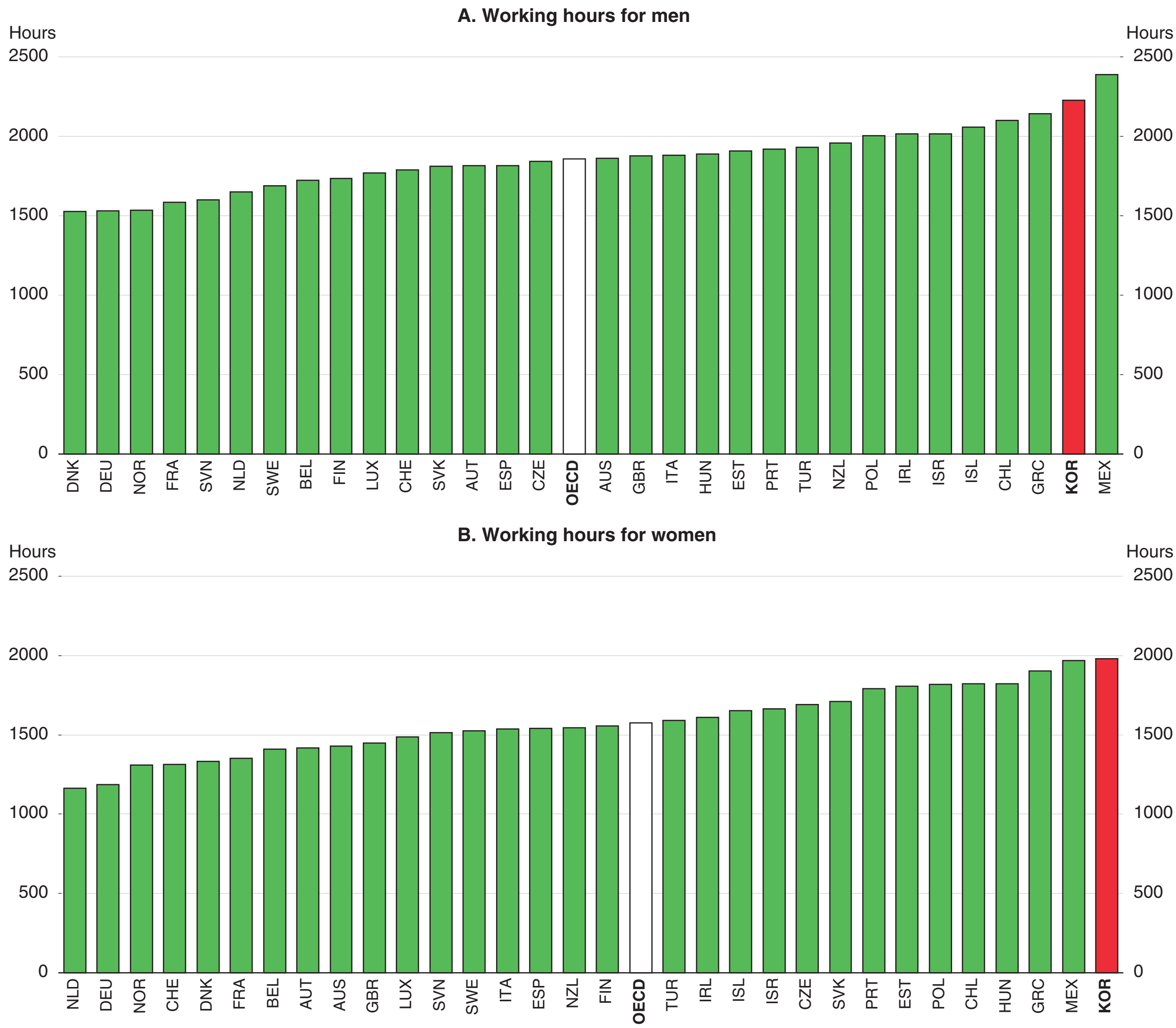
SMEs, which face labour shortages, making it important to resolve the labour mismatch problem. In sum, the tradition of long working hours should be replaced by a productive work culture. Indeed, Korea's labour inputs (relative to its population) are the highest in the OECD while labour productivity 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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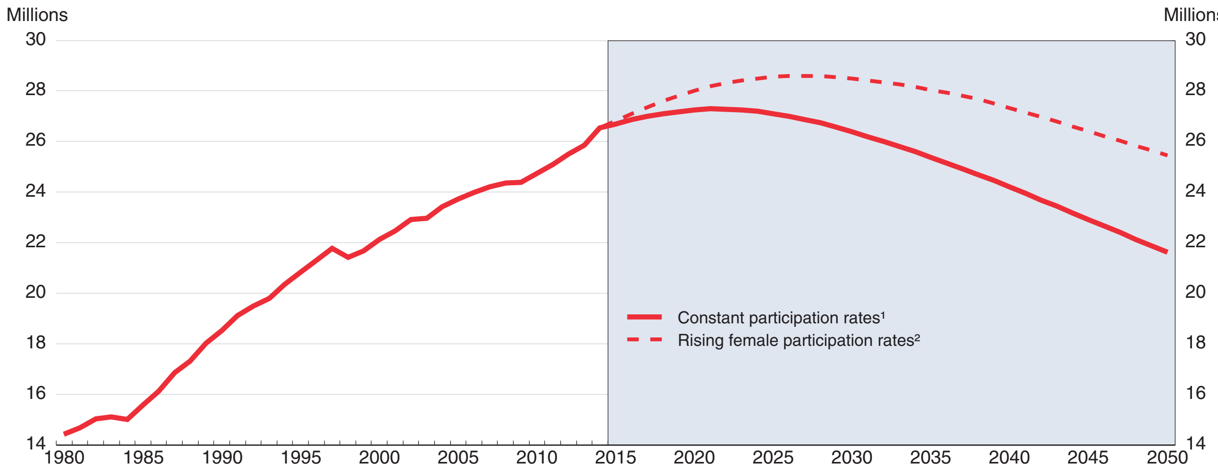
Raising Korea's youth employment rate

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.

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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

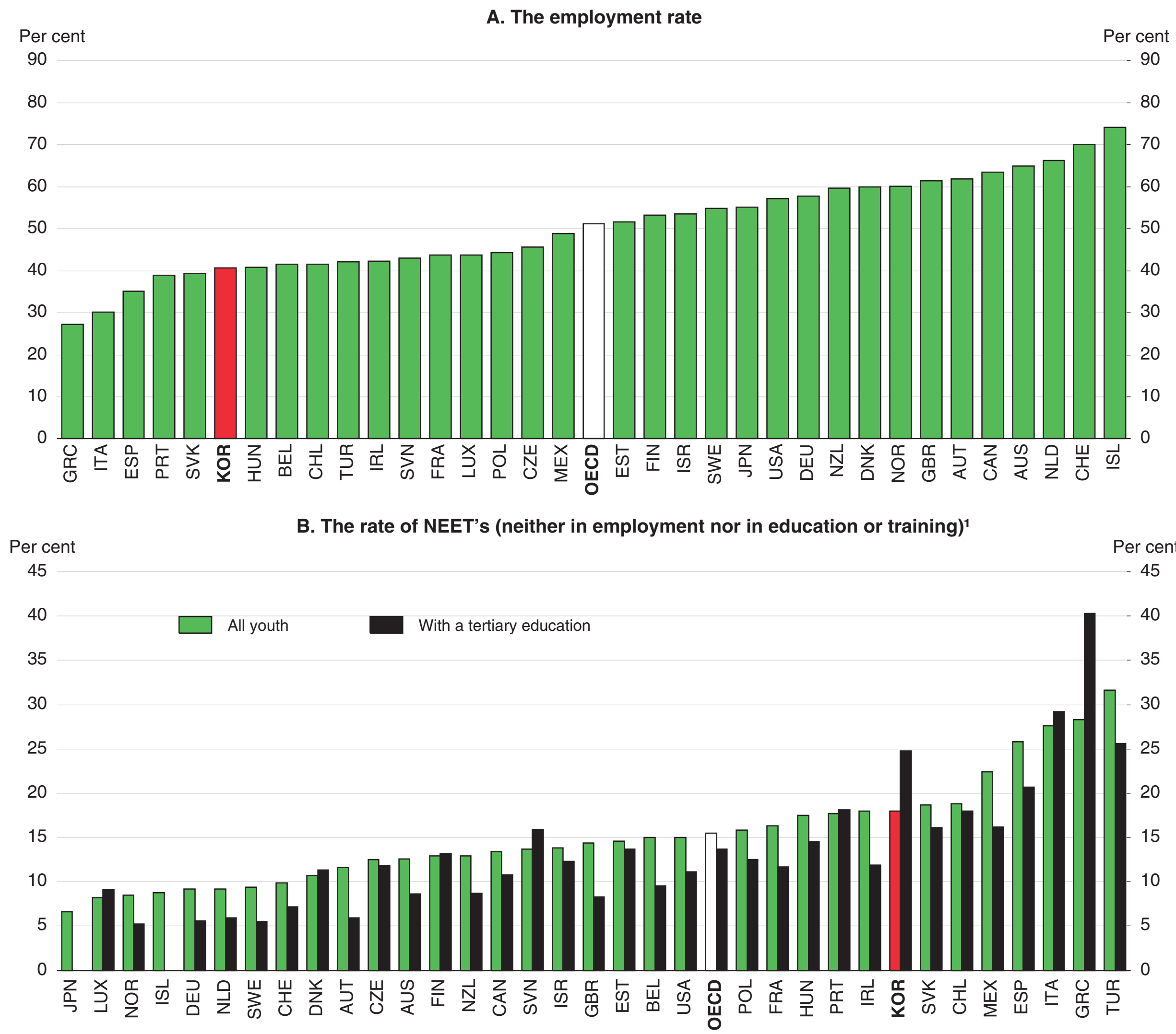
1. Based on the *Korea Labour and Income Panel Survey*.
2. Wage of workers who were continuously engaged in education or the labour markets is set at 100.0.

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

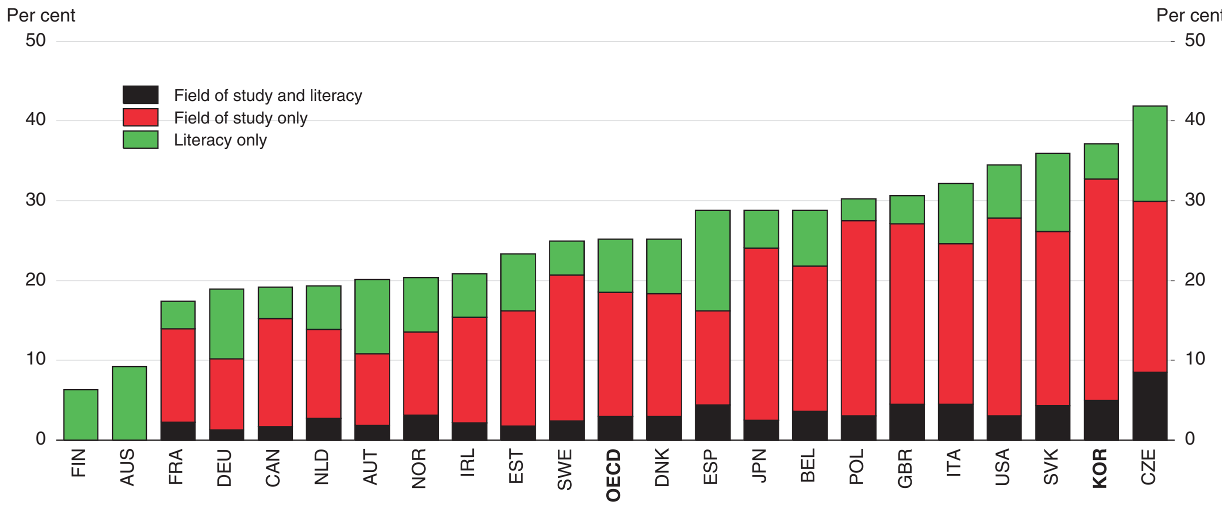
Learning Dual System" in 2013. However, the two initiatives cover only 5.6% of vocational high school students, who account for a fifth of the total number of high school students, suggesting the need for further expansion.

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



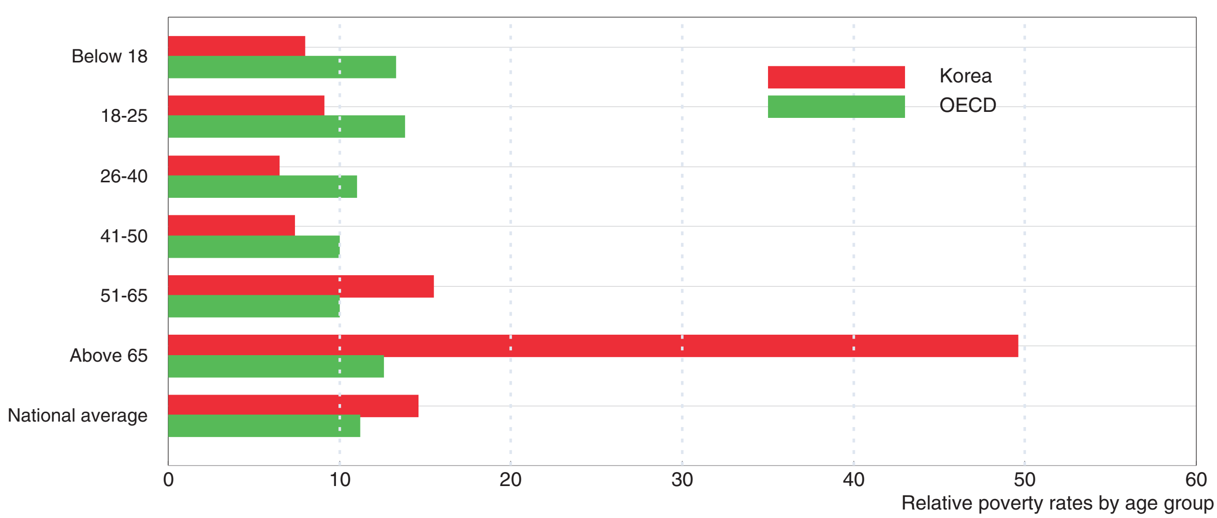
Source: OECD (2014c).

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

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.

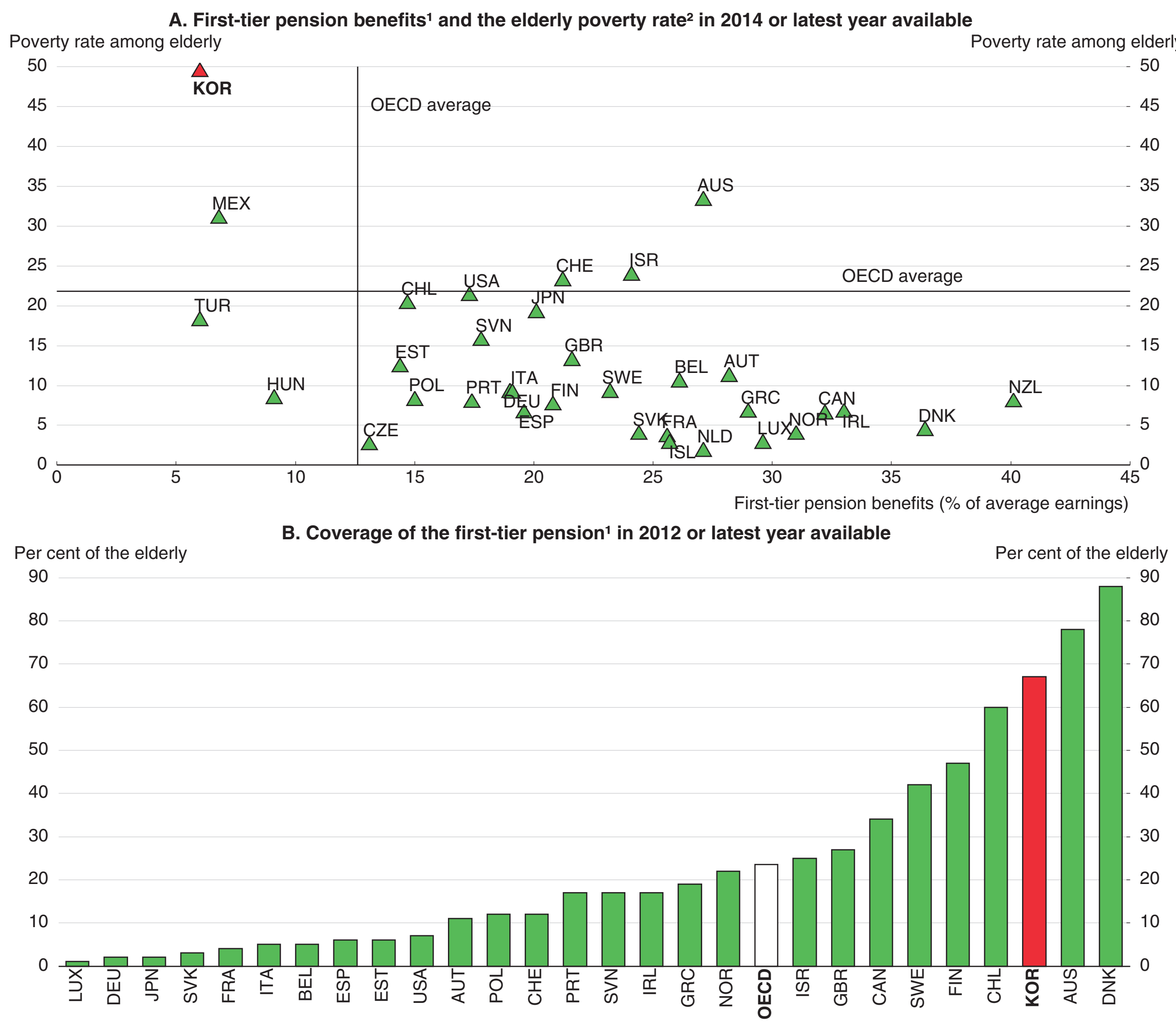
Longer careers at their main jobs would reduce poverty among older persons, both while they are working and after retirement, in part by lengthening their pension contribution period. However, more needs to be done to reduce the relative poverty rate among the elderly, which was 49.6% in 2013 for the 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.

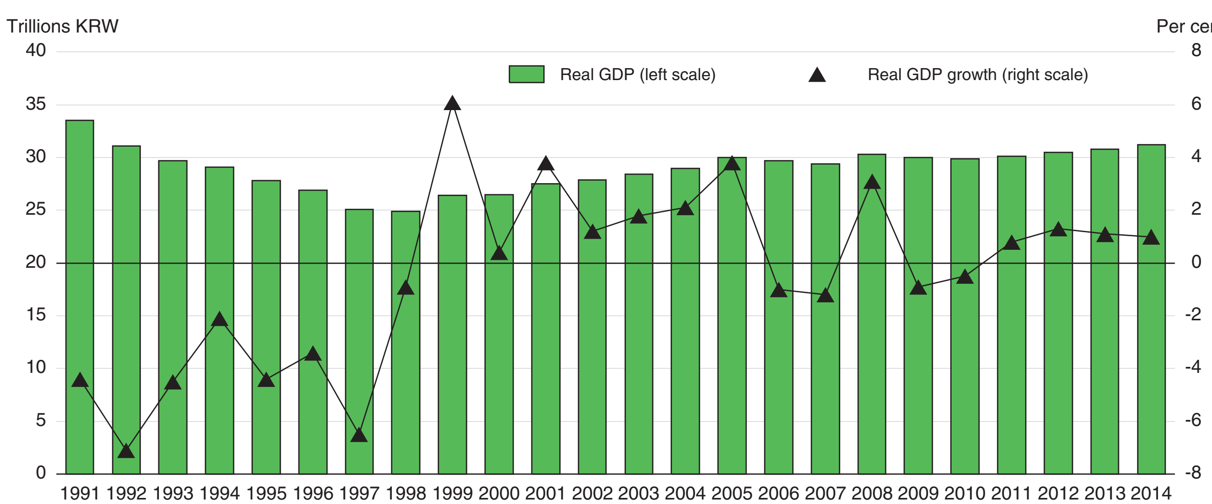
Source: Government of Korea.

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

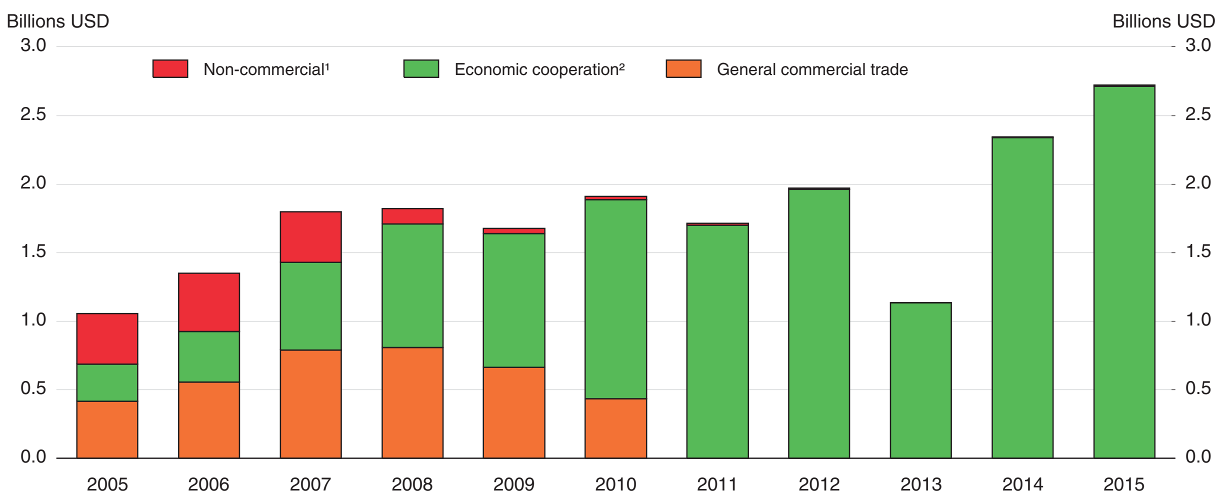
Table A3.1. **Comparison of North and South Korea in 2014**

	(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**

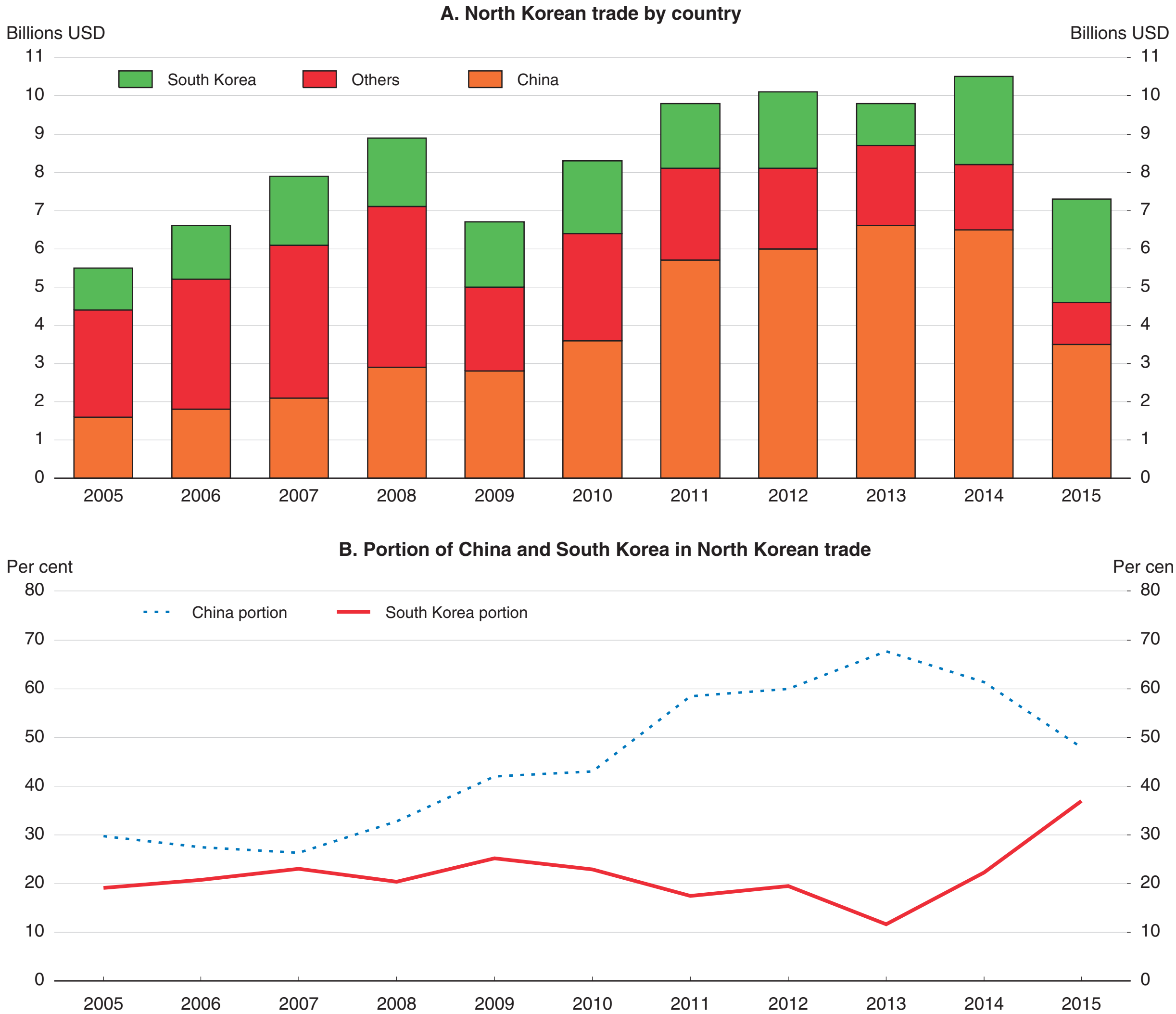


1. Primarily humanitarian aid.
2. Includes special projects, such as the Mount Geumgang resort, which was closed in 2008, and the Gaesung Industrial Complex. The operation of the Complex was suspended in February.
Source: Statistics Korea (Daejeon).

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.