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**Sustaining Korea's  
Convergence  
to the Highest-Income  
Countries**

**Randall S. Jones,  
Satoshi Urasawa**

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by **Randall S. Jones and Satoshi Urasawa**

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## ABSTRACT/RÉSUMÉ

### Sustaining Korea's convergence to the highest-income countries

While Korea remains one of the fastest-growing OECD economies, its potential growth rate per capita is projected to decelerate from around 4% during the current decade to around 2¼ per cent during the 2030s. Sustaining growth requires policies to mitigate the impact of rapid population ageing by increasing labour inputs from under-utilised segments of the population. In particular, female labour participation should be encouraged by better work-life balance and increasing the availability of high-quality, affordable childcare, in part by raising tuition fee subsidies and improving the quality of private childcare centres. More flexible employment and wage systems would increase the age at which older workers leave firms. For young people, improved vocational education at the secondary and tertiary levels would help overcome the labour mismatch problem and the overemphasis on tertiary education. Enhancing educational quality at all levels would promote productivity gains, including in services. Strengthened competition is also a key to narrow the large productivity gap between services and manufacturing.

This Working Paper relates to the 2012 *OECD Economic Survey of Korea* ([www.oecd.org/eco/surveys/Korea](http://www.oecd.org/eco/surveys/Korea)).

JEL classification: H2, I2, J2, O4, O53.

Keywords: Korea; Korean economy; potential growth; labour market dualism; non-regular workers; labour force participation rates; female employment; older workers; tax reform; VAT; education; ECEC; childcare; tertiary education; vocational education; innovation; R&D; service sector; SMEs.

\* \* \* \* \*

### Poursuivre la convergence en Corée vers les pays les plus riches

Si la Corée connaît toujours l'une des croissances les plus dynamiques de la zone OCDE, son taux de croissance potentiel par habitant devrait ralentir pour passer de 4 % environ d'ici à 2020 à 2¼ pour cent entre 2030 et 2040. Pour soutenir la croissance, les autorités coréennes doivent prendre des mesures pour compenser les effets du vieillissement rapide de la population, en renforçant l'apport de travail des catégories de population sous-utilisées. Il convient notamment de renforcer le taux d'activité des femmes, en leur assurant des conditions d'emploi permettant de mieux concilier vie professionnelle et vie privée et en améliorant l'offre de services de garde de qualité et à moindre coût. Pour ce faire, les autorités devraient plus particulièrement relever les subventions destinées à couvrir les frais d'inscription de garde et améliorer la qualité des centres de garde privés. Une plus grande flexibilité des systèmes d'emploi et de rémunération permettrait aux travailleurs âgés de poursuivre leur activité professionnelle. Quant aux jeunes, l'amélioration de la formation professionnelle dans le secondaire et le supérieur contribuerait à résoudre les problèmes d'adéquation entre l'offre et la demande de compétences et de surqualification dans l'enseignement supérieur. Un enseignement de meilleure qualité à tous les niveaux augmenterait les gains de productivité, y compris dans le secteur tertiaire. Le renforcement de la concurrence offre également une piste pour combler l'écart de productivité important entre le secteur des services et le secteur manufacturier.

Ce Document de travail se rapporte à *l'Étude économique de l'OCDE de la Corée, 2012* ([www.oecd.org/eco/etudes/corée](http://www.oecd.org/eco/etudes/corée)).

Classification JEL : H2, I2, J2, O4, O53.

Mots clés: Corée ; économie coréenne ; potentiel de croissance ; dualisme du marché du travail ; travailleurs non réguliers ; taux d'activité ; l'emploi des femmes ; travailleurs âgés ; réforme fiscale ; TVA ; système éducatif ; EAJE ; enseignement supérieur ; enseignement professionnel ; innovation ; R-D ; secteur des services ; PME.

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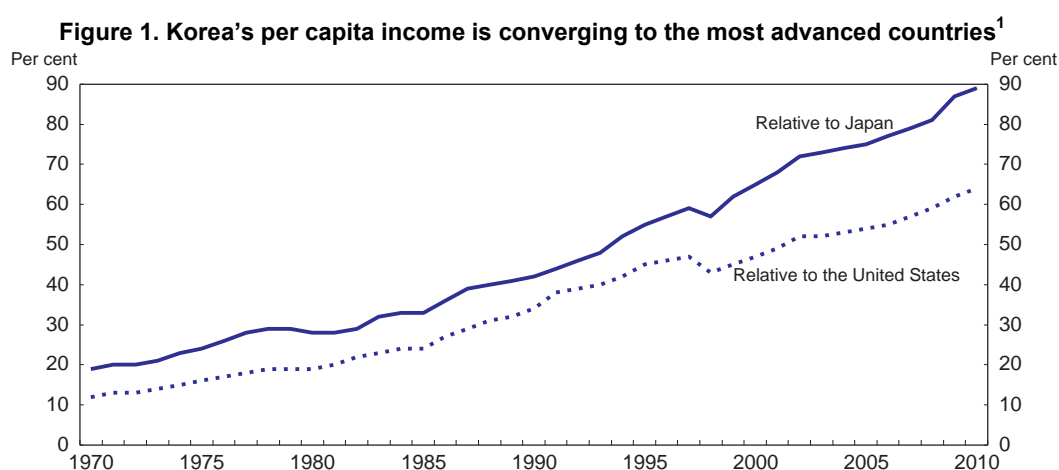
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## SUSTAINING KOREA'S CONVERGENCE TO THE HIGHEST-INCOME COUNTRIES

By Randall S. Jones and Satoshi Urasawa<sup>1</sup>

1. The economic development of Korea since 1960 has been among the most rapid ever achieved, boosting per capita income from 12% of the US level in 1970 to 63% in 2010 (Figure 1). As Korea has converged towards the high-income countries, its potential per capita growth rate has slowed from around 7% in 1995 to close to 4% at present. It is projected to fall further in the context of rapid population ageing, as Korea has experienced one of the sharpest falls in fertility rates in the OECD area and a remarkable gain in longevity. Consequently, Korea, currently the third-youngest country in the OECD area, will have the second-highest elderly dependency ratio by mid-century (Figure 2). The ratio of the working-age population to the elderly will thus fall from 6.0 in 2010 to 1.3 in 2050, implying that public social spending will pose a heavy burden on a shrinking labour force. Similarly, the total dependency ratio – the number of persons under 20 and over 65 as a share of the working-age population – will double from 52% in 2010 to 105% in 2050, the third highest in the OECD. Sustaining economic growth is essential to allow continued improvements in living standards.



1. Using 2005 purchasing power parity exchange rates.

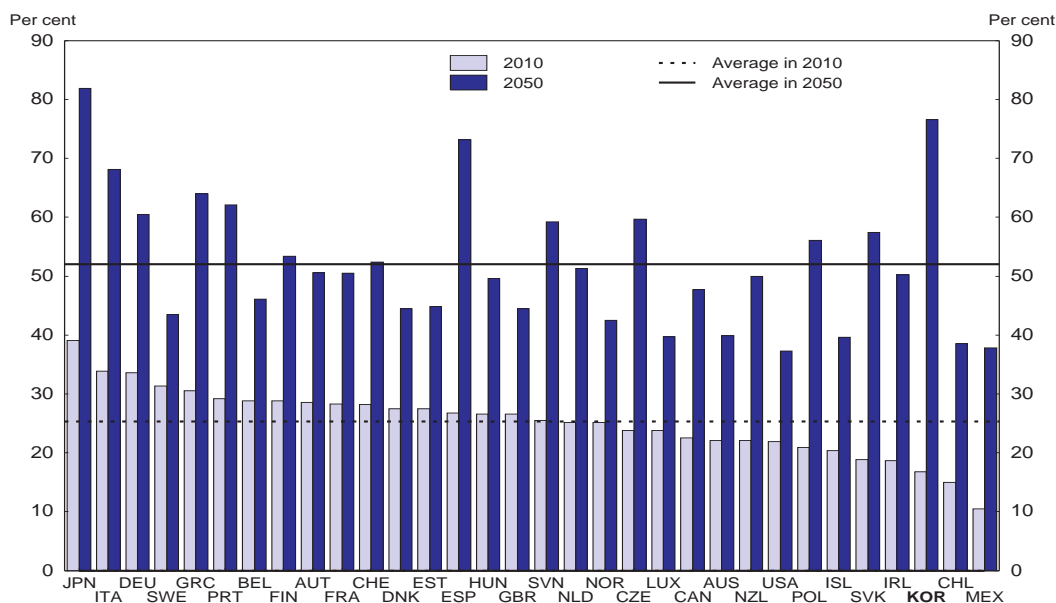
Source: OECD (2012), *Going for Growth 2012*.

2. Korea's growth performance depends on measures to mitigate the fall in labour inputs due to demographic trends and to increase productivity. After an overview of Korea's long-term growth prospects, the following sections discuss labour market and tax policies to promote labour force participation. The paper then analyses education reforms that would support productivity growth, before discussing the service sector, where the potential for productivity gains is large. Policy recommendations are summarised in Box 2 at the end of the paper. While economic growth is a priority, it is essential to

1. Randall S. Jones is head of the Japan/Korea Desk in the Economics Department of the OECD and Satoshi Urasawa is an economist on the Desk. This paper is based on material from the *OECD Economic Survey of Korea* published in April 2012 under the authority of the Economic and Development Review Committee (EDRC). The authors would like to thank Inyup Choi, Hyung-Woo Chung, Andrew Dean, Robert Ford, Mark Keese, Vincent Koen, Minwon Lee and Byungseo Yoo for valuable comments on earlier drafts. Special thanks go to Lutécia Daniel for technical assistance and to Nadine Dufour and Pascal Halim for technical preparation.

ensure that it is environmentally sustainable by promoting green growth and inclusive so as to reduce income inequality and poverty.<sup>2</sup>

**Figure 2. Population ageing in Korea will be the fastest in the OECD area<sup>1</sup>**



1. The elderly dependency ratio in this figure is defined as the over-65 population as a share of the 20-to-64 population.

Source: Statistics Korea, *Population Projection for Korea* (2011 version) and *OECD Demography and Population Database*.

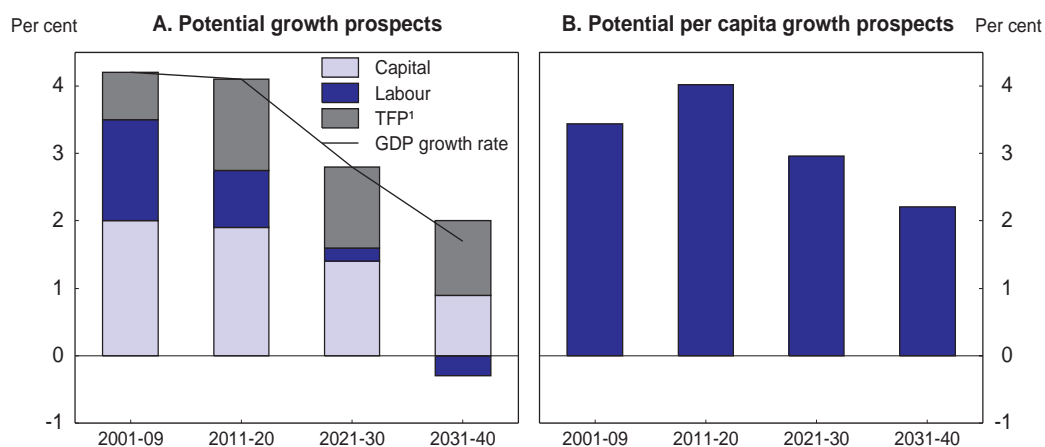
### Korea's long-run growth potential

3. The fall in Korea's potential growth since 1995 reflects a deceleration of both productivity and labour inputs. *First*, the contribution from trend labour productivity has fallen from about five percentage points to three as Korea moved closer to the technology frontier. *Second*, the contribution from labour inputs has declined from two percentage points to one, as working-age population growth halved (from 1.4% to 0.7%). Looking ahead, the Korea Development Institute estimates that Korea's potential growth rate will fall to 1.7% during the 2030s, as the contribution from labour inputs turns negative (Figure 3). In per capita income terms, the fall in potential will be more gradual – from 4.0% during the current decade to 2.2% in the 2030s – given the decline in population.

4. Korea's rapid growth has boosted its per capita income to within 30% of the top half of the 34 OECD countries (Figure 4). The gap can be divided into labour inputs (the middle column) and labour productivity (the right-hand column). Labour inputs, relative to population, are by far the largest in the OECD area, reflecting long working hours that are 25% above the OECD average. The gap is likely to narrow quickly as the working-age population begins falling from 2017 and as working hours, which have been declining at a 1.5% annual rate since 2000, continue to drop. Measures to mitigate falling labour inputs are therefore important to sustain Korea's convergence to the highest-income countries. At the same time, there is significant scope for productivity gains, as Korea's labour productivity per hour of work is only about half of that in the top half of the OECD countries. The issues of labour force participation and productivity growth are both linked to labour market dualism (Box 1).

2. The issues of green growth and income inequality and poverty are addressed in Chapters 2 and 3, respectively, of the 2012 *OECD Economic Survey of Korea*.

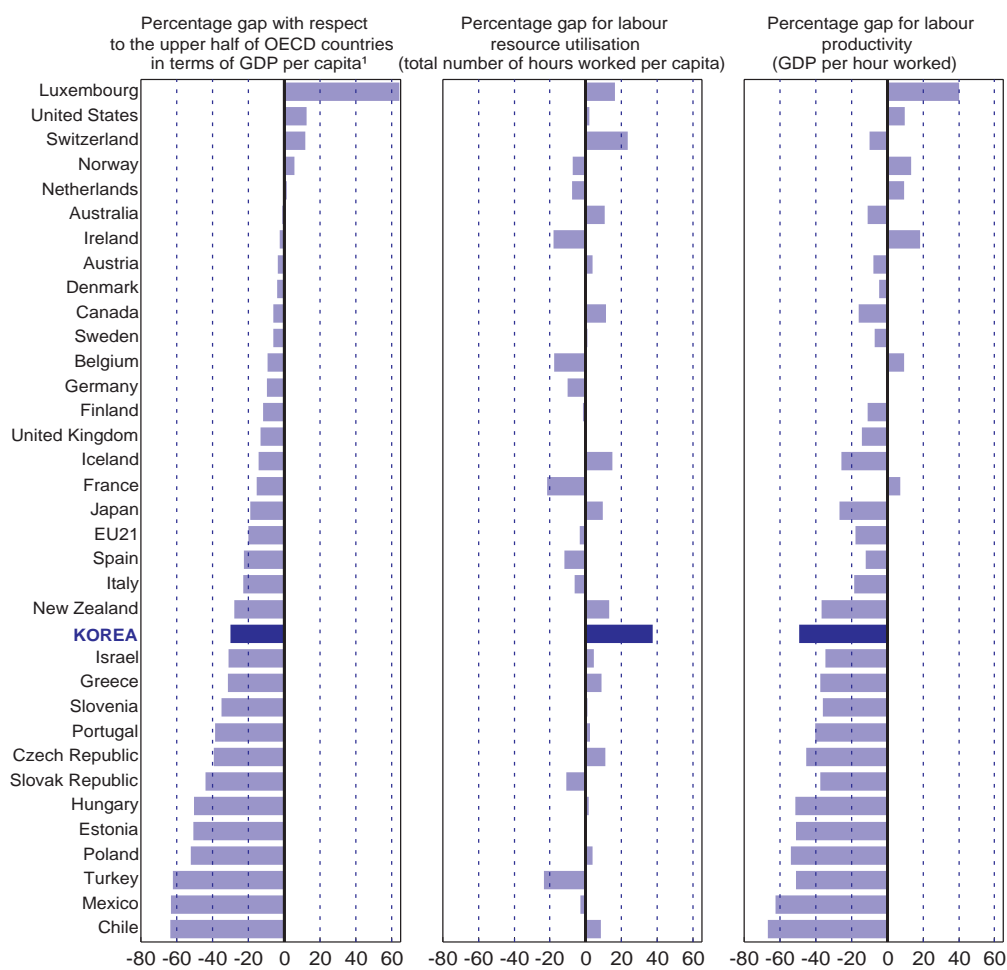
**Figure 3. Korea's potential growth prospects**  
Annual average percentage rate



1. Total factor productivity.

Source: Korea Development Institute.

**Figure 4. Explaining differences in income in 2010**



1. Using 2010 PPP exchange rates.

Source: OECD (2012), *Going for Growth 2012*.



**Box 1. Labour market dualism in Korea**

Non-regular workers – a category that includes temporary (*i.e.* those with fixed-term contracts), part-time and atypical workers, such as temporary agency workers – account for one-third of employees (Table 1). The largest component of non-regular employment is temporary workers at almost one-half of non-regular workers. Firms hire non-regular workers to reduce labour costs and to increase employment flexibility, given the difficulty and cost of laying off regular workers.

**Table 1. Employed persons by status**

| Year     | Wage workers | Non-regular workers |          | of which <sup>1</sup>    |   |   |                   |                  |        |
|----------|--------------|---------------------|----------|--------------------------|---|---|-------------------|------------------|--------|
|          |              |                     |          | Temporary workers        |   |   | Part-time workers | Atypical workers |        |
|          |              |                     |          | With fixed-term contract | With open-ended contract, expect job to continue <sup>2</sup> | With open-ended contract, but could be dismissed <sup>3</sup> |                   | Dispatched       | Others |
| Thousand | Thousand     | Per cent            | Per cent | Per cent                 | Per cent  | Per cent  | Per cent          | Per cent         |        |
| 2003     | 14 149       | 4 606               | 32.6     | 52.2                     | 5.4   | 7.9   | 20.2              | 2.1              | 34.3   |
| 2005     | 14 968       | 5 483               | 36.6     | 49.8                     | 5.5   | 10.7  | 19.0              | 2.1              | 32.6   |
| 2007     | 15 882       | 5 703               | 35.9     | 44.4                     | 9.7   | 8.1   | 21.1              | 3.1              | 35.7   |
| 2009     | 16 479       | 5 754               | 34.9     | 48.9                     | 3.0   | 9.1   | 24.8              | 2.9              | 36.8   |
| 2011     | 17 510       | 5 995               | 34.2     | 44.5                     | 5.7   | 7.3   | 28.4              | 3.3              | 37.2   |

1. The sum of the categories of non-regular workers exceeds 100% due to double-counting.

2. Workers' whose term is not fixed and can be renewed regularly.

3. An employee could be dismissed, for example, due to seasonal factors, completion of a project or the return of an employee that they were replacing.

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

A 2011 government labour survey shows that non-regular workers are disproportionately older, female, less educated, engaged in elementary work and employed in small and medium-sized enterprises (SMEs) (Table 2):

- The proportion of non-regular workers is highest among older workers. In 2011, the over-60 age group accounted for only 7.8% of employees but 16% of non-regular workers (Panel A). In contrast, only 3.5% of regular workers were over 60.
- Female employees accounted for over half of non-regular workers, but only 37.1% of regular workers (Panel B).
- Non-regular workers tend to be less educated, as a quarter attained only middle school or less compared to 9.7% for regular workers (Panel C). In contrast, most workers with tertiary degrees are regular workers, thus helping to fuel demand for university education.
- Almost one-half of non-regular workers were engaged in assembly and elementary work, compared to less than one-third of regular workers (Panel D). In contrast, only 18.1% were in management.
- There is significant variation between sectors. The share of non-regular workers is especially large in wholesale and retail trade and construction (Panel E).
- Non-regular workers are concentrated in firms with less than 300 employees (Panel F).
- Non-regular workers have shorter tenure, averaging around two years, compared to more than six years for regular workers (Panel G).
- Non-regular workers receive significantly less coverage by the social insurance system. Less than half of non-regular workers are covered by employees' pension and health insurance and employment insurance, compared to around four-fifths for regular workers (Panel H).

**Table 2. A comparison of regular and non-regular workers**

In per cent in August 2011

| Table 2. A comparison of regular and non-regular workers |                                 |                             |                      |       |
|--|---------------------------------|-----------------------------|----------------------|-------|
| In per cent in August 2011                               |                                 |                             |                      |       |
| <b>A. Age</b>  |                                 |                             |                      |       |
|  | Under age 30                    | 30 to 59                    | Over age 60          |       |
| All employees  | 20.9                            | 71.4                        | 7.8                  |       |
| Regular workers  | 20.9                            | 75.6                        | 3.5                  |       |
| Non-regular workers                                      | 20.7                            | 63.3                        | 16.0                 |       |
| <b>B. Gender</b>   |                                 |                             |                      |       |
|  | Male                            | Female                      |                      |       |
| All employees  | 57.3                            | 42.7                        |                      |       |
| Regular workers  | 62.9                            | 37.1                        |                      |       |
| Non-regular workers                                      | 46.6                            | 53.4                        |                      |       |
| <b>C. Education</b>                                      |                                 |                             |                      |       |
|  | Middle school or less           | High school                 | Tertiary             |       |
| All employees  | 15.2                            | 39.0                        | 45.8                 |       |
| Regular workers  | 9.7                             | 36.8                        | 53.5                 |       |
| Non-regular workers                                      | 25.9                            | 43.1                        | 31.0                 |       |
| <b>D. Occupation<sup>1</sup></b>                         |                                 |                             |                      |       |
|  | Assembly and elementary workers | Administrators and managers | Clerks               | Other |
| All employees  | 36.6                            | 24.2                        | 21.5                 | 17.7  |
| Regular workers  | 30.9                            | 27.4                        | 26.8                 | 14.9  |
| Non-regular workers                                      | 47.5                            | 18.1                        | 11.3                 | 23.0  |
| <b>E. Sector</b>   |                                 |                             |                      |       |
|  | Manufacturing                   | Wholesale and retail trade  | Construction         | Other |
| All employees  | 19.7                            | 18.2                        | 8.0                  | 54.1  |
| Regular workers  | 25.3                            | 18.3                        | 5.9                  | 50.5  |
| Non-regular workers                                      | 9.0                             | 18.1                        | 12.0                 | 60.9  |
| <b>F. By size of establishment<sup>2</sup></b>           |                                 |                             |                      |       |
|  | More than 300                   | 30 to 299                   | Less than 30         |       |
| All employees  | 11.2                            | 29.9                        | 58.8                 |       |
| Regular workers  | 14.1                            | 32.7                        | 53.1                 |       |
| Non-regular workers                                      | 5.6                             | 24.6                        | 69.8                 |       |
| <b>G. Tenure</b>   |                                 |                             |                      |       |
|  | Average tenure                  |                             |                      |       |
| Regular workers  | 6 years and 7 months            |                             |                      |       |
| Non-regular workers                                      | 2 years and 2 months            |                             |                      |       |
| <b>H. Coverage by social insurance</b>                   |                                 |                             |                      |       |
|  | Employees' pension scheme       | Employees' health insurance | Employment insurance |       |
| Regular workers  | 79.1                            | 80.9                        | 77.4                 |       |
| Non-regular workers                                      | 38.2                            | 44.1                        | 42.3                 |       |

1. For the top three occupations for regular workers. The "administrators and managers" category includes engineers.

2. Number of employees.

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

Non-regular workers earned only 57% as much per hour as regular workers in 2010 (although the gap is narrowed to 13% after adjusting for differences in individual characteristics, such as gender, education, tenure, occupation and age). Consequently, more than a quarter of full-time workers in Korea earn less than two-thirds of the median wage, the highest proportion in the OECD area, with negative implications for equity. Moreover, non-regular workers receive less coverage by the social insurance system. The negative consequences of dualism are exacerbated by the lack of mobility between non-regular and regular employment. The forces driving dualism, as well as policies to reverse it, are analysed in the 2012 *OECD Economic Survey of Korea*.

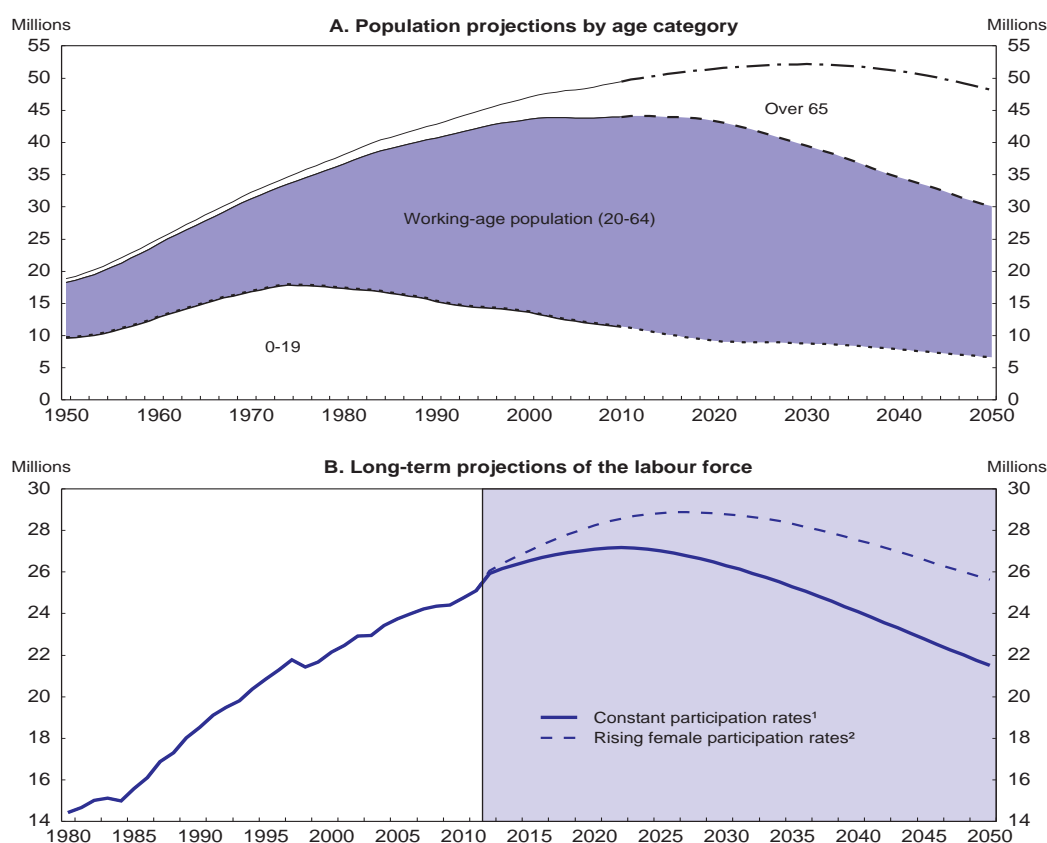
### Labour market reforms to boost employment and productivity

5. The population is expected to peak at about 52 million around 2030 and then drop by 8% by mid-century (Figure 5). The working-age population, meanwhile, will peak already in 2016 and then fall by more than one quarter by 2050. The retirement of the generation born between 1955 and 1974 –

16.5 million persons (34% of the total population) - is beginning in earnest and will have a profound impact. It is essential to boost labour force participation, particularly among women, who tend to withdraw from the labour force for marriage or childbirth, the elderly, who retire at a relatively young age from firms, and youth, who face serious mismatch problems. One option to ease the demographic burden would be immigration, although inflows have been closely restricted thus far. Indeed, the government reported that there were 0.7 million foreign workers in Korea in 2011, accounting for less than 3% of the labour force, well below the OECD average of 10% (OECD, 2007c).<sup>3</sup>

6. The government's 2010 "National Employment Strategy 2020" aims at making greater use of "vulnerable workers", such as women, the elderly and youth, to boost the employment rate from 63% of the working-age population in 2010 to the 70% level of some advanced countries (Figure 6). The other pillars of the strategy are to: *i*) pursue employment-friendly economic and industrial policies, including the Green Growth Strategy; *ii*) create a fair workplace to improve income distribution and welfare, in part by reforming regulations on non-regular workers; and *iii*) reform the social safety net to strengthen work incentives (Ministry of Employment and Labour, 2010).

**Figure 5. Rapid population ageing in Korea and the decline of the labour force**



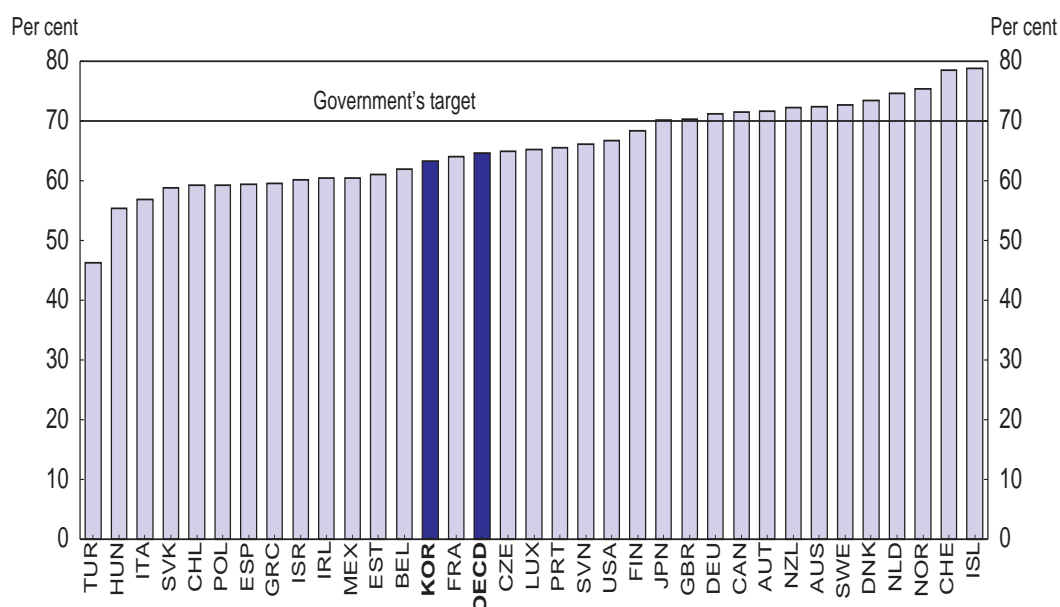
1. The participation rates for men and women are assumed to remain at their current levels for each age group.

2. Female participation rates are assumed to reach current male rates in each age group by 2050.

Source: Statistics Korea, *Population Projection for Korea* (2011 version) and *Economically Active Population Survey* and OECD calculations.

3. Local employers unable to find domestic workers are allowed to hire foreign workers, usually for manual jobs, for up to 58 months under the Employment Permit System adopted in 2004.

**Figure 6. International comparison of employment rates**  
As a per cent of the working-age population in 2010



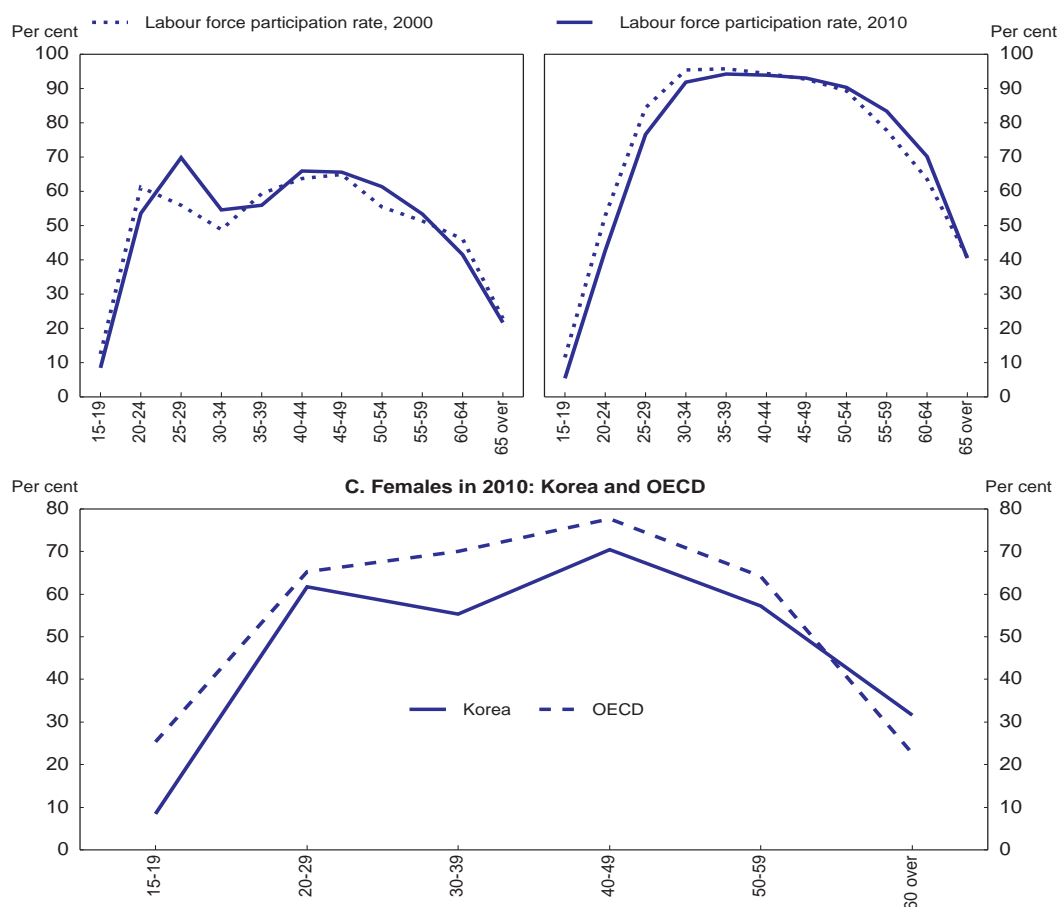
Source: OECD (2011d), *OECD Employment Outlook 2011*.

### ***Boosting female labour force participation***

7. If participation rates were to remain at their current levels for each age group by gender, the labour force would peak at 27.2 million in 2022 and then fall by 21%, to around 21.5 million (Figure 5, Panel B) by 2050. However, if the female participation rate were to converge to the current level for males for each age group by 2050, the labour force would only decline to around 25.6 million, 19% higher than in the case of unchanged participation rates.

8. Women's participation rate was 54.5% for the working-age population in 2010, compared to an OECD average of 61.8% and more than 70% in some advanced countries. The government has set a target of boosting the rate to 60% by 2014. Although the participation rate of prime-age women (the 25-to-54-age group) increased from 54% in 1990 to 62% in 2010, it was still the third lowest in the OECD area. The low rate reflects the withdrawal of a majority of women at the time of marriage or childbirth, although most return later, resulting in an M-shaped pattern not found for Korean men or for women in the OECD area as a whole (Figure 7). The withdrawal of women is due to the challenge of combining employment with caring for a family. According to a 2010 government survey, 53% of women responded that "family responsibilities" were the primary obstacle to employment, followed by their children's schooling (19%) and childcare (14%). The tradition of long working hours in Korea (see below) makes it difficult for both parents to work as regular workers. Consequently, 57% of married women are not in the labour force and instead bear most of the family responsibilities.

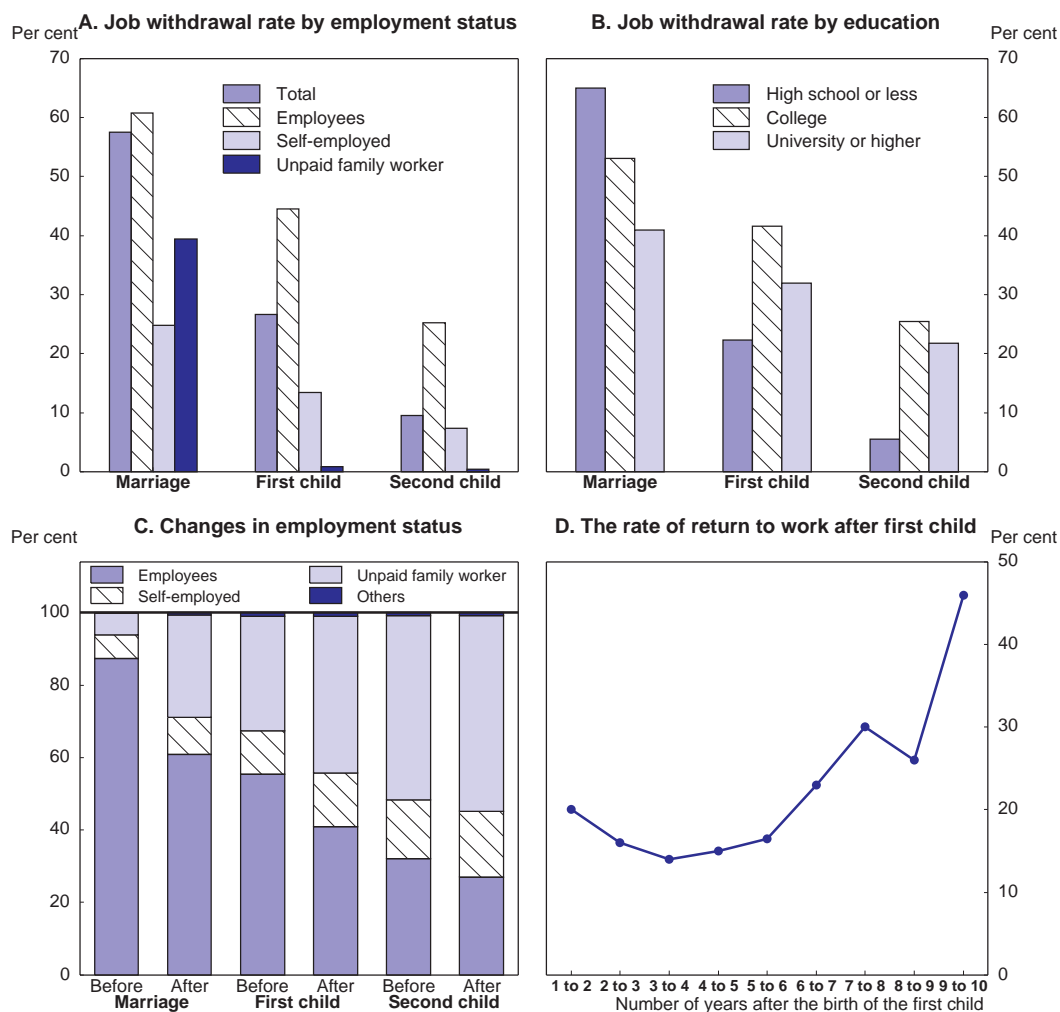
**Figure 7. Changes in labour force participation by age and gender**



Source: OECD Employment Outlook Database.

9. Another study (Figure 8) found that:

- In 2007, 58% of female workers withdrew from the labour force when they marry, with the figure much higher for employees than for the self-employed or family workers. Another 27% leave at the birth of their first child and 10% when a second child is born (Panel A).
- Women with higher educational attainment were less likely to withdraw following marriage than those with a lower educational attainment, reflecting their higher opportunity cost of not working. However, they are more likely to withdraw following the birth of a child (Panel B).
- A large share of women who were employees prior to interrupting their careers for marriage and childbirth return to the labour force as self-employed and unpaid family workers. Indeed, the share of women working as employees fell significantly from 87% prior to marriage to 27% after their second child (Panel C). Moreover, many of those who are employees work as lower-paid non-regular workers.
- The share of women who returned to work after their first child falls for the first four years, perhaps due in part to the birth of an additional child. The rate of return to the labour force gradually rises as children enter school and reaches 46% after nine years (Panel D).

**Figure 8. Responses of female workers to marriage and childbirth<sup>1</sup>**

1. The 2007 survey samples for marriage, birth of a first child and a second child are not necessarily identical.

Source: Kim (2011).

10. Realising the 60% target for female participation among the working-age population by 2014 will require a number of reforms, although it is difficult for the government to change business practices and social customs. Nevertheless, it has taken steps to alleviate the burden of bearing and caring for children and to create more family-friendly workplaces, based on the recommendations by the Korean Committee on Low Fertility and Population Ageing Policy in 2006:

- i. Expand investment in public childcare, while introducing a subsidy for private facilities;
- ii. Encourage flexible working schedules, including shorter hours for parents with childcare responsibilities;
- iii. Lengthen maternity leave to 90 days for women employed at SMEs, with the cost covered by the Employment Insurance System (EIS);

- iv. Raise the childcare leave benefit and easing the conditions attached to it.<sup>4</sup>

11. These measures were followed by the 2011 revision of the Equal Employment Opportunity and Work-Family Balance Assistance law, which allows parents with children under age six to request shorter working hours.<sup>5</sup> The government also encouraged more fixed-term and “dispatched workers” (workers from temporary worker agencies) to take childcare leave by excluding the leave time from the legal time limits on their length of employment. Better work-life balance would also benefit firms by reducing the turnover of skilled workers, leading to higher productivity (Kim and Hwang, 2009).

12. The take-up rate for maternity leave is now estimated at 63% for regular employees and 37% for non-regular workers. By 2010, the number of women taking maternity leave had increased to around 75 000. However, the average length was 13 weeks in 2008, below the OECD average of 19 weeks. Further extending the length of maternity leave beyond 90 days and expanding the coverage of the EIS, which plays a major role in financing it, would encourage female workers to remain in the labour force at the time of childbirth. One study found that around five months is the optimal length from a labour supply perspective (Jaumotte, 2003). Longer maternity leave should be accompanied by longer parental leave, which averages 46 weeks, well below the OECD average of 72 weeks. Moreover, the full-time paid equivalent is ten weeks, only half of the OECD average, suggesting a need to make the benefit more generous. The number of fathers taking childcare leave surpassed 1 000 in 2011 for the first time, but still accounts for only 2% of parents taking the leave. The limited take-up reflects fathers’ concern that it would have negative effects on their career and relationships with colleagues (OECD, 2011b). Reserving a part of the parental leave for the exclusive use of fathers would increase their take-up of parental leave.

13. In addition to maternity and parental leave, reducing working hours is a priority to improve work-life balance. The tradition of long working hours stems in part from heavy use of overtime, encouraged by a large overtime premium and low marginal income tax rates, and unused annual leave. Compared to other countries, Korean workers tend to favour working longer hours and earning more (Choi *et al.*, 2012). As for firms, they prefer to meet increased demand through longer hours rather than by expanding the number of employees, given the fixed costs of hiring and the employment protection that makes it expensive to dismiss unnecessary workers (Kim and Hwang, 2009). In 2007, 87% of men (the fifth highest in the OECD area) and 77% of women (the seventh highest) worked more than 40 hours per week (OECD, 2011a). The emphasis should shift from long working hours to productivity, which would also help expand domestic demand. Following the gradual introduction of the 40-hour work, beginning with companies with more than 1 000 workers in 2004, average annual working hours fell by 8% to 2 193 in 2010. The decline in working hours for the self-employed, who are not subject to limits on hours, followed a similar pattern, suggesting that shorter hours reflect social preferences.

14. Nevertheless, annual working time remains the longest in the OECD area at 25% above the average of 1 749 hours in 2010. The government goal to cut working time to 1 800 hours would require a number of measures. *First*, strictly enforcing the 40-hour workweek, as well as the 12-hour limit on weekly overtime, would reduce working time. In 2011, 15% of employees worked more than 53 hours per week, thus violating the labour code. Long working hours are more prevalent at smaller companies. In 2010, working time at companies with between five and nine employees was 7% longer than at those with more than 300 employees (KEF, 2011). *Second*, the legal exemptions to working time limits for certain

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4. In 2010, eligibility was expanded from an employee whose children are age three or younger to age six or younger. Each parent can take up to one year of leave. A worker taking parental leave receives 40% of his or her salary, of which 15% is paid six months after the return to work.
5. According to the law, “the employer will be required to allow that worker to work shorter hours as long as there is no special managerial reason”. In addition, it made the three-day unpaid paternity leave paid, with the possibility of an additional two days of unpaid leave.

professions, such as hospital workers, could be narrowed. *Third*, the 40-hour workweek, which was extended in July 2011 to all firms with more than five workers, could be extended to firms with fewer than five workers. *Fourth*, the government should encourage the use of annual leave. While firms granted 25 days on average, workers used only 13, with the take-up rate lower at larger companies (KEF, 2011).

15. To boost female participation, the government introduced a bill in 2011 to promote the employment of part-time workers, which accounted for only 15% of female employment in 2010, well below the OECD average of 26% (OECD, 2011d). As part of this effort, it is promoting flex-time, which allows flexibility in arrival and departure times from work. However, part-time work is classified as non-regular employment, which brings a number of disadvantages, including lower hourly wages, which weaken the incentives for female part-time employment, particularly for highly-educated women with a high reservation wage.<sup>6</sup> This underscores the importance of reducing the disadvantages of non-regular employment. In addition, firms resist part-time employment as it breaks up the continuity of work, complicates personnel management and expands the need for training. According to the Korea Employers Federation (2011), the “majority view is that part-time regular employment is not appropriate for the Korean labour market”.

16. Another factor discouraging female employment is the gender gap in earnings, despite government efforts, such as the 1997 Equal Opportunity Law, to eliminate discrimination against women. A 2006 law required both public and private firms with more than 1 000 workers to draw up an action plan and make voluntary efforts to promote gender equality. This initiative was expanded to firms with more than 500 workers in March 2008. Nevertheless, in 2010, female workers were paid only 60% as much as male workers, virtually unchanged from 1996 (OECD, 2011a). The gender wage gap, the largest in the OECD area, reflects the large share of women engaged in non-regular employment with low wages, as well as the low proportion in management positions. Indeed, women accounted for only 8% of managers in Korea between 2007 and 2009, well below the OECD average of 29%. It is important to create better job opportunities for women that would attract them to the labour market, in part by reducing dualism and expanding the weight of performance in setting wages, thereby narrowing the gender wage gap. In short, reforms are needed to offer women the hours, jobs, wages and careers that would encourage them to work.

17. It is also important to expand the availability of affordable, high-quality childcare, which women cite as a major obstacle to employment (see below). In addition to boosting female participation, it would help achieve the government’s goal of boosting the fertility rate. Indeed, OECD studies have found a positive relationship between childcare and female employment (OECD, 2007a) and between childcare and the fertility rate (D’Addio and Mira d’Ercole, 2005). Boosting the fertility rate also depends on reducing the burden of education. According to a survey of parents, the desired number of children is 1.81, well above the birth rate of 1.15 in 2009.<sup>7</sup> The burden of education is the major factor for having fewer children than their desired number; 57.9% cited education costs, 17.3% the cost of childcare and kindergarten and 9.8% the cost of university (Table 3). Households accounted for 30% of spending on educational institutions in 2008, the second highest in the OECD area, even before taking account of large outlays for private tutoring (Figure 9). In comparison, households’ share was only 13% in the OECD area.

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6. The Federation of Korean Trade Unions complains that many part-time workers, who typically work six hours a day, are forced to work eight hours with no overtime payments.

7. Hyundai Research Institute (2010). According to a survey taken in the mid-2000s, the average number of children desired by Korean women between the ages of 15 and 54 was 2.2.



**Table 3. The desired number of children and obstacles to having them**  
In per cent<sup>1</sup>

| <b>A. Desired number of children</b> |   |       |        |           |             |         |            |
|--------------------------------------|---|-------|--------|-----------|-------------|---------|------------|
|                                      |   | Total | Single | Married   |             |         |            |
|                                      |   |       |        | Sub-total | No children | 1 child | 2 children |
| Do not want children                 |   | 4.3   | 6.2    | 1.4       | 5.5         | 0.0     | 0.0        |
| Want children (number)               | 1 | 24.0  | 20.9   | 29.3      | 34.5        | 47.8    | 0.0        |
|                                      | 2 | 58.2  | 59.1   | 56.7      | 47.3        | 47.8    | 75.4       |
|                                      | 3 | 13.5  | 13.8   | 12.9      | 12.7        | 4.3     | 24.6       |

| <b>B. The most serious obstacles to having children</b> |       |                |        |                      |                      |                          |
|---|-------|----------------|--------|----------------------|----------------------|--------------------------|
|   | Total | Marital status |        | Income level         |                      |                          |
|   |       | Married        | Single | Up to 30 million won | 30 to 50 million won | More than 50 million won |
| Education fees  | 57.9  | 55.5           | 59.5   | 56.6                 | 59.5                 | 69.2                     |
| Kindergarten and childcare fees                         | 17.3  | 21.6           | 14.6   | 17.7                 | 17.1                 | 15.4                     |
| Medical costs   | 10.5  | 8.7            | 11.7   | 13.1                 | 5.7                  | 3.8                      |
| University tuition                                      | 9.8   | 7.8            | 11.1   | 9.4                  | 10.1                 | 7.7                      |
| Preparing a house for children                          | 3.0   | 4.6            | 2.0    | 2.1                  | 5.7                  | 0.0                      |
| Children's wedding fees                                 | 1.4   | 1.8            | 1.2    | 1.1                  | 1.9                  | 3.8                      |

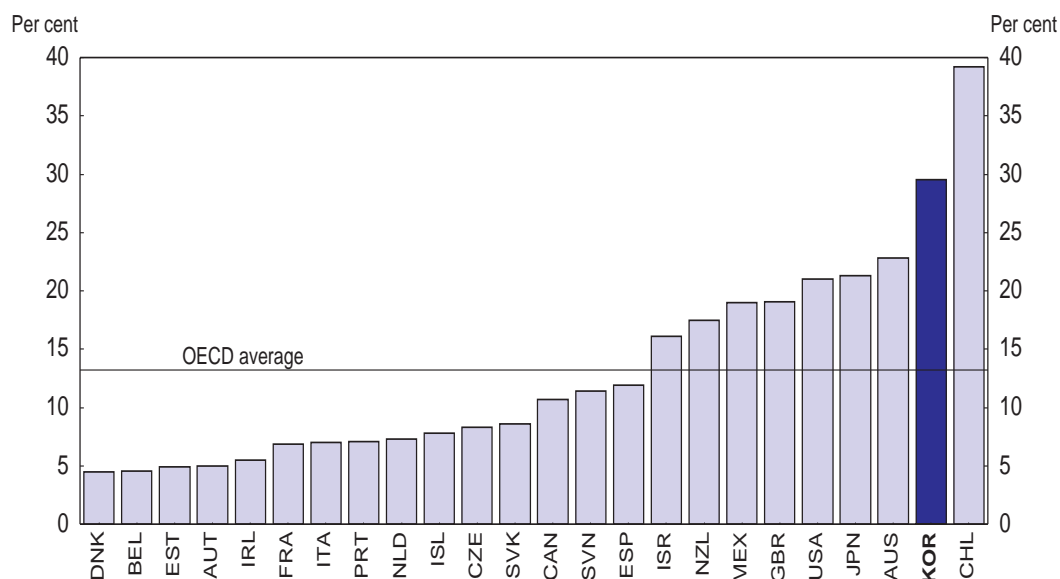
1. Based on a survey of 557 adults.

Source: Hyundai Research Institute (2010).

### ***Promoting continuous employment of older workers***

18. The labour force participation rate for the 55-to-64-age group was 62.7% in 2010, above the OECD average of 57.5%, reflecting the still-low coverage and small pensions from the National Pension Scheme (NPS). Moreover, the company pension system introduced in 2005 is also still in an early stage of development. The participation rate falls from a peak of 80% in the 45-to-49 group to 56% of the 60-to-64 group, with little change since 2000. Sustaining a high participation rate – or even increasing it to the highest levels in the OECD area – will be a challenge as pension systems develop.

19. However, most workers leave firms at a relatively young age, as the mandatory retirement age set by firms in 2010 averaged 57 years and 95% of firms with more than 300 workers set the age below 60. Moreover, the length of tenure in firms peaks around 50, as many workers leave prior to the mandatory retirement age. Many firms force workers to retire before the mandatory age, either through incentives (bonuses) or penalties (shifting workers to undesirable jobs) (Klassen, 2011). A survey that asked firms which factors discourage the employment of older workers reported that the most important reasons were related to their ability, such as “low adaptability to change” (57.3% of firms), “lower work ability and capacity” (44.8%) and “difficulty in assigning to posts” (39.7%) (Table 4). Older workers tend to lack the skills needed in an increasingly knowledge-based economy, reflecting their low educational attainment compared to younger workers (see below). High wage costs due to the seniority-based wage system were cited by 43.1% of firms. Indeed, a worker with more than 25 years of tenure in a firm earns almost two and a half times more than a newly-hired employee (Figure 10). Firms agree to steep seniority-based wage profiles on the condition that they can force older workers to retire when wages surpass productivity. Finally, the cultural emphasis on age and seniority make it difficult for older persons to be supervised by someone younger, leading to “up-or-out” personnel practices. The difficulty of older workers in accepting instructions is cited by 19.9% of firms.

**Figure 9. Households' share of total spending on educational institutions is high in Korea<sup>1</sup>**

1. Spending in 2008, excluding outlays on private, after-school tutoring.

Source: OECD (2011c), *OECD Education at a Glance 2011*.

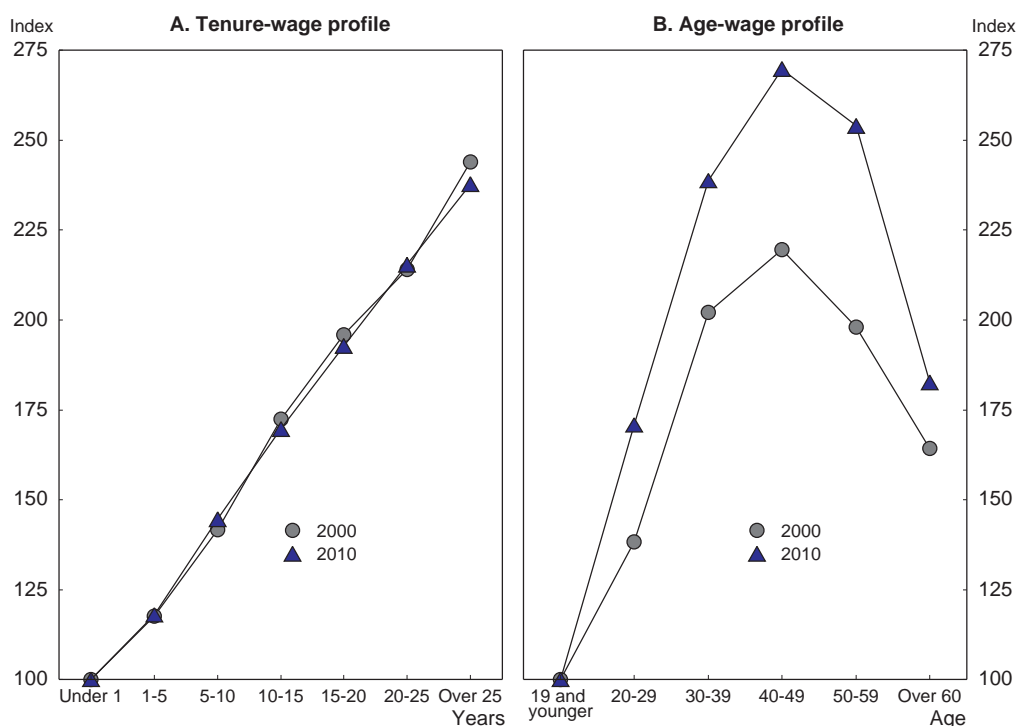
**Table 4. Reasons given by firms as obstacles to employing older workers**

In 2008<sup>1</sup>

| Reasons  | Per cent |
|--|----------|
| Low adaptability to change                       | 57.3     |
| Lower work ability and capacity                  | 44.8     |
| High wages relative to productivity              | 43.1     |
| Difficulty in assigning to posts                 | 39.7     |
| Unable to perform difficult tasks                | 32.9     |
| Little motivation or enthusiasm for new work     | 25.8     |
| Difficulty in accepting instructions             | 19.9     |
| Frequent accidents                               | 8.2      |
| Lack of ability to co-operate with other workers | 6.3      |

1. The survey included 648 firms. Firms were allowed to give three answers.

Source: Korea Labor Institute, *Survey on firms implementing the Wage Peak Compensation Scheme 2008*.

Figure 10. Wage profile in Korea<sup>1</sup>

1. Wages for 19-year-olds and younger and for less than a year are set at 100 in each year.

Source: Ministry of Employment and Labour, *Wage Structure Survey*.

20. The departure of workers from firms at a relatively young age is a waste of human capital. According to the Korea Longitudinal Study of Ageing, 37% of workers became unemployed once reaching the mandatory retirement age. Among those who continue to work, only 38% remained as regular workers, while 10% moved into non-regular employment. Another 13% became self-employed, primarily in services with low productivity. Early departure also disrupts the NPS, as the unemployed, self-employed or non-regular workers tend to not contribute to the public pension systems. In short, the current system benefits firms at the expense of individuals and the government. Extending the employment of older workers would enhance Korea's growth potential, reduce excess labour in low productivity self-employment in services and promote the long-run sustainability of the public pension system.

21. The government's 2006 five-year plan to foster the employment of older persons included a number of initiatives: *i*) encouraging firms to raise their mandatory retirement age; *ii*) supporting the re-employment of older persons who left their jobs involuntarily because of mandatory retirement; and *iii*) promoting friendly working conditions for older people. The government provides wage subsidies to firms that guarantee employment until their retirement age, increase their retirement age or offer re-employment programmes to retirees. The government also offers subsidies for firms adopting the "wage-peak system", which allows workers to remain at the firm beyond the mandatory retirement age, although at a wage below that based on seniority. In addition, it introduced a law in 2010 to prohibit age discrimination in recruitment and employment.

22. In December 2011, the government announced the “Second Basic Employment Promotion Plan (2012-16) for the Aged”, which includes:

- Strengthening support for inter-generational job-sharing through subsidies for firms that hire young workers to offset shorter hours for older employees.
- Increasing subsidies for the wage-peak system.
- Strengthening skills by requiring large firms to provide a certain period of pre-retirement training to their middle-aged and older workers before forcing them to leave their jobs involuntarily.
- Expanding opportunities for older workers to participate in the Employment Success Package that links counselling, vocational training and job placement.
- Promoting the development of the company pension system.

While the various subsidy programmes may have some impact, they have not prompted significant changes in labour practices and tend to have large deadweight costs (2008 *OECD Economic Survey of Korea*).

23. Given Korea’s demographic challenge, it is essential to expand continuous employment for older persons in firms. This requires a flexible employment and wage system based on ability rather than age, thus ensuring that older workers remain attractive to firms. According to the government’s wage system survey, there is a close positive relationship between the flexibility of a firm’s wage system and its employment of older workers. Another survey reported that 59% of workers are willing to accept a salary cut in exchange for an opportunity to work past the mandatory retirement age (Pacific Bridge, 2011). In sum, weakening the seniority-based wage system in favour of a performance-based system is essential. However, such an approach is unpopular with workers and has even led to strikes when introduced.<sup>8</sup> Moreover, government subsidies to firms implementing the wage-peak system have had low take-up.

24. Additional government policies are needed in light of the difficulty of reaching a consensus between workers and firms to extend the employment of older workers. Among the OECD countries that allow firms to set a mandatory retirement age, Korea is one of the few that has not legislated a minimum age, leaving firms free to set the mandatory retirement age as low as they wish. The priority should be to set a minimum mandatory retirement age and gradually raise it to the pension eligibility age. Such an approach would put pressure on firms to adjust wages in line with productivity as workers grow older. The ultimate goal should be to abolish the right of firms to set mandatory retirement ages, thus helping to break down the link between seniority and wages. The 2008 Age Discrimination Act prohibits hiring based on age. The same logic should outlaw forced retirement based on age, which allows employment decisions to rest on a single criterion. Four OECD countries – the United States, Australia, Canada and the United Kingdom – have eliminated mandatory retirement. While this was done to improve human rights, the economic effects have been largely favourable (Klassen, 2011).

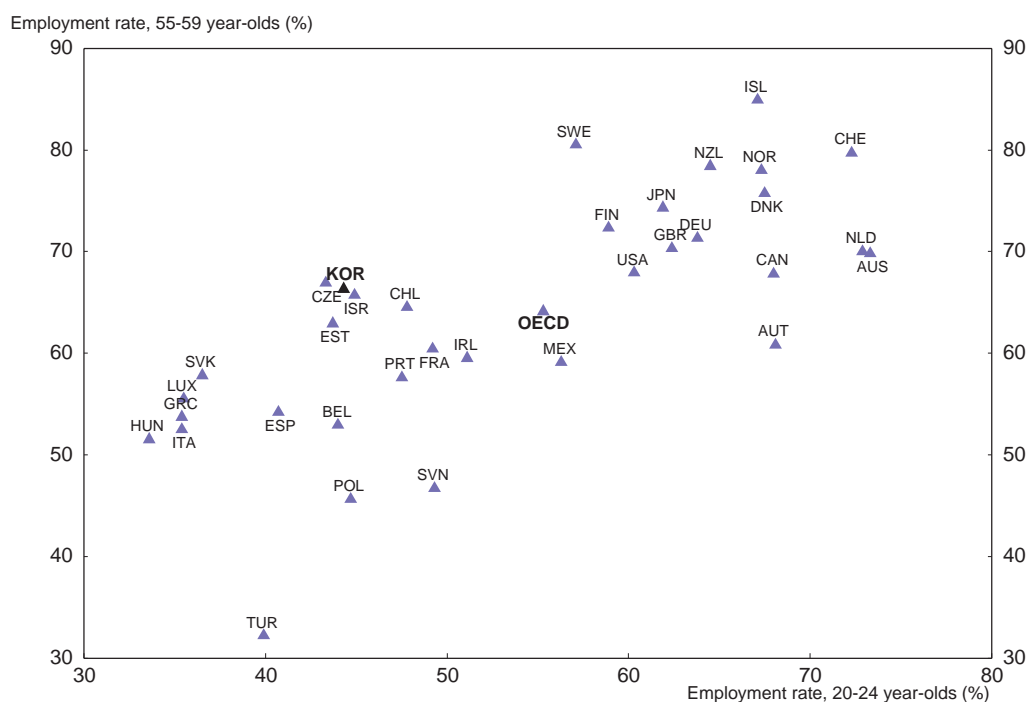
25. The abolition of mandatory retirement is often opposed on the grounds that it reduces employment opportunities for young people. However, this argument is based on the fallacy that an economy has a fixed number of jobs. In reality, limiting employment opportunities for some workers – such as older people – simply decreases economic activity (OECD, 2006a). Indeed, the employment rates for younger and older workers across OECD countries are positively correlated and statistically significant (Figure 11).

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8. Standard Chartered’s decision to introduce performance-based pay resulted in the longest strike ever in Korea’s banking sector. This dispute was eventually settled by the introduction of a very generous early retirement programme, essentially buying off those with high salaries due to long service.

26. It is also important to replace the mandatory retirement allowance with company pensions. The cost of the retirement allowance, which requires the payment of at least one month of wages for each year worked, rises sharply with seniority, thus increasing the expense of keeping older workers. The company pension system introduced in 2005 would provide better income security for retired workers, as well as reduce firms' incentives to retire older workers. Firms are now encouraged to establish either a defined benefit (DB) or a defined contribution (DC) system, based on an agreement with their workers. The company pension system now covers 9% of firms and 36% of employees, with two-thirds enrolled in DB plans. For employees who change jobs frequently, the government has created an Individual Retirement Pension (IRP) with deferred taxation. In July 2012, the government will launch a package of measures to revitalise retirement pensions: *i)* it will put limits on the interim settlement of the retirement allowance, which employees use for major purchases; *ii)* departing employees will be required to place their retirement allowance in an IRP; and *iii)* firms will be allowed to adopt both DB and DC plans. This should accelerate the development of the company pension system, as it has been slowed by the difficulty of reaching an agreement between workers and firms on whether to introduce a DB (favoured by workers) or a DC system (favoured by firms). DC systems have the advantage of favouring pension and labour mobility for all workers. The government should encourage IRP accounts to promote pension portability.

**Figure 11. Employment rates of younger and older workers**  
 Percentage of 55-59 year-olds and 20-24 year-olds in employment in 2010<sup>1</sup>



1. The correlation coefficient is 0.53.

Source: OECD ELS Database.

### *Encouraging labour force participation of discouraged youth*

27. The participation rate for youth (the 15-to-24-age group) declined from 37% in 1994 to 25% in 2010, about half of the OECD average of 47%. Although this was due in part to rising enrolment in tertiary education, it also reflects a mismatch problem, as the rising share of youth with tertiary education have difficulty in finding suitable employment (see below). At the same time, Korean SMEs, which account for 99.9% of industrial firms and 87.7% of industrial employment, face a chronic workforce shortage that is partially filled by foreign workers. According to a 2011 government survey, 43% of small firms said that they currently face a labour shortage and 40% expect to face one. The survey also reported that the labour shortage in small firms was attributable to the lack of qualified job applicants, the high expectations of job applicants and the low income and employee benefits offered by SMEs. The mismatch has been exacerbated as young people enter tertiary education to avoid being trapped in non-regular employment.

28. It is essential to address the problem of overemphasis on tertiary education by improving vocational education (see below), providing effective training courses that meet labour market needs, particularly for SMEs facing labour shortages, and improving access to employment services for career consulting and job-search assistance. Job training for unemployed youth is limited, as such training tends to be provided by firms. Meanwhile, the government's traditional training programmes aimed at youth concentrated on university graduates, while neglecting less educated youth, although the emphasis was shifted by several recent initiatives. Perhaps most important is the "New Start Project for Youth", which was launched in 2008 to provide in-depth and individually-customised assistance. It targets those with a high school education or less, the long-term unemployed and other disadvantaged youth, to improve their employability.

29. In 2011, the New Start Project was merged into the "Packaged Employment Service" aimed at low-income people. The Service combines career consulting, work experience and job placement services, while providing six months of living subsidies of up to 200 000 won (about \$175) a month. Recipients can receive assistance for up to 12 months, divided into three stages from career guidance to job placement:

- *First stage:* a course aimed at boosting participants' confidence and desire to work through individual counselling and career guidance, leading to an Individual Action Plan (IAP).
- *Second stage:* participants either begin vocational training or work, primarily in government-funded non-profit organisations or SMEs.<sup>9</sup>
- *Third stage:* participants are helped to find employment through intensive job-placement services. Participants who obtain a job receive an allowance of up to 1 million won (\$890).

30. In 2011, the programme enrolled 20 000 participants (about 9% of the unemployed under the age of 30), of whom two-thirds were employed by the time they finished the training. In 2011, the government expanded the coverage to include other groups, such as the elderly and female family heads. The success of these employment support programmes depends on their acceptance by firms, suggesting a need for close links with the labour market. In addition, effective implementation of a standardised system of recognition of acquired skills is needed to improve employment prospects for youth. Overlapping qualification systems in the public and private sectors should be streamlined to respond to labour market demands.

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9. For those who work at SMEs, half of their wages up to 800 000 won (\$680) are paid by the government for six months. If they are hired as regular workers at the end of the internship, a subsidy of 650 000 won a month is paid for another six months.

31. As discussed in the 2012 *OECD Economic Survey of Korea*, reducing labour market dualism would improve the job prospects of youth, as well as women. This requires, in part, reducing employment protection. The experience of other OECD countries shows that a high level of employment protection for permanent workers hinders the integration of youth in the labour market (OECD, 2008c). Moreover, dualism boosts job instability. Around 57% of non-regular workers in Korea have worked less than one year in their current jobs, and only 22% more than three years. In contrast, only 25% of regular workers have worked less than one year, while 54% worked more than three years. In addition to the negative implication for wages, shorter tenure reduces the incentive for firms to invest in training non-regular workers. Indeed, the same study reported that only 2% of non-regular workers received firm-provided training, compared to 15% for regular workers. The high share of workers receiving limited training and weak human capital accumulation has negative implications for their productivity and Korea's growth potential.

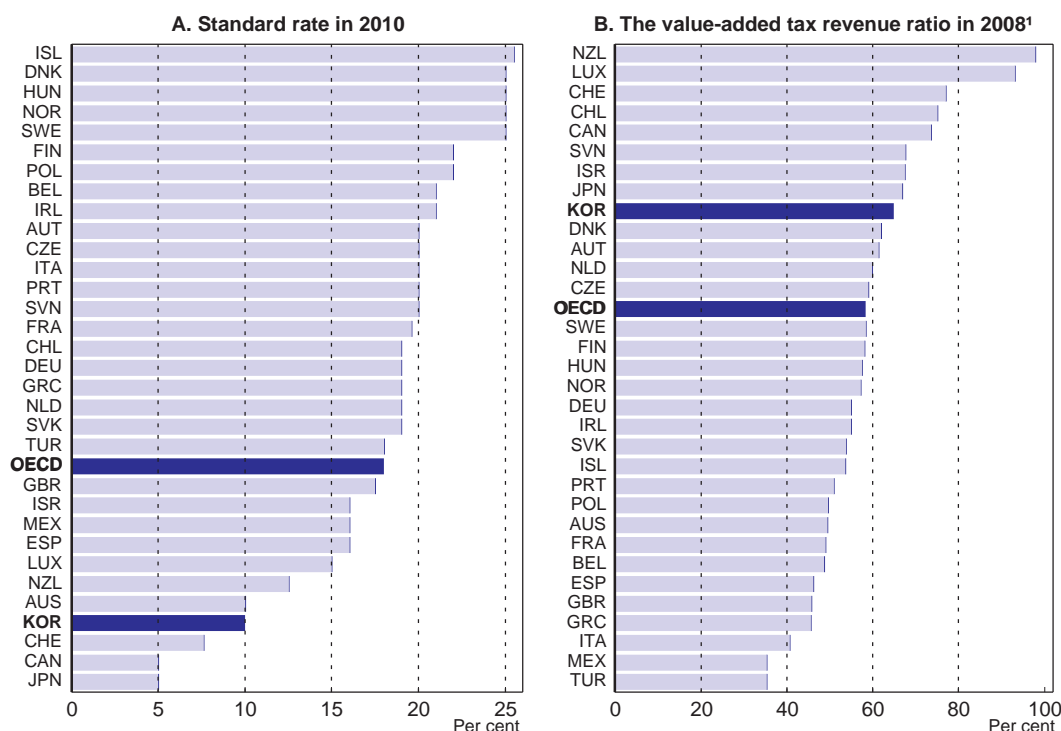
### **Tax policies to promote employment and growth**

32. Taxes have an important impact on labour force participation, according to cross-country studies by the OECD. While taxes on labour reduce employment, saving and capital investment, thereby lowering potential growth, a low tax burden promotes jobs and growth by enhancing incentives for foreign direct investment (FDI) inflows, education and entrepreneurship. The overall "tax wedge" on labour, including social security contributions, was only 20% in 2010, the fourth lowest in the OECD area. Low taxes are an important factor explaining Korea's high labour inputs, which are 37% higher relative to the population than the United States, offsetting much of the gap in labour productivity.

33. The low tax burden in Korea is sufficient at present, as Korea had the second-lowest level of public spending, at 31% of GDP on a general government basis in 2010, compared to the OECD average of 46%. However, under current policies, population ageing alone is projected to boost public social spending from 7½ per cent of GDP at present to 20% by 2050 (Won *et al.*, 2011). Even with measures to squeeze spending in other areas, Korea's low tax burden will have to rise from its current level of 25% of GDP in 2010 to finance such spending. It is essential to finance rising spending through revenue increases that minimise the negative effect on growth. Indeed, the economic impact of higher taxes depends on how the revenue is raised as well as on how much is raised.

34. Pro-growth tax policy calls for limiting any increase in the tax wedge on labour income, while keeping the corporate tax rate low (2008 *OECD Economic Survey of Korea*). Such a strategy implies that revenue increases should come primarily from indirect taxes, notably the value-added tax (VAT), which has a smaller negative effect on labour supply. Korea's VAT rate is currently 10%, far below the OECD average of 18% (Figure 12). Another advantage is that the VAT is simple and relatively difficult to avoid or evade in Korea, and the VAT tax base is the ninth broadest in the OECD area. However, a shift from income to consumption taxes would reduce the tax system's already low redistributive impact, thus increasing inequality. The regressive impact should be offset by increasing the earned income tax credit (EITC) and well-targeted social spending (see the 2012 *OECD Economic Survey of Korea*). Another important source of revenues should be environmental taxes and the receipts from revenues from auctioning ETS permits as part of the Green Growth Strategy. Taxes on property-holding are a third option to raise revenue, as they have less negative impact on economic activity than direct taxes (Arnold *et al.*, 2011).

Figure 12. Value-added taxes in OECD countries



1. VAT Revenue Ratio = (VAT revenue) / [(consumption expenditures – VAT revenue) \* standard VAT rate].

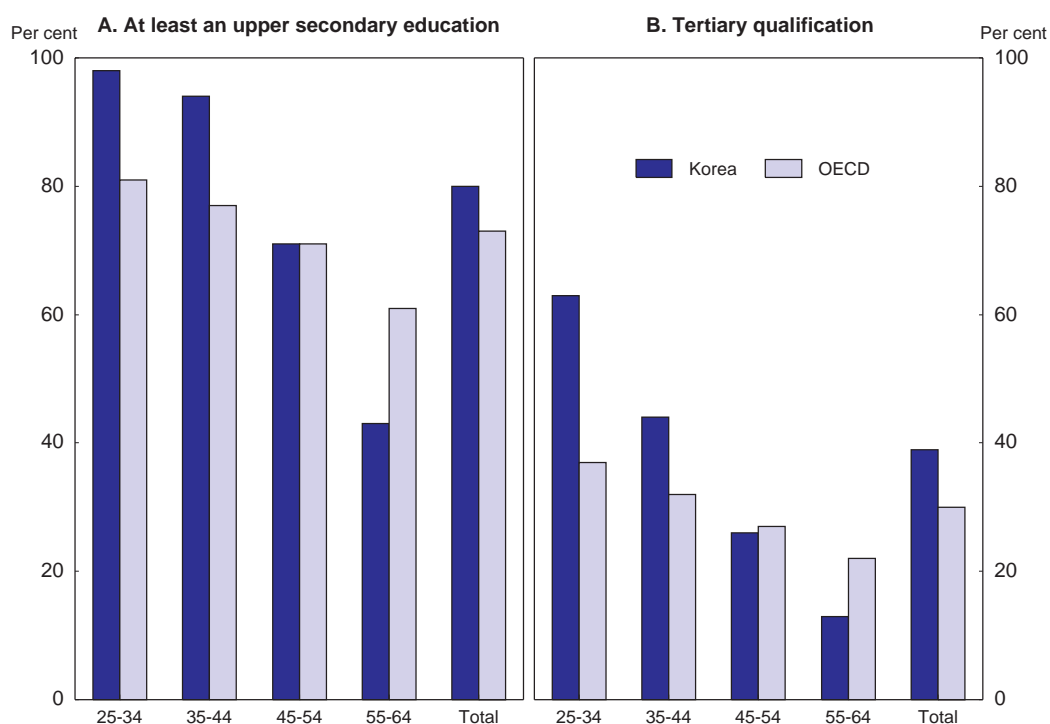
Source: OECD (2011), *Consumption Tax Trends*.

### Policies to improve educational outcomes

35. Education played a key role in Korea's transformation from one of the poorest countries in the world to a leading industrial nation by promoting the development of human resources and technological change. Each phase of investment in education fuelled economic growth. The development of primary education following the Korean War supplied the workers suitable for the labour-intensive industries of the 1960s. The expansion of secondary education contributed to the development of capital-intensive industries in the 1970s and 1980s. The focus shifted to expanding tertiary education in the 1990s, laying the foundation for Korea's success in IT and the growth of a knowledge-based economy (Koh *et al.*, 2010). The exceptionally rapid development of education in Korea is illustrated by differences in the level of educational attainment for different age cohorts. The share of the population with at least a secondary education ranges from 98%, the highest in the OECD area, for young adults (25 to 34) to only 40% for older adults (55 to 64) in 2009 (Figure 13). Moreover, 58% of young adults have completed tertiary education, the highest share in the OECD, compared to only 12% of older adults (Panel B). In addition to these quantitative measures, Korea has consistently ranked near the top in the OECD in the Programme for International Student Assessment (PISA).



**Figure 13. The rapid expansion of educational attainment in Korea**  
In 2009



Source: OECD (2011c), *OECD Education at a Glance 2011*.

36. Improving the quality of education would promote productivity gains that would sustain growth in the face of demographic headwinds. This section discusses measures to boost quality in early childhood education and care (ECEC), primary and secondary schools and the tertiary system. Such reforms should help address the overemphasis on tertiary education and help the tertiary sector to play a bigger role in innovation.

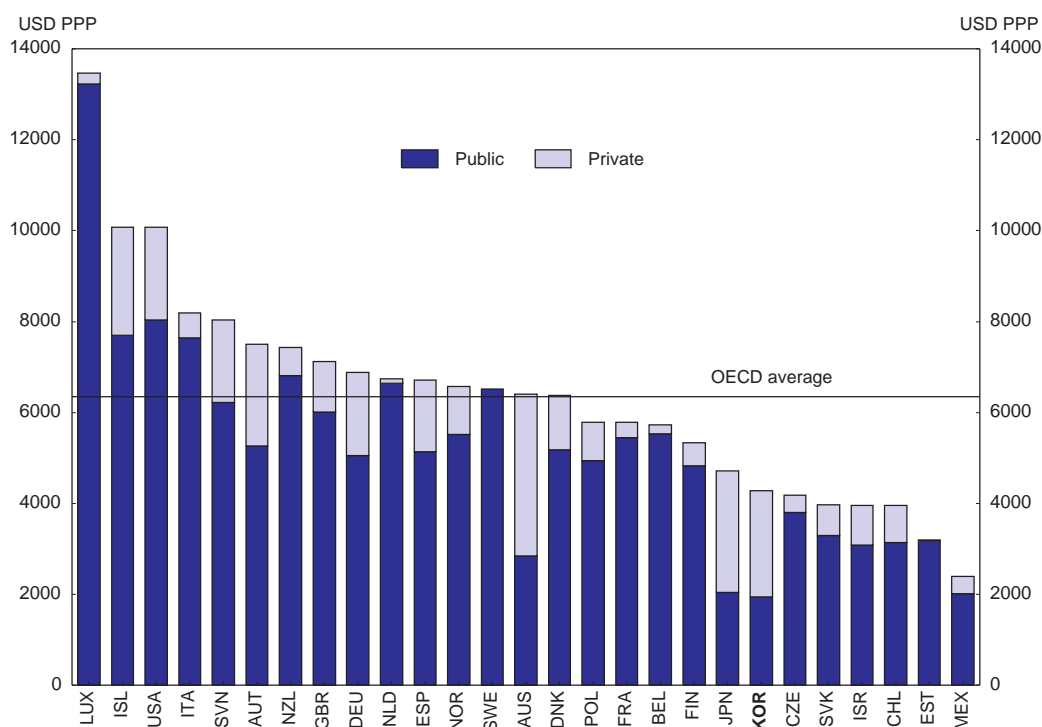
#### *Upgrade the quality of early childhood education and care*

37. ECEC plays an essential role in improving the educational development of children as well as increasing female labour force participation. Empirical work has established that fundamental cognitive and non-cognitive abilities are created well before the age of five. Investment in pre-primary education thus provides high rates of return by enhancing later school achievement. However, spending on pre-primary education per student in Korea in absolute terms was one-third below the OECD average in 2008 (Figure 14). In addition, the public-sector share was only 46%, compared with the average of 82%. As a share of GDP, public expenditure on pre-primary education in Korea in 2008 was the second lowest among OECD countries. Moreover, it is relatively low compared to spending at other levels of education; outlays per student in kindergarten in Korea was only 37% of that in primary and secondary schools, well below the OECD average of 70%.

38. The low level of spending on ECEC raises questions about its quality. Indeed, the PISA assessment found that participation in ECEC in Korea had the smallest impact among OECD countries on the educational achievement of 15-year-olds (OECD, 2010b). While the overall enrolment rate for children aged three to five is relatively high at 82%, the enrolment pattern is not conducive to high quality. Specifically, the share in childcare (42.4%), which has a weaker education orientation, is slightly higher than the more academically-focused kindergartens (39.7%), and the share in childcare has been increasing.

Moreover, 89% of children are enrolled in private childcare, which is of lower educational quality than public institutions. Korea thus faces the intertwined problems of the low quality of childcare, a lack of places in higher-quality public centres and the affordability of childcare fees. The waiting lists for public childcare co-exist with significant excess capacity in private facilities. A range of policies would help improve the quality of ECEC.

**Figure 14. Spending per student on pre-primary education is low in Korea<sup>1</sup>**



1. Annual spending based on full-time equivalent students in 2008.

Source: OECD (2011c), *OECD Education at a Glance 2011*.

39. *First*, the growing share of childcare reflects the fact that it is cheaper than private kindergarten and private educational institutions known as *hagwons*, while there are waiting lists for public kindergarten. Raising tuition subsidies would improve access to private kindergarten. Over the medium term, adding more kindergartens to primary schools would expand capacity. The 2010 revision of the kindergarten law allows kindergartens to be attached to a primary or secondary school, but this is still rare in the capital region. The law should be revised to require new primary schools to include kindergartens.

40. *Second*, given that the expansion of kindergarten capacity will be gradual and insufficient to accept a significant share of the 0.6 million children aged three to five currently enrolled in childcare, it is important to upgrade the educational quality of childcare. The first step is to effectively implement the common curriculum for five-year-olds in childcare and kindergarten as planned in 2012 and then progressively harmonise programmes for younger children.

41. *Third*, other measures are needed to upgrade the quality of childcare. One option would be to construct more public centres. For example, the new mayor of Seoul, elected in 2011, has promised to increase the number of public centres by about one-third to 848. However, the creation of 200 centres of average size would accommodate less than 14 thousand children, only slightly reducing enrolment in

private childcare centres, which totals more than one million in Korea.<sup>10</sup> Achieving higher-quality childcare will thus depend on ensuring consistent quality across the ECEC system by upgrading the quality of private centres. This would require stricter assessment and accreditation, given that around a quarter of private childcare facilities are not accredited by the government. Accreditation should be made mandatory, as a 2009 study reported that the quality of childcare centres improved after the accreditation process, especially for larger facilities (Suh *et al.*, 2009). Moreover, the standards for accreditation should be made more stringent to strengthen parents' confidence in such centres. Finally, government tuition subsidies should be gradually limited to accredited childcare centres to promote quality.

42. *Fourth*, an upgraded accreditation system should be part of an effective information system on the quality of centres to help families make well-informed decisions. At present, the government discloses only the names of accredited centres, but not their scores or weaknesses, and parental awareness of the system is low. Enhancing transparency about quality would strengthen competition among centres.

43. *Fifth*, another key to higher quality is to raise the qualifications of teachers, particularly in private institutions. Raising the level of qualifications for teachers would help improve the quality of ECEC, while taking advantage of an under-utilised resource, given that around half of university graduates are unable to find regular employment.

44. *Sixth*, the fee ceilings imposed on private childcare providers are problematic. Private centres presumably wish to improve quality and attract children to fill their empty spaces, but have been blocked by the fee ceilings. Indeed, the ceilings have been set below the level the government calculates to be necessary to provide adequate care (2008 *OECD Economic Survey of Korea*). The government should relax the price ceiling and entry barriers to upgrade the quality of private childcare centres. To ensure the affordability of childcare, the relaxation of fee ceilings could be accompanied by some increase in tuition subsidies for parents using accredited childcare centres.

45. Over the medium term, the quality of ECEC would be best promoted by further co-operation between childcare and kindergarten, culminating in their eventual integration. OECD work shows that a systematic and integrated approach to policy development and implementation delivers high-quality ECEC services (OECD, 2006b). A number of OECD countries have integrated ECEC under one lead ministry, while others have been integrating services at the local level. Integration is not an end in itself, but instead a means to achieve better outcomes to strengthen the educational capacity of childcare. In addition to improving quality, countries' reasons for integrating ECEC include increasing enrolments, promoting fairness and streamlining management by eliminating a dual approach. The development of separate childcare and kindergarten systems aiming at largely the same age cohort in the absence of comprehensive planning has led to substantial administrative and financial inefficiencies (Rhee *et al.*, 2008). The integration of the two systems is essential to limit duplication, conflict and confusion, thereby cutting the administrative and overhead costs of running two parallel systems, in part by allowing them to be housed in the same facilities.

46. While initial efforts to promote integration in Korea in the 1990s failed (Rhee *et al.*, 2008), gradual integration based on the following steps would improve ECEC:

- Establishing common administrative and delivery systems. In particular, kindergartens could be allowed to care for children under three so that they target the same age group as childcare.
- Harmonising the regulations, standards and procedures for establishing childcare and kindergartens, thus allowing new facilities to be set up as integrated ECEC centres.

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10. One option would be to absorb the private centres into the public sector, but this is opposed by the owners.

- Integrating staff qualifications, education and teacher training to allow individuals to teach at either type of institution. At present, the training of childcare and kindergarten teachers is compartmentalised in different institutions with different programmes. The best option would be to upgrade the qualifications for childcare staff to those required for kindergarten teachers. In addition, there is a sharp divide between the training of ECEC and primary school teachers.
- Creating a common quality assurance mechanism.
- Establishing a coherent financing system that is fair (Rhee *et al.*, 2008).

### ***Improve the quality of primary and secondary schools through greater autonomy and diversity***

47. While Korea is a top performer in the PISA, there is significant scope to improve schools in Korea, as the heavy reliance on *hagwons* suggests that there are weaknesses that prompt parents to turn elsewhere. It is important to address such weaknesses rather than relying on *hagwons*, with their associated costs and negative implications for equity (see the 2012 OECD *Economic Survey of Korea*). To improve schools, the emphasis should be placed on greater local autonomy, expanding the scope for school choice at the primary level and increasing the diversity of institutions at the high school level. It is also important to adjust spending in the primary and secondary levels in line with falling enrolments. Although the number of students fell by 9% between 2000 and 2010, spending increased from 4.0% of GDP to 4.2% in 2008, reflecting a 12% rise in the number of schools and a 22% increase in the number of teachers. Looking ahead, the number of primary and secondary students is projected to fall further by a quarter by 2020 and by more than one-half by mid-century, requiring changes in spending priorities.

#### *Autonomy and accountability*

48. OECD research demonstrates that educational performance is better in countries with greater decentralisation (Sutherland and Price, 2007). Moreover, a recent international study comparing 20 different school systems found that decentralisation was the key to turning good education systems into excellent ones (McKinsey, 2010a). According to an OECD study, 46% of decisions in middle schools in Korea are taken autonomously by the school or within a framework set by a higher authority, a share close to the OECD average (OECD, 2008c). The greatest autonomy was found in the “organisation of instruction” (78%) and the lowest in “planning and structures” (25%) and “personnel management” (42%). Greater devolution of authority to schools would thus likely lead to better outcomes, given that Korea has made large strides in ensuring accountability. Indeed, since 2008, schools’ performance in the National Assessment of Educational Achievement and school evaluation reports have been publicly available (<http://www.schoolinfo.go.kr>).

49. Increasing local funding of education and promoting closer integration of local education boards and offices of education with local general governments would enhance local autonomy in education. At present, the financing of local education authorities is provided primarily by central government grants, which are subject to central government rules and regulations. Shifting the taxes that provided education funding from the central to the local government level would increase local autonomy. Making local general governments more responsible for education would promote diversity, innovation and competition. This could be achieved, for example, by having the candidates for governor and education superintendant run as a team in elections. In the long run, merging the local education authorities with the local general government would provide many advantages.

*Expanding school choice*

50. School choice is not permitted in Korea at the primary and middle school level. Promoting competition among schools by allowing greater school choice has been found to improve educational outcomes in the OECD area (Sutherland and Price, 2007). In the 2009 PISA, competition and performance do seem related among schools within OECD countries, although the relationship weakens once the socio-economic profile of students is taken into consideration, as more privileged students are more likely to attend the best schools (OECD, 2010b). In the case of Japan, school choice at the primary level has been permitted on a limited scale since 2000, and several studies have shown positive results on education outcomes.<sup>11</sup> The success of school choice depends on the availability of publicly-provided information, which has been expanded in Korea, as noted above. While school choice is beneficial for individual schools, it is important to avoid negative externalities in other schools. Moreover, it is essential that school choice be accompanied by policies to ensure that financial costs or other factors related to changing schools do not limit the ability of low-income households to exercise school choice.

*Improve the quality of secondary schools through greater diversity*

51. The equalisation policy adopted in 1969 for middle schools and 1974 for high schools allocates students by lottery. While this was aimed at reducing the intense competition for school entry, one consequence has been weak competition and diversification between schools, thereby reducing quality (Kim and Lee, 2003). The government launched the “300 High School Diversification Project” in 2008 to strengthen competition between schools and to increase diversity. Three new types of schools, which together will account for almost one-fifth of Korean high schools, have been introduced:

- *Autonomous private schools* are allowed significant autonomy in curriculum and management, in contrast to regular private schools. Although Korea has a large number of private schools, accounting for nearly one-fifth of middle school students and half of high school students, they follow the same curriculum and regulations as public schools, receive public funding and charge the same tuition fees as public ones. In contrast, the autonomous private schools, which do not receive government support, set tuition fees two to three times higher than for regular schools. By 2010, there were 51 independent private high schools and the number is to be increased.
- *Meister schools*, which emphasise workplace training, have been established to strengthen vocational education, based on the German model of training master craftsmen. Thus far, 28 Meister schools have been designated and the government hopes to increase the number to 50 by 2013. However, such schools are expensive as they are heavily subsidised by the government and require an agreement between the local government, the local school board and companies.
- *Special purpose high schools* focus on certain subjects, such as science, foreign languages and the arts (MEST, 2010). By 2011, 99 specialised high schools had been created, accounting for 2.7% of high school students. Tuition is three times higher than at general high schools.

Admission to the autonomous and specialised high schools is based on the lottery system, in line with the equalisation policy. However, given their higher tuition, it is important to provide financial aid to ensure access for low-income students to ensure that the diversification of high schools does not create inequality.

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11. One study found that the university advancement rate of students in public schools in urban areas is higher in districts allowing school choice, with no negative effect on rural schools (Akabayashi, 2006). Another study found that school choice improved academic results, while between-school differences have not risen (Yoshida *et al.*, 2009).

### *Upgrade the tertiary sector*

52. The development of human resources through tertiary education needs to be exploited fully in the face of demographic trends and competitive pressures. The government has increased support to colleges, primarily two-year institutions that still account for almost a quarter of tertiary students despite shrinking enrolments since 2000. The public share of their funding was doubled from 6% in 2005 to 12% in 2009. In addition, it is reducing state intervention in colleges, such as regulations on curriculum, to increase their autonomy so that they can quickly respond to changing economic and social conditions. However, more autonomy should be accompanied by higher quality standards. *First*, colleges should be required to meet a carefully-defined set of standards, including output indicators, such as labour market outcomes. *Second*, workplace training, which is currently optional and subject to weak quality control, should play a larger role to the extent possible. *Third*, employers should be more involved in vocational education, for example, by including them in colleges' boards of directors.

53. Korea's university sector is not highly rated, in contrast to its primary and secondary schools, and it is widely acknowledged that rapid expansion has come at some expense to quality (OECD, 2009). Korea is now in the process of shifting the focus from quantity towards quality and from inputs to outcomes through the Brain Korea 21 (BK21) programme and the World Class Universities initiative. International ratings suggest some progress: the number of Korean universities in the top 200 in the QS international rankings increased from two in 2007 to five in 2010.<sup>12</sup> These initiatives, though, focus primarily on elite institutions. Quality concerns are a major issue at lower-ranking universities and colleges. Governance reform, in part to enhance transparency, incorporation to promote autonomy, reducing public funding to poorly-performing universities and internationalisation are keys to strengthening competition and improving performance.

### *Governance reform and transparency*

54. The government introduced a new quality management system for tertiary institutions in 2007. *First*, universities were required to conduct self-evaluation of their education and research activities and publicly disclose the results, making them more responsible for quality. *Second*, it introduced a government recognition system for external assessment and accreditation agencies. The 2009 OECD study of Korea's university system criticised the previous accreditation system for its lack of coherence and rigour and the weak independence of the responsible organisations (OECD, 2009). To improve the accreditation process, the government selected two non-profit organisations as accreditation bodies for colleges and universities. Accreditation should be made effective based on criteria including output measures, such as the employment of graduates, and evaluations by the business sector. Although accreditation is not mandatory, most universities are expected to participate because accreditation results will be publicly disclosed and linked to government funding programmes beginning in 2014.

55. An effective accreditation system would facilitate a shift from a system of top-down, direct regulation, aimed at part in enforcing quality standards, to a more flexible approach. According to the OECD's 2009 study, "Korea has developed a top-down system of control of universities and colleges, and despite efforts to accommodate differences among institutions, this tends on the whole to limit opportunities for flexibility and innovation in private and national/public institutions". The objective should be to motivate universities to improve quality through innovation rather than regulations that enforce uniformity. During the past three years, many regulations governing such areas as student quotas, admission criteria and tuition fees have been abolished to strengthen universities' autonomy and promote

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12. The QS World University Ranking is based on six indicators: academic reputation based on a global survey (40%), citations per faculty (20%), faculty-student ratio (20%), employer reputation (10%), proportion of international students (5%) and proportion of international faculty (5%).

flexibility and responsiveness to changing conditions. The government should continue to aim at improving quality rather than constraining behaviour and more at informing stakeholders than enforcing rules.

56. The new quality management system should enhance transparency and competition between universities, thereby improving quality. A website (<http://www.academyinfo.go.kr>) provides information on graduation rates and employment rates of graduates to help students make rational choices. However, more detailed data for specific departments would be useful in helping to better inform student decisions. In addition, it would disrupt the single array of university ratings that drives the competition among high school students to enter the highest-ranking universities. For universities, rather than trying to compete across the board with elite institutions, they could attract students by achieving excellence in certain fields.

#### *Incorporation of national universities*

57. Seoul National University (SNU), Korea's premier institution of higher learning, was incorporated in December 2011. Previously, SNU had been a government entity, subject to strict regulations on its employment, budget and operations, thus restricting its competitiveness. Incorporation will shift governance to the Board of Trustees and allow the university to have autonomy in personnel management, now that professors are no longer civil servants. The selection of the university president will shift from election by the faculty to recruitment by the Board (Rhee, 2007). SNU will also gain autonomy over its budget, which in the past was provided for on a line-item basis, and it will be allowed to choose various funding methods, such as long-term loans or issuing university bonds. Moreover, it will be able to exercise ownership rights over its assets, which are considerable. Increased autonomy is accompanied by greater responsibility for performance. SNU will set outcome goals with the government and be evaluated on its success in achieving them. The government believes that incorporation will help make SNU one of the world's most prominent universities. Most national universities oppose incorporation, preferring government status over more independence. Nevertheless, if this initial experiment proves successful in raising educational quality at SNU, incorporation should be applied to other universities.

#### *Reducing funding to low-performing tertiary institutions*

58. Korea is a country with too many tertiary institutions and those outside of Seoul already have difficulty in filling their student quotas (OECD, 2009). All but a handful ran operating deficits between 2005 and 2008 (McNeil, 2011). Demographic projections suggest that the number of high school graduates will fall below the current admission quotas for tertiary institutions by the end of the decade. By 2030, the university-age cohort will be one-third below its 2010 level, according to the government's population projection. To induce voluntary restructuring of insolvent universities, the government provides subsidies for amalgamation, reveals financial information about weak universities and reduces their student quota. Thus far, M&As have merged 23 private universities into 11, making only a small impact on the sector, which numbers 180 institutions. In 2010, the government consulted with 57 private universities, reduced admission quotas by 3 000 students (only 0.1% of the total) and limited loans to students in 23 universities. The government is revising relevant laws to create an institutional exit for private institutions so that they can go through voluntary liquidation. Colleges and universities' status as non-profit entities complicates M&As, suggesting that at least a temporary change in their status would facilitate restructuring. Finally, providing adequate information through an accreditation and quality assurance system is essential to ensure that downsizing results in the restructuring, merger and closure of the weakest institutions. As for national universities, 20 have been consolidated into ten.

59. However, these measures have been too weak to prompt a significant degree of consolidation in the tertiary sector. Beginning in 2012, the government will reduce public support to institutions that perform poorly. A committee of 20 experts evaluates tertiary institutions each year based on eight criteria,

including employment rates of students after graduation, how well institutions fill their student quotas and their tuition increase rate. The committee identifies the bottom 15% (about 50 private institutions), which are not eligible for project-based or institutional-level grants during the following year. In addition, loans to students at some of these institutions that fail to meet additional evaluation requirements are restricted,<sup>13</sup> but not scholarships and grants.<sup>14</sup> While these institutions are largely funded by tuition payments, the stigma of being classed in the lower 15% is expected to prompt management changes in order to earn a higher ranking the following year. Some universities, though, have complained that uniform standards, such as for employment rates, do not adequately take account of the characteristics of some universities, such as art schools (*Joongang Daily*, 1 October 2011).

#### *Internationalisation of the university sector*

60. The university system has only a limited degree of internationalisation, as reflected in the relatively low number of students from overseas and a near absence of foreign higher education institutions operating in Korea. The share of foreign students in tertiary education in Korea in 2009 was only 1.6%, well below the OECD average of 8.7%, although the number has increased rapidly since 2000. In contrast, Korea was the largest source of foreign students in OECD countries, accounting for 5% of the total in 2009. These students amount to about 7% of Korean tertiary students. Attracting foreign students would upgrade the quality of tertiary education in Korea, in addition to providing high-skilled human resources for Korea. Moreover, it would help mitigate the severe financial situation of tertiary institutions in Korea. For these reasons, the government established the “Study Korea Project Plan” in 2008, with a target of attracting 100 thousand foreign students by 2012 by improving the competitiveness of higher education. To this end, the government is expanding exchanges of students and faculty, facilitating joint research among universities, and running a cross-border joint degree system through the Campus Asia programme with China and Japan. In 2011, the government introduced the Accreditation System on Recruitment and Support of International Students in order to better attract and assist outstanding foreign students and improve the quality of education. Policies to attract outstanding students to leading graduate schools should be strengthened, rather than simply recruiting foreign students to fill empty chairs as Korea’s university-age population declines. The competition is severe as other Asian countries have similar targets to attract foreign students, including Japan (300 thousand by 2020), China (500 thousand by 2020) and Singapore (150 thousand by 2015).

61. Facilitating the entry of accredited foreign institutions would also stimulate competition and upgrade the competitiveness of universities. At present, there are only three foreign universities operating in Korea,<sup>15</sup> as some regulations to ensure the quality of education and to protect consumers, such as standards for setting up campuses (buildings and property), act as entry barriers. In addition, the non-profit juridical person requirement for schools discourages the entry of foreign educational institutions by prohibiting them from remitting profits.

#### ***Improving vocational education to address the overemphasis on tertiary education***

62. There are complaints from the business sector about a lack of skills among new graduates. For example, the Korea Employers’ Federation estimates that it takes 30 months and \$100 thousand on average to train new graduates. Another study estimated that the average length of training for university graduates

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13. Students attending schools in the “minimum loan” group can only borrow 30% of their tuition, while those in the “limited loan” group can borrow 70%.

14. However, new students attending the bottom 15% of universities will face restrictions on receiving the new national scholarships that were introduced in 2012 to reduce tuition fees.

15. These include the Shipping & Transportation College from the Netherlands, Friedrich-Alexander University of Germany and Stony Brook of New York State University.



is 8.4 months, with the length increasing with the size of the company (KRIVET, 2007). Upgrading vocational education is important to boost labour productivity.

63. At the same time, it would help Korea address its problem of overemphasis on tertiary education. Even in 2007 – with real output growth of 5.1%, a 1.2% rise in employment and an unemployment rate of 3.2% – only 51.9% of university graduates were able to find regular jobs in the year following graduation (Table 5). Another 16.1% accepted non-regular jobs, primarily in temporary positions. While some graduates were enrolled in graduate school or fulfilling the military service obligation (21 months), 20.5% were not working. In 2009, around 25% of youth with tertiary education were neither in employment nor in education, the second-highest share in the OECD area and double the OECD average (Figure 15). Moreover, the rate is higher for tertiary graduates in Korea than for those with high school education, in contrast to most other OECD countries. Among those who remain in the labour force, 40% of tertiary graduates spent more than three months to find their first job. In addition, a growing number of graduates do not find employment corresponding to the skills they acquired in education. For example, about 40% of university graduates in natural and social sciences do not find jobs in their field of study (OECD, 2007b).

**Table 5. Employment outcomes for university graduates in 2007**

|                           | Graduates      | Employees      | Regular        | Non-regular   |                         |                    |                     | Self-employed | Not working    | Others <sup>4</sup> |
|---------------------------|----------------|----------------|----------------|---------------|-------------------------|--------------------|---------------------|---------------|----------------|---------------------|
|                           |                |                |                | Sub-total     | Tempo-rary <sup>1</sup> | Daily <sup>2</sup> | Family <sup>3</sup> |               |                |                     |
| <b>Total</b>              | <b>560 632</b> | <b>390 180</b> | <b>290 907</b> | <b>90 470</b> | <b>60 749</b>           | <b>26 633</b>      | <b>3 088</b>        | <b>8 803</b>  | <b>115 073</b> | <b>55 379</b>       |
|                           |                | <b>69.6%</b>   | <b>51.9%</b>   | <b>16.1%</b>  | <b>10.8%</b>            | <b>4.8%</b>        | <b>0.6%</b>         | <b>1.6%</b>   | <b>20.5%</b>   | <b>9.9%</b>         |
| Colleges                  | 215 040        | 173 804        | 132 783        | 37 678        | 25 248                  | 11 584             | 846                 | 3 343         | 27 527         | 13 709              |
|                           |                | 80.8%          | 61.7%          | 17.5%         | 11.7%                   | 5.4%               | 0.4%                | 1.6%          | 15.8%          | 6.4%                |
| Teacher universities      | 5 929          | 4 109          | 3 680          | 429           | 417                     | 12                 | 0                   | 0             | 1 537          | 283                 |
|                           |                | 69.3%          | 62.1%          | 7.2%          | 7.0%                    | 0.2%               | 0.0%                | 0.0%          | 25.9%          | 4.8%                |
| General universities      | 277 858        | 168 254        | 120 618        | 44 333        | 28 644                  | 13 608             | 2 081               | 3 303         | 75 842         | 33 762              |
|                           |                | 60.6%          | 43.4%          | 16.0%         | 10.3%                   | 4.9%               | 0.7%                | 1.2%          | 27.3%          | 12.2%               |
| Industrial universities   | 26 490         | 19 714         | 15 701         | 3 299         | 2 425                   | 737                | 137                 | 714           | 5 354          | 1 422               |
|                           |                | 74.4%          | 59.3%          | 12.5%         | 9.2%                    | 2.8%               | 0.5%                | 2.7%          | 20.2%          | 5.4%                |
| Other universities        | 282            | 109            | 48             | 57            | 57                      | 0                  | 0                   | 4             | 16             | 157                 |
|                           |                | 38.7%          | 17.0%          | 20.2%         | 20.2%                   | 0.0%               | 0.0%                | 1.4%          | 0.5%           | 55.6%               |
| Graduate school (general) | 35 033         | 24 190         | 18 077         | 4 674         | 3 958                   | 692                | 24                  | 1 439         | 4 797          | 6 046               |
|                           |                | 69.0%          | 51.6%          | 13.3%         | 11.3%                   | 2.0%               | 0.1%                | 4.1%          | 13.7%          | 17.2%               |

1. Temporary employees are those whose labour contracts are for less than one year.

2. Includes part-time employees who work more than 18 hours a week.

3. Family employees are unpaid workers in establishments owned by family or relatives.

4. Includes those continuing to advanced studies and men fulfilling their military service obligation.

Source: Ministry of Education, Science, and Technology.

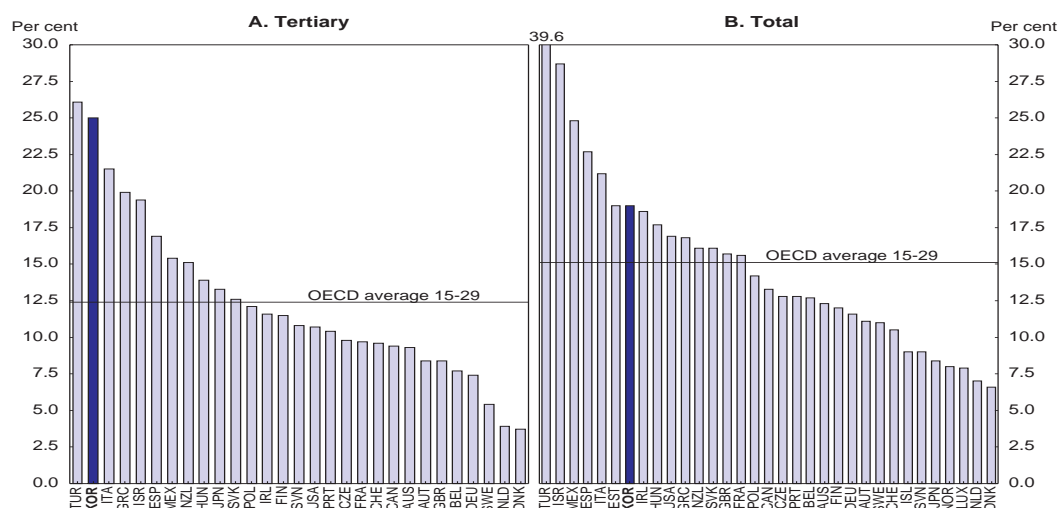
64. The problem of overemphasis on tertiary education is evident in other aspects of the labour market. *First*, the employment rate for university graduates in the 25-to-64-age population in Korea was only 2.5 percentage points above the rate for the overall population in 2009, the smallest gap in the OECD area (Figure 16).<sup>16</sup> Similarly, the unemployment rate for university graduates was almost identical to the

16. This is based on tertiary-type A programmes (ISCED 5A), which are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture.

overall unemployment rate, compared to an average 2.5 percentage-point gap in the OECD area. *Second*, the wage premium for tertiary graduates in Korea is relatively low; tertiary graduates earned only 43% more than high school graduates, as against an OECD average of 63% (Panel B).

**Figure 15. The share of inactive youth with tertiary education is high in Korea**

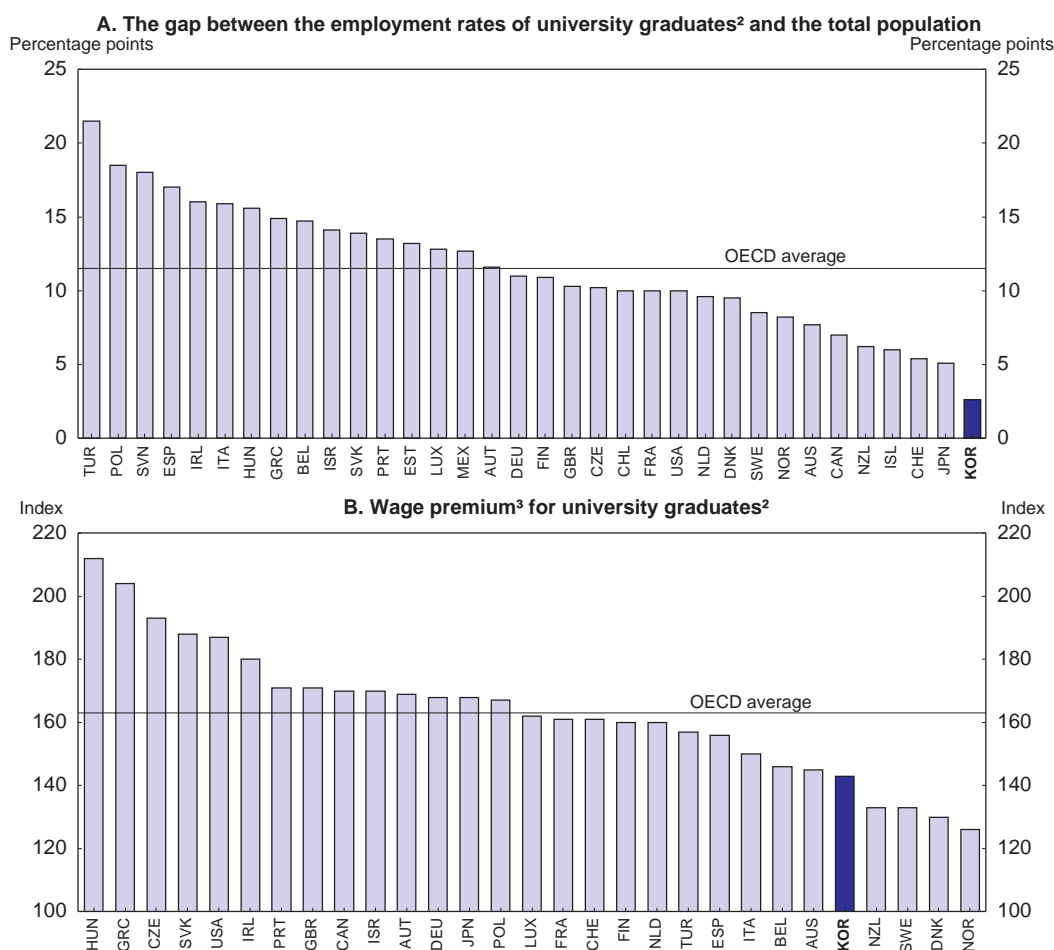
The share of the 15-to-29-age group neither in employment nor in education in 2009<sup>1</sup>



1. Data on the category ISCED 4, which captures programmes that straddle the boundary between upper secondary and post-secondary education, are not available in Korea and eleven other OECD countries. This category could potentially include persons in an apprenticeship or training outside of school. The numbers in the chart therefore overestimate the number of youth who are inactive in these countries.

Source: OECD (2011c), *OECD Education at a Glance 2011* and Statistics Korea, *Economically Active Population Survey*.

65. While university graduates are underused, SMEs face labour shortages, as noted above. In addition to creating mismatches in the labour market, the overemphasis on tertiary education imposes a huge financial burden on Korea. As President Lee Myung-bak stated, “Reckless university enrolment has aggravated both the private education budget and youth unemployment. It’s a huge loss, not just for households but the whole country” (*Financial Times*, 11 June 2011). The share of GDP devoted to tertiary education – public and private - in 2009 was the highest in the OECD area at 2.6%. In addition, much of the private education expense – another 2% of GDP – is focused on gaining admission to high-ranking universities. Addressing the problem of overemphasis on tertiary education is difficult as it is based on the national consensus that higher education is the key to success (Chang, 2009). A university degree has become the standard expectation, regardless of students’ capabilities or career aspirations. It is necessary to gradually shift the focus from chasing the status and prestige of high-ranking universities to rewarding the acquisition of skills that are demanded in the labour market. In 2011, the government signed an agreement with five major business organisations that agreed to provide more job opportunities for high school graduates, especially from vocational schools.

**Figure 16. International comparison of labour outcomes for university graduates in 2009<sup>1</sup>**

1. For the population between the ages of 25 and 64.
2. Defined as tertiary-type A and advanced research programmes.
3. The wages of upper secondary and post-secondary non-tertiary graduates is set at 100.

Source: OECD (2011c), *OECD Education at a Glance 2011*.

66. Following the 2008 global crisis, the share of high school graduates advancing to tertiary education fell to 72.5 in 2011 from its peak of 84%.<sup>17</sup> However, it is too early to say whether this is a permanent trend or a temporary response to the 2008-09 economic crisis. In any case, the share remains high. In order to reduce the blind pursuit of higher education, it is important to improve vocational education at both the secondary and tertiary level and demonstrate that it leads to favorable labour market outcomes. At the secondary level, vocational high schools' share of students fell from 42% in 1995 to 24% in 2010, reflecting the below-average academic achievement of their students. Moreover, despite the efforts of vocational high schools to keep up with changes in the industrial structure and technology, the range of occupations for which vocational high school graduates are qualified has fallen, resulting in continued mismatch problems (Park *et al.*, 2010). A 2010 government survey suggests that the share of vocational schools is set to fall further: only 6.4% of the parents of middle school students want their

17. This primarily reflects a decline in the advancement rate from general high schools from 87.9% to 75.2% between 2008 and 2011, while the rate fell from 72.9% to 63.7%, for vocational high schools.

children to attend a vocational school, compare to 64.4% for general schools (MEST, 2011). In contrast, independent private high schools and specialised schools are becoming increasingly popular.

67. In 2010, the government introduced the “Plan for Enhancing High School Vocational Education” to improve vocational high schools and Meister schools through financial assistance and other support. The employment rate of vocational high school graduates increased from 19% in 2010 to 42% in 2012. In addition, 81% of seniors in Meister schools have already signed employment contracts.

68. The role of colleges would also be enhanced by improving the system of qualifications. The two parallel systems of standards – “occupational standards” (managed by the Ministry of Employment and Labour) and “skills standards” (managed by the Ministry of Education, Science and Technology) - have been united under the new “competency standards” and will be the basis for national technical qualifications (NTQ). At present, vocational programmes do not systematically reflect occupational standards and the courses do not lead to the qualifying exams. Instead, students typically have to prepare separately for those exams. Moreover, Korea still has thousands of private-sector qualifications established by companies and training institutes. It is important to converge towards a core set of standards, taking into account private-sector views, in order to include the skills that they value. Such an approach would allow college courses, as well as those in vocational high schools, to be aligned with the NTQ requirements and prepare students for the NTQ exams. Moreover, making it possible to take an NTQ exam without completing a college programme would further reduce unnecessary tertiary education.

69. Other policies would enhance the role of the two-year colleges in competing against universities, which have been gaining students by encroaching on the vocational territory of colleges. *First*, the government should introduce policies to discourage universities from entering fields that are more appropriately handled at the college level to stop such “institutional drift”. For example, some lower-quality universities now offer four-year programmes in cosmetology, which are surely jobs that should be filled by college or secondary school graduates (OECD, 2009). *Second*, improving co-ordination between colleges and universities would help to lessen the stigma of colleges by making them a stepping stone to university. Only 6% of college graduates enter a university programme and they are poorly prepared as there is little co-ordination of curricula between the two systems.

70. Labour market reforms to break down dualism would also help resolve the problem of overemphasis on tertiary education. Tertiary graduates accounted for 53.6% of regular workers in 2011, but only 31.5% of non-regular workers. Students know that a tertiary degree enhances their chance of finding regular employment, which offers higher salaries, greater job stability and better coverage by the social safety net. Breaking down dualism would reduce this incentive for higher education. More generally, increasing the weight of performance in determining wages – while reducing that of education and seniority – would better reward the skills learned in education and reduce the motivation for tertiary education.

### **Increasing the role of the education system in innovation**

71. Korea’s gross domestic expenditure on R&D (GERD) amounted to 3.6% of GDP in 2009, well above the OECD average of 2.4% and the third largest in the OECD. The “577 Initiative” targets an increase in GERD to 5% of GDP in 2012 to make Korea one of the “seven major science and technology powers in the world” (MEST, 2009).<sup>18</sup> The government supports private R&D through direct funding and tax incentives, which together provide the largest support for R&D after France in the OECD area.

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18. The Initiative also set the objective of boosting basic research from 26% of government R&D to 50% by 2012. At the same time, it will focus on seven major technology areas, including cars, shipbuilding, machinery and semiconductors.

Business enterprises accounted for 71.1% of R&D funding and performed 74.3% of R&D in 2009 (Table 6), the third-largest share in the OECD area. In contrast, universities accounted for only 0.9% and 11.1%, respectively, the second lowest in the OECD area (Figure 17), despite the fact that Korea's share of articles in the Science Citation Index doubled from 1.3% in 1999 to 2.5% a decade later, the 11<sup>th</sup>-highest in the world. Korea also stands out for its low degree of internationalisation in R&D: it ranks as fourth lowest in the OECD measure of international collaboration among institutions (OECD, 2011e).

**Table 6. Flows of R&D funds in 2009**  
**A. R&D Funding**

|                         | Allocation between R&D actors <sup>2</sup> |            |              |                      |       |
|-------------------------|--|------------|--------------|----------------------|-------|
|                         | Share of total R&D spending                | Government | Universities | Business enterprises | Total |
| Government <sup>1</sup> | 27.8                                       | 49.5       | 32.2         | 18.3                 | 100.0 |
| Universities            | 0.9  | 1.4        | 93.5         | 5.1                  | 100.0 |
| Business enterprises    | 71.1                                       | 1.2        | 1.8          | 97.1                 | 100.0 |
| Foreign sources         | 0.2  | 18.9       | 18.9         | 62.2                 | 100.0 |

| <b>B. Sector performing R&amp;D</b> |                                  |            |              |                      |                 |       |
|-------------------------------------|----------------------------------|------------|--------------|----------------------|-----------------|-------|
|                                     | Funding source for R&D performed |            |              |                      |                 |       |
|                                     | Share of total R&D performed     | Government | Universities | Business enterprises | Foreign sources | Total |
| Government <sup>1</sup>             | 14.7                             | 93.9       | 0.1          | 5.7                  | 0.3             | 100.0 |
| Universities                        | 11.1                             | 80.8       | 7.6          | 11.3                 | 0.4             | 100.0 |
| Business enterprises                | 74.3                             | 6.9        | 0.1          | 92.9                 | 0.2             | 100.0 |

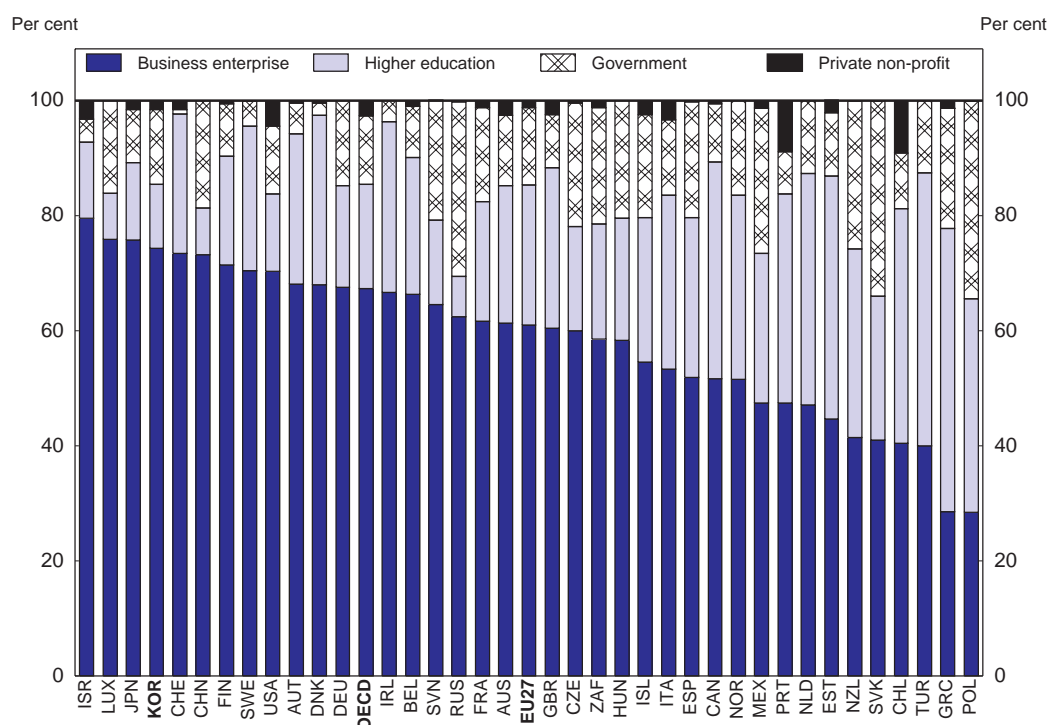
1. Includes private non-profit institutes.

2. By which sector performs the R&D.

Source: OECD R&D Statistics Database.

72. Increasing the effectiveness of R&D requires expanding the interaction between researchers in business, government and universities. In 2009, 97.1% of the R&D financed by enterprises was performed by enterprises and only 1.8% at universities (Table 6), which employ around three-quarters of the PhDs in Korea. Despite relatively low wages, universities attract researchers because of the high level of social respect accorded to professors and job security, in contrast to business research centres. The weak links between R&D in firms and universities may reflect the concentration of firms in applied research. However, as Korea has reached the technology frontier in many areas, the importance of basic research – typically concentrated in universities – should play a growing role. Given that the transfer of knowledge and technology takes place to a large extent through people, it is important to promote the mobility of researchers by expanding the use of fixed-term contracts and performance evaluation at universities and by requiring young researchers to change their organisational affiliation at least once after graduation before obtaining a permanent position. Finally, the share of government R&D funding for universities that is allocated competitively should be increased.

**Figure 17. R&D expenditure by performing sector**  
As a per cent of gross domestic expenditure on R&D in 2009 or latest year available



Source: OECD Main Science and, Technology Indicators Database.

### Promoting the development of the service sector

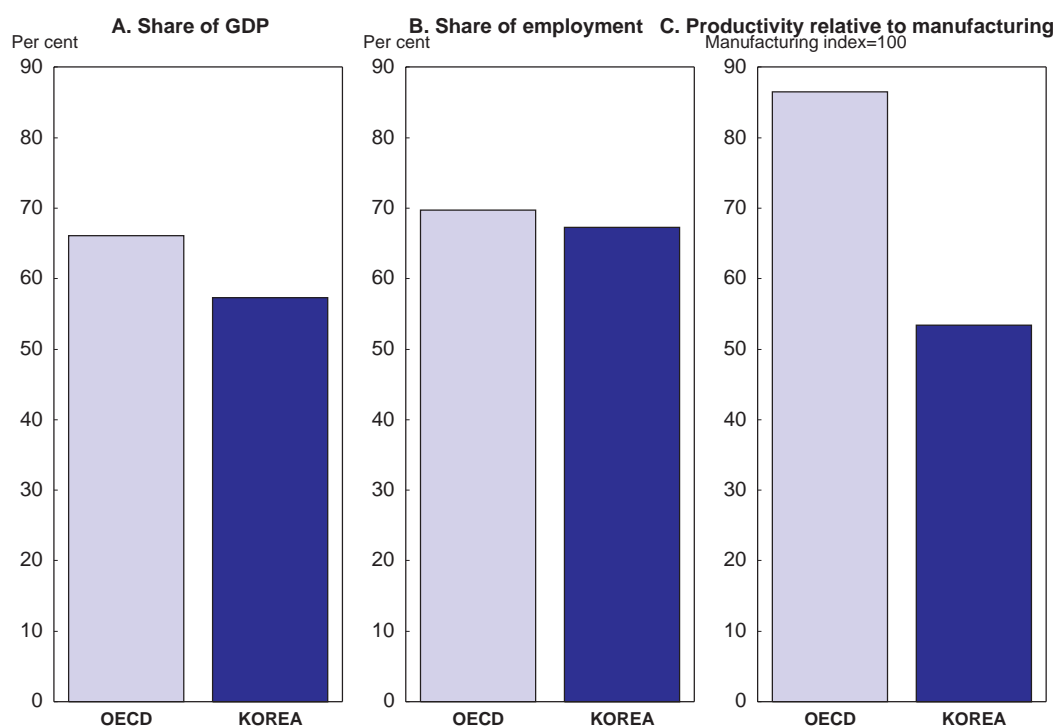
73. Although the share of the service sector increased from 50% of GDP in 1990 to 57% in 2008, it is the second lowest in the OECD area and well below the OECD average (Figure 18). The upward trend in the share of services in output is likely to continue as Korea continues its process of economic convergence. The development of the service sector is a key determinant of economic growth, given its size and its impact as an input in other parts of the economy, such as manufacturing. However, labour productivity in the service sector has consistently lagged behind that in manufacturing, slowing from an annual rate of 2.6% during the 1980s to 1.2% between 1997 and 2007, in contrast to nearly 9% growth in manufacturing (Table 7). Consequently, by 2008, service-sector productivity was only about half of that in manufacturing, the largest gap in the OECD area (Figure 18, Panel C). Moreover, the contribution of market services to aggregate productivity growth in Korea between 2000 and 2008 was one of the smallest in the OECD area and was partially offset by a fall in other services.

**Table 7. Labour productivity growth in manufacturing and services**  
Annual growth rate of value added per employee in per cent

| Industry             | ISIC code      | 1980-1990  | 1990-1997  | 1997-2007  |
|----------------------|----------------|------------|------------|------------|
| Manufacturing        | 15 to 37       | 6.4        | 8.7        | 8.7        |
| Market services      | 50 to 74       | 4.3        | 1.6        | 2.6        |
| Non-market services  | 75 to 99       | -0.2       | 1.7        | -2.0       |
| Total services       | 50 to 99       | 2.6        | 1.5        | 1.2        |
| <b>Total economy</b> | <b>1 to 99</b> | <b>5.5</b> | <b>4.4</b> | <b>3.3</b> |

Source: Bank of Korea, National Accounts.

**Figure 18. Korea's service sector is relatively small and has low productivity**  
In 2008, based on 2005 prices for value added



Source: OECD National Accounts Database and STI Database.

74. To some extent, low service-sector productivity is the legacy of an export-led growth strategy that attracted the most productive resources into manufacturing, which enjoyed a number of advantages, including tax breaks, government R&D support and lower electricity prices (see the 2012 *OECD Economic Survey of Korea*). The government is making efforts to bridge the productivity gap between manufacturing and services. *First*, it has been trying to level the playing field for the service sector by expanding the number of service businesses that receive tax benefits. *Second*, it has been removing entry barriers and trying to boost competition in services. *Third*, it has been trying to stimulate R&D investment by providing tax credits to 11 knowledge-based service industries. In some cases, it would be better to level the playing field by removing preferences granted to manufacturing rather than extending them to services (McKinsey, 2010b). Moreover, a comprehensive quantification of the various forms of explicit and implicit support to manufacturing would be helpful. In addition, a stronger won would promote the development of some non-tradable services by boosting domestic demand.

75. Policies to strengthen competition in services are particularly important, given that “overly strict regulations are obstructing investment and competition” (MOSF, 2009). The keys to stronger competition include eliminating domestic entry barriers, accelerating regulatory reform, upgrading competition policy and reducing barriers to trade and inflows of FDI. The government has significantly reduced entry barriers, as reflected in the improvement in Korea’s ranking in the “cost of starting a new business” from 126<sup>th</sup> in the world in 2008 to 24<sup>th</sup> in 2011 (Table 8). Moreover, regulation in network sectors has also fallen, although it remains well above the OECD average (OECD, 2012). Moreover, competition policy should be further strengthened. *First*, even though financial penalties have risen, their deterrent effect is still weaker than in most other OECD countries, indicating a need for further increases. In addition, criminal penalties, which are rarely applied, should be used more frequently. *Second*, the investigative powers of the

competition authority, the Korea Fair Trade Commission, need to be expanded. *Third*, the number of exemptions from the competition law, including for SMEs, should be further scaled back.

**Table 8. Ease of starting a business in OECD countries**

|                 | 2011<br>world<br>rank | 2010<br>world<br>rank | 2008<br>world<br>rank | Procedures<br>(number) | Time<br>(days) | Cost <sup>1</sup> | Minimum<br>capital <sup>1</sup> |
|-----------------|-----------------------|-----------------------|-----------------------|------------------------|----------------|-------------------|---------------------------------|
| New Zealand     | 1                     | 1                     | 1                     | 1                      | 1              | 0.4               | 0.0                             |
| Australia       | 2                     | 2                     | 3                     | 2                      | 2              | 0.7               | 0.0                             |
| Canada          | 3                     | 3                     | 2                     | 1                      | 5              | 0.4               | 0.0                             |
| United States   | 13                    | 9                     | 6                     | 6                      | 6              | 1.4               | 0.0                             |
| Ireland         | 13                    | 11                    | 5                     | 4                      | 13             | 0.4               | 0.0                             |
| United Kingdom  | 19                    | 17                    | 8                     | 6                      | 13             | 0.7               | 0.0                             |
| <b>Korea</b>    | <b>24</b>             | <b>60</b>             | <b>126</b>            | <b>5</b>               | <b>7</b>       | <b>14.6</b>       | <b>0.0</b>                      |
| France          | 25                    | 21                    | 14                    | 5                      | 7              | 0.9               | 0.0                             |
| Portugal        | 26                    | 59                    | 34                    | 5                      | 5              | 2.3               | 0.0                             |
| Chile           | 27                    | 62                    | 55                    | 7                      | 7              | 5.1               | 0.0                             |
| Slovenia        | 28                    | 28                    | 41                    | 2                      | 6              | 0.0               | 43.6                            |
| Denmark         | 31                    | 27                    | 16                    | 4                      | 6              | 0.0               | 25.0                            |
| Belgium         | 36                    | 31                    | 20                    | 3                      | 4              | 5.2               | 18.9                            |
| Iceland         | 37                    | 29                    | 17                    | 5                      | 5              | 3.3               | 12.6                            |
| Finland         | 39                    | 32                    | 18                    | 3                      | 14             | 1.0               | 7.3                             |
| Hungary         | 39                    | 35                    | 27                    | 4                      | 4              | 7.6               | 9.7                             |
| Norway          | 41                    | 33                    | 33                    | 5                      | 7              | 1.8               | 19.4                            |
| Israel          | 43                    | 36                    | 24                    | 5                      | 34             | 4.4               | 0.0                             |
| Estonia         | 44                    | 37                    | 23                    | 5                      | 7              | 1.8               | 24.4                            |
| Sweden          | 46                    | 39                    | 30                    | 3                      | 15             | 0.6               | 14.0                            |
| Turkey          | 61                    | 63                    | 43                    | 6                      | 6              | 11.2              | 8.7                             |
| Mexico          | 75                    | 67                    | 115                   | 6                      | 9              | 11.2              | 8.4                             |
| Slovak Republic | 76                    | 68                    | 48                    | 6                      | 18             | 1.8               | 20.9                            |
| Italy           | 77                    | 68                    | 53                    | 6                      | 6              | 18.2              | 9.9                             |
| Netherlands     | 79                    | 71                    | 51                    | 6                      | 8              | 5.5               | 50.4                            |
| Luxembourg      | 81                    | 77                    | 69                    | 6                      | 19             | 1.9               | 21.2                            |
| Switzerland     | 85                    | 80                    | 52                    | 6                      | 18             | 2.1               | 26.9                            |
| Germany         | 98                    | 88                    | 102                   | 9                      | 15             | 4.6               | 0.0                             |
| Japan           | 107                   | 98                    | 64                    | 8                      | 23             | 7.5               | 0.0                             |
| Poland          | 126                   | 113                   | 145                   | 6                      | 32             | 17.3              | 14.0                            |
| Spain           | 133                   | 125                   | 140                   | 10                     | 28             | 4.7               | 13.2                            |
| Austria         | 134                   | 130                   | 104                   | 8                      | 28             | 5.2               | 52.0                            |
| Greece          | 135                   | 147                   | 133                   | 10                     | 10             | 20.1              | 22.8                            |
| Czech Republic  | 138                   | 149                   | 86                    | 9                      | 20             | 8.4               | 30.7                            |
| <b>Average</b>  |                       |                       |                       | <b>5.4</b>             | <b>12.0</b>    | <b>5.1</b>        | <b>13.4</b>                     |

1. As a per cent of income per capita.

Source: World Bank (2011), *Doing Business 2012*.

76. Greater openness to the world economy is another priority to boost productivity in services. The stock of FDI in Korea, at 13% of GDP, was the third lowest in the OECD area in 2010 and the share of inward FDI in services was less than half. Consequently, the stock of FDI in services in Korea was only 6% of GDP, compared to an OECD average of 37%. Strengthening international competition requires reducing barriers to FDI, including foreign ownership ceilings in key services, and liberalising product market regulations. In addition, it is important to foster a foreign investment-friendly environment, thereby encouraging more cross-border M&As, enhance the transparency of tax and regulatory policies and reform the labour market. The treatment of manufacturing and services in the Free Economic Zones should be more balanced. Finally, the emphasis on special zones should not distract policymakers from the top priority of improving the business climate.



77. The problems in services are closely linked to those of SMEs, which account for about 90% of service-sector employment. While the major business groups, known as *chaebol*, were forced to adopt more commercially-based corporate governance structures and to restructure aggressively, the government essentially bailed out SMEs through increased public subsidies and guarantees during the 1997 crisis (Claessens and Kang, 2008). Moreover, this support was not fully scaled back once the crisis had passed. Consequently, the SMEs have not been as aggressive in reforming their business model and their performance has increasingly lagged that of large firms (2008 *OECD Economic Survey of Korea*). In 2009, to prevent widespread bankruptcies and minimise systemic risk, the government further increased assistance to SMEs by: *i*) sharply raising guarantees by public financial institutions for lending to SMEs; *ii*) advising banks to automatically roll over loans to SMEs (excluding those already delinquent on existing loans); *iii*) creating two initiatives to aid SMEs in distress; and *iv*) doubling government spending to assist SMEs. Moreover, government assistance to banks, such as guarantees on their foreign borrowing and capital injections, were contingent on increased lending to SMEs. While expanded financial support to SMEs prevented some bankruptcies and job losses, it has also exacerbated moral hazard problems by increasing the reliance of SMEs and banks on public assistance (2010 *OECD Economic Survey of Korea*).

## Conclusion

78. Korea's economic performance over the past 50 years has been outstanding. However, continuing the convergence to the highest-income countries is increasingly challenging as Korea enters a period of population ageing that is exceptionally rapid while per capita income is still relatively low. In addition, economic policy will have to place greater emphasis on environmental sustainability and achieving inclusive growth to promote social cohesion. Sustaining the convergence process requires labour market and education reforms to limit falls in labour inputs in the face of demographic headwinds. In addition, improving the education system is essential to narrow the productivity gap with leading countries. Developing the service sector – the source of much of the gap – is essential to make the final transition to high-income status. Detailed recommendations are summarised below in Box 2.

### **Box 2. Summary of recommendations to sustain Korea's convergence to the highest-income countries**

#### ***Encouraging labour market participation, particularly of women, the elderly and youth***

- Encourage better work-life balance, in part by expanding flexibility in working hours and reducing them, lengthening maternity and parental leave and encouraging their take-up by increasing the benefits for parental leave and reserving part of the leave time for the exclusive use of fathers.
- Increase the availability of affordable, high-quality childcare.
- Reduce labour market dualism to create better job opportunities for women and young people.
- Encourage greater use of flexible employment and wage systems to promote the continuous employment of older workers, while expanding and upgrading lifelong learning and training opportunities to improve their job prospects.
- Set a minimum mandatory retirement age and gradually increase it with an aim of eventually abolishing mandatory retirement, while phasing out the retirement allowance by further expanding company pensions.
- Ensure better access to comprehensive employment support programmes to encourage youth to work.

#### ***Tax reform to foster employment and growth***

- Raise additional revenue to finance rising government spending through the value-added tax, as well as taxes on carbon and property-holding, thereby keeping the tax burden on labour low.

***Improving the education system to promote productivity growth******Early childhood education and care***

- Raise the proportion of children attending kindergarten by expanding tuition subsidies, especially for low-income children, and increasing the capacity of public kindergarten by including them in primary school buildings.
- Improve the quality of private childcare facilities by upgrading the accreditation process and making it mandatory and relaxing fee ceilings on private childcare, which impinge on quality.
- Upgrade the quality of teachers by increasing the requirements in ECEC.
- Gradually integrate childcare and kindergartens to improve quality, while achieving cost savings.

***Primary and secondary schools***

- Increase the autonomy of schools and promote closer co-operation between local governments and local educational authorities, with the eventual aim of merging them.
- Expand school choice to encourage schools to excel, while continuing to expand diversity in the type of high schools to promote competition and excellence.
- Develop vocational education by increasing the number of Meister schools and developing National Technical Qualifications (NTQ) that link education and the labour market.

***Tertiary education***

- Increase transparency, including at the department level, while promoting internationalisation by facilitating the entry of foreign students and tertiary institutions in Korea, to enhance competition.
- Develop vocational education by enhancing the role of colleges and linking them to a streamlined set of NTQs.
- Use the rankings, which designate the lower 15% of institutions, to improve management and foster restructuring; incorporate other national universities, in addition to Seoul National University, to promote their autonomy.
- Make an upgraded accreditation system effective, while easing regulations to promote innovation and diversity.

***Enhance the role of the education system in innovation***

- Expand the role of universities in innovation by strengthening links between research institutes in government, business and academia, in part by promoting labour mobility of researchers.

***Raising productivity in the service sector***

- Further reduce entry barriers, including in network industries, through regulatory reform, and upgrade competition policy by increasing the deterrent effect of surcharges and criminal penalties to strengthen competition.
- Strengthen international competition in services through greater inflows of direct foreign investment by removing ownership restrictions and improving the business climate.
- Scale back government assistance to SMEs, including subsidies, financial assistance, credit guarantees and tax incentives, to make small companies less dependent on public support and promote their restructuring.
- Comprehensively quantify the various forms of explicit and implicit support to manufacturing as a first step to leveling the playing field.

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