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The Key Economic Challenges Facing Korea in the 21st Century*

Randall S. Jones[†]

Abstract

After experiencing a severe financial crisis in 1997, Korea implemented a wide-ranging package of reforms that have helped to sustain economic growth during the past decade. However, there has been a deceleration of growth—from a 7.2% annual rate between 1998 and 2002 to 4.4% during 2002 to 2007. There remains considerable scope to sustain rapid growth by raising labor productivity, which is currently 60% below the US level. Narrowing the productivity gap requires meeting a number of challenges. First, Korea needs to enhance the return from its large investment in innovation by reforming its R&D framework and education system. Second, it is important to enhance the integration of Korea in the world economy to accelerate productivity growth. At present, Korea is relatively closed to inflows of foreign direct investment, trade and human resources from abroad. Third, Korea needs to cope with rapid population aging, which is projected to transform it from the second youngest population in the OECD area in 2000 to the fourth oldest in 2050. Aging is projected to significantly reduce the labor force and poses a serious fiscal challenge to cope with increased public spending for pensions and healthcare. Fourth, Korea needs to reverse the increasing share of non-regular workers, as labor market dualism creates both efficiency and equity concerns. Successfully meeting these challenges would enable Korea's per capita income—currently about two-thirds of the OECD average—to continue its convergence to the levels in the most advanced countries.

JEL codes: O3, F15, J1, J08

Key words: Korean economy, innovation, globalization, population aging, labor market dualism

I. Introduction

Korea has overcome the 1997 crisis with a decade of economic growth at a 5¹/₂ percent annual rate, thanks in part to a broad program of structural reforms. Sustaining high growth rates in the years to come will be a challenge, in part due to the rapid pace of population aging. This paper begins with an overview of the 1997 crisis and Korea's policy response. It then addresses a number of challenges that Korea will need to meet to maintain high growth, namely: *i*) improving the innovation system; *ii*) enhancing the integration of Korea in the global economy; *iii*) coping with the impact of population

* The author acknowledges the help provided by Yutaka (Rick) Imai in the OECD's work on Korea. Rick supervised five *OECD Economic Surveys of Korea* (1998, 1999, 2000, 2001 and 2003) and accompanied the author on ten fact-finding missions to Korea.

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aging on the labor force and on public finances; and *iv*) addressing increasing dualism in the labor market.

Overcoming the 1997 crisis

In 1997, Korea was hit by one of the most severe financial crises ever experienced by an OECD country. With its foreign reserves virtually exhausted and unable to meet its foreign debt obligations, Korea agreed to a record \$57 billion standby agreement with the IMF in December of that year. Before the end of that month, the exchange rate had lost half of its pre-crisis value against the dollar while interest rates more than doubled to about 30%. The impact of the financial crisis on the real economy became apparent early in 1998 as output fell sharply and the bankruptcy rate soared. The heavily-indebted corporate sector, which was hard hit by the sharp rise in interest rates, responded by cutting investment and employment. Consequently, the unemployment rate increased almost four-fold to 8% by the end of 1998, creating severe hardship in a country with only a limited social safety net. With investment and private consumption falling, there was a sharp contraction of imports that contributed to an unprecedented current account surplus of 12% of GDP. In sum, output fell by 7% in 1998, with domestic demand shrinking by 17% (OECD, 1999).

The financial crisis in Korea was surprising to many observers, given the country's successful development strategy, which had transformed it from one of the poorest nations in the world in the early 1960s to an industrialized country in the space of one generation. Indeed, economic growth averaged 8% a year between 1963 and 1993, the fastest in the world, boosting per capita income from 20% of the OECD average in 1970 to almost 60% by the time of the crisis (Figure 1). Korea's development strategy, though, had created a number of structural weaknesses that made it vulnerable to the financial crisis that swept through Asia in 1997. According to the government:

“Over the past thirty years of accelerated economic growth, former governments were deficient in developing the rules and principles of a market economy, failing to implement structural reform policies consistent with changes in the international environment” (Ministry of Finance and Economy, 1999).

Three such weaknesses were fundamental (OECD, 1998):

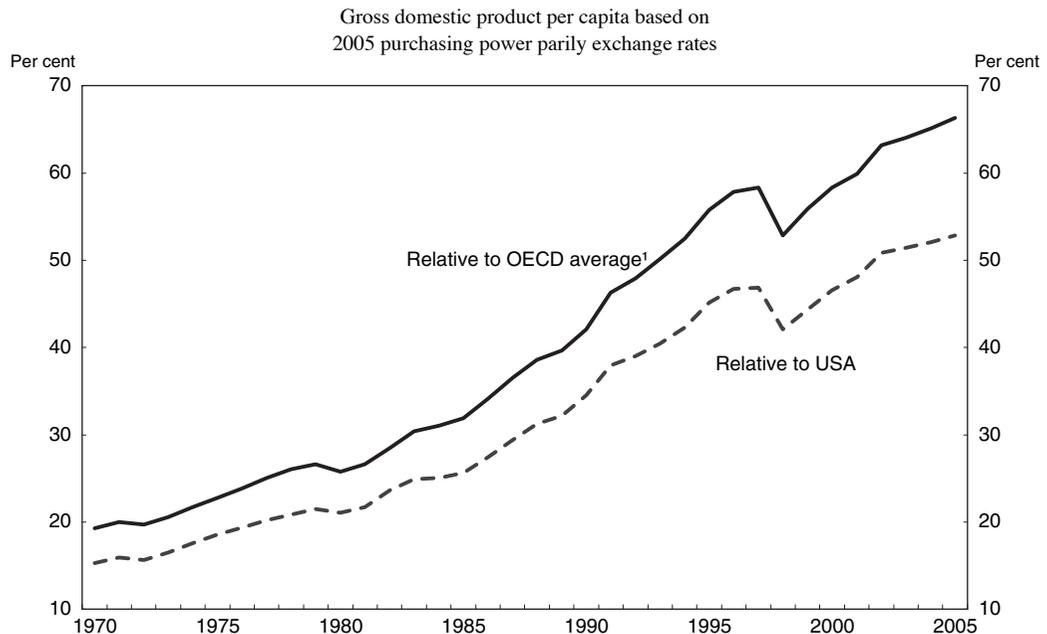
- The corporate sector had low levels of profitability and high levels of debt, reflecting the tendency of the business conglomerates (*chaebol*) to diversify across a wide range of areas. Such an approach was encouraged by a weak corporate governance framework and the moral hazard resulting from a “too big to fail” mentality.
- Korea had a poorly functioning financial system that followed government direction in allocating capital and had poor credit analysis and risk management mechanisms.
- Following the liberalization of short-term overseas borrowing in 1993, corporations and financial institutions built up a large level of short-term foreign debt, reflecting excessive risk-taking and insufficient attention to credit and exchange rate risks.

Korea bounced back from the 1997 crisis with economic growth at a 7.2% rate between 1998 and 2002 (Table 1). While a relaxation of monetary and fiscal policies played a positive role, the key

factor was a wide-ranging program of structural reforms that restored confidence in the Korean economy.

Perhaps the greatest success was the restructuring of the financial sector along market-oriented lines. The government created an independent regulator, the Financial Supervisory Commission, to enforce prudential regulations. Nearly a quarter of the country's financial institutions, including nine of 26 commercial banks, were closed. Korea launched a program to re-capitalize viable financial institutions and address the non-performing loan (NPL) problem. Between November 1997 and the

Figure 1. Korea's Per Capita Income Is Converging to the OECD Average



Note: The OECD average is based on 26 member (except Slovak Republic, Poland, Czech Republic and Hungary) from 1970 to 1990, 29 countries (except Slovak Republic) from 1991 to 1992 and all 30 countries from 1993 to 2005.

Source: 2007 *OECD Economic Survey of Korea*.

Table 1. Economic Growth Trends in Korea

	Average annual growth rates		Contribution to growth	
	1998–2002	2002–07	1998–2002	2002–07
Private consumption	8.2	2.2	4.4	1.1
Government consumption	3.8	4.9	0.5	0.6
Gross fixed capital formation	6.7	3.2	2.0	0.9
Stockbuilding	0.8	-0.1
Total domestic demand	8.0	2.7	7.7	2.5
Exports	10.8	13.5	-0.5 ¹	1.9 ¹
Imports	12.6	10.9		
GDP	7.2	4.4	7.2	4.4

Note: 1. Contribution of net exports.

Source: Bank of Korea.

end of 2004, the authorities spent 165 trillion won (26% of average annual GDP over that period) for financial restructuring (Table 2). About half of that amount has been recovered through the sale of NPLs and the privatization of financial institutions that had been re-capitalized using public funds. This resulted in a sharp expansion of foreign ownership in the banking sector from 16% in 1997 to 64% in 2004. Currently, foreign investors own more than 50% of nine of the 14 commercial banks. The foreign presence has greatly contributed to improving the productivity of individual institutions by promoting competition, introducing advanced know-how and practices, and strengthening risk management in lending.

The government introduced important reforms to promote restructuring of the corporate sector. *First*, transparency was improved by strengthening auditing procedures and requiring the conglomerates to prepare financial statements on a consolidated basis. *Second*, shareholder rights have been expanded by introducing derivative suits against directors and class action suits. *Third*, listed companies have been required to fill a quarter of their boards of directors with outside directors. *Fourth*, the market for corporate control has been liberalized with the relaxation of regulations on portfolio and direct investment. This new framework has encouraged chaebol owners to place greater emphasis on profitability. The biggest catalyst for change, though, was probably the 1999 collapse of Daewoo, then the second biggest conglomerate, which helped put an end to the “too big to fail” myth.

In addition, the government implemented measures to strengthen competition, in part, by reducing trade barriers. In particular, the import diversification program that had restricted imports from Japan was phased out. This contributed to a rise in international trade from 33% of GDP in 1997 to 45% in 2007, with net exports accounting for almost half of output growth since 1997. Restrictions on capital inflows were relaxed and the government introduced measures to promote inflows of foreign direct investment, helping to boost foreign ownership of listed companies from 15% in 1997 to a peak of 42% in 2004. Foreign investors hold more than 50% of a number of leading companies. In addition, the government launched programs to privatize some state-owned enterprises and implement

Table 2. Korea's Financial-Sector Restructuring Program

Outlays by type of financial institutions between November 1997 and December 2004 in trillion won

	Equity participation	Capital contributions	Deposit payoffs	Asset acquisition	NPL purchases	Total
Banks	34.0	13.8	–	14.4	24.6	86.8
The non-bank sector	28.2	3.9	30.3	1.4	12.0	75.9
Merchant banks	2.7	0.4	18.3	–	1.5	22.9
Securities/investment trusts	9.6	0.1	–	0.5	8.5	18.7
Insurance	15.9	3.1	–	0.3	1.8	21.2
Credit unions	–	–	4.8	–	–	4.8
Saving banks	–	0.2	7.3	0.6	0.2	8.3
Foreign institutions	–	–	–	–	2.4	2.4
Total	62.2	17.7	30.3	15.9	39.0	165.0

Source: 2005 OECD Economic Survey of Korea.

regulatory reform. The review of existing regulations by the Regulatory Reform Committee, established in 1998, reduced the total number by almost one-half, from 11,095 in 1998 to 5,670 in 1999. Regulatory reform was aimed at relaxing restrictions on firms and easing controls on the financial sector (OECD, 2000).

Facing the challenges ahead

Korea's response to the 1997 financial crisis helped the convergence process to resume, boosting its per capita income to around two-thirds of the OECD average at present (Figure 1). The rate of economic growth, though, slowed significantly to an average annual rate of 4.4% between 2002 and 2007. The deceleration during the past five years is due, in part, to the collapse of the credit card bubble and terms of trade losses that reduced the growth of national income. However, it also reflects structural weaknesses in the Korean economy.

Korea's new president, Lee Myung-bak, has promised to raise the country's potential growth to 7%, a rate well above the 5% estimated by the OECD. Korea's rapid economic development has been based primarily on inputs of capital and labor, driven by the highest rate of business investment in the OECD area, a growing working-age population, long working hours and a rising labor force participation rate. In addition, investment in education and R&D has facilitated a "catch-up" model of innovation. Looking ahead, though, the outlook for input-based growth is dimming. The size of the working-age population is projected to begin falling from 2016 in the context of rapid population aging. Indeed, the share of the population over age 65 is projected to double from 7% in 2000 to 14% in 2018, and increase further to 20% in 2026. Meanwhile, fixed investment has dropped from an average of 37% of GDP during the 1990s prior to the crisis to less than 30% during the past few years.

In contrast, productivity growth has played a less important role in Korea's economic growth. With inputs of labor and capital slowing, sustaining high growth depends increasingly on productivity gains. There is considerable scope to raise labor productivity, which is 60% below the US level (Figure 2, right-hand column). Narrowing the large productivity gap requires meeting a number of challenges:

- Improving the innovation system
- Enhancing the integration of Korea in the global economy
- Coping with the impact of population aging on public finances
- Addressing increasing dualism in the labor market

Each of these challenges is discussed below.

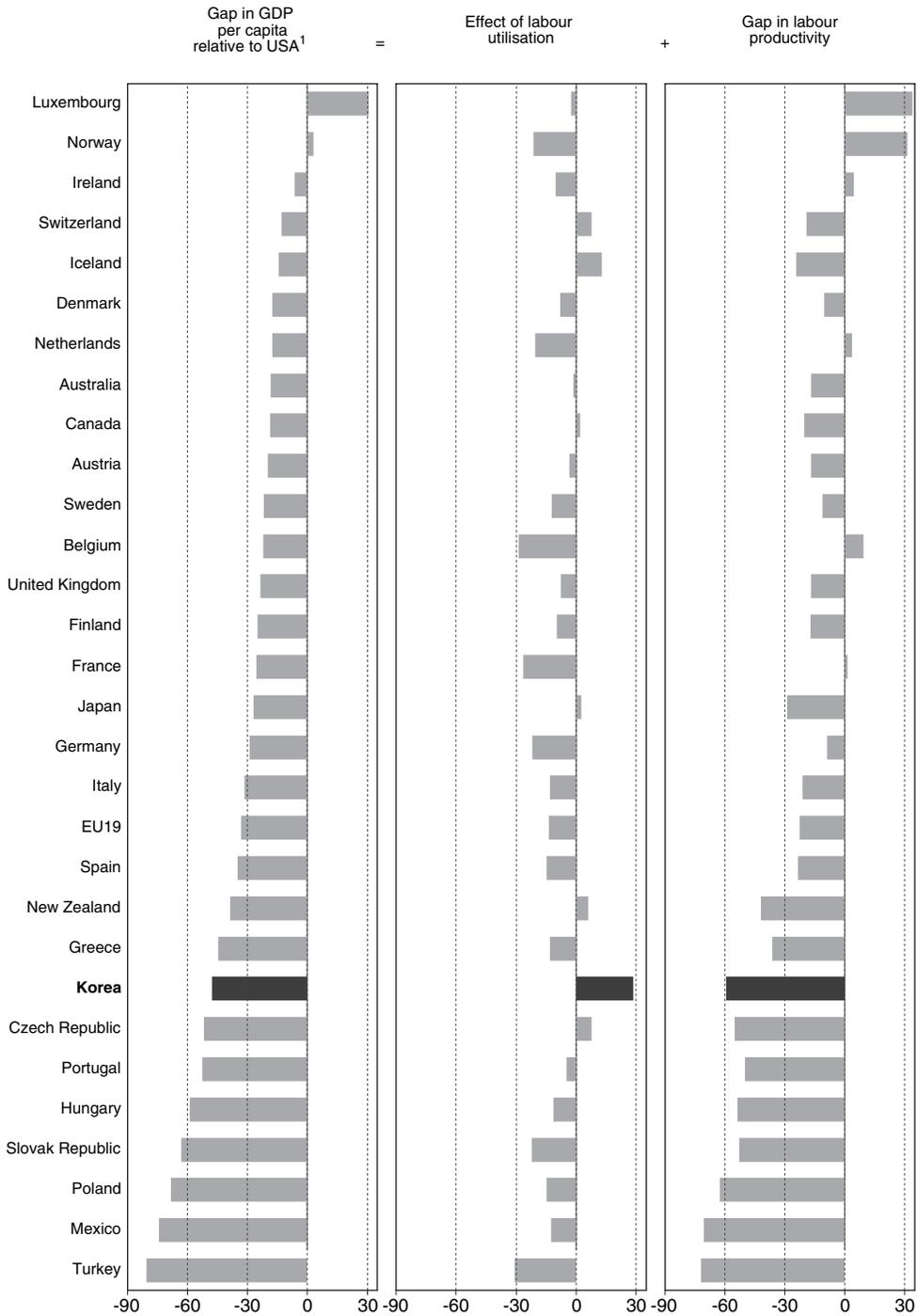
II. Improving the Innovation System¹

Productivity gains are closely linked to innovation—the successful development and application of knowledge—which in turn depends to a large extent on investment in R&D and human capital. Such

¹ This subject is discussed in detail in the 2005 *OECD Economic Survey of Korea*.

Figure 2. Explaining Differences in Per Capita Income Levels

Percentage point differences in GDP per person in US\$ (PPP exchange rates) relative to the United States in 2005, with productivity measured on a per-hour basis



Note: The gap in GDP per capita is equal to the sum of the two components shown.

Source: 2007 OECD Economic Survey of Korea.

investment has become particularly important to Korean exporters, many of whom have reached the technology frontier in their fields. Indeed, according to a survey by the Korea International Trade Association, around half of the big companies report that the quality of their products was at least as good as rivals in more advanced countries. Increasing productivity and continuing the convergence to the income levels in the most advanced countries depends on upgrading the R&D framework and reforming the education system in order to increase the capacity for innovation.

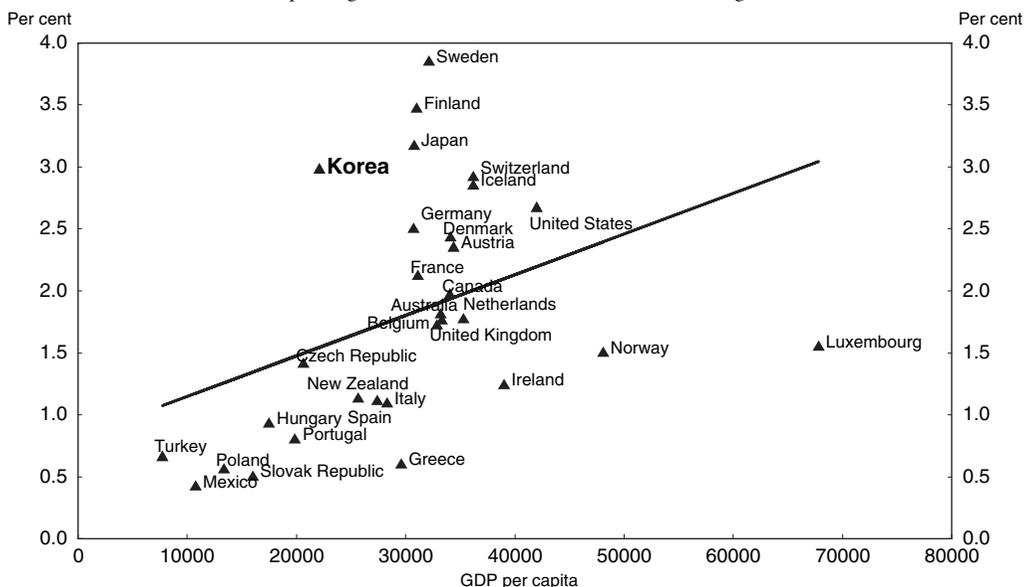
Upgrading Korea’s R&D framework

Total R&D spending in Korea increased from 2.6% of GDP in 2003 to 3% in 2005, surpassing the 2.7% ratio in the United States (Figure 3). Moreover, R&D spending in Korea is concentrated in the business sector, which accounts for three-quarters of the total.

Despite the high level of spending, Korea’s R&D framework has a number of weaknesses.

- i. Korea needs to make the transition from a catch-up strategy of innovation, which has emphasised imports of technology and reverse engineering, to a more creative approach. In a survey of 6,000 manufacturing firms, the overall level of technology was estimated to be 80% of the world technology frontier, while 13% of firms replied that they have already reached the frontier. Consequently, foreign sources can no longer provide the needed expertise in a growing number of fields. Moreover, foreign firms appear to have become more reluctant to release their technology.
- ii. R&D activities are focused on a relatively small number of industries and firms in manufacturing. The Information and Communication Technology (ICT) sector and

Figure 3. International Comparison of R&D Spending
R&D spending as a share of GDP in 2005 US\$ PPP exchange rates



Source: Jones (2007).

automobiles accounted for 60% of total business R&D in 2003, with the top five companies alone in these two industries responsible for 37%². The heavy concentration in two industries contributes to the dualism in the Korean economy and may not provide a broad enough base to promote the convergence of per capita income in Korea to the levels in the most advanced OECD countries.

- iii. R&D in services is small. Although the service sector produces 57% of value-added in the Korean economy, it accounts for less than 10% of business R&D, well below the OECD average of 25% and the 40% share in the United States. The low level of R&D in services in Korea contributes to the large productivity gap between its manufacturing and service sectors. Indeed, service sector productivity was only 65% of that in manufacturing in Korea in 2003, well below the OECD average of 97% (Table 3). In other words, productivity levels in manufacturing and services are roughly comparable in the OECD area, in contrast to Korea.
- iv. Universities are not well integrated in the R&D system. Although they employ about three-quarters of researchers with a PhD degree, they account for only 10% of the total R&D performed in Korea, about half of the OECD average, indicating that the human resources in universities are under-utilised in research. More generally, interaction between business, government and academic R&D activities is weak. For example, only 2% of R&D financed by the business sector is performed in universities and only 1% in government research institutes.
- v. Korea's R&D system is isolated internationally. Foreign sources financed only 0.7% of R&D activities in Korea in 2005, the second lowest figure in the OECD area (after Japan). Korea also ranks second to last in terms of the share of foreign ownership of domestic inventions (again next to Japan), partly reflecting the low level of FDI in Korea and weak linkages with foreign research institutes. International isolation may limit the scope for technological

Table 3. Employment, Value-added and Productivity by Sector¹

	Korea	OECD
Share of total employment, 2003 (%) ²		
Manufacturing (15–37)	19.0	16.6
Services (50–99)	63.5	69.2
Share of total value added, 2003 (%) ³		
Manufacturing (15–37)	26.4	17.9
Services (50–99)	57.2	68.9
Value added per worker in 2003, manufacturing = 100 ²		
Services (50–99)	64.8	97.1
Wholesale & retail trade, hotels and restaurants (50–52, 55)	28.1	70.5

Notes: 1. The numbers in parentheses show the ISIC (Rev.3) codes.

2. The OECD total is the simple average of 28 member in which both employment and value-added data are available for 2003 or the most recent year.

3. The OECD total is based on 30 countries, using data for the latest year available.

Source: 2007 *OECD Economic Survey of Korea*.

² The five companies are Samsung Electronics, LG Electronics, Hyundai Motors, Hynix Semiconductors and GM Daewoo Auto & Technology.

progress, as foreign sources of knowledge are increasingly important for innovation.

- vi. Korea has strengthened its legal framework for intellectual property rights (IPR) protection, bringing it in line with global standards such as the WTO agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). However, the Institute for Management Development (IMD) ranked Korea's patent and copyright protection at 37th out of 60 economies in 2004, and the World Economic Forum (WEF) ranked IPR protection at 23rd out of 104 countries.

Another concern is the government's plan to develop certain technologies to act as growth engines for the Korean economy over the next five to ten years. The ten strategic industries identified in 2003 as growth engines are: bio-medical products, computer displays, semiconductors, batteries, future automobiles, intelligent robots, digital TV and broadcasting, mobile communications, intelligent home networks and digital content and software solutions. The government argues that since the absolute amount of R&D in Korea is small compared to some of the leading countries, it is necessary to pick strategically important industries and concentrate R&D spending in them.

To promote the growth engines, the government is encouraging the development of the necessary technology, the creation of infrastructure to support R&D investment, the training of skilled workers and measures to enhance collaboration between firms, universities and government research institutes. To accomplish these goals, the government has established ten consortiums, which provide R&D funds. Moreover, they receive other advantages. For example, the shareholding ceiling imposed on chaebol-affiliated companies is waived for the ten strategic industries. Perhaps equally important as the financial support and regulatory advantages for the growth engine industries is the signal provided to the private sector.

However, picking winners and giving them undue emphasis could lead to government failure and distortions. The experience of the Heavy and Chemical Industry drive in Korea during the 1970s, which focused investment on certain strategic industries, illustrates the risks of government measures to pick winners. The risks may be even larger today, given globalization and the rapid pace of technological change, which make it difficult for the government to accurately anticipate which areas will be most important in the future. In addition, the growth engine program focuses on a number of key manufacturing industries, such as cars, semiconductors, computer displays and mobile telecommunication equipment. Such an approach tends to maintain the emphasis on manufacturing at the expense of the service sector. The growth engine approach may also widen the gap between large companies and small and medium-sized enterprises (SMEs) as priority areas are driven by large firms.

Another risk of focusing on key high-technology products, such as semiconductors and mobile telecommunications, is a further deterioration in the terms of trade as other countries also increase production in these areas. Terms of trade losses reduced Korea's national income by 14% between 1998 and 2006, the largest such loss in the OECD area, reflecting the downward trend in the prices key ICT products. Consequently, the growth of national income has lagged behind output growth. The constraint on income growth has limited private consumption and slowed the improvement in living standards. Other countries that are major producers of ICT products, such as Sweden, Finland and

Japan, also report significant terms of trade losses. Countries that target priority industries for R&D tend to pick the same sectors as Korea, suggesting that there may be continued terms of trade losses in the future.

The above analysis suggests a number of areas for improvement that would increase the return on Korea's investment in R&D, thereby promoting innovation and productivity growth.

- Rather than trying to “pick winners” by identifying growth engines, there are gains to a more diversified approach to R&D. The government should focus on developing generic technologies and human capital in order to avoid crowding out private investment. Flexibility in implementing R&D programs would help limit the concentration of R&D in certain industries and may also increase the share of R&D in the service sector.
- Strengthening linkages among the institutions active in R&D, including foreign players, should be a priority. In particular, joint research and manpower exchanges between research institutes in universities, the government and the business sector would promote such cooperation. Achieving greater international linkages depends in part on attracting R&D centers to Korea and increasing the stock of FDI, which is one of the lowest among OECD countries (see below).
- Universities should have a greater role in R&D. This would increase the emphasis on basic research and encourage the transition from catch-up innovation to a more creative approach.
- Enforcement of IPR needs to be improved further to encourage companies to invest in R&D and to file patents. Empirical studies report a positive relationship in Korea between patent protection and technological innovation (Chung et al., 2004).

Reforming the education system to ensure an adequate supply of human capital

Securing an ample supply of well qualified labor is a key ingredient of innovation. The long-run effect on GDP per capita of one additional year of education ranges from 4% to 7%, according to the OECD's *Growth Study*. Korea's record in expanding student enrolments at all levels of schooling is remarkable. In 2004, the proportion of the population between 25 and 34 years old with an upper secondary school education was the highest in the OECD area and the third highest for post-secondary education. The proportion will continue rising as the advancement rate from secondary to post-secondary education has increased from 33% of the age cohort in 1990 to 81% in 2004, the highest in the OECD area. Expanding educational enrollment has been accompanied by outstanding results on international standardised tests of students. Indeed, Korean fifteen-year-olds have some of the highest scores in mathematics, reading, science and problem solving in the OECD's PISA study, placing them second overall.

Nevertheless, there is widespread dissatisfaction with the education system. The rapid expansion of higher education was accompanied by a decline in quality, as the ratio of students to teaching staff has risen significantly to a level well above the OECD average. International flows of students also suggest quality deficiencies. While Korea accounts for almost 5% of foreign student flows to the OECD area, making it the second largest source after China, its role as a destination is among the lowest in the OECD. Indeed, only 0.1% of all post-secondary level students in Korea are from abroad.

International surveys also give low rankings to the quality of education in Korea; the WEF ranked it at 60th out of 104 countries, while it was ranked 44th out of 60 countries by the IMD. In addition, the IMD ranked the usefulness of Korea's university education at 59th. Low quality, particularly in higher education, may limit the ability of the education system to enhance Korea's competitiveness in a global economy driven by knowledge.

At the same time, the cost of education is high. Korea spends about 7½ percent of GDP for educational institutions at all levels, second highest among OECD countries. While educational spending by the public sector, at 4½ percent of GDP, was below the OECD average, private outlays were the highest in the OECD area at 3%. This figure does not include spending for students' out-of-school activities, especially private tutoring provided at institutes known as *hakwon*, which amounts to as much as 2% of GDP according to some estimates. The heavy financial burden on families is cited as one reason for the marked decline in the fertility rate to 1.08 in 2005 (see below).

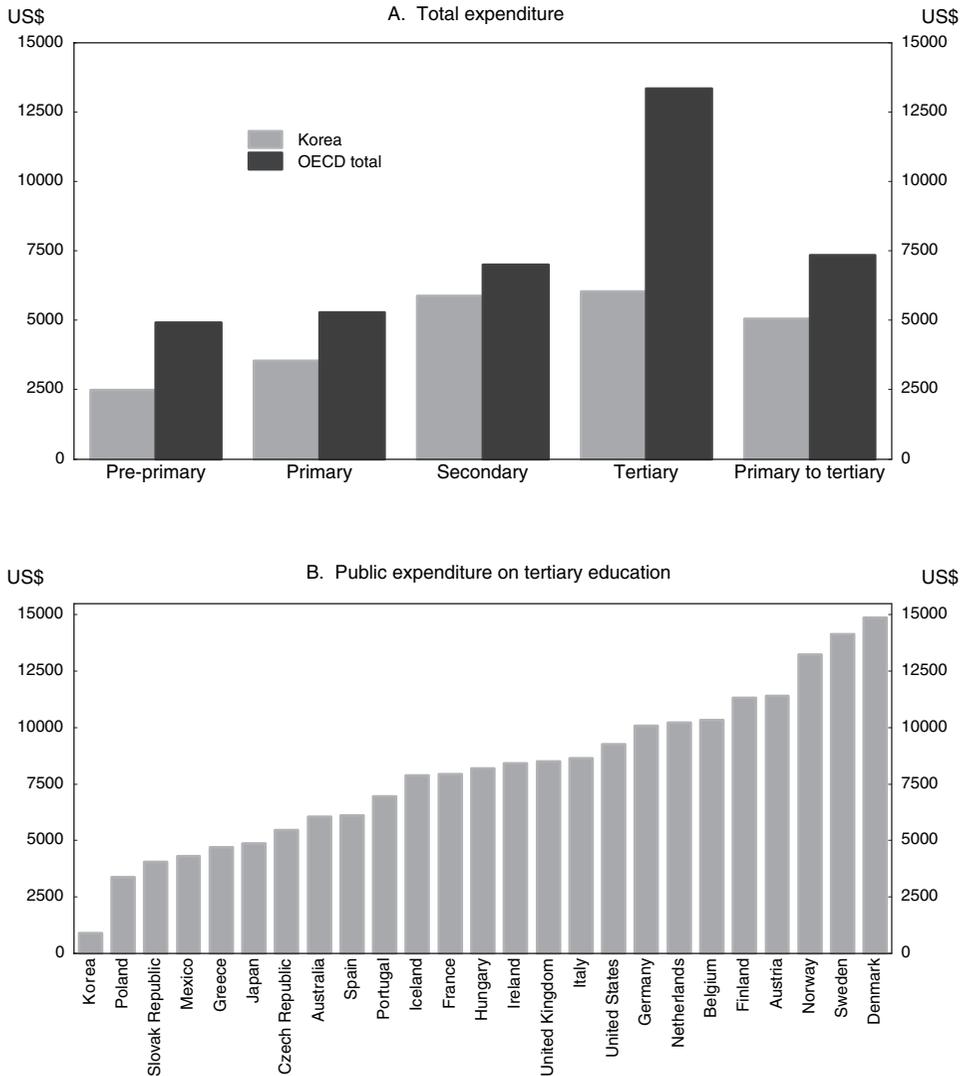
Korea needs to achieve a better balance between quantitative expansion and quality promotion in higher education through a number of reforms. The *first* priority is to expand financial resources for higher education. Public expenditure on post-secondary education amounted to less than \$1,000 per student (at purchasing power parity exchange rates) in 2002, compared to an OECD average of around \$8,000 (Figure 4). User charges are the highest in the OECD at 84% of total post-secondary education costs. The heavy reliance on user charges creates equity concerns about the access of low-income households to higher education, given that scholarships and student loans in Korea are relatively low. However, increasing the resources of higher education requires consideration of a number of complex issues: *i*) the already high level of overall educational spending, including private tutoring; *ii*) the balance between public and private financing; and *iii*) the allocation of funds between different levels of education. Public spending on the post-secondary level was 0.3% of GDP in 2002, much lower than the 3.3% spent on primary and secondary schools. In contrast, outlays in the OECD area are divided more evenly at 1.0% and 3.5%, respectively. The projected 29% decline in the number of children between the ages of 5 and 15 over the next decade should facilitate a shift in expenditures to the post-secondary level.

Second, restructuring and consolidation of universities are required. Given the marked decline in the fertility rate, the population in the 15 to 25 age group is projected to decline by 5% by 2017, providing an opportunity for cost savings that could be used to boost the quality of higher education. Over-capacity is already apparent among provincial universities. It is important to follow through on the government's 2004 plan to restructure higher education through mergers and the exit of non-viable universities.

Third, greater deregulation is needed to help stimulate competition among universities and encourage them to better respond to the preferences of students and the corporate sector. Moreover, it would result in more diversity between universities as they develop their comparative advantages. However, the rigid hierarchy of universities in Seoul and the information asymmetry between education service providers and students discourages competition between universities, which is needed to improve their performance as well as to guide the restructuring process. In particular, it is

Figure 4. Expenditure on Educational Institutions Per Student

US dollars using PPP's, based on full-time equivalents, in 2002



Source: OECD (2005b).

important to provide more information about the performance of universities to promote competition. The recent decision to disclose the success of the graduates of each university in finding jobs is significant and should be expanded to cover more information. An independent national organization with clearly defined criteria and standards should be created to undertake these tasks.

Opening the university education market to accredited foreign providers would be an effective way to stimulate competition and upgrade the competitiveness of Korean universities. At present, there are no foreign schools operating in Korea, as FDI in education is not allowed, except in the three Free Economic Zones and Jeju Island. Even in these areas, though, the repatriation of earnings from schools is banned, effectively discouraging foreign schools from entering Korea.

Fourth, industry–university relationships should be strengthened to reduce mismatches in the labor market. According to a 2004 survey by the Federation of Korean Industries, 78% of companies replied that higher education has serious problems in supplying skilled workers. It takes between 23 and 30 months to train new employees, thus imposing a heavy burden on the corporate sector. The degree of mismatch and concerns about the quality of education is reflected in the high unemployment rate of 10.2% for youth (15 to 24 age group) in 2005. It was three times higher than the unemployment rate for the 25 to 54 age group, compared to an OECD average of 2.3 times. In addition, one–half of workers are employed in a different field than the one they studied in school.

III. Enhancing the Integration of Korea in the World Economy³

The benefits of integration in the world economy are demonstrated by both economic theory and history. Korea is one of the countries that have benefited most from increased globalization during the past decade through freer international flows of capital, goods and services as noted above. Despite increased openness, Korea’s level of integration with the world economy is still low in terms of import penetration, the stock of inward FDI and the share of foreign workers (Figure 5). Furthermore, FDI inflows declined during 2005–07, while foreign ownership of listed companies fell to 32% by the end of 2007. At the same time, a significant segment of the Korean population questions the benefits of foreign investment and the broad–based free trade agreement recently negotiated with the United States. This section discusses how the Korean economy can benefit more fully from globalization by increasing its openness to FDI, trade and human resources from abroad, thereby accelerating productivity gains and output growth.

Promoting inflows of foreign direct investment

The economic benefits of FDI result from positive spill–overs from the presence of foreign firms that: *i*) trigger transfers of technology; *ii*) facilitate the restructuring of firms; *iii*) promote international trade; *iv*) strengthen competition; and *v*) support human capital formation. The \$46.5 billion of FDI inflows into Korea between 1998 and 2005 were more than double the amount received during the previous 35 years, and much larger than the \$10 billion in inflows between 1991 and 1997. As a result, the stock of inward FDI rose from 2% of GDP in 1990 to 8% in 2005. Increased FDI inflows played a pivotal role in Korea’s strong recovery following the 1997 crisis by providing significant capital, technology and management skills. Foreign affiliates in Korea accounted for almost a quarter of the increase in manufacturing turnover between 1997 and 2003 and their labor productivity in the manufacturing sector is estimated to be 25% higher than in domestic firms (Ministry of Commerce, Industry and Energy, 2005).

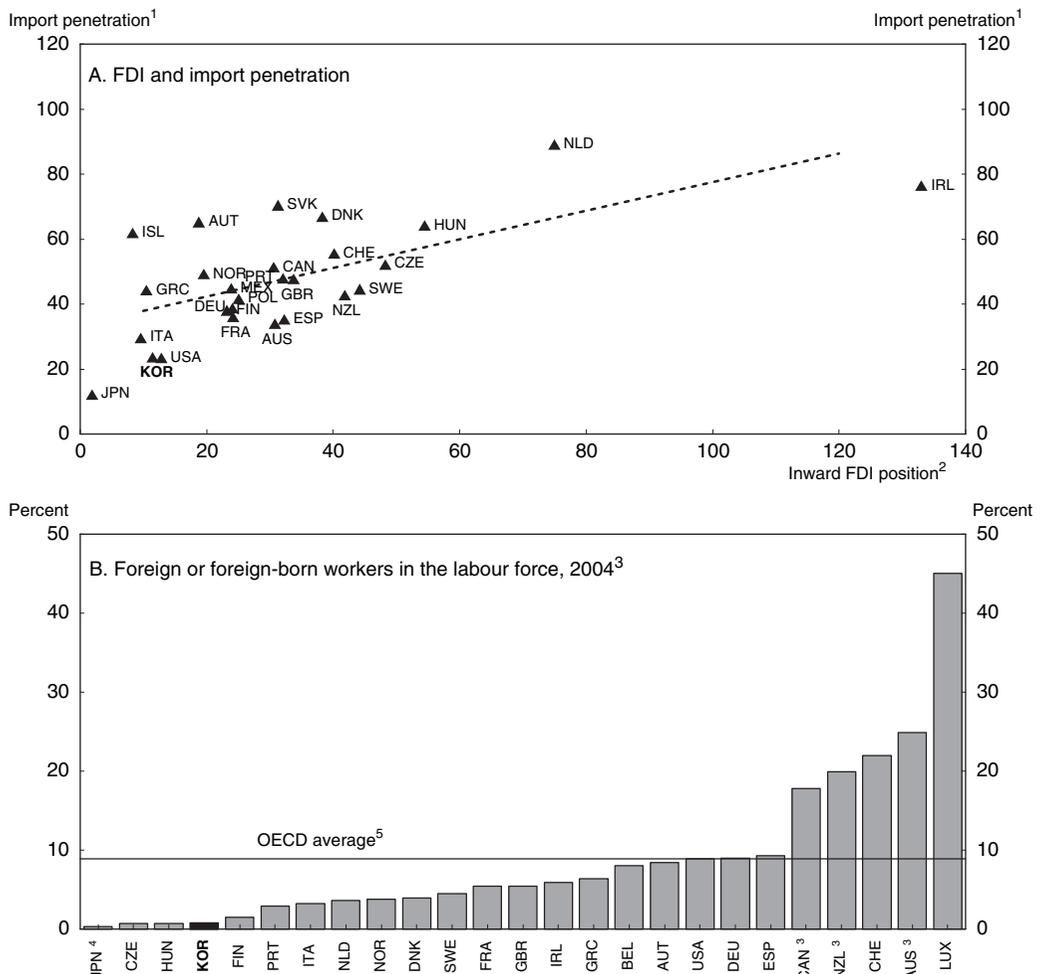
However, the benefits from FDI have been limited by the small amount of inflows in Korea. Despite the increase since 1997, the stock of inward FDI relative to GDP was the sixth lowest in the

³ This topic was examined in the 2007 *OECD Economic Survey of Korea*.

OECD area in 2002 (Figure 5), and inflows declined during the period 2005–07 as noted above. The declining trend suggests the need to address factors that act as barriers to FDI inflows and improve policies aimed at attracting foreign investors.

First, higher priority should be given to facilitating cross-border M&As, which have emerged as the main driver of global FDI flows⁴. Although Korea experienced a surge in cross-border M&As after

Figure 5. Indicators of Korea's Integration in the World Economy



Notes: 1. Imports of manufactures as percent of domestic demand in 2003.

2. Stock of inward FDI as percent of GDP in 2002.

3. Data for Australia, Canada and New Zealand (data refer to 2003 only) are for foreign-born labor force. The data source is the Labor Force Survey or census in all countries except Japan and Korea, where the source is work permits.

4. Foreign residents with permission for employment. Excludes permanent and long-term residents, whose labor activity is not restricted.

5. Unweighted average of the 25 countries shown in this figure.

Source: 2007 *OECD Economic Survey of Korea*.

⁴ The value of cross-border M&As rose by 88% in 2005, driving the increase in global FDI inflows. Cross-border M&As accounted for 67% of global FDI inflows during 2004 and 2005.

1997 as a result of the removal of restrictions and the restructuring of the corporate and financial sectors, the country accounted for only 1.5% of the world total in 2005. This reflects the fact that the total M&A market in Korea is relatively small, amounting to only 2.9% of market capitalization in 2005, well below the United States (6.9%), France (7.4%), Germany (9.4%) and the United Kingdom (9.9%). The small M&A market partly reflects funding difficulties in Korea's still developing capital market and the negative attitude of management, labor unions and non-governmental organizations concerning M&As. To facilitate cross-border M&As, the authorities should explain the benefits of an active market for corporate control, while rejecting corporate sector demands for legal changes to prevent unsolicited takeovers. A more active M&A market may help reduce the "Korea Discount"—the low price-earnings ratio for Korean firms compared to other countries—by prompting a revaluation of target firms. In addition, facilitating M&As may improve corporate governance. The threat of a potential M&A adds pressure to develop well-structured corporate governance.

Second, restrictions on FDI inflows should be removed, aiming at equal treatment of foreign and domestic investors. In the wake of the financial crisis, Korea implemented the Foreign Investment Promotion Act (FIPA), which: *i*) opened additional sectors to foreign investment (the number of business lines completely closed to FDI was reduced from 30 in 1997 to two at present—television and radio broadcasting—out of 1,058 business lines); *ii*) eliminated restrictions on cross-border M&As; *iii*) removed regulations on foreign ownership of real estate; and *iv*) streamlined the registration of FDI from prior approval to notification. Overall, formal FDI restrictions in Korea are judged to be slightly weaker than the OECD average, reflecting lower restrictions in manufacturing⁵. However, investment in 26 sectors, primarily services, such as transport, telecommunications and electricity, are restricted by limits on foreign ownership.

Third, product market regulations should be liberalized. Such regulations, which apply to both domestic and foreign firms, have been found to impose significant barriers to FDI and they have become relatively more significant obstacles as explicit restrictions on FDI have been gradually eliminated. The OECD indicator of "barriers to entrepreneurship," which includes regulatory opacity, administrative burdens on start-ups and barriers to competition, ranks Korea as relatively restrictive. As for regulations in the service sector, Korea ranked as the fifth most restrictive country.

Fourth, regulations restricting new investment in the capital region, which are intended to promote balanced national growth, are also a major obstacle to FDI. The preference of foreign investors for the capital region, given its high quality infrastructure, the availability of skilled human resources and access to a large market, conflicts with the government's objective of developing other parts of the country. Each foreign investment proposal still requires approval from the relevant ministries, which considers its overall contribution to the economy. The case-by-case approach undermines the transparency of the FDI framework, thereby driving away potential investors. Transparency should be enhanced by introducing clear criteria, while lifting the capital-region regulations. The problems of

⁵ Korea's overall rating is 0.12, compared to an OECD average of 0.15, with zero indicating no barriers to foreign investors (Golub and Koyama, 2006).

pollution and congestion in the capital region should be dealt with by economic instruments.

Fifth, it is important to improve the business environment. A 2006 poll of foreign firms identified labor–management relations as the major problem in the business environment in Korea (Table 4). The relationship between employers and employees is often marked by struggle and confrontation rather than dialogue and compromise. Of the 280 foreign firms surveyed, 49% were dissatisfied with labor–management relations—the largest share for any issue—while only 19% were satisfied. Other labor market problems cited by foreign affiliates include the demand of workers to participate in management, a complicated wage structure, the retirement allowance system, the requirement to pay labor union leaders and limits on the duration of contracts for dispatched workers. Another concern is employment protection (see below), which makes corporate restructuring difficult and raises costs by limiting managerial discretion. The lack of flexibility in restructuring may undermine the rationale for M&As, thus tending to reduce FDI inflows. Another criticism of the business climate in Korea concerns administrative transparency. Foreign firms complain about a lack of transparency and predictability in tax and financial supervisory policies, especially at the enforcement level, and believe that rules are interpreted more strictly for foreign companies (Jones and Yoon, 2008). This is a result of enforcement based on internal regulations and wide discretion at the working–level staff.

Sixth, the special incentives offered to attract foreign firms should be improved. Korea has created special zones since 1970 to attract FDI inflows and these efforts have been strengthened since the financial crisis. At present, there are four types of zones. The availability of four different types of zones and the fact that some of the zones overlap geographically complicate the FDI regime and may confuse potential foreign investors. The benefits of these zones should be regularly evaluated to insure that they justify the costs while special regulatory reforms in the zones should be extended to the rest of the country to create a level playing field for domestic and foreign firms. Moreover, the emphasis on special zones should not distract policymakers from the top priority of improving the business climate, which would promote both domestic and foreign investment in Korea.

Table 4. Korea's Business Environment: the View of Foreign Firms

Response to the question: "What is the most important task to improve the business environment?"¹

	Percent
Address problems in labor–management relations	34.6
Create an international mindset	31.1
Open markets	22.5
Expand the use of foreign languages	13.9
Alleviate the excessive tax burden	13.2
Ensure transparent business practices	12.9
Strengthen administrative support for services	12.1
Foster a freer and more international financial environment	10.7
Ensure political stability	8.9
Refurbish the logistical environment	6.1
Other	2.1
No response	0.4

Note: A survey of 280 foreign firms operating in Korea.

Source: Invest Korea (2006).

Increasing openness to international trade

Import penetration in Korea, defined as imports of manufactures divided by domestic demand, is one of the lowest in the OECD area (Figure 6). Moreover, it rose less than 1 percentage point between 1995 and 2003, compared to a 9 percentage–point increase on average in the OECD area. One major factor influencing imports is trade protection. Korea’s simple average tariff rate is more than double that in other major OECD regions, reflecting very high rates on agricultural products (Table 5). In contrast, the average rate on other products is more in line with other OECD countries. In addition, differences between countries in standards can also limit imports. Of the 21,251 Korean standards, 60% are subject to international harmonization. The proportion varies significantly, from 93% for information technology to 23% for household goods. Foreign firms argue that standards unique to Korea pose a barrier to imports, notably in industries such as food and cars. Moreover, labelling, testing and certification procedures are considered to be unfair in areas such as pharmaceuticals⁶. Further reducing and harmonising voluntary standards and mandatory technical regulations with international norms would increase openness to imports.

The number of bilateral and regional free trade agreements (FTAs) in force reported to the World Trade Organization has soared from 27 in 1990 to around 200. However, Korea did not belong to any such agreements prior to 2004, as it focused on the multilateral trading system. The increasing emphasis in Korea on FTAs marks a shift toward a two–pronged approach to trade policy (Table 6). Korea’s first FTA was with Chile, followed by Singapore, the European Free Trade Association and ASEAN (covering goods only). Negotiations with the United States were successfully concluded in April 2007. At present, Korea is pursuing a multi–track approach, negotiating FTAs with the European Union, Canada, India and Mexico. In addition, Korea has completed joint studies with MERCOSUR at the government level and China at a private level. Recently, President Lee and Prime Minister Fukuda have discussed re–launching negotiations for a Korea–Japan FTA. Korea’s long–term objective is to conclude FTAs with large economic blocs.

Korea’s objective in pursuing FTAs is to revitalize its economy by liberalizing its trade and investment regime, while securing better access to foreign markets. FTAs are expected to boost output growth through dynamic gains from capital formation and increased productivity, in addition to static

Table 5. International Comparison of Tariffs

Simple average of applied MFN tariff rates in 2004¹

	Total	Agricultural products	Non–agricultural products
Korea	12.8	52.2	6.7
United States	4.9	9.7	4.0
European Union	6.5	16.5	4.1
Japan	6.3	17.7	3.7

Note: WTO definitions for agricultural and non–agricultural products.

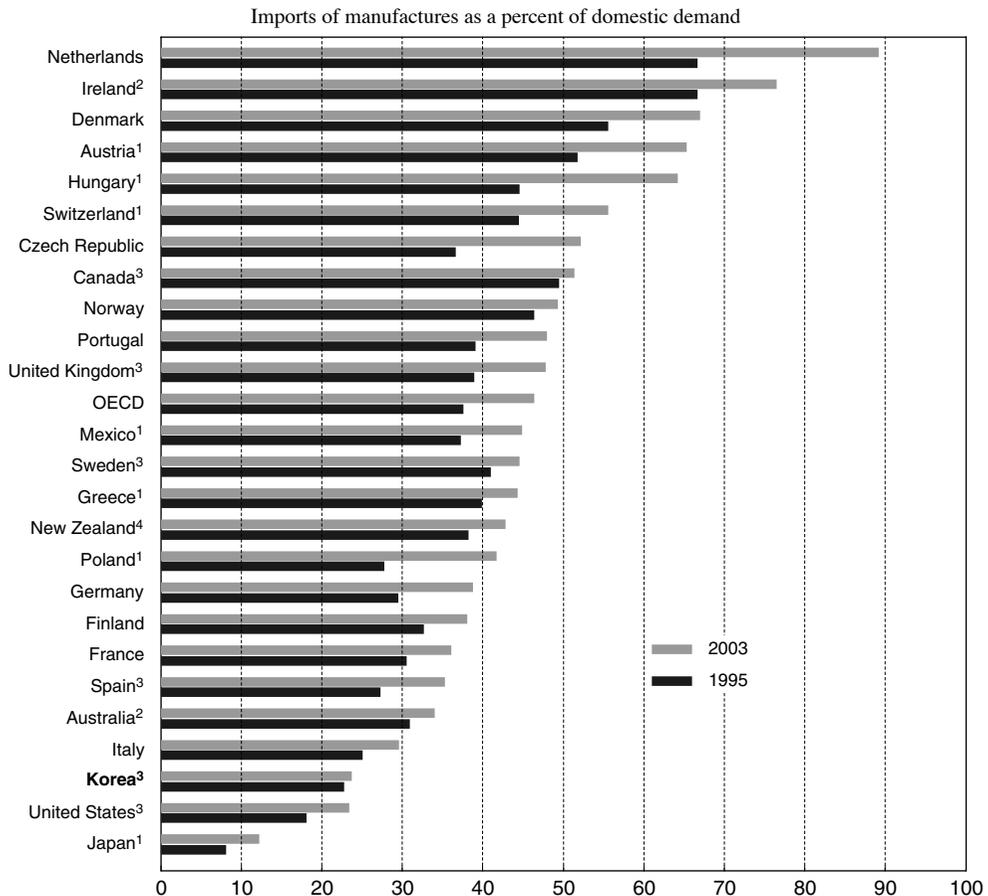
Source: World Trade Organization.

⁶ These issues are discussed in OECD (2007).

gains in efficiency by prompting the restructuring of less competitive sectors. The Korea–US FTA is projected to increase GDP by as much as 2% in the long run (KIEP, 2006). Furthermore, FTAs should improve the FDI climate by expanding the scope of the market and reducing operating costs, thus providing better opportunities to foreign investors. Approval of the agreement with the United States would add considerable momentum to regulatory reform in the service sector.

Despite the strong commitment to achieve FTAs with major trading partners, the priority attached to protecting sensitive areas—primarily in the agriculture sector—substantially limits the positive economic impact on Korea. One reason is that it weakens the negotiating leverage to open markets for manufactures, where Korea has a competitive advantage. Under the Korea–Chile FTA, Korea permanently excluded the possibility of lower tariffs on 21 important agricultural items such as rice, apples, and pears. Moreover, tariff reductions on 373 agricultural tariff lines, including vegetables,

Figure 6. International Comparison of Import Penetration



Notes: 1. Data for Austria, Greece, Hungary, Japan, Mexico, Poland and Switzerland refer to 2002.
 2. Data for Australia and Ireland refer to 1999.
 3. Data for Canada, Korea, Spain, Sweden, United Kingdom and United States refer to 2001.
 4. Data for New Zealand refer to 1998.

Source: OECD (2005a).

Table 6. Korea's FTA Strategy

Country	Status	Share of exports in 2005 in per cent		Share of imports in 2005 in per cent	
		Total	Agriculture	Total	Agriculture
Chile	Signed in 2003 and took effect in 2004	0.4	0.0	0.9	0.6
Singapore	Signed in 2005 and took effect in 2006	2.6	1.1	2.0	0.3
EFTA	Signed in 2005 and took effect in 2006	0.4	0.1	0.7	0.3
ASEAN	Signed only on trade in goods in 2006	9.6	6.5	10.0	10.6
United States	Negotiations were completed in 2007	14.5	12.5	11.7	21.0
Canada	Negotiations are underway	1.2	1.3	1.0	3.6
India	Negotiations are underway	1.6	0.2	0.8	1.8
Mexico	Negotiations are underway	1.3	0.1	0.2	0.2
Japan	Negotiations stopped since 2005	8.4	32.7	18.5	2.0
EU	Negotiations are underway	15.4	2.4	10.4	11.1
MERCOSUR	Joint study at government level was completed in 2006	1.0	0.2	1.1	11.0
China	Joint study at private level was completed in 2006	21.8	9.7	14.0	23.8

Source: 2007 *OECD Economic Survey of Korea*.

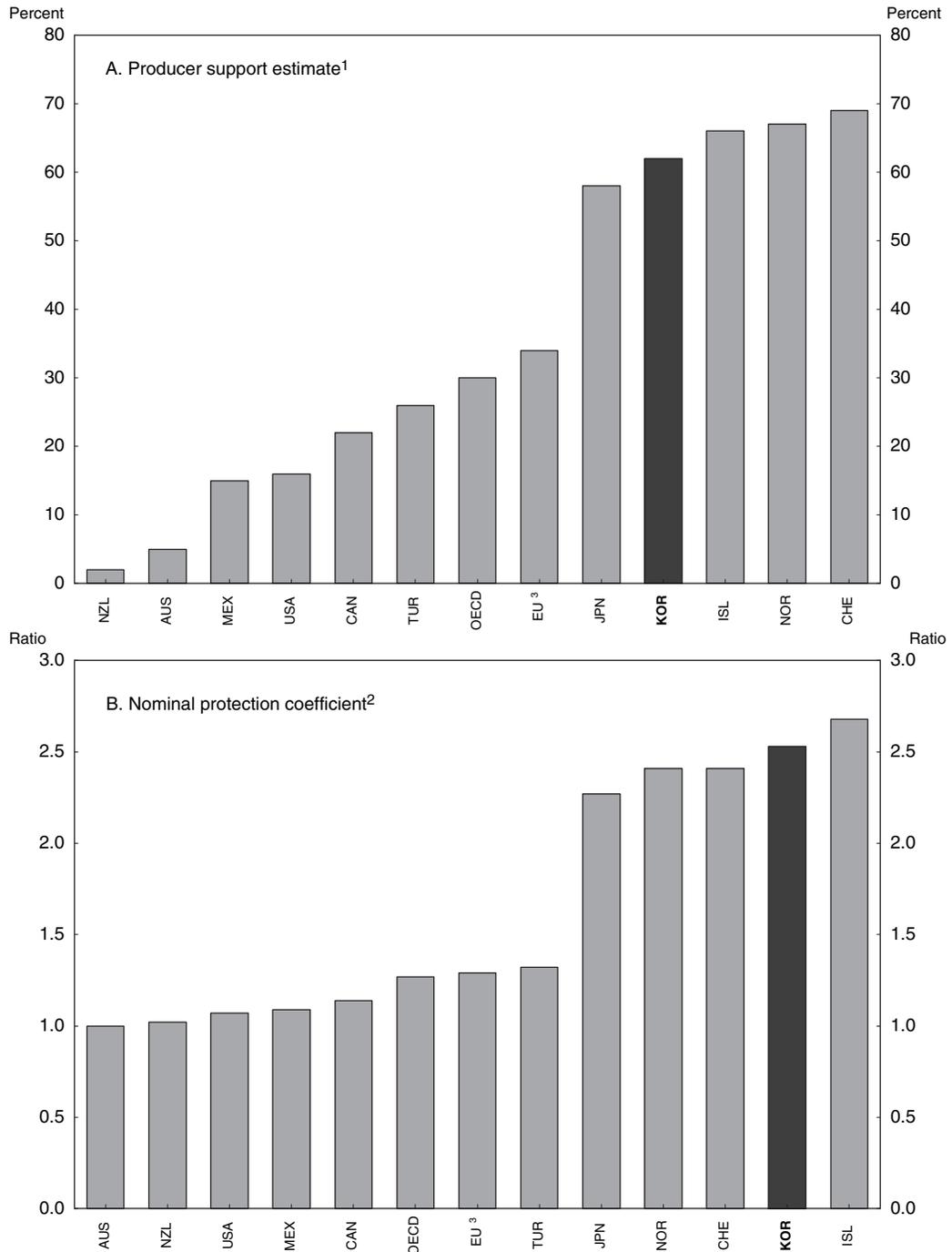
grains, livestock, dairy products and fruit, were temporarily excluded. As a result, the average agricultural tariff on imports from Chile after the FTA remains high at 50% (WTO Trade Policy Review, 2004), roughly in line with Korea's overall average on agricultural products (Table 5). Similarly, in the FTA with ASEAN, at least 90% of tariff lines are scheduled to be liberalized by 2010, with agricultural products (including forest and fishery products) accounting for most of the remaining 10%.

The reluctance to open up the agricultural market reflects the high level of agricultural support, especially for rice. Korea's Producer Support Estimate (PSE) for agriculture was 62% in 2003–05, double the OECD average and among the highest in the OECD area (Figure 7). Indeed, agricultural support exceeds the sector's relatively small share of GDP. As a result of such heavy protection, Korean consumers paid 2.5 times the world price on average for agricultural commodities between 2003 and 2005, as indicated by the Nominal Protection Coefficient shown in Panel B. More than 90% of the support for agriculture is provided through market price supports, the most distortive form of support because they alter production and trade decisions and limit the influence of world markets on domestic production decisions. This results in surplus production of key commodities, such as rice and dairy products.

Policies to encourage the inflow of human capital

Inflows of foreign workers in Korea have been small, despite persistent labor shortages in some sectors. In 2004, the government implemented the "Employment Permit System" (EPS) for unskilled workers, which allows work permits for foreign workers for up to three years and makes them eligible for the same social insurance benefits and labor rights as domestic workers. However, foreign workers are not allowed to bring their families to Korea. The Foreign Workforce Policy Committee in the

Figure 7. An International Comparison of Agricultural Support during 2003–05



Notes: 1. The producer support estimate is an indicator of the value of monetary transfers to agriculture resulting from agricultural policies. It is presented as a share of the total value of production at domestic producer prices.

2. The nominal protection coefficient is a measure of market protection defined as the ratio between the average prices paid by consumers and the international price.

3. EU15 for 2003 and EU25 from 2004.

Source: OECD (2006a).

prime minister's office determines the inflows of low-skilled foreign workers, including the ceiling on the total number, industry of employment and countries of origin. Firms that wish to hire foreign workers must show that they have made efforts to hire domestic workers. In addition, there is a special program since 2002 for overseas Koreans who wish to work in Korea, including in jobs in the service and construction sectors, which are substantially closed to foreign workers. Nevertheless, at 0.8% of the labor force in 2004, the proportion of foreign workers in Korea's labor force was the fourth lowest in the OECD (Figure 5).

The impact of foreign workers on domestic economies is generally positive in the experience of OECD countries. Increasing the number of foreign workers in Korea would likely have a significantly positive impact, particularly in the context of rapid population aging and labor shortages. Much of the benefit of having foreign workers has gone to SMEs in the manufacturing sector, which hires foreign workers willing to work at low wages that are unattractive to most Koreans. According to a survey of firms with foreign workers, more than half replied that increasing foreign employees is a short and long-term solution to labor shortages, suggesting a large demand for foreign workers (Yoo et al., 2004).

The number of employment permits should be increased and the length of permitted stays extended to meet the growing demand for foreign workers, as well as to reduce the large number of unregistered workers in Korea. Indeed, unregistered workers accounted for more than half of foreign workers in Korea in 2005. Other reforms are needed as well. *First*, workers under the EPS should be able to work in the service sector, as is the case for overseas Koreans. For example, foreign workers could help fill shortages in caring for the elderly, which are likely to increase in the context of population aging. *Second*, the immigration control system, which involves more than a dozen ministries, needs to be streamlined. *Third*, it is also important to remove administrative regulations and improve the business and living environment in order to attract more high-skilled workers. Although the immigration system gives preferential treatment to high-skilled foreign workers, skilled labor accounts for only 6% (about 25,000 workers) of the total foreign labor force in Korea in contrast to 19% in Japan.

Greater use of foreign labor would help ease the demographic transition in Korea. However, given the magnitude of the projected decline in the working-age population (see below), inflows of foreign workers are not capable of fully offsetting demographic changes. Increased immigration should therefore be accompanied by policies to boost the labor force participation rate and to raise fertility.

IV. Coping with the Impact of Population Aging

Korea's population is projected to peak at 50 million in 2020 and then decline about 15% by mid-century (Table 7). The median age, which was 20 years in 1960, reached 32 in 2000 and is likely to be nearly 50 in 2030, suggesting fundamental changes in the country's socio-economic structure. Moreover, the share of Korea's total population over the age of 65 is expected to double from 7% in 2000 to 14% by 2018 (Table 8). In contrast, this transition is projected to take 71 years in the United States and took 115 years in France. The further increase in the share of the elderly from 14% to 20%

in Korea is exceptionally rapid at only eight years, compared with up to 40 years in major European countries. The rising number of older persons will boost the elderly dependency ratio from the second lowest in the OECD area in 2000 to the fourth highest by mid-century (Figure 8), the largest increase among OECD countries. This “compressed population aging” presents a number of challenges for Korea.

Increasing life expectancy and falling fertility is driving population aging. Life expectancy lengthened by 21 years, from 55 years in 1960 to 76 years in 2000 (Table 7), the largest rise in the OECD area. A more important factor is the fall in the fertility rate—the average number of children a woman can expect to bear during her lifetime. The decline from six children in 1960 to below the replacement level in 1983 and further to 1.5 in 2000 (Figure 9) reflects trends such as rising female labor force participation and changing social values. The decline continued with a 25% drop in the

Table 7. Population Indicators and Projections for Korea¹

	Population (in millions)	Growth rate (%) ²	Fertility rate ³	Life expectancy	Median age	Share of elderly ⁴
1960	25.0	2.3	6.0	55.3	19.9	2.9
1970	31.5	1.8	4.5	63.2	19.0	3.1
1980	37.4	1.5	2.7	65.8	22.2	3.8
1990	43.4	0.6	1.6	71.3	27.0	5.1
2000	46.1	0.6	1.5	75.9	31.8	7.3
2010	49.2	0.1	1.2	79.1	37.9	10.9
2020	50.0	-0.1	1.2	81.0	43.7	15.7
2030	49.3	-0.5	1.3	81.9	49.0	24.1
2040	46.7	-1.0	1.3	82.6	53.1	32.0
2050	42.3		1.3	83.3	56.2	37.3

Notes: 1. Assumptions by the National Statistical Office for the period 2005 to 2050.

2. The annual average growth rate for the decade. The figure in 1960, for example, shows the rate for the decade 1960 to 1970.

3. The average number of children a women can expect to bear during her lifetime.

4. The number of persons over the age of 65 as a percentage of the total population.

Source: Korea National Statistical Office.

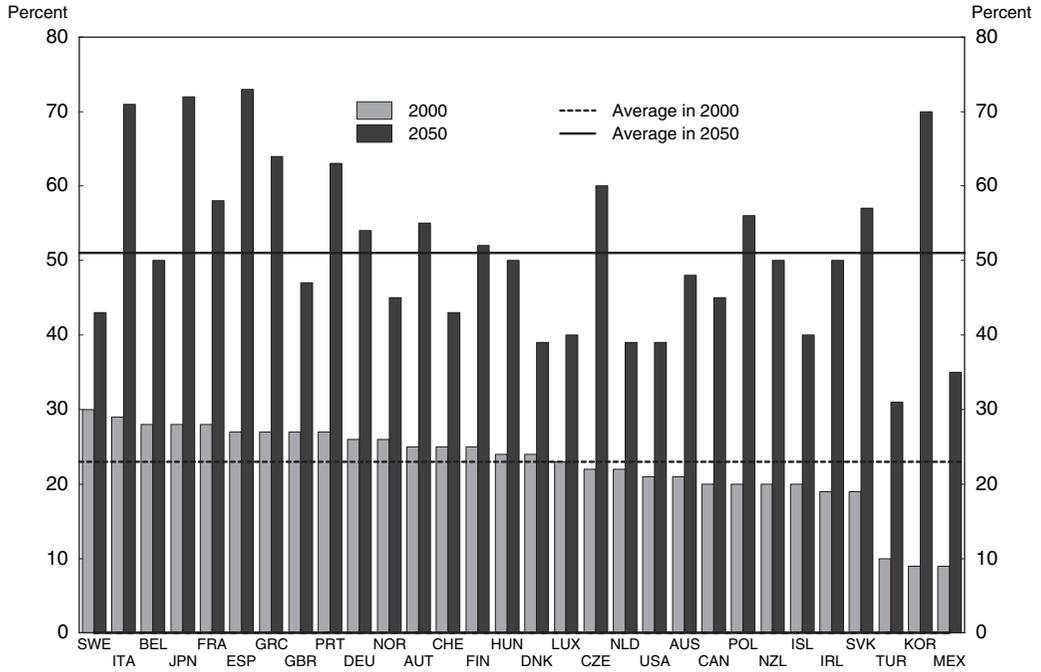
Table 8. Speed of Aging in Selected OECD Countries

Country	Year when share of elderly (over age 65) make up:			Years elapsed	
	7% of population	14% of population	20% of population	7 to 14%	14 to 20%
Korea	2000	2018	2026	18	8
Japan	1970	1994	2006	24	12
Germany	1932	1972	2012	40	40
United Kingdom	1929	1976	2021	47	45
Italy	1927	1988	2007	61	19
United States	1942	2013	2028	71	15
Sweden	1887	1972	2012	85	40
France	1864	1979	2020	115	41

Source: United Nations.

Figure 8. Population Aging in OECD Countries

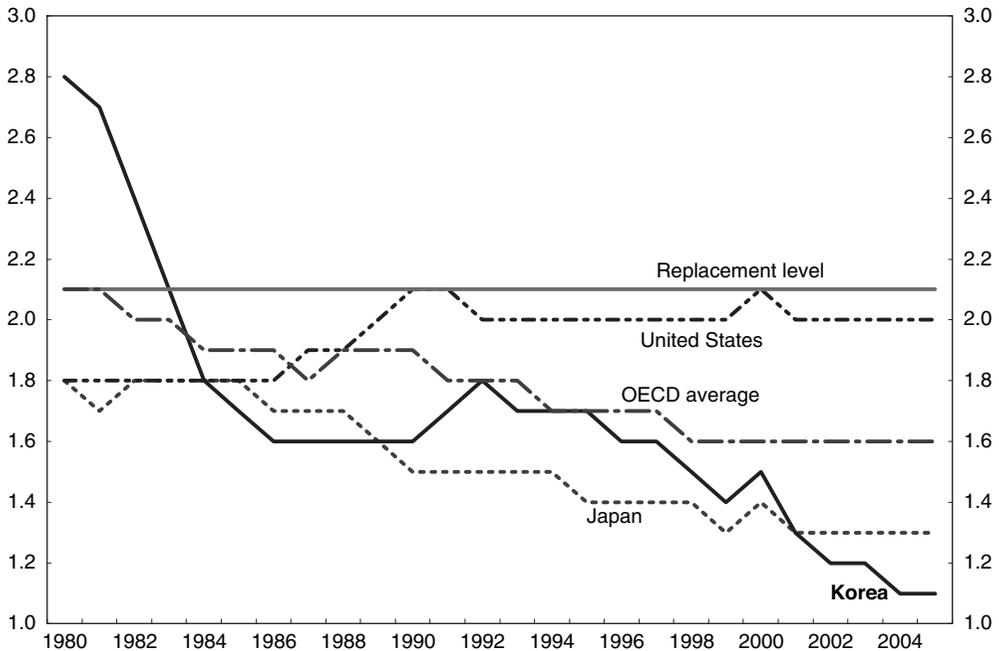
Population aged 65 and over, relative to the population aged 20–64



Source: OECD (2006c).

Figure 9. Trends in Total Fertility Rates in OECD Countries

Children per woman



Source: D'Addio and Mira d'Ercole (2005).

fertility rate between 2000 and 2005, to 1.08, the lowest level in the OECD area. The extent of the fall is unprecedented among OECD countries.

Limiting the decline in the labor force

Given the population projections presented above, the labor force is projected to decline by more than a quarter between 2020 and 2050, assuming unchanged participation rates (Figure 10). The relatively low participation rate for women suggests some scope for limiting the decline in the labor force. The rate for prime-aged women (between 25 and 54) in Korea is the third lowest in the OECD area. If the participation rate for women were to increase to the same level as for men by mid-century, the labor force in 2050 would be 20% higher than in the case of unchanged participation rates. The size of the labor force also depends on maintaining the relatively high labor participation rate for older persons. If the rate were to decline to the OECD average, the labor force would fall by 40% by 2050 from its 2020 peak, rather than the 25% assuming unchanged participation rates.

There are a number of policies that would encourage labor force participation and limit the decline in the labor force:

- Encourage private-sector supply of childcare, in part by removing price caps on private-sector suppliers.
- Address the factors that limit the attractiveness of the labor market to women by reducing the extent of non-regular employment and the importance of seniority in determining wages.
- Promote the participation of older workers by raising or eliminating mandatory retirement ages.
- Replace employment subsidies for older persons, which tend to have high deadweight costs, with more emphasis on lifelong education, which would help develop skills needed in the job market.

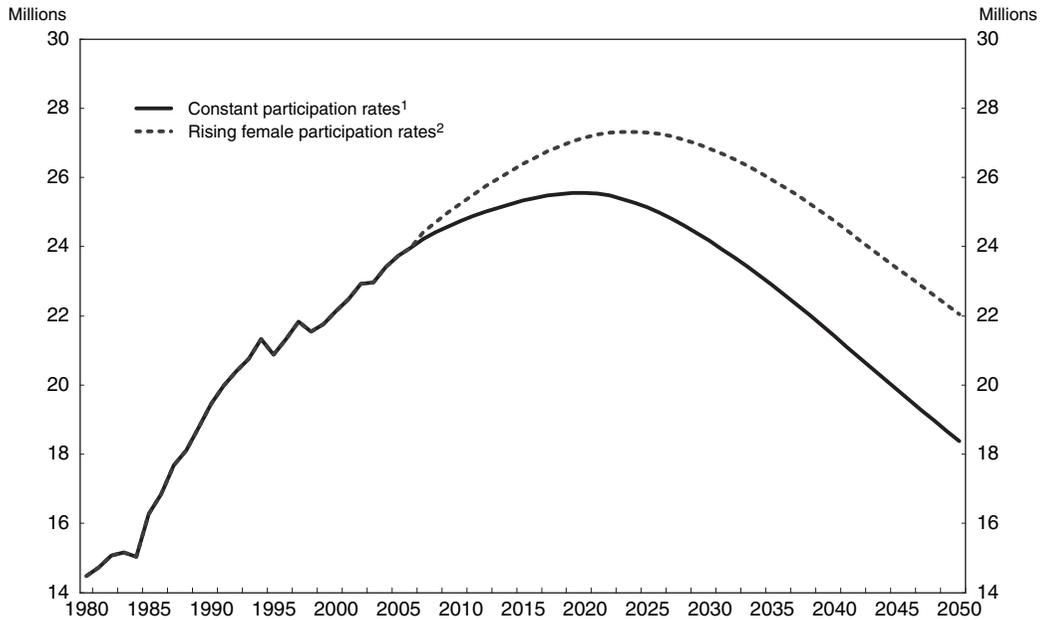
However, the government should be cautious in introducing tax and social benefits for families to boost the fertility rate as this approach may also discourage the labor force participation of women.

In addition, it is important to use the human capital of older workers more effectively. At present, employees tend to leave firms around the age of 50, a relatively young age in a rapidly aging economy. Indeed, the average employment tenure peaks at 11 years in the 45 to 49 age group—well below most other OECD countries where the peak is in the 55 to 64 age group—and then falls sharply. The early departure of employees reflects the importance of seniority—rather than individual performance—in determining wage levels. Most firms set a mandatory retirement age, generally well below the age of 60 recommended by law, to avoid being burdened by a large number of expensive older workers. Given the difficulty of dismissing regular employees, a mandatory retirement age also helps firms to adjust their workforces (Cho and Lee, 2005). About three-quarters of departing employees become self-employed, primarily in sectors characterised by low productivity and income. Consequently, 40% of workers over the age of 55 are self-employed, compared to only 27% of those under that age. Of those who continue as employees past the age of 50, the majority work as non-regular workers in small firms.

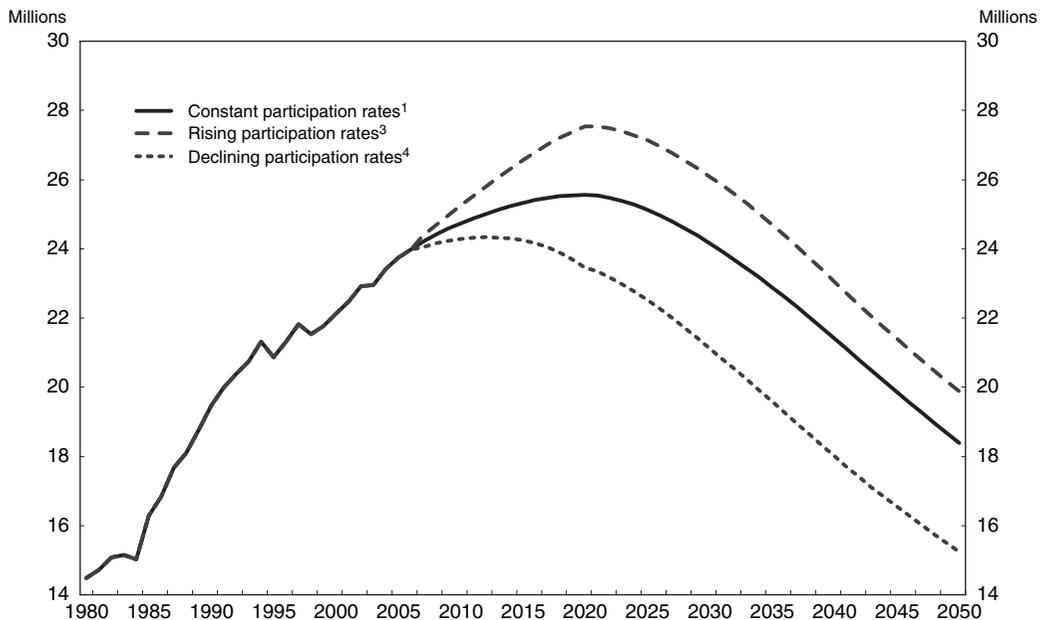
In the long run, an increase in the fertility rate would ease some of the burden on the working-age population. Korea's official population projections assume that the fertility rate will rebound to 1.3 by

Figure 10. Long-term Projections of the Labor Force

A. Labor force with different scenarios for female participation



B. Labor force with different scenarios for older workers



- Notes: 1. The participation rates for men and women remain at their current levels for each age group.
 2. Female participation rates reach current male rates in each age group by 2050.
 3. The participation rates converge by 2030 to the maximum value in the OECD for each gender and age group over 50, while the rates for younger workers remain at their current levels.
 4. The participation rates converge by 2030 to the average value in the OECD for each gender and age group over 50, while the rates for younger workers remain at their current levels.

Source: OECD calculations based on population projections by the Korea National Statistical Office.

2030 and then remain at that level. However, the government has set a target of increasing the fertility rate to the OECD average of around 1.6 by 2020. To achieve its goal of raising the birthrate, the government announced a five-year plan for the period 2006–10 (Jones, 2008). Accomplishing this goal requires an understanding of the causes of the decline and the factors that influence fertility.

According to a 2005 government survey, 59% of women would like to have two children, while 34% would like three or more, with an average of 2.3. Women thus have one child less on average than they would like to have, suggesting that there are constraints that discourage childbirth. Raising the fertility rate thus requires policies to relax these constraints. The cost of raising children appears to be an important factor in Korea. In a 2005 government survey of married women between the ages of 20 and 44 with at least one child, more than half cited education as the largest item in the household budget, absorbing 18% of household income on average. One-third of the women surveyed did not plan to have more children because of the high cost of education⁷. A second factor limiting the birth rate is the difficulty of combining childrearing and work. Research by the OECD has found that the fertility rate is higher in countries where parental leave is longer and childcare enrollment rates are higher (d'Addio and Mira d'Ercole, 2005).

Limiting the impact on public finances

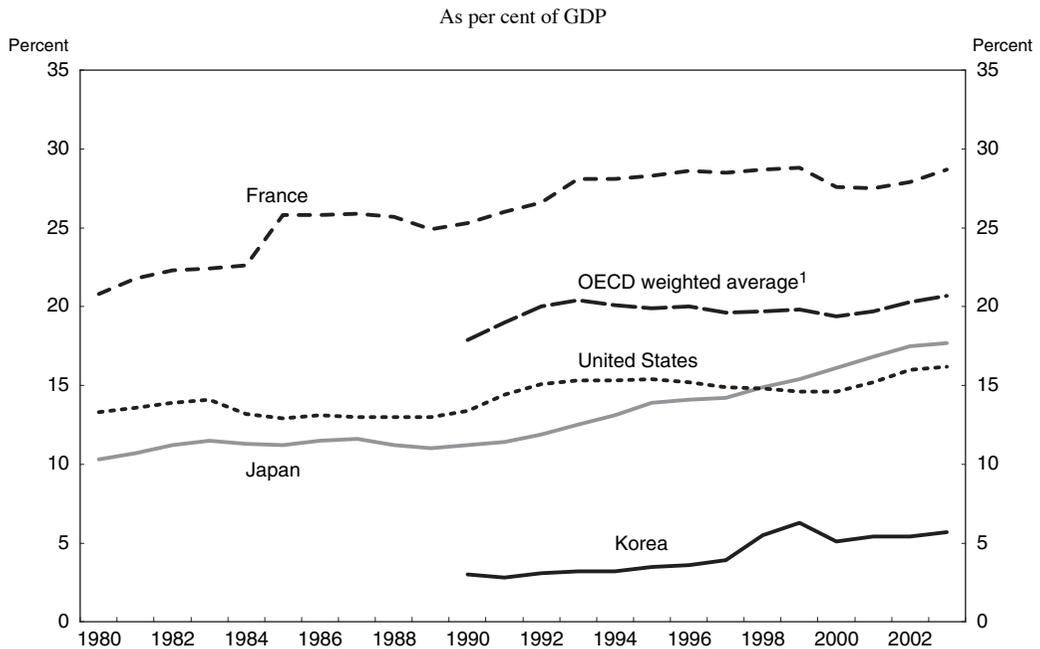
At 6% of GDP, public social spending in Korea is the lowest in the OECD area and well below the average of 21% (Figure 11), reflecting the relatively recent start to developing a social safety net and a young population compared to other OECD countries. However, the projected aging of the population, from the second youngest in the OECD area at present to the fourth oldest by 2050, will put upward pressure on social spending. Indeed, the *Vision 2030* plan, prepared by the Roh Moo Hyun government, projected that it will reach the current OECD average of 21% by 2030. If increased social spending were largely financed by a higher tax burden, this would likely have a negative impact on economic growth. An OECD study estimates that a one percentage-point rise in the tax wedge on labor income reduces employment by 0.25% (Bassanini and Duval, 2006).

Public pensions

In particular, population aging will increase the cost of public outlays under the National Pension Scheme (NPS). It was created in 1988 as a partially-funded system with a strong redistributive element, as benefits are based equally on the average wage and individual earnings. Although the NPS is less than 20 years old, it has already been revised several times. The benefit accrual rate was initially set at 1.75% a year, implying a replacement rate of 70% for an average income worker with 40 years of contributions. Even though the initial contribution rate of 3% was doubled to 6% in 1993, benefits remained too high relative to contributions. In 1998, the average replacement rate was cut to 60%,

⁷ Education costs amounted to 12% of spending in households with one child, 22% in those with two children and 26% in those with three or more. The proportion of women who do not want more children because of education costs excludes those who responded that they have enough children or were too old, thus limiting the sample to women who want to have additional children. See KIHASA, Ministry of Health and Welfare and the Presidential Committee on Aging Society and Population Policy (2005).

Figure 11. An International Comparison of Gross Public Social Spending



Note: The OECD average does not include Hungary and the Slovak Republic due to insufficient data. The national data is converted to US dollars using 2003 PPP exchange rates.

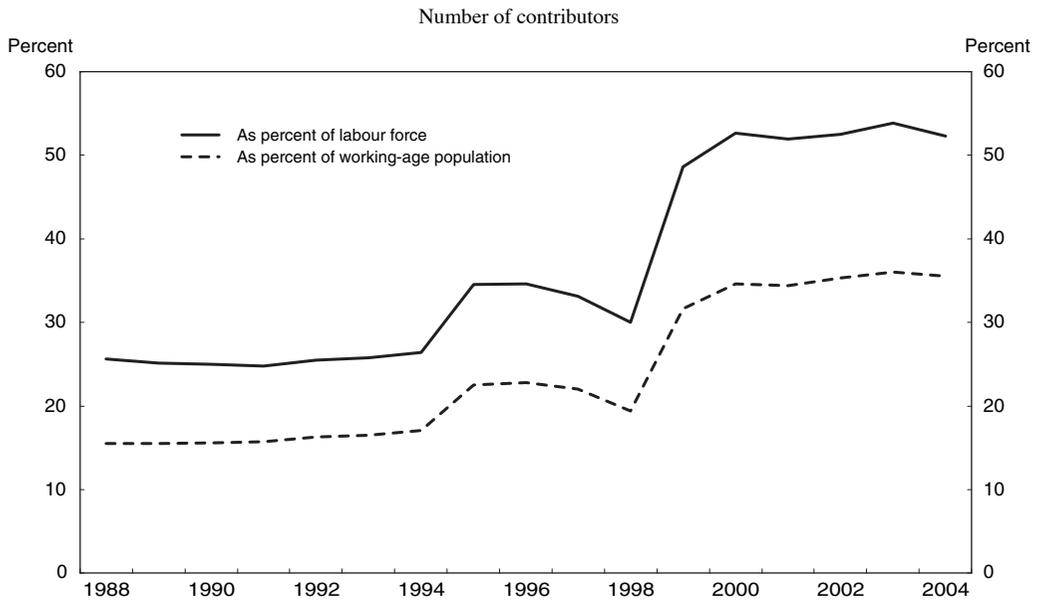
Source: OECD, *Social Expenditure database*, 1980, 2003.

while the contribution rate was raised to 9%. Although these parametric changes were inadequate to ensure the long-run financial sustainability of the NPS, further reforms were blocked in the National Assembly between 2003 and 2007. Finally, a compromise was approved to lower the replacement rate to 50%, while boosting the contribution rate to 12.9% by 2018, thereby delaying the depletion of the National Pension Fund from 2047 to 2065. However, ensuring the sustainability of the system requires a reduction of the replacement rate to 40%.

The coverage of the NPS, initially limited to regular employees in firms with at least ten workers, has been gradually expanded to include all workplaces and the self-employed. Consequently, the number of contributors doubled from around 16% of the working-age population in 1988 to 33% in 2000 before leveling off around that level (Figure 12). The proportion is significantly higher for men, at half of the male working-age population, compared to only a quarter for women. Adding the occupational pension schemes for the civil service, military and private-school teachers boosts the proportion of contributors to almost 40% of the working-age population. However, it remains low compared to the OECD average of 63%. The low level of coverage in Korea reflects the large number of self-employed persons and non-regular workers. The long-term projections of the NPS assume that less than half of the elderly will receive NPS pensions in 2030, suggesting that it does not expect a significant expansion in coverage.

In addition to the low level of coverage, there is a risk that pension benefits will be relatively small.

Figure 12. The Coverage of the National Pension Scheme



Source: National Pension Service and the Korea National Statistical Office.

The replacement rate for a worker in 2030 who had earned an average income and had paid 40 years of contributions would be 50%, as noted above. However, in its long-term projections, the NPS assumes that the average period of contribution in 2030 will be 17.6 years, reflecting the fact that self-employed do not contribute consistently during their working life and the retirement of employees at a relatively young age of around 50. The short average contribution period results in an average replacement rate of only 22%, a level close to the minimum cost of living, which is set at 20% of the average wage. If the authorities follow the option of lowering the target replacement rate to 40%, the average pension in 2030 would then fall below the minimum cost of living. Moreover, there is likely to be a significant variation among beneficiaries in their contribution periods. Salaried workers would have as many as 30 years if the average age when workers leave companies rises from its current level of around age 50 to 55. With the overall average of 17.6 years of contributions, the average contribution period for the self-employed is likely to be quite short, leaving them below the minimum cost of living. Moreover, there is a large gap in the level of contributions between those ensured through their workplace (1.9 million won in 2006) and individually-insured persons (1.05 million won), who tend to be self-employed. In sum, the low level of coverage, short average contribution period and small payments by those who are self-employed raise the risk that the NPS will not be adequate to reduce the rate of poverty among older persons.

Future reform of the NPS should focus on its effectiveness in reducing poverty among the elderly. One option is to substantially boost the amount of contributions to the NPS and its coverage, from the current level of around a third. This objective is difficult, though, because of the large number of non-regular workers and self-employed and the lack of transparency about their income⁸.

Given the difficulty of substantially extending the coverage of the NPS, the recent introduction of the means-tested benefit in 2008 is a step in the right direction, although at 5% of the average wage, it is well below the minimum cost of living equal to 20% of the average wage. Expanding the benefit to the minimum cost of living to prevent absolute poverty and extending its coverage to all persons over the age of 65 is estimated to boost its cost from 1.1% of GDP in 2050 to around 6.8% (Table 9, Column 2). The cost of this universal pension would be in addition to contributions to the NPS, which would reach 7% of GDP in 2050, based on a contribution rate of 12.9%. The total cost of a universal pension and the NPS would thus rise to around 14% of GDP in 2050. This is above the OECD average of 11% of GDP projected for 2050 (Dang et al., 2001). A higher than average level in Korea would not be surprising given that its share of elderly will be one of the highest in the OECD area.

The total cost of public pensions under the two-part approach could be reduced by further scaling back the NPS. With the development of financial markets, the rationale for government involvement in redistributing people's income over their lifetime has weakened, suggesting a greater focus on protecting the elderly against poverty. If the replacement rate of the NPS were cut to 20%, the contribution rate could be reduced to 6.45% of labor income, 3.5% of GDP (Table 9, third column). The combined replacement rate of 40%—20% each from the universal pension and the NPS—would cost around 10% of GDP in 2050, close to the level projected for the OECD area, despite Korea's relatively old population⁹.

In sum, the Korean authorities have a choice between the current approach, which will provide a substantial public pension benefit to nearly half of the population, and systemic reform to create a two-part national system that includes a universal pension to reduce poverty among the elderly. There are advantages to each of these options. The current approach has the positive feature of requiring saving by the current working population in preparation for retirement, thus promoting inter-generational equity. The advantage of the two-part national pension is that it would prevent absolute poverty among the elderly. In terms of financing, the two-part system would rely more on tax revenue and less on social security contributions. Using indirect taxes to pay for pension costs, rather than payroll taxes, would be favorable for growth as it would impose less distortions on the labor market. In addition, it would limit the accumulation of assets in the National Pension Fund, which amounted to 185 trillion won (23% of GDP) in 2006 and is projected to increase nine-fold over the next 30 years. The Fund's investment objective is to generate a high return, while taking account of "stability and socioeconomic utility." In any case, it is essential to ensure a governance framework that prevents political influence on the firms in which the Fund invests, as well as protecting the Fund from political pressure in allocating its investment portfolio.

Scaling back the NPS as part of a systemic reform would make it even more important to encourage greater private-sector savings for retirement. One key is to develop the "company pension system"

⁸ Given such uncertainty, the NPS assumes, as a general practice, that self-employed persons have the same earnings as middle-income employees, which discourages low-income persons from contributing to the NPS.

⁹ The cost could be further reduced by cutting the universal pension. For example, if it were set at 15% of the average wage, the total cost (including the NPS) would be 8.6% of GDP in 2050 (Table 9, fourth column).

Table 9. Options for Pension Reform
Projections for 2050

	Current plan ¹	Current plan plus universal pension ¹	Universal pension plus scaled back NPS	Reduced universal pension plus scaled-back NPS
Means-tested/universal pension ²				
Replacement rate (%)	5.0	20.0	20.0	15.0
Cost (% of GDP) ³	1.1	6.8	6.8	5.1
National Pension Scheme				
Contribution rate (%)	12.9	12.9	6.45	6.45
Replacement rate (%)	40.0	40.0	20.0	20.0
Cost (% of GDP)	7.0	7.0	3.5	3.5
Total cost (% of GDP)	8.1	13.8	10.3	8.6

Notes: 1. The replacement rate is currently set at 50% but needs to be cut to 40% to ensure the sustainability of the NPS. Otherwise, the contribution rate would need to be raised to nearly 16%. The cost in terms of GDP assumes that employee compensation and self-employed income—which are subject to NPS contributions—remain around 55% of GDP.

2. Both the means-tested benefit in the government's plan and a universal pension would be financed by tax revenue.

3. For the universal pension, it nets out the savings in social assistance to the elderly (currently 8.6% receive social assistance).

Source: OECD calculations.

introduced in 2005, with the following provisions:

- Workplaces with five or more employees may transform the existing lump-sum retirement allowance required by law into a company pension, based on an agreement between labor and management. They must choose between a defined benefit and a defined contribution scheme.
- Firms that adopt defined benefit schemes must entrust at least 60% of the funds to financial institutions and 100% in the case of defined contribution schemes. In both cases, the employers must provide payments at least as large as under the current lump-sum retirement allowance.

By the end of 2006, pension plans had been introduced in 3.5% of Korea's companies, although almost all of them were small or medium-sized companies with less than 500 employees. The low number of large firms introducing company pension plans reflects differences between employers and employees on which type of plan to introduce. Employers favor defined contribution plans, which place the risk on workers, while workers favor defined benefit plans, which are similar to the current retirement allowance in guaranteeing the amount paid. The difficult environment for collective bargaining may frustrate agreements on the type of pension plan, as well as the government's decision to introduce a company pension system while maintaining the lump-sum retirement allowance. This decision reflects the difficulty of phasing out the latter, which is popular with workers, who consider it to be deferred wage payments. In the absence of new government measures, the retirement allowance system may continue indefinitely given its popularity.

However, the retirement allowance system has a number of drawbacks. *First*, it creates incentives to retire employees early. Many large firms have agreed to pay about double the legal requirement of one month of salary for each year worked. Given that the lump sum is based on an employee's final wage, which increases sharply with seniority, there is a disincentive to keep older employees. *Second*, it is

not a secure source of income, as the lump-sum is partially unfunded, making full payments dependent on the firm’s survival. *Third*, given the short average tenure of employees, this payment has lost its link to retirement income as most workers receive such lump sums numerous times during their working life and often spend it for housing or consumer durables. To promote the transition to company pensions, the government should remove the tax preferences for retirement allowances, which allow the lump sum to be taxed at low rates. In addition, the government should encourage defined contribution pension systems, rather than those based on defined benefits, to promote pension portability and thereby labor mobility. Given that average employment tenure is only five years in Korea, an average worker may be employed by as many as eight or nine firms during his/her career, making a defined benefit system difficult to manage.

Reforming the healthcare system

Public spending on healthcare in Korea, on a per capita basis, has expanded at a 10.1% annual rate (adjusted for inflation) since 1981, well above the OECD average of 3.6% (Table 10). The increase from the initially low level was largely explained by rising incomes, although demographic factors also played a role. In addition, a residual factor—primarily the shift of healthcare spending from the private to the public sector—boosted outlays by 2.4% a year. The National Health Insurance (NHI) achieved universal coverage in 1989, only 12 years after its introduction. To limit the cost of expanded coverage, the NHI restricted benefits and set co-payments at a high level. Consequently, the private sector accounts for half of total spending on healthcare, well above the OECD average of 28%. This helps to limit public healthcare expenditure to 3% of GDP, the lowest in the OECD area (Figure 13).

A cross-country analysis by the OECD projects that public spending on healthcare will rise by between 3 and 5 percentage points of GDP in Korea by 2050, the largest increase among member

Table 10. Growth in Public Expenditures on Healthcare in Korea and the G-7 Countries¹

Average annual percentage change between 1981 and 2002 unless otherwise noted

	Total health spending	Age effect	Income effect ²	Residual ³
Canada	2.6	0.4	1.7	0.6
France	2.8	0.2	1.6	1.0
Germany	2.2	0.2	1.2	1.0
Italy (1988–2002)	2.1	0.7	1.7	–0.1
Japan (1981–2001)	3.8	0.4	2.2	1.1
United Kingdom	3.4	0.2	2.3	1.0
United States	4.7	0.1	2.0	2.6
Korea (1982–2002)	10.1	1.4	6.1	2.4
OECD average	3.6	0.3	2.3	1.0

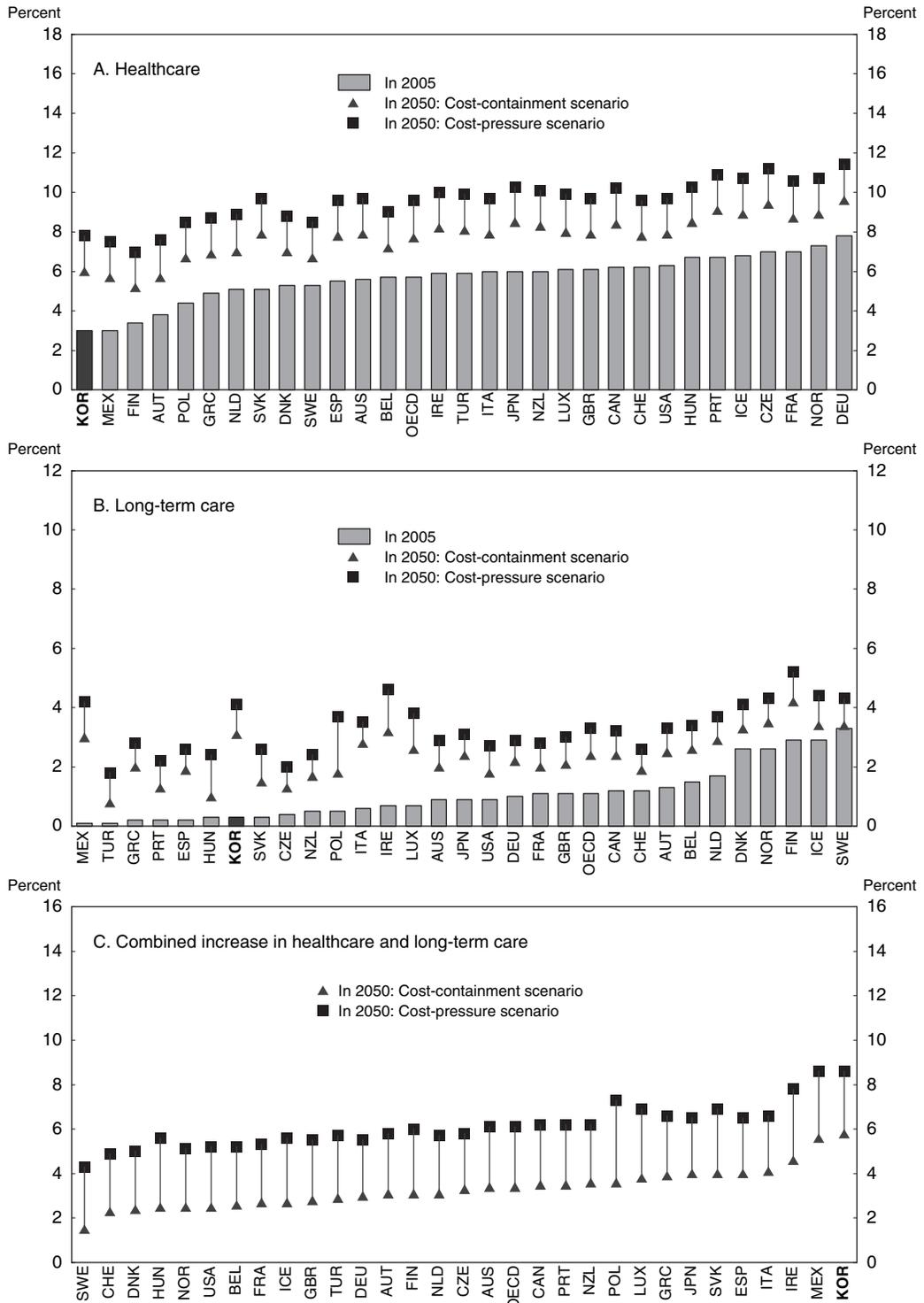
Notes: 1. Total public health spending per capita.

2. Assuming an income elasticity of health expenditure equal to 1.

3. Includes the shift of healthcare spending from the private to public sector, the cost of implementing technological advances in medical care and adverse relative price changes.

Source: OECD (2006b).

Figure 13. Projected Increase in Public Spending on Healthcare and Long-term Care
Over the period 2005 to 2050, in percent of GDP



Source: OECD (2006b).

countries (Figure 13). *First*, given the tendency for medical expenses to increase with age, rapid population aging in Korea is projected to raise public healthcare outlays by 1.4% of GDP, well above the 0.3% projected for the OECD area (Table 10). The elderly in Korea accounted for 23% of total health expenditures in 2004, well above their 9% share of the population. *Second*, relatively rapid growth in income, as living standards in Korea converge to the OECD average, will tend to push up the share of national income devoted to healthcare. Under this assumption, the level of healthcare spending in Korea in 2050—at 6% to 8% of GDP—would be comparable to the current level in some OECD countries, including Japan.

In contrast, the Korean authorities project a sharper increase in public healthcare spending to 12% of GDP by 2050, which would make it the highest in the OECD area. Indeed, the rise in healthcare expenditures may be significantly larger than projected in Figure 13 for a number of reasons. Perhaps most importantly, total healthcare outlays, at 6% of GDP in 2005, are relatively low compared to the level of per capita income in Korea, in part due to the practice of keeping price increases in the healthcare sector below overall inflation. This creates pressure for catch-up in the price of healthcare services that would boost its share of GDP. In addition, the government plans to increase its share of healthcare financing from 50% to 60% over the next few years.

Further reductions in the co-payment rates for patients should be avoided to limit the increase in public outlays. At the same time, the burden on employed persons should be eased by several reforms. *First*, elderly persons, who are currently exempted from contributions to the NHI if they have working children, should be required to contribute. Given the maturation of the public pension system, elderly persons will be in a better financial position to shoulder more of the burden. *Second*, as with the NPS, it is essential to more accurately assess the income of the self-employed and reduce underreporting in order to achieve an equitable sharing of the financial burden among the labor force. The government currently pays about half of the contributions for the self-employed, resulting in transfers from low-income employees to high-income self-employed persons.

Cost control measures are needed to limit expenditure growth in the long run. Despite the hike in contribution rates and in government support (from 3.1 trillion won in 2002 to 3.9 trillion won—0.5% of GDP—in 2006), the NHI returned to deficit in 2006 in the wake of a one-third increase in spending between 2004 and 2006. Reforms are thus needed to limit the rise in healthcare spending. One problem is that the fee-for-service reimbursement system tends to boost outlays as doctors increase the number of appointments. Incentives for the efficient use of resources would be improved by the introduction of other payment systems, such as *Diagnostic Related Groups*, in which medical treatments are divided into a number of groups and reimbursed at specific rates¹⁰. In addition, the NHI should become a more active and effective purchaser of health services for its clients rather than passively paying for all claims. Strengthened auditing and assessment of medical bills would help to reduce costs. Finally, it is important to reduce the use of pharmaceuticals, whose share of healthcare spending, at 27.4% in 2004, is well above the OECD average of 17.7%. A new framework to

¹⁰ Such an approach was recommended for Japan in Imai (2002).

encourage cost-effective use of pharmaceuticals based on audits and appraisal of doctors' prescription behavior, the introduction of prescription guidelines and greater use of generic drugs may result in savings in the use of pharmaceuticals.

In addition to ensuring the financial sustainability of the NHI, it is also important to raise the quality of healthcare. Indeed, less than half of Koreans are satisfied with their medical services, according to a 2006 government survey. High medical fees for patients, reflecting large out-of-pocket payments, and unsatisfactory treatment, perhaps due to limits on the cost of healthcare, were the major complaints. In addition, 17.5% cited long waiting times and 6.6% cited over-treatment. Koreans have an average of 10.6 medical consultations per year, compared to an OECD average of 6.6. Doctors are compensating for low fees by raising the volume of consultations, reflecting Korea's fee-for-service reimbursement system. The number of doctors per 1,000 population in Korea was 1.6 in 2004, the second lowest among OECD countries and well below the OECD average of 3.0. Similarly, the number of nurses per capita was only 1.8, compared to the OECD average of 8.3. The large number of medical consultations and the low number of medical personnel suggests a pattern of frequent but short visits, contributing to complaints of long waiting times. Moreover, the number of consultations per doctor is one of the highest in the OECD area, suggesting low quality. The small number of doctors and nurses suggests that the attractiveness of medical careers is limited by low prices for such services. One option to increase medical personnel is to relax controls on the inflow of foreign workers, such as nurses as suggested above.

Allowing for-profit companies to provide healthcare and a greater role for private health insurance may help increase the satisfaction of consumers. At present, only "medical legal persons" are permitted to establish medical institutions, and they are limited to one institution each. Foreign providers of medical care are excluded, except in the three Free Economic Zones and Jeju Special Governing Province. As for private insurance, it accounts for only 4% of healthcare spending. Allowing private insurance to cover more healthcare services not reimbursed by the NHI would help meet consumer demand. However, the role of private insurance is limited by the government's concern that it will lead to a polarization in healthcare provision.

The projection of future healthcare spending in Korea shown in Figure 13 assumes that further increases in life expectancy are matched by a corresponding rise in the average healthy lifespan. If extended longevity were instead accompanied by longer periods of disability, healthcare spending would rise even faster than projected. On the other hand, reducing the length of disability would slow the rise in healthcare expenditures. One key is to further reduce the rate of smoking among men, which was the highest in the OECD area at almost 60% in 2004. Increases in cigarette prices, the expansion of smoke-free areas and the implementation of smoking prevention programs helped to lower the proportion to 50% in 2005, with an objective of 30% by 2010. A second priority is to maintain healthy diets. Total calorie consumption is among the lowest in the OECD area, keeping the proportion of obesity at 30%, the second lowest in the OECD area. Nevertheless, the rate of obesity is increasing rapidly in Korea and is about 60% higher than a decade ago. In sum, illness prevention and health promotion policies are needed to slow the increase in demand for healthcare as the population

ages.

The average length of stay in hospitals for acute care was 10.6 days in Korea in 2004, compared to an OECD average of seven days. One reason is the growing pressure on hospitals to care for elderly people who need long-term care. The pressure to provide long-term care is also driving the rapid growth in the number of acute care hospital beds from 3.6 per 1,000 in 1994 to 5.9 in 2003, compared to an OECD average of 4.1. “Social admissions” to hospitals is an expensive method to assist elderly persons who need nursing care. The further development of long-term care facilities, which would reduce the pressure on the healthcare system, is discussed below.

Providing long-term care for the elderly

Public expenditures on long-term care amounted to 0.3% of GDP in 2005, well below the OECD average of 1.1% (Figure 13, Panel B). The government’s role is focused on providing in-home or institutional care to persons qualifying for social assistance. The low overall level of spending on long-term care reflects Korea’s relatively young population at present and the heavy reliance on informal family care provided primarily by daughters (49%) and spouses (32%). Only 0.4% of the elderly in 2004 received long-term care in institutions, the lowest among the 23 OECD countries for which data are available and well below the average of 4.5%. Similarly, the proportion receiving formal paid care at home is only 0.7%, well below the OECD average of 9.6%. With long-term care facilities available for only 0.4% of the elderly at present, the growing need for long-term care is placing an increasing strain on the NHI.

Demographic trends will increase spending on long-term care, which grows exponentially with age, with the bulk concentrated on persons over the age of 80. In Korea, the number of persons above that age is projected to increase nine-fold by mid-century, rising from 1% of the population at present to 14%. In addition, growing female participation in the labor force and the falling proportion of elderly living with their family will reduce the scope for family-based care, creating the need for a better developed social infrastructure for providing care. The OECD estimates that public spending on long-term care will rise to between 3% and 4% of GDP by 2050, above the OECD average of 2.4% to 3.3% (Figure 13). As is the case for healthcare, the projected increase is among the largest in the OECD area.

The public sector in Korea provides institutional long-term care to about 15,000 persons, about 90% of the elderly in institutions at present. Of the 679 long-term care facilities in 2006, 77% were public facilities. The authorities plan to add 1,112 public long-term care facilities, with 30,000 additional places, between 2006 and 2008, with only 6,000 additional places provided by the private sector. The government will encourage a larger private-sector role after it further develops public long-term care. As in the case of childcare, however, providing vouchers to households would increase consumer choice in long-term care and improve the satisfaction of older persons and increase their degree of independence (Lundsgaard, 2005). Shifting Korea’s current approach of relying on the government to provide most long-term care facilities would foster competition among providers and more choice for families, while limiting government outlays.

A national long-term care insurance system was introduced in 2008, an approach currently used in Germany, Japan, Luxembourg and the Netherlands. Contributions are to be collected by the NHI, with an initial rate expected to be set at around 0.25% of employee income. Beneficiaries, who will be chosen by the Health Insurance Corporation from among the elderly suffering geriatric diseases, can receive public care at home or in institutions, or cash benefits to pay for private care. The number of beneficiaries is to be initially limited to 80,000 (1.7% of the elderly population). However, 350,000 elderly persons (8.3% of the elderly) were already suffering from dementia in 2005. The number of beneficiaries is expected to double by 2010. In implementing this new insurance system, it is important to learn from the experience of other countries, notably Japan, where there was a supply-driven increase in the number of persons receiving formal long-term care. This reflects the tendency of care managers to err on the side of generosity in approving care (Imai and Oxley, 2008).

V. Addressing Increasing Dualism in the Labor Market

The share of temporary workers in the labor force, according to the OECD definition, rose from 16.6% in 2001 to 28.3% in 2007 (Table 11), the second highest in the OECD area. Workers on fixed-term contracts of one year or less, account for more than half of temporary workers. In Korean statistics, the proportion of non-regular workers, which also includes other types of workers such as part-timers, in addition to temporary workers, is around 36%. There is a large wage gap: non-regular workers earned 62% as much as regular workers in 2005.

According to a survey of firms employing non-regular workers, 32.1% cited lower labor costs as the major reason for hiring such workers (Table 12). The lower wages are explained in part by productivity differences, though discrimination also plays a role. According to the Korea Employers

Table 11. Share of Temporary Workers in Korea
Percent of employees¹

	2001	2003	2005	2006	2007
Workers with a fixed-term contract					
Less than or equal to 1 month	5.6	5.5	5.5	5.2	3.2
More than 1 month to less than 1 year	2.8	4.8	4.8	4.9	4.7
Exactly one year	1.5	5.3	5.3	5.0	5.4
More than 1 year to less than 3 years	0.6	1.8	1.7	1.7	1.4
3 years or more	0.5	0.8	0.8	0.9	1.2
Subtotal	11.0	18.2	18.2	17.7	15.9
Workers without fixed-term contract, whose job is not expected to continue due to involuntary reasons	2.9	4.3	5.9	5.9	6.4
Temporary agency workers	1.0	0.7	0.8	0.9	1.1
Oncall workers	2.2	4.2	4.8	4.3	5.3
Total ²	16.6	25.9	29.4	28.2	28.3

Notes: 1. This table shows the share of employees who are temporary according to the OECD definition. The concept of non-regular worker in Korea includes other categories, such as part-time workers, and is higher at around 36%.

2. The total is adjusted for overlapping categories.

Source: Ministry of Labor, *Economically Active Population Survey and the Supplementary Survey of Economically Active Population Survey*.

Federation (2006), the productivity of non-regular workers is 22% below regular workers, while their wages are 44% less. Only one-half of the wage differential, therefore, is justified by productivity differences. Another study found that non-regular workers are paid 20% to 27% less than regular workers, after adjusting for age, experience, education and other attributes (Jeong, 2003). A more recent analysis reported that 23% of the wage gap is explained by discrimination (Ahn, 2006). In addition to lower wages, non-regular workers also receive fewer benefits (Table 13). While 73% of regular workers receive the retirement allowance, over-time payments, regular bonuses and paid-holiday leave, 74.2% of non-regular workers receive none of these benefits. Labor costs are further widened by differences in social insurance coverage. More than four-fifths of regular workers are covered by all social insurance programs—national pension, health and employment insurance—while two-thirds of non-regular workers have no work-based social insurance. The low coverage of non-regular workers is not primarily due to differences mandated by the law, but instead reflects weak compliance.

The survey of employers also reported that 30.3% hire non-regular workers to increase employment flexibility, a rationale that was more important for large firms than for small firms, which focus more on reducing labor costs (Table 12). It is very difficult to lay off regular workers because of the Labor Standards Act¹¹ and the power of trade unions. The OECD ranks employment protection for regular workers in Korea in the top third of member countries. In a world of increasing competition, Korean firms have an incentive to maintain a minimum number of regular workers and to adjust to demand fluctuations by hiring non-regular workers and outsourcing. Non-regular employment thus helps firms achieve the optimal level of employment, leading to profit maximization. Countries with stricter protection for regular workers tend to have a higher incidence of temporary employment (Grubb et al., 2007).

According to a 2005 government survey, 80% of regular workers were satisfied with their employment, compared to only 29% of non-regular workers. However, 41% accepted non-regular employment because nothing better was available, while another 11% preferred non-regular employment as it provided working-time flexibility. Surprisingly, only 8% of non-regular workers hoped to use their current post as a stepping stone to another job, reflecting limited mobility between regular and non-regular employment. Of those who were non-regular workers in 2003, only 15% moved to regular employment during the following year, while 59% remained in non-regular status. Moreover, 20% lost their jobs and became unemployed or left the labor force, while 5% became self-employed. It is clear that a considerable portion of non-regular workers are trapped in this type of employment. In contrast, less than 10% of regular workers moved to the categories of unemployment, inactivity or unpaid family workers.

¹¹ The revision of the labor law in 1998 to allow collective dismissals for “urgent managerial reasons” has not sufficiently enhanced flexibility in practice. This reflects the attached conditions, notably exhausting “all means” to avoid dismissals, discussing proposed dismissals for at least two months with workers and notifying the government. Given the constraints in the law, firms rely on more expensive methods to reduce employment, such as early retirement packages and incentives for voluntary departures. In addition, regular workers in unionized companies also receive protection in collective bargaining agreements.

Table 12. Reasons for Hiring Non-regular Workers
Percentages

	Labor costs	Flexibility	Peripheral tasks	Short-term tasks	Others
All industries	32.1	30.3	18.5	13.9	5.2
Manufacturing	28.7	34.5	17.9	14.7	4.1
Non-manufacturing	35.4	26.1	19.1	13.2	6.2
Firms with					
Less than 30 workers	35.5	28.9	15.8	13.2	6.6
30–99 workers	28.5	27.6	18.7	18.2	7.0
100–299 workers	37.7	26.2	15.5	14.3	6.3
300–499 workers	34.3	29.4	19.6	12.7	3.9
500 workers and more	26.1	39.9	22.9	9.6	1.6

Source: 2007 *OECD Economic Survey of Korea*.

Table 13. The Coverage of Social Insurance and Benefits by Types of Employment

	Regular employees	Non-regular employees ¹
Benefits ²		
All	73.0	9.5
Some	25.9	16.3
Nothing	1.1	74.2
Social insurance ³		
All	81.2	29.4
Some	17.4	5.3
Nothing	1.4	65.3

Notes: 1. In the paper by Ahn, non-regular workers includes temporary and daily workers, as well as “non-standard workers.” The latter category includes workers on fixed-term and part-time contracts, as well as alternative employment (dispatched workers, temporary agency workers, independent contractors, on-call workers and home-based workers).

2. Includes the retirement allowance, over-time payments, regular bonuses and paid-holiday leave.

3. Includes the National Pension Scheme, National Health Insurance and the Employment Insurance System.

Source: Ahn (2006).

In sum, non-regular employment is characterised by precarious jobs that pay low wages and limited coverage by the social safety net. The social polarization resulting from the increasing proportion of non-regular employees thus has negative implications for equity. Korea has experienced a rise in income inequality, according to a number of measures (Table 14). For example, the ratio of the top income decile to the bottom rose from 7.4 in 1990 to 9.3 in 2004. The decline in inequality recorded during the rapid growth in the first half of the 1990s was reversed by the 1997 crisis and the severe recession in 1998. Since then, measures of inequality have fluctuated around the higher level, falling during the years of strong growth (2000–02) and rising following the collapse of the household credit bubble and relatively weak growth since then. The Gini coefficient on a nation-wide basis was 35.1 in 2006, the sixth highest in the OECD area and 13% above the OECD average (Forster and Mira d’Ercole, 2006). The high level of inequality reflects the relatively low level of social spending,

Table 14. Indicators of Income Inequality in Korea
For urban salary and wage-earner households¹

	Gini coefficient ²	Quintile ratio ³	Decile ratio ⁴
1990	29.5	4.6	7.4
1995	28.4	4.4	6.8
1996	29.1	4.6	7.2
1997	28.3	4.5	7.0
1998	31.6	5.4	9.4
1999	32.0	5.5	9.3
2000	31.7	5.3	8.8
2001	31.9	5.4	8.8
2002	31.2	5.2	8.3
2003	30.6 (34.1)	5.2 (7.2)	8.9 (15.5)
2004	31.0 (34.4)	5.4 (7.4)	9.3 (15.7)
2005	31.0 (34.8)	5.4 (7.6)	9.1 (15.9)
2006	31.0 (35.1)	5.4 (7.6)	9.1 (15.9)

Notes: 1. Nation-wide data, available since 2003, is shown in parentheses.

2. The Gini coefficient is defined as the area between the Lorenz curve (which plots cumulative shares of the population, from richest to poorest, against the cumulative share of income that they receive) and the 45-degree line, taken as a ratio of the whole triangle. The values, which range from 0 in the case of perfect equality and 1 in the case of perfect inequality, are multiplied by 100 to give a range of 0 to 100.

3. The ratio of the top quintile to the bottom quintile.

4. The ratio of the top decile to the bottom decile.

Source: Korea National Statistical Office.

resulting in little scope for redistribution, and a high degree of wage dispersion. For full-time workers, the ratio of the 90th to 10th earning percentiles is 4.0, well above the OECD average.

The increasing proportion of non-regular workers also reduces long-term growth prospects by boosting the rate of worker turnover; 62% of non-regular workers have less than one year of tenure compared to 30% for regular workers. A number of studies show that non-regular workers receive less training than regular workers (Grubb et al., 2007).

The government's strategy is to limit the use of non-regular workers and prevent discriminatory treatment of them. The labor law reform bill passed in December 2006 had two major provisions:

- "Unjustifiable discriminatory practices" against non-regular workers are prohibited. Employees claiming discriminatory working conditions or wages can submit complaints to the Labor Relations Commission, where firms must prove that their practices are not discriminatory.
- After two years of employment, workers with fixed-term contracts are considered to be regular employees. However, the labor unions argue that the limit on fixed-term contracts is too long and that firms will simply fire such workers before the end of the two years.

In addition, the government plans to target active labor market policies on non-regular workers to improve their employability and increase the coverage of such workers by the social safety net.

While the labor law reform is aimed at reducing the growing proportion of non-regular workers, it risks reducing the employment of such workers, as well as overall employment. The prohibition on discrimination against non-regular workers may subject firms to costly and time-consuming litigation

Table 15. Coverage of the Employment Insurance System
Number of workers in thousands and percent

	1995	2000	2001	2002	2003	2004	2005	2006	2007
Wage and salary earners	12 899	13 142	13 659	14 181	14 402	14 894	15 185	15 551	15 970
Eligible for EIS	4 280	8 700	6 909	9 269	9 651	10 037	10 330	10 803	11 115
Actually insured	4 204	6 747	6 884	7 171	7 203	7 577	8 064	8 537	9 063
Eligible as a percent of wage and salary earners	33.2	66.2	67.9	65.4	67.0	67.4	68.0	69.5	69.6
Insured as a percent of eligible workers	98.2	77.6	74.5	77.4	74.6	75.5	78.1	79.0	81.5
Insured as a percent of wage and salary earners	32.6	51.3	50.6	50.6	50.0	50.9	53.1	54.9	56.8
Proportion of unemployed receiving benefits ¹	15.1	16.6	18.5	22.4	25.6	30.0	34.8

Note: Annual averages.

Source: Ministry of Labor.

that would discourage the employment of non-regular workers and increase poverty, thereby putting upward pressure on public social spending. If non-discrimination were interpreted as wage parity, the total wage bill would increase by as much as 13%. In practice, the actual increase would depend on the proportion of the wage gap that is attributed to discrimination and how much is due to differences in the job performed and productivity, a question for which there is a wide range of estimates, as shown above.

Instead, relaxing employment protection for regular workers would have a positive effect on growth by reducing dualism. In addition, it may also spur job creation and encourage investment in Korea. At the same time, it is important to improve the effective coverage of social insurance, including the Employment Insurance System (EIS), to reduce the gap in labor costs between regular and non-regular workers. In 2007, only 34.8% of unemployed persons received unemployment benefits, due in part to strict conditions to qualify for benefits as well as their relatively short duration (Table 15). However, it was also because of the limited coverage of the EIS. Although almost 70% of employees are eligible for the EIS, only 56.8% are actually insured, reflecting the difficulty of ensuring compliance. Increasing the effective coverage is complicated by the frequent turnover of non-regular employees and the large number of small firms. Indeed, 3 million of Korea's 3.2 million firms in 2005 had less than ten employees. The initiative of the National Tax Service to require firms to report the payroll of temporarily employed workers and contingent employees may be helpful in improving compliance. In addition, the collection of the four social insurance contributions (pension, health, employment and industrial accident) should be consolidated in a single agency.

VI. Conclusion

Korea's rapid economic development has lifted its per capita income from one-third to two-thirds of the OECD average during the past two decades. The economy is changing profoundly as a result of the structural reform program launched after the 1997 crisis and increasing integration with the world economy. Korea remains one of the fastest growing economies in the OECD area, as strength in high-technology sectors and strong demand from China have supported growth.

However, sustaining rapid growth in the future will require meeting a number of challenges. *First*, with population aging and lower investment rates, growth will depend more on productivity gains, which depend to a large extent on improving the innovation framework. A number of reforms are needed to make sure that Korea obtains full value for money from its relatively large investment in R&D and education. The R&D system should be upgraded by enhancing links between business, government, academic and foreign research institutes, with universities playing a greater role. Flexibility in allocating R&D funds is important to avoid excessive emphasis on areas identified as future growth engines. In addition, university education should be restructured based on increased competition between institutions, including those from abroad, to improve its quality. Funding for education needs to be rebalanced to upgrade the quality of university education, which has fallen during its period of rapid expansion.

Second, strengthening the integration of Korea in the world economy is a priority. Making fuller use of foreign goods and services, FDI and foreign workers is important to boost productivity growth, as well as to cope with labor shortages in small companies. Achieving this objective requires reducing barriers to FDI and imports, including agricultural products, and relaxing controls on inflows of foreign workers.

Third, it is essential to maintain a sound fiscal position in the face of exceptionally rapid population aging. As noted above, the government's *Vision 2030* plan projects that public social spending will rise from 6% of GDP at present to around the current OECD average of 21% by 2030. It is important to proceed cautiously in raising spending and aim at efficiency in each area, thereby limiting the necessary hike in the tax burden. Some priorities should be:

- Removing factors putting downward pressure on the fertility rate, which has fallen to only 1.08, the lowest in the OECD area.
- Encouraging higher labor participation by women to mitigate the impact of population aging.
- Shifting the focus from increased public provision of childcare and long-term care in favor of vouchers for households to boost competition and better meet consumer demands.
- Expanding the means-tested benefit for the elderly, while promoting the new company pension system and reforming public occupational pension schemes.
- Reforming the National Health Insurance to limit upward pressure on healthcare spending.

Fourth, it is important to reverse the rising share of temporary workers, which has negative consequences for equality and for growth by limiting employee training and the accumulation of human capital. To reduce the share of temporary workers, who now account for a third of employees, it is important to relax employment protection for regular workers and improve the coverage of the social safety net. Together, policy reforms in this wide range of areas will help Korea's per capita income converge to the level in the most advanced countries.

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