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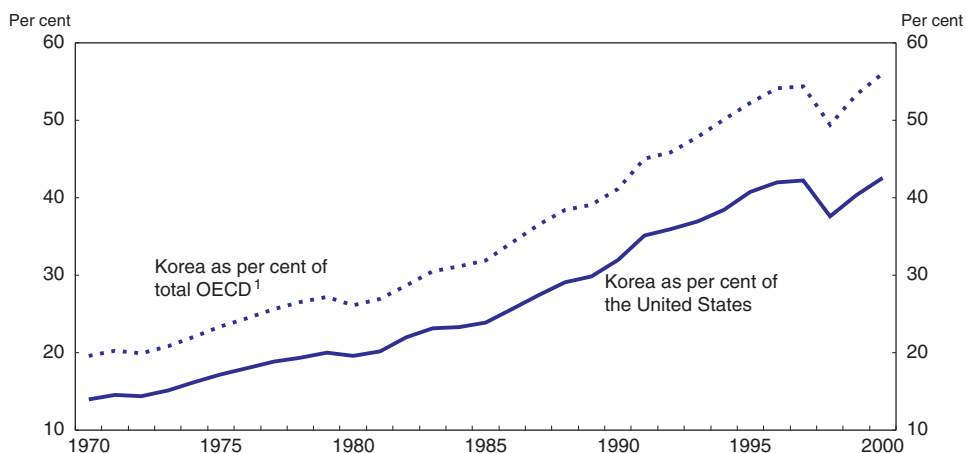
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IV. Structural reform to maintain high growth

Rapid growth beginning in the 1960s transformed Korea from one of the poorest countries in the world to an industrialised nation with a per capita income more than half of the OECD average (Figure 31). However, certain aspects of Korea's economic framework left it vulnerable to contagion from the crisis that began in Southeast Asia in mid-1997. In the wake of the crisis, Korea launched a major restructuring programme to create a more market-based economy. Progress in implementing these reforms, which has been examined in the past four OECD *Economic Surveys of Korea*, laid a foundation for strong growth and allowed the convergence to income levels in the advanced countries to resume, after having been temporarily reversed by the crisis. Measures taken since the 2001 *Survey* are summarised in Box 8.

Figure 31. **Relative income levels in Korea and the OECD**

Gross domestic product per capita using purchasing power parity exchange rates



1. The average of the 24 countries that were members of the OECD in 1993.

Source: OECD.

Box 8. Overview of progress in structural reform

This box follows up on recommendations from the 2001 *Survey* and summarises recommendations from this *Survey*. Box 7 summarises recommendations pertaining to the public expenditure system.

Recommendations in the 2001 <i>Survey</i>	Actions taken or proposed by the authorities	Current assessment or recommendation
A. The corporate sector		
Abolish the KDB bond-underwriting scheme in 2002 so as to let market forces more fully drive corporate restructuring.	The KDB scheme ended at the end of 2001.	
Phase out the Collateralised Bond Obligation (CBO) programme using government guarantees as financial markets stabilise.	The CBO programme was to be phased out by the end of 2002.	
Activate the new corporate governance framework.	The M&A market is to be re-vitalised in part by promoting the development of investment banks.	The new framework is taking root as companies with good corporate governance practices are rewarded with increases in their share prices.
Shift the KFTC's emphasis away from regulation of chaebol activities as the enhanced corporate governance framework and the market-oriented financial sector operate to discipline their behaviour.	The number of private-sector business groups subject to the full scope of regulation by the KFTC was reduced in 2002 from 30 to 12.	Further ease restrictions imposed on the chaebol in line with the development of market-based institutions for corporate restructuring.
Expand opportunities for shareholders to gain compensation for illegal management decisions, either through the introduction of class action suits or changes in derivative suits.	A class action suit system will be introduced to protect shareholders from false disclosure, unfaithful accounting and stock price manipulation.	
Strengthen the exit mechanism, in part through the "pre-packaged bankruptcy" system.	The "pre-packaged bankruptcy" system has been put into practice. The three insolvency-related laws are to be unified in order to facilitate the exit of non-viable companies.	
Improve the workout programme.	The workout programme, which continues for 12 of the original 83 companies, is to be abolished in the near future.	
Increase transparency by improving the quality of external audits.	The government announced a plan in November 2002 to upgrade the accounting system and enhance transparency.	

Box 8. **Overview of progress in structural reform** (cont.)

Recommendations in the 2001 <i>Survey</i>	Actions taken or proposed by the authorities	Current assessment or recommendation
B. The financial sector		
Effectively implement the second-stage restructuring programme so as to limit the need for additional funds.	The second-stage programme spent 47.6 trillion won between August 2000 and October 2002.	The banks are now profitable, with non-performing loans at a record low.
KAMCO should continue to sell, according to its timetable, the non-performing loans (NPLs) that it has purchased.	KAMCO received another 5.3 trillion won in 2001 and 2.7 trillion won in the first ten months of 2002 through the resolution of NPLs.	KAMCO, which still holds 40 trillion won of the 100 trillion won of NPLs that it purchased between 1997 and 2002, should continue with its asset sales.
Take steps to achieve profitability in the government-owned Woori Financial Holding Company in order to limit the additional costs to taxpayers.	Each of the three banks in the Woori Financial Holding Company recorded profits in 2001.	
Privatise the commercial banks.	The government has taken steps to sell Choheung Bank and plans to reduce its share of the Woori Financial Holding Company to under half by the end of 2003.	The privatisation of commercial banks should be a top priority in order to enhance their role in corporate restructuring and establish a market-oriented financial system.
Reduce government interference in private financial institutions by avoiding putting pressure on them to participate in the KDB bond underwriting scheme and bond market stabilisation funds.	The KDB scheme and bond market stabilisation funds have been abolished.	
The FSC should ensure that banks effectively implement the forward-looking loan classification criteria.	Domestic banks are currently improving their internal credit rating system as part of the forward-looking system.	It is important for the FSC to monitor potential future risks to asset quality related to the surge in bank lending to households, the increased use of credit cards and asset price fluctuations.
Enforce the supervisory framework to promote the stability of the non-bank financial sector.	The number of non-bank financial institutions has fallen by about 7 per cent since the end of 2000.	

Box 8. **Overview of progress in structural reform** (cont.)

Recommendations in the 2001 <i>Survey</i>	Actions taken or proposed by the authorities	Current assessment or recommendation
C. The labour market		
Further expand the coverage of the Employment Insurance System (EIS).	The EIS is to be expanded in 2004 to daily workers and part-time employees working more than 15 hours a week, while the legal enforcement of the system is to be upgraded.	
Ensure that employment protection for regular workers does not hinder restructuring of the corporate and financial sectors.	No action taken.	Relaxing such protection may help to limit the development of a dualistic labour market. This should be accompanied by an extension of the social safety net to non-regular workers.
Effectively implement the new social welfare system while maintaining incentives to work.	The number of persons receiving social assistance fell about 6 per cent in 2002 due to the economic recovery.	
Use the Tripartite Commission to forge a consensus on bringing Korea's industrial relations practices into line with internationally accepted norms.	The Tripartite Commission continues to operate, although it failed to reach an agreement on the key issue of introducing a 40-hour workweek.	The Korea Confederation of Trade Unions should rejoin the Tripartite Commission in order for it to function effectively.
Phase out employment subsidies with large deadweight costs.	The amount spent on wage subsidies increased in 2001.	Employment subsidies with large deadweight costs should be phased out.
D. The land market		
Introduce efficient mechanisms for land-use decisions in the semi-agricultural and semi-urban land zones.	The "Act on Planning and Utilisation of the National Territory" is intended to develop a coherent planning system for the entire country beginning in 2003.	Increase the holding tax on property and make the current system less regressive.
E. Increasing competition		
Make the Regulatory Impact Analysis statements public to improve their quality and raise public support for reform.	The Regulatory Impact Analysis statements are available to the public.	The Regulatory Reform Committee should prevent civil servants from imposing regulations that are not backed by legislation.
Effectively implement the "Clean Markets Project" in the six sectors chosen in 2001.	The Project has resulted in significantly lower prices in some of the sectors chosen.	Continue the Project in the eleven additional business lines in six sectors selected in 2002.
Continue to remove impediments to inflows of foreign direct investment.	The authorities are preparing annual FDI Environment Improvement Plans	Annual inflows have remained at high levels despite a sharp contraction in world direct investment flows.

Box 8. **Overview of progress in structural reform** (cont.)

Recommendations in the 2001 <i>Survey</i>	Actions taken or proposed by the authorities	Current assessment or recommendation
Complete the 1998 privatisation programme.	With the sale of Korea Telecom and Korea Tobacco and Ginseng, eight of the 11 enterprises in the 1998 programme have been privatised.	Complete the 1998 programme and consider whether the privatisation of other state-owned enterprises would enhance efficiency.
F. Specific sectors		
Telecommunications		
Reduce government intervention in the business and investment plans of private companies and avoid favouring the domestic equipment-making sector.	The mandatory contribution from service providers for R&D was reduced from 1 per cent to between 0.5 to 0.75 per cent in June 2002.	Further reduce such contributions and limit government intervention.
Establish an independent regulatory authority and streamline the licensing process to facilitate the entry of new firms.	No action taken.	Implement previous recommendation.
Impose price caps in markets where Korea Telecom remains dominant while limiting intervention in all other markets.	No action taken.	Implement previous recommendation.
Further ease the remaining restrictions on foreign ownership in the telecommunications sector.	The ceiling on foreign ownership of Korea Telecom was raised from 33 to 49 per cent in April 2002.	Implement previous recommendation.
Electricity		
Implement the ten-year plan to separate and privatise the generating and distribution assets of the Korea Electric Power Corporation.	The privatisation of the first of the six newly created generating companies began in the second half of 2002.	Consider accelerating the ten-year plan in order to bring the benefits of competition to households earlier.
Establish an independent regulatory authority.	No action taken.	Implement previous recommendation.
Agriculture		
Accelerate the shift from market price supports to direct payments to farmers.	Direct payments increased from 4 per cent of total support to farmers in 2000 to 7 per cent in 2001.	Accelerate the shift to direct payments to farmers.
Promote farm consolidation to boost the average farm size.	The five-hectare limit on farms outside the agricultural promotion zones was removed at the beginning of 2003.	The increase in the average farm size, which rose from 1.37 in 2000 to 1.39 in 2001, should be accelerated by this step.

Box 8. **Overview of progress in structural reform** (cont.)

Recommendations in the 2001 Survey	Actions taken or proposed by the authorities	Current assessment or recommendation
Reduce reliance on chemical inputs, notably fertiliser and pesticides, to improve the environment.	The authorities have launched direct payments to farmers using environmentally friendly methods.	The use of chemical fertiliser has fallen by 15 per cent between 1999 and 2001.
Increase market access for imported rice when the “minimum access commitment” ends in 2004.	No action.	Implement previous recommendation.
G. Creating a knowledge-based economy		
<i>The education system (new issue)</i>		
		<p>Liberalise centralised control to increase the autonomy of individual schools, while also ensuring their accountability.</p> <p>Expand the pilot project of allowing independent private schools.</p> <p>Consider increasing spending on tertiary education by increasing support for private institutions, which educate the majority of students.</p> <p>Provide sufficient loans and grants to ensure access to tertiary education.</p>
<i>Research and development (new issue)</i>		
		<p>Increase the role of universities in the R&D effort by boosting incentives for research by professors.</p> <p>Encourage interaction between R&D in universities, the private sector and government research institutes by promoting labour mobility and enhancing opportunities for networking.</p> <p>Increase international linkages in the R&D area.</p> <p>Exercise caution in designating specific technologies as the focus of R&D programmes.</p>
<i>Venture business (new issue)</i>		
		<p>Reduce the government’s role in providing equity and guarantees in this sector, while encouraging participation by other investors, such as business angels and institutional investors.</p>

Box 8. **Overview of progress in structural reform** (cont.)

Recommendations in the 2001 Survey	Actions taken or proposed by the authorities	Current assessment or recommendation
		Consider whether the government should continue to designate certain firms as venture business, and if so, whether the criteria are sufficiently objective.
Small and medium-sized enterprises		
Further streamline support given to small and medium-sized enterprises (SMEs)	Public expenditures for SMEs rose by 5 per cent in the 2002 budget, while the number of programmes increased from 80 to 88.	Reduce the amount of support and the number of programmes to avoid waste and duplication
Lower protection given to SMEs	The number of business lines reserved for SMEs was reduced from 88 to 45 in September 2002.	Continue to lower protection for SMEs.
H. Sustainable development		
Air pollution (new issue)		Extend the Seoul emission permit-trading scheme to other areas, based on accurate data on emissions. Strengthen enforcement by increasing the role of independent inspections and separating the monitoring and ownership functions of local authorities. Reduce tax advantages for diesel vehicles and raise emission standards and fuel quality for such vehicles. Tighten heavy-duty vehicle emission standards in line with other OECD countries. Expand the use of road pricing and improve traffic management policies in order to reduce congestion.
Waste management (new issue)		Gradually increase the cost of garbage bags used for municipal waste. Carefully monitor the system of extended producer responsibility for recyclable products to ensure that recycling does not generate excessive costs in relation to alternative waste disposal methods. Allay opposition by residents to the construction of new, modern, waste disposal facilities by compensating them and introducing tougher monitoring of such facilities.

Box 8. **Overview of progress in structural reform** (cont.)

Recommendations in the 2001 <i>Survey</i>	Actions taken or proposed by the authorities	Current assessment or recommendation
I. Sustainable income for retirement		
Take advantage of the window of opportunity through 2008 to enact fundamental reforms to introduce a three-pillar system that relies more on private-sector saving.	The National Pension Reform Committee was established in 2002 to discuss the pros and cons of fundamental reforms. Discussions of proposals to create a corporate pension system are underway in the Tripartite Commission.	Implement previous recommendation.
Reform public occupational pensions and integrate them with the National Pension Scheme.	The National Pension Reform Committee will discuss this issue when actuarial estimates are introduced in 2003.	Implement previous recommendation.
Ensure that social assistance benefits bring the income of the elderly up to the minimum subsistence level.	The productive welfare system introduced two years ago is intended to provide minimum subsistence income to all eligible persons.	Ensure that the new system is, in fact, providing minimum subsistence income to all elderly in need, as well as other eligible individuals.
J. The tax system		
Broaden the personal tax base.	The deduction from the personal income tax base for purchases using credit cards, which was introduced in 2000, was doubled from 10 to 20 per cent in 2002. The income assessment methods for the self-employed have been improved.	Allowances and credits should be reduced to increase further the tax base.
Broaden the corporate income tax base by eliminating or streamlining various incentives.	A number of reductions in the capital gains and corporate income tax were abolished at the end of 2001.	A number of tax preferences for SMEs, investment and R&D have sunset clauses set at the end of 2002 and 2003 and should be allowed to expire.
The base of the VAT should be broadened.	The number of small businesses eligible for special treatment under the VAT has been reduced	The tax base of the VAT should be broadened by reducing the number of exemptions.
Increased taxation of fringe benefits is needed to broaden the tax base.	No action.	Implement previous recommendation.
Reform taxation of capital income, which is low and uneven across sources.	No action.	Implement previous recommendation.
Property taxation should be reformed to promote the efficient use of land by raising holding taxes and lowering transaction taxes.	The government plans several steps to increase the effective tax rate on holding property in the first half of 2003.	Continue to raise taxes on holding property and lower transaction taxes.
Reduce the use of <i>quasi-taxes</i> (charges that are not imposed by tax laws).	With the addition of 12 more quasi-taxes in 2001, the total number surpassed 100 with total revenue of more than 1 per cent of GDP.	Implement previous recommendation.

However, Korea's progress to date should not result in complacency about the importance of continuing the reform process. As noted in Chapter I, slowing inputs of capital and labour are expected to significantly reduce Korea's potential growth rate (Table 9). A continued commitment to economic reform is essential to sustain Korea's high growth potential and narrow the income gap with the most advanced countries. This chapter begins by discussing the corporate and financial sectors and the labour market, three of the key priorities of the post-crisis restructuring programme.⁸⁷ The second section looks at policies to make Korea more open to international competition, followed by an analysis of the land market. The fourth section considers policies to promote the development of a knowledge-based economy. The chapter then offers an assessment of structural reform before concluding with an analysis of issues important to ensure that growth is sustainable in the long run.

Completing the economic restructuring programme introduced in the wake of the crisis

Restructuring the corporate sector

The corporate sector has undergone significant changes since the crisis. Of the top thirty chaebol in 1997, many have shrunk in size and only about half remain among the top thirty today, although three of the largest at the time of the crisis are still at the top of the rankings by size (Table 29). Moreover, the number of companies listed on the Korea Stock Exchange has fallen by 13 per cent since 1997. Despite the restructuring that has taken place, a large number of weak firms remain. In 2001, 28 per cent of firms did not earn sufficient profits to cover their interest payments, let alone principal (Table 5). Perhaps more troubling is the fact that more than 5 per cent of companies, with total debt amounting to 7 per cent of GDP, have failed to cover their interest payments since 1999 or before. The survival of such a large number of non-viable companies absorbs resources that could be used by more productive firms. One key to accelerating the restructuring process is the privatisation of the commercial banks that were re-capitalised with public money after the crisis (see below).

Restructuring should be guided by the new corporate governance framework that was introduced following the crisis. As noted in previous *Surveys*, the major changes were to increase the rights of minority shareholders and strengthen the role of the board of directors, which must now include outside directors.⁸⁸ While corporate governance issues are related to private-sector relations between companies and shareholders, the governance framework underpins the integrity and credibility of market institutions, thus justifying the role of the state in this issue. However, some Korean companies have complained that the requirements imposed by the current system are excessive and have lobbied for their removal.

Table 29. **The large business groups**
Trillion won as of April 2002

Business group	Number of affiliates	Assets	Rank in 2001	Debt-equity ratio	
				Excluding financial sector ²	Total
1 Korea Electrical Power Corporation ¹	14	90.9	–	72.1	72.1
2 Samsung	63	72.4	1	77.6	240.6
3 LG	51	54.5	3	153.9	206.8
4 SK	62	46.8	4	140.4	156.4
5 Hyundai Motors	25	41.3	5	143.5	168.0
6 Korea Telecom ¹	9	32.6	–	101.7	101.7
7 Korea Highway Corporation ¹	4	26.4	–	100.4	100.4
8 Hanjin	21	21.6	6	256.3	294.4
9 Korea Land Corporation ¹	2	14.9	–	369.4	373.4
10 Korea National Housing Corporation ¹	2	14.5	–	185.2	185.2
11 Hyundai	12	11.8	2	646.3	977.6
12 Gumho	15	10.6	9	361.0	503.1
13 Hyundai Heavy Industry	5	10.3	–	227.4	219.4
14 Hanwa	26	9.9	10	232.2	238.3
15 Korea Water Resources Corporation ¹	2	9.5	–	27.2	27.2
16 Korean Gas Corporation ¹	2	9.1	–	256.0	256.0
17 Doosan	18	9.0	11	191.0	191.4
18 Dongbu	21	6.1	15	187.2	312.1
19 Hyundai Oilbank	2	5.9	13	837.1	837.1
Total	356	497.9	–	125.1	171.7

1. State-owned enterprises. Korea Telecom, though, was completely privatised in May 2002.

2. Excludes affiliated companies in the financial and insurance sectors.

Source: Korea Fair Trade Commission.

Recent data demonstrates, though, that listed companies that improve their governance practices are rewarded by an increase in their market capitalisation, suggesting a positive link between corporate governance and firm performance.⁸⁹ In addition to corporate governance, transparency has been enhanced by requiring business groups with more than 2 trillion won (\$1.6 billion) in assets to file combined financial statements and by increasing the responsibility of auditing firms for providing accurate information (see 2001 *Survey*).

Another aspect of corporate restructuring is the exit mechanism. In the wake of the crisis, many firms in distress and their creditors opted to enter work-out programmes. Of the 83 firms that entered the programme, 55 have graduated, 16 were liquidated and 12 remain in the programme. At the same time, the government has improved the insolvency laws, which provide separate tracks for re-organisation, composition and liquidation, to make them shorter and more attractive to creditors (see 2000 *Survey*). For example, the average time for re-organisation procedures has fallen from almost two years in 1997 to less than half a year at

present. In addition, “pre-packaged bankruptcy” was introduced in 2001 and has been used in several major re-organisation cases. Despite some progress, the government is working on measures to further improve the bankruptcy system, in part by merging the three separate tracks into one.

With the development of the corporate governance framework, the increase in transparency and the rehabilitation of the financial sector (see below), the government has adjusted the threshold at which chaebol-affiliated firms become subject to special regulations. Under the Monopoly Regulation and Fair Trade Act, the Korea Fair Trade Commission has regulated aspects of chaebol behaviour in an effort to prevent reckless investment, excess borrowing and fleet-style management. In particular, the amount of equity investment, cross-shareholding and debt guarantees by firms affiliated with the top thirty chaebol has been subject to restrictions. Beginning in April 2002, the regulations on investment cover only those business groups with more than 5 trillion won in assets. Currently, twelve private-sector business groups qualify under this criterion (Table 29). In addition, seven state-owned enterprises were added to the list, even though four of them only have two affiliates. However, the prohibitions on cross-shareholding and debt guarantees apply to groups with more than 2 trillion won, of which there are a total of 43. The revision of the coverage of the regulations on chaebol reflects progress in implementing the new corporate governance framework and in enhancing transparency. The continued development of the corporate governance framework and the financial sector should allow an easing of chaebol-specific regulations.

Developing a sound and market-oriented financial system

The financial-sector restructuring programme launched in 1997 has been successful in overcoming the impact of the crisis and laying the foundation for a more efficient and market-oriented system. The positive results are most evident in the commercial banking sector, which has returned to profitability in 2001 after four consecutive years of losses (Table 30). Moreover, the average capital adequacy ratio of nation-wide banks exceeds 10 per cent. The financial sector has been restructured by large outlays of public funds – amounting to 157 trillion won (27 per cent of GDP) – as of October 2002, with more than half used in the banking sector (Table 31). These funds were used to re-capitalise viable institutions, reimburse depositors and address non-performing loans. These expenditures were accompanied by an upgrading of prudential supervision, notably through the creation of the Financial Supervisory Commission, and the closure of nearly a quarter of financial institutions operating at the time of the crisis. Moreover, there have been significant cuts in operating costs due to reductions in branches and employees.

Table 30. **Indicators of bank profitability**
Nation-wide banks, in billion won and per cent

	1997	1998	1999	2000	2001	2002 first half
Before-tax profits						
Net profits	2 032.8	-3 244.6	1 625.1	7 350.6	8 739.2	6 402.7
Net profits minus loan loss provisions	-769.6	-10 346.8	-5 523.5	-1 863.8	3 630.4	3 807.8
Net profits minus all provisions	-3 223.3	-10 077.6	-5 523.5	-1 863.8	3 630.4	3 637.0
After-tax profits	-3 360.2	-10 130.0	-5 953.7	-2 399.9	3 391.5	2 849.1
Return on equity (per cent)	-14.09	-48.63	-24.73	-10.81	16.30	n.a.
Return on assets (per cent)	-0.90	-2.99	-1.42	-0.53	0.79	n.a.
Total loans	334 225.5	263 940.4	305 524.9	337 927.5	353 211.0	396 018.1
Substandard loans or below ¹	18 452.6	18 971.0	43 367.6	29 847.2	11 726.1	9 609.8
Ratio to total loans (per cent)	5.5	7.2	13.9	8.8	3.3	2.4
Loan loss reserves	4 698.0	12 102.5	19 762.1	19 584.1	9 568.9	n.a.
Reserves to substandard loans or below ¹	25.5	63.8	46.6	65.6	81.6	n.a.
Capital adequacy ratio (BIS ratio)	6.66	8.22	10.79	10.52	10.81	10.5
Number of branches	4 682	4 164	4 040	3 977	4 052	4 140

1. Includes loans classified as substandard, doubtful and estimated loss.

Source: Financial Supervisory Commission.

The recovery in profits has helped nation-wide banks to reduce loans classified as sub-standard or below from 13.9 per cent of total loans at the end of 1999 to a record low of 2.4 per cent in mid-2002. The banks accomplished this through write-offs, securitisation, the sale of borrowers' collateral and debt-equity swaps. In addition, the Korea Asset Management Corporation (KAMCO) has purchased such assets on behalf of the government since November 1997. By the time its role ended in November 2002, it had purchased non-performing loans with a face value of 105 trillion won (17 per cent of GDP) for the price of 39 trillion won. KAMCO's use of new techniques to dispose of these assets has furthered the development of the financial market, while recovering 29 trillion won of revenue for the government (Table 31, Panel C). Most of these funds were re-cycled for further restructuring of the financial sector. KAMCO still holds almost 40 per cent of the non-performing loans that it purchased.

The re-capitalisation of financial institutions using public money left a substantial share of the banking sector in the hands of the government (Table 32). Indeed, it currently owns two of the remaining eight nation-wide banks, in addition to nearly half of two others, plus two out of six local banks. The government has announced a plan to reduce its share of Woori Financial Holding Company, which includes three of the publicly-owned banks, to less than half by the end of 2003 by inducing domestic and foreign strategic investors, issuing global

Table 31. **The financial-sector restructuring programme**
November 1997 to October 2002 in trillion won

A. Outlays by type of financial institutions

	Equity participation	Capital contributions	Deposit payoffs	Asset acquisition	NPL purchases	Total
Banks	33.9	13.6	–	14.0	24.4	85.9
The non-bank sector	26.3	2.9	26.8	0.9	11.9	68.8
Merchant banks	2.7	–	17.2	–	1.6	21.5
Securities/investment trusts	7.7	–	–	–	8.3	16.0
Insurance	15.9	2.8	–	0.3	1.8	20.8
Credit unions	–	–	2.4	–	–	2.4
Saving banks	–	0.1	7.2	0.6	0.2	8.1
Foreign institutions	–	–	–	–	2.4	2.4
Total	60.2	16.5	26.8	14.9	38.7	157.1

B. Outlays by source of financing

Sources	Equity participation	Capital contributions	Deposit payoffs	Asset acquisition	NPL purchases	Total
Bond issuance	42.2	15.2	20.0	4.2	20.5	102.1
Public money	14.1	–	–	6.3	0.5	20.9
Recovered funds	3.9	1.2	6.1	4.4	16.6	32.2
Others	–	0.1	0.7	–	1.1	1.9
Total	60.2	16.5	26.8	14.9	38.7	157.1

C. Recovery of expenditures

Year	KDIC	KAMCO	Government	Total ¹
1998	–	2.4	–	2.4
1999	4.3	9.7	–	14.0
2000	6.1	8.9	–	15.0
2001	4.1	5.3	–	9.4
2002	1.6	2.7	6.4	10.7
Total	16.1	29.0	6.4	51.5

1. Includes 50 billion won of equity sales by the government.

Source: Public Funds Oversight Committee.

depository receipts (GDRs) and selling remaining equity step-by-step. The sale to strategic investors will be facilitated by the recent decision to ease the bank ownership limit on domestic investors by bringing it into line with that imposed on foreign investors. The general limit for all investors is now 10 per cent, although this can be raised to 100 per cent with FSC approval for financial capital. For non-financial capital, a 10 per cent stake is allowed as long as voting rights are restricted to 4 per cent, the previous limit. The relaxation of ownership limits

Table 32. **The government's ownership share of commercial banks**
End of 2002

Bank	Government share (per cent)	Held by
A. Nation-wide banks		
Choheung	80.05	KDIC
Woori ¹	87.71	Woori Financial Group – KDIC ²
Korea First	49.01	KDIC (45.92%), government (3.09%)
Korea Exchange	43.17	Ex-Im Bank (32.50%), Bank of Korea (10.67%)
Kookmin	9.64	Government
Shinhan	–	–
KorAm	–	–
Hana	27.90	KDIC
B. Local banks		
Daegu	–	–
Pusan	–	–
Kwangju	87.71	Woori Financial Group – KDIC ²
Cheju	31.96	KDIC
Jeonbuk	–	–
Kyongnam	87.71	Woori Financial Group – KDIC ²

1. Formerly known as Hanvit Bank.

2. Woori, Kwangju and Kyongnam are 100 per cent owned by the Woori Financial Group and 87.71 per cent of Woori Financial Group is owned by the KDIC.

Source: Financial Supervisory Commission.

raises the importance of financial supervision to prevent abuses, such as those that occurred in the past between non-bank financial institutions and their large shareholders. Carrying out the privatisation of the banks should be a top priority, in part to recover some of the 100 trillion won (17 per cent of GDP) outstanding in government-guaranteed bonds used for financial-sector restructuring. Moreover, a strong, privately-owned banking sector is essential to advance the corporate restructuring process.

The privatisation of the banks also provides an opportunity to increase the foreign presence in that sector. For nation-wide commercial banks, ownership shares of between 4 and 10 per cent must be reported to the Financial Supervisory Commission and its approval is needed to surpass 10, 25 and 33 per cent. While only one commercial bank is majority foreign-owned, five others have significant foreign investment. Foreign investors tend to improve governance by pushing banks to concentrate more on shareholder value. In addition, 61 foreign bank branches and 26 foreign representative offices were operating in Korea as of March 2002. Although their market share of 6.5 per cent is only slightly higher than the pre-crisis level, the participation of these banks in the local market has increased significantly, as indicated by the rise in the share of operating funds raised domestically from less than 20 per cent in 1996 to 68 per cent in 2001. The

growing role of foreign banks should have a beneficial impact on competition and efficiency as they appear to have comparative advantages in risk analysis and management, loan project assessment, credit analysis, portfolio management and computerisation.

The successful turnaround in the banking sector is recognised in the upgrades given to a number of Korean banks by global credit-rating agencies. As noted in earlier chapters, bank loans to households soared more than 50 per cent (year-on-year) during the first three quarters of 2002. Given the sharp rise in household debt relative to disposable income (Figure 5), such growth is unlikely to be maintained. Moreover, there are concerns about asset quality. With the rise in household debt, the number of individuals defaulting on loans increased 27 per cent between 2000 and 2002. The delinquency rate on credit cards, an area where the banks have a third of the market, has risen to more than 10 per cent. It is important that the supervisory framework take account of these emerging risks. The FSC has already taken some steps, such as lowering the share of real estate that can be used as collateral for household loans and increasing the risk weight attached to loans to households, thus forcing banks to hold more reserves. Finally, ensuring the long-term health of the banking system will require upgrading risk management capabilities, in part through successful use of the forward looking criteria introduced in 1999.

The situation is less favourable in the non-bank sector, where non-performing loans amounted to 10.4 per cent of total lending at the end of June 2002. This sector, though, is now substantially smaller than prior to the crisis, with total lending having fallen from half of GDP in 1997 to around 14 per cent. In particular, only three of the thirty merchant banks remain. The shrinking of the non-bank sector, combined with the bunching of bond maturities in 2001 and a high level of credit risk in the corporate sector, contributed to serious problems in the corporate bond market in 2001, which made it difficult for firms to roll over their bonds (see 2001 *Survey*). The bond market stabilised in 2002, leading to the phasing out of the CBO scheme to roll over corporate bonds using government guarantees. The insurance industry is one area where there has been significant restructuring, with public outlays of 20 trillion won (3.4 per cent of GDP) and downsizing. Moreover, the number of companies in the life insurance industry has been reduced by a third from 33 to 22, helping it to become profitable again.

The labour market

Korea's high degree of wage flexibility – as demonstrated by the fall in nominal wages in 1998 – reflects the sensitivity of wage and bonus payments, which account for a third of employee compensation, to economic conditions. Moreover, the practice of annual salary negotiations at the firm level has tended to make wage outcomes appropriate to the situation at individual companies. In

addition, the statutory minimum wage, which remained below a quarter of the average manufacturing wage in 2001 (Table 33), has little impact on the labour market. Despite double-digit increases during the past few years, less than 3 per cent of employees are paid the minimum wage. As for employment flexibility, the picture is less clear. The labour code was revised in 1998 to allow layoffs for managerial reasons, subject to certain conditions, including reporting to the government (see 1999 *Survey*).⁹⁰ The restructuring of the corporate, financial and public sectors has been associated with major reductions in employment. The total number of workers at the 30-largest chaebol, state-owned enterprises and financial institutions fell by a fifth between the end of 1997 and April 2001. However, redundancy for “managerial needs” accounted for only 6 per cent of the job losses reported to the Public Employment Service in 1998 and only 1 per cent in 2001. Apparently, layoffs have been used only as a last resort in cutting the workforce. Despite the large decline in employment at major firms, more than a tenth of enterprises in early 2002 reported having excess manpower in a survey by an employers’ organisation.⁹¹ This suggests that layoffs are restrained by the preconditions imposed for dismissing workers.⁹² However, this may also reflect cyclical factors. A survey of firms by the Ministry of Labour in December 2002 reported that 23 per cent were experiencing manpower shortages, while only 3 per cent had excess employees.

The paradox of sharp declines in employment combined with an apparent lack of employment flexibility may be explained by the duality of the labour market, which is segmented between regular and non-regular workers. According to the Korea National Statistical Office, non-regular workers – temporary and daily

Table 33. **The minimum wage**

	Minimum wages ¹			Minimum wage as a per cent of average wage in manufacturing	Number of workers paid the minimum wage ¹	Workers earning minimum wage as per cent of dependent employment ²
	Won per month (thousand)	Won per hour	Increase (per cent)			
1996	288.2	1 275	9.0	22.8	103 191	1.9
1997	316.4	1 400	9.8	23.9	127 353	2.4
1998	335.6	1 485	6.1	26.1	123 513	2.3
1999	344.7	1 525	2.7	23.4	22 980	0.4
2000	361.6	1 600	4.9	22.6	53 760	1.1
2001	421.5	1 865	16.5	24.8	141 102	2.1
2002	474.6	2 100	12.6	n.a.	201 344	2.8
2003	514.2	2 275	8.3	n.a.	n.a.	n.a.

1. The minimum wage is set in September of each year. The figure shown for 1997, for example, was in effect from September 1996 until August 1997. Since November 2000, the minimum wage applies to all firms. Previously, it applied only to those with five or more workers.

2. Percentage of regular workers only.

Source: Ministry of Labour.

workers – account for more than half of employees. However, the analysis reported in Box 9 suggests that the proportion on fixed-term contracts is actually around 17 per cent,⁹³ which is still relatively high by OECD standards. Whatever the precise figure, the labour market is characterised by a core of regular workers with a high level of employment protection, supplemented by a large group of temporary workers, whose numbers can be more easily adjusted in line with changing economic conditions. Indeed, non-regular workers accounted for 70 per cent of the newly employed in the autumn of 2001, a proportion significantly above their share of employment (KLI, 2001). Employers cite the difficulty of reducing the number of regular workers as a major reason for hiring non-regular workers.⁹⁴ Another reason given is that social welfare payments required for non-regular employees are lower. Indeed, firms do not have to provide certain benefits, such as the retirement allowance and childcare, to workers with less than one year of tenure. Moreover, firms tend to pay lower social contributions for such workers

Box 9. **The declining proportion of regular workers**

According to the labour force survey, regular workers – those who work more than one year at a firm and are paid standard wages, plus bonuses and overtime – accounted for 29 per cent of the labour force, or 48 per cent of employees, in 2001. The proportion of non-regular workers, defined as those working for a specific length of time and those not entitled to certain allowances, has thus increased from 42 per cent of employees in 1995 to 52 per cent in 2002. However, the degree of job precariousness is significantly less than suggested by the official statistics since many employees classified as temporary and daily in fact remain with their employer on a longer-term basis.

The Korea National Statistical Office has developed a survey to provide information about the different types of employment for wage earners. According to the survey, non-regular workers in the strict sense – those working for a limited period of time – includes the following categories (Table 34). *Contingent workers*, defined as those without a fixed-term contract who do not expect their employment to continue for involuntary reasons, accounted for 2.9 per cent of employees in August 2001. Another 3.3 per cent were *non-standard workers*, defined as those who are temporary agency workers and on-call workers. Adding these categories to the 11 per cent of employees with fixed-term contracts sums to 17 per cent – well below the 52 per cent reported in the regular survey as the combined proportion of temporary and daily workers. In sum, the discrepancy reflects the fact that a large number of employees that are classified as non-regular, either because they have no contract or are not entitled to certain allowances, expect the employment relationship to last. The proportion of non-regular workers is presumably between 17 and 52 per cent, but probably closer to the lower figure. However, it is also clear that the proportion has been increasing.

Table 34. **Non-regular workers in Korea**
August 2001

	Number of workers (thousand)	As a per cent of dependant employment ¹
Less than or equal to 1 month	763	5.7
More than 1 month to less than 1 year	370	2.8
Exactly 1 year	187	1.4
Workers with a fixed-term contract: More than 1 year to less than 3 years	73	0.5
3 years or more	59	0.4
Subtotal	1 452	11.0
Workers without a fixed-term contract, where employment is not expected to continue for involuntary reasons	387	2.9
Temporary agency workers	130	1.0
On-call workers	305	2.3
Total²	2 274	17.2

1. The total number of dependent workers was 13.3 million.

2. The overall total of temporary workers is likely to be higher, as two employee categories which were classified separately in the Supplementary Survey (home workers and workers provided by contract firms) contain an unspecified number of persons with a fixed-term contract, or a short-term employment perspective.

Source: Korea National Statistical Office.

or none at all. Daily workers, for example, have been excluded from the Employment Insurance System. The increase in the number of non-regular workers by sector is positively correlated with the separation rate of regular workers, suggesting that reducing costs is a primary motivation for hiring non-regular workers (Dae Il Kim, 2001).

The different pay and working conditions in the two segments of the labour market create equity concerns. The market for regular workers is characterised by lifetime employment, little threat of dismissal, a seniority-based pay system and infrequent movements of workers between companies. In contrast, the market for non-regular workers resembles a perfectly competitive market in which both hiring and firing are relatively easy and wages are determined by an employee's performance. Moreover, regular workers are protected by the social safety net while non-regular workers, who earn 20 per cent less after adjusting for years of service, type of job and working hours, are excluded from some aspects. Finally, non-regular jobs in Korea are viewed as traps that prevent workers from moving on to regular posts rather than a bridge to more stable employment (SERI, 2001). Given the equity problems posed by a dualistic labour market, it is important to weaken the incentives favouring temporary workers through two approaches. *First*, the social safety net for non-regular workers should be strengthened, thus reducing the cost advantage of such employees. The plan to extend

unemployment insurance to daily workers is a step in the right direction. *Second*, employment protection for regular workers should be relaxed.

One factor contributing to labour market rigidity is the adversarial relations between workers and management, which also discourages foreign direct investment.⁹⁵ The militancy of the trade unions since democratisation in 1987 may have been a strategic move to encourage government involvement in labour-management disputes.⁹⁶ Progress has been made in the context of the Tripartite Commission, which was established in 1998 to resolve a number of difficult issues and bring the industrial relations framework into line with OECD norms. Major outstanding issues include allowing multiple trade unions at the firm level, the payment of full-time union officials by companies and the right of civil servants to organise. The Commission also discussed the introduction of a 40-hour workweek to reduce annual working hours from 2 500 – the highest in the OECD area – to 2 000, but failed to reach an agreement. Without a change in the legal framework, working hours will be the subject of contentious negotiations at the firm level.

Other aspects of labour market flexibility include enhancing the availability of information about jobs and allowing greater use of temporary (dispatched) workers, which are currently limited to 26 occupations, primarily professional jobs. Expanding the use of such workers, as well as protecting them, is under discussion in the Tripartite Commission. As for job information, the Public Employment Service should seek more synergies with the large and long-established network of private job placement agencies, which total more than 5 000. Moreover, the separate Public Employment Service networks operated by the central and local governments should be integrated and the quality of staff upgraded.

Labour flexibility and mobility is also enhanced by helping workers gain the skills and knowledge needed in a rapidly changing economy. The number of unemployed receiving training jumped eight-fold in 1998 with the introduction of such programmes to provide income support for jobless persons in the wake of the crisis. However, with the economic recovery, the number of unemployed receiving training fell by 43 per cent to 189 000 by 2001.⁹⁷ While training programmes are still much larger than prior to the crisis, there are a number of criticisms of the current approach.⁹⁸ *First*, the choice of participants is biased towards those under the age of thirty. *Second*, dropout rates are high. Indeed in 2000, less than half of those enrolled in training programmes completed their courses (Table 35). *Third*, employment rates for those completing training have not been impressive. In 2000, a year when total employment rose 4 per cent and the unemployment rate fell below 4 per cent, two-thirds failed to find jobs during the three months following the completion of training courses. Indeed, a study comparing participants and non-participants in 1998 and 1999 found that the reemployment rate was lower for those participating in training programmes (Kang and Lee, 2001). To make training a more effective method for promoting employment, it is

Table 35. Training programmes for the unemployed

	Total	Reemployment training of the unemployed under the EIS	Training programmes not financed by the EIS					Other programmes
			Employment promotion	Craftsmen	3-D jobs	Business start-ups	New labour market entrants	
1998								
Total number of trainees	330 644 (100.0)	170 096 (51.4)	101 709 (30.8)	14 515 (4.4)	11 000 (3.3)	13 598 (4.1)	10 715 (3.2)	9 011 (2.7)
Number of trainees who completed the course	134 314	73 320	37 465	4 786	2 904	11 051	4 788	..
Completion rate ¹ (per cent)	40.6	43.1	36.8	33.0	26.4	81.3	44.7	..
Found employment ²	26 582 (19.8)	15 571 (21.2)	7 218 (19.3)	1 286 (26.9)	1 486 (51.2)	547 (4.9)	474 (9.9)	..
2000								
Total number of trainees	216 317 (100.0)	120 296 (55.6)	47 057 (21.8)	13 311 (6.2)	6 885 (3.2)	4 699 (2.2)	6 666 (3.1)	17 403 (8.0)
Number of trainees who completed the course	103 807	68 502	18 516	4 171	484	2 919	3 835	5 380
Completion rate ¹ (per cent)	48.0	56.9	39.3	31.3	7.0	62.1	57.5	30.9
Found employment ³	43 632 (35.5)	30 798 (37.6)	5 681 (26.8)	1 260 (29.4)	484 (77.6)	440 (14.5)	1 512 (35.4)	2 626 (41.6)

.. Data not available.

1. Completion rate equals the number of trainees who completed the course divided by the total number of trainees.

2. The figures in parenthesis is the number of persons who found employment in the first three months after completing training programmes divided by the sum of those who completed the training.

3. The figures in parenthesis is the number of persons who found employment in the first three months after completing training programmes divided by the sum of those who completed the training plus those who found employment before completing training.

Source: Ministry of Labour.

Table 36. **Coverage of the Employment Insurance System**
Number of workers in thousands and per cent

	July 1995	January 1998	July 1999	December 2000	September 2001	October 2002
Wage and salary earners	12 824	12 500	12 603	13 142	13 265	13 932
Eligible for EIS	4 280	5 190	8 342	8 700	9 269	9 700 ²
Actually insured	4 204	4 309	5 876	6 747	6 884	7 102
Eligible as a per cent of wage and salary earners	33.4	41.5	66.2	66.2	69.9	70.0 ²
Insured as a per cent of eligible workers	98.2	83.0	70.4	77.6	74.3	73.0 ²
Insured as a per cent of wage and salary earners	32.8	34.5	46.6	51.3	51.9	51.0
Proportion of unemployed receiving benefits ¹	13.5	...	16.0	

1. Annual averages.

2. Estimates.

Source: Ministry of Labour.

important to continuously evaluate programmes based on the following criteria: *i*) targeting on participants; *ii*) keeping programmes small in scale; *iii*) ensuring that training results in a qualification that is recognised and valued by the market; *iv*) including a strong on-the-job component in training, which helps to establish close links with employers (Martin and Grubb, 2001).

As stressed in previous *Surveys*, labour market flexibility should be accompanied by an adequate social safety net. Following the crisis, Korea moved quickly in this regard, boosting spending on labour market programmes – including unemployment insurance, vocational training and public works jobs – from 0.1 per cent of GDP in 1997 to 1.2 per cent in 1999 (Table 22). Such expenditures have fallen sharply to around 0.5 per cent of GDP since 2000, reflecting the marked decline in unemployment. However, the relatively low proportion of the labour force that is covered by unemployment insurance is a concern (Table 36). Although 70 per cent of employees are eligible,⁹⁹ only 51 per cent are actually insured. The fact that 2.4 million eligible workers are not insured indicates poor enforcement and a lack of awareness on the part of workers and management on the need for unemployment insurance. Including the self-employed, only 30 per cent of those working in 2001 were covered by unemployment insurance.

The proportion of unemployed receiving benefits – 16 per cent in September 2001 (Table 36) – is substantially lower than the share of the labour force that is covered by unemployment insurance. One reason is that not all jobless persons have met the legally required minimum contribution period of

Table 37. **Employment subsidies**

	Number of participants (thousands)				Expenditure (billions of won)			
	1998	1999	2000	2001	1998	1999	2000	2001
Total	780.6 (100.0)	669.9 (100.0)	445.1 (100.0)	568.3 (100.0)	96.3 (100.0)	184.2 (100.0)	113.6 (100.0)	128.8 (100.0)
Employment maintenance programmes	654.4 (83.8)	369.6 (55.2)	148.2 (33.3)	257.4 (45.3)	74.2 (77.1)	79.2 (43.0)	29.3 (25.8)	56.0 (43.4)
Of which: Temporary shutdown	602.8 (92.1)	291.1 (78.8)	130.1 (87.8)	178.4 (69.3)	53.3 (71.9)	47.4 (59.8)	21.8 (74.5)	32.2 (57.6)n
Employment promotion programmes	125.9 (16.1)	300.3 (44.8)	296.8 (66.7)	310.9 (54.7)	22.1 (22.9)	105.0 (57.0)	84.4 (74.2)	62.8 (56.6)
Of which: Hiring of laid-off workers	5.2 (4.1)	101.4 (33.8)	62.7 (21.1)	30.3 (9.7)	5.9 (26.6)	75.2 (71.6)	40.8 (48.3)	20.2 (27.8)

Source: Ministry of Labour.

180 days. Others do not receive benefits because their unemployment spell exceeds the maximum coverage period (between 90 and 240 days), they quit their jobs voluntarily or they do not fulfil the job-search requirements. Such requirements are intended to encourage the unemployed to look for and accept jobs. However, it is important that the authorities follow through on measures planned for 2004 to increase the coverage of the Employment Insurance System. *First*, daily workers and part-time employees working more than 15 hours weekly (previously 18 hours) will be included. *Second*, the legal reporting system is to be strengthened.

Outlays on employment subsidies recorded a 13 per cent increase in 2001, with the number of participants in the two subsidy programmes reaching nearly 4 per cent of all employees (Table 37). *Employment-maintenance subsidies* are offered to firms that retain redundant workers during periods of financial difficulty. *Hiring subsidies* are provided to companies that take on certain categories of workers, such as the elderly, women or the long-term unemployed. The bulk of these subsidies are paid to firms with less than 300 employees. As noted in the 2001 *Survey*, the deadweight and substitution effects of such subsidies tend to be as high as 90 per cent in other OECD countries using such policies.

Promoting international openness

Lowering barriers to international trade

Korea has made significant efforts during the past few years to reduce barriers to trade, including the elimination in 1999 of the Import Diversification Programme, which had prohibited imports of certain products from Japan, and the abolition of all quotas except that on rice. It is important to continue the trend to

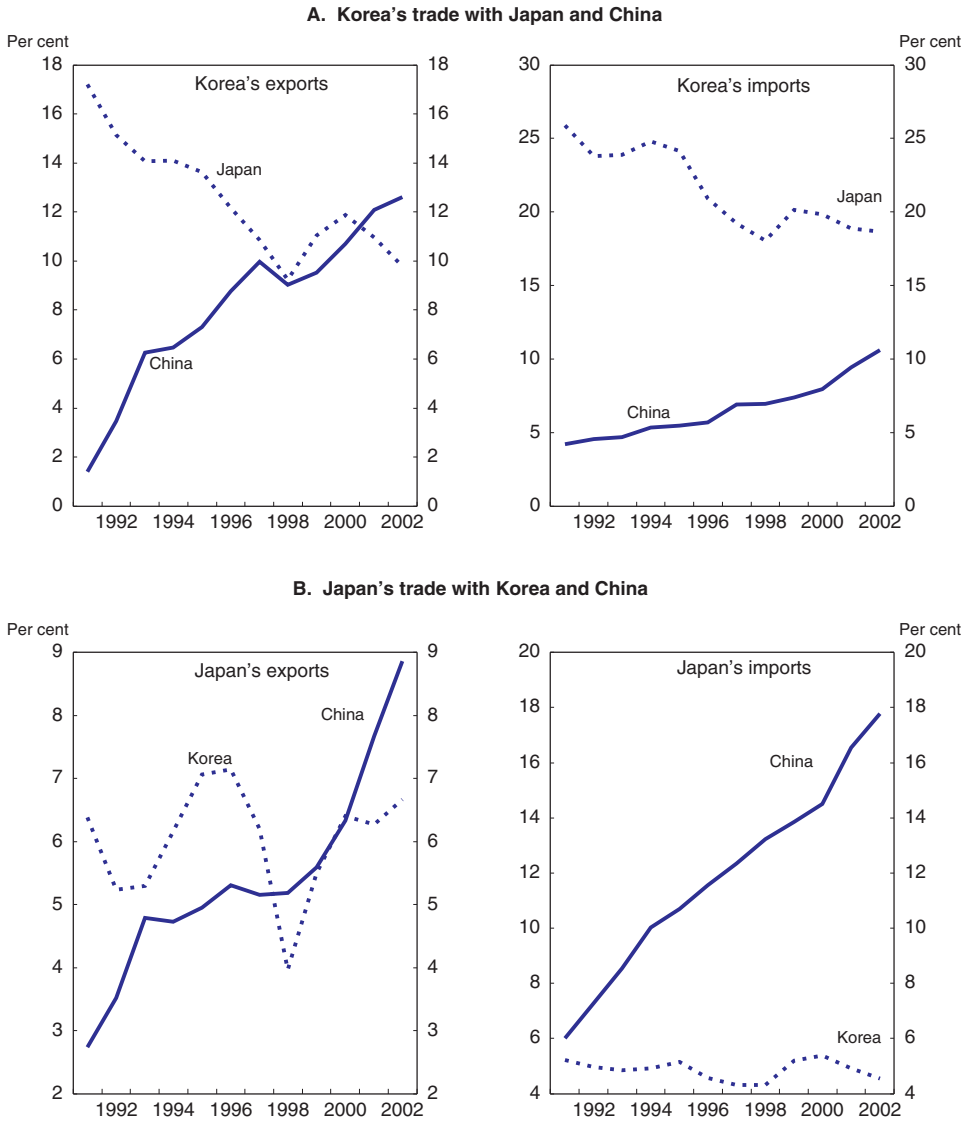
greater openness, which has facilitated an increase in imports from 36 per cent of GDP in 1997 to an estimated 42 per cent in 2002, despite the sharp decline in the exchange rate, which remains a third below its pre-crisis level.

One key development in this area was the conclusion of a free trade agreement (FTA) with Chile in October 2002 after three years of negotiations. Previously, Korea had been one of the few major trading nations that was not a member of any regional trade agreement, the number of which has jumped from around 25 at the beginning of the 1990s to over 150 by the end of the decade. In addition to Korea's emphasis on multilateral negotiations, its concerns regarding the potential impacts of FTAs on its agricultural sector has been an obstacle to joining such agreements. Indeed, the agreement with Chile does exclude some agricultural products. The choice of Chile for Korea's first FTA reflects the fact that it has an industrial structure that is complementary to Korea's and it is a relatively small economy, thus reducing the risk of significant shocks on the Korean economy. Moreover, Chile has concluded FTAs with a number of countries during the past 20 years. In addition, the FTA with Chile offers Korea a bridge into South America.

A joint study group of experts from government, academia and business in Japan and Korea was launched in July 2002 to explore all relevant issues pertaining to the creation of a free trade agreement between the two countries. Such an FTA has the support of some business leaders on both sides.¹⁰⁰ Agriculture is less likely to pose a stumbling block on the Korean side than with other potential partners. Such an agreement would remove non-tariff barriers in addition to tariffs, which average 7.9 per cent in the case of Korea and less than 3 per cent in Japan. According to research done at the Korea Institute of International Economic Policy, a Korea-Japan FTA would boost Korea's GDP by between 1 and 4 per cent in the long run (Cheong, 2001). Such an agreement would re-invigorate bilateral trade, which has waned in importance for both Korea and Japan during the past decade, while China has emerged as both a key market and a supplier of imports for Korea and Japan (Figure 32). Given the growing role of China, some Korean business leaders envision a Japan-Korea FTA as the first step toward a trilateral FTA that would include China. Moreover, it would be a start to achieving the goal of creating an East Asia FTA, which would embrace the ASEAN countries plus China, Japan and Korea.

In the Doha Round of multilateral trade negotiations, the two areas with perhaps the greatest potential impact on Korea are services and agriculture (see below).¹⁰¹ Korea's trade in services doubled to 15 per cent of GDP in the decade to 2001. In the Uruguay Round's General Agreement on Trade in Services, Korea made a number of commitments in most service sectors. Further liberalisation in the new round will help boost trade, as well as inward investment in service sectors, thus providing better access to services for consumers at lower

Figure 32. **Trade flows in Northeast Asia**
Share in total trade¹



1. January to June for 2002.

Source: OECD.

Table 38. **Commercial presence of foreign financial institutions in Korea**
2000

	Bank	Security	Investment trust company	Investment advisory	Life insurance	Non-life insurance
Branch	Open	Open	Open	Open	Open	Open
Subsidiary	Open	Open	Open	Open	Open	Open
Joint venture	Open	Open	Open	Open	Not open	Not open
Cross-border trade	Partially open	Not open	Partially open	Open	Open	Partially open

Source: Korea Institute of Finance.

prices. Countries participating in the new round made initial requests by the end of June 2002 and are scheduled to make initial offers by March 2003, with negotiations continuing until the end of 2004. Requests to Korea have been made by a number of countries, reportedly covering all twelve service sectors recognised by the World Trade Organisation.¹⁰²

Financial and legal services are two of the service sectors in the new round. Regarding financial services, the market has been opened for the establishment of foreign institutions in Korea, with the exception of the insurance industry (Table 38). However, there are still significant barriers to cross-border trade in financial services, *i.e.* the provision of services by institutions located in a foreign country.¹⁰³ The Korean authorities have argued that, given the level of development of the domestic financial market, a commercial presence in Korea by foreign firms is needed to supply financial services such as underwriting and broker-dealer services. However, with the rapid development of the financial market since the crisis, such concerns have presumably become less important. As for legal services, there are restrictions on such activities by foreigners in Korea, thus limiting the availability of international-standard, high-quality legal services that are essential for the internationalisation of the economy. Allowing foreign law firms to establish representative offices in Korea for the practice of non-Korean law would be a first step to liberalisation. This should be followed by allowing full partnerships between foreign and Korean law firms, with foreign firms having the right to employ individual Korean lawyers.

With the opening of the beef market in 2001, rice is the only product subject to quantitative restrictions. Under the “minimum access commitment”, rice imports are to rise from 1 to 4 per cent of domestic consumption over the period 1995 to 2004. In addition, 64 products are subject to tariff-rate quotas. Korea is also committed under the Uruguay Round to reduce its “Aggregate Measure of Support” by 13 per cent between 1995 and 2004, which requires shifting away from market price supports. In line with this objective, government outlays to purchase rice fell by about 5 per cent in both 2001 and 2002. To maintain assistance

to farmers, direct payments have risen from 4 to 7 per cent of total support in 2001, with the introduction of the “De-coupled Income Support” programme. This programme, which is only available for paddy land that was in operation between 1998 and 2000, provides payments to farmers who use environmentally friendly methods. The amount of the payment was doubled to between 400 000 and 500 000 won per hectare, depending on whether the farm is located in an agricultural promotion area. Such policies have also helped reduce the use of chemical fertilisers, which is extraordinarily high in Korea, by 15 per cent between 1999 and 2001. Direct payments are a more effective and transparent means to provide assistance to producers and result in less distortion to resource allocation.

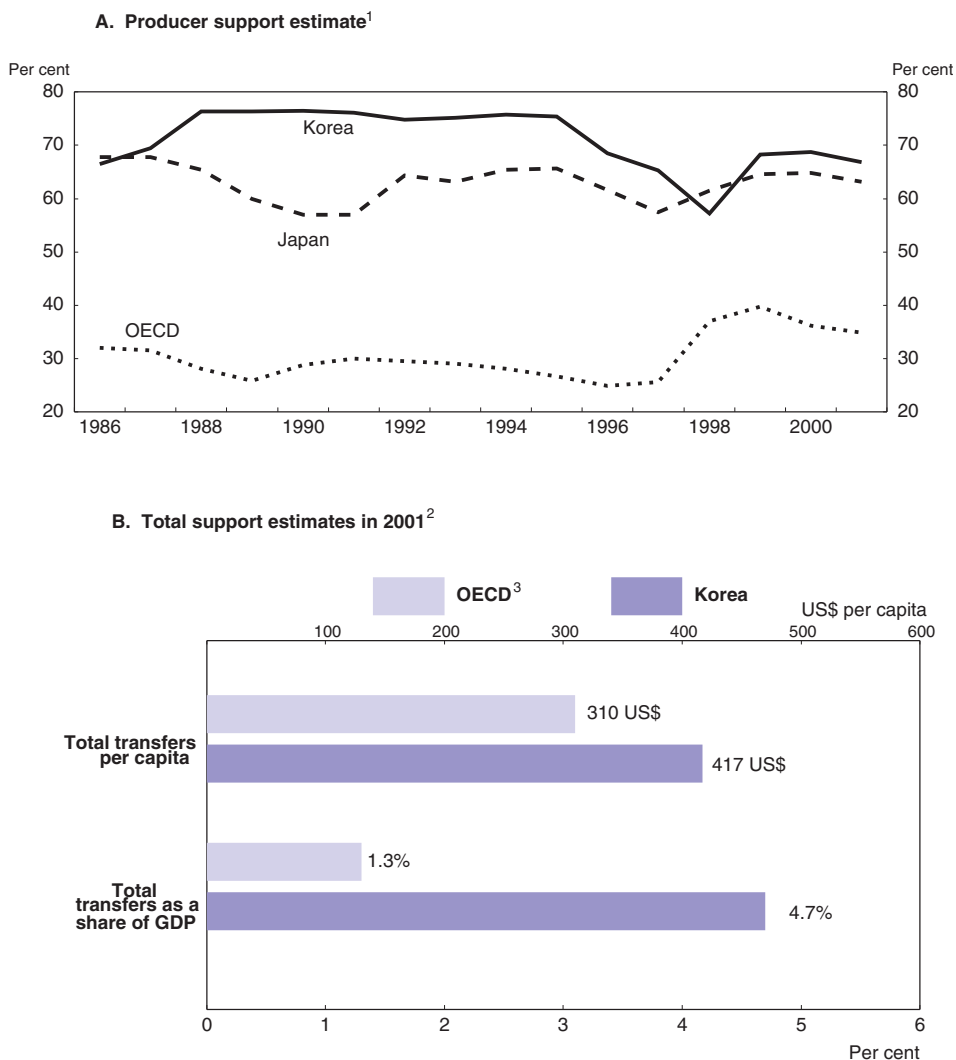
However, there has been limited progress in increasing the market-orientation of Korean agriculture. The level of assistance to producers, as measured by the Producer Support Estimate, fell slightly from 67 per cent in 2000 to 64 per cent in 2001 (Figure 33). Nevertheless, it remains one of the highest among OECD countries and double the OECD average. Moreover, 93 per cent of this support took the form of market price supports, primarily trade restrictions and the domestic price stabilisation mechanism, including government purchases and public stockbuilding. These types of assistance are the most distortive to trade and production decisions. Government support boosted gross farm receipts by 2.8 times and posed a significant burden on consumers, who paid prices that were two and a half times the world level. Transfers to agriculture amounted to \$417 per person and totalled 4.7 per cent of GDP.

The key to establishing a more efficient agriculture sector appears to be increasing the size of farms, which are relatively small, averaging less than 1.4 hectares (Table 39). The government provides low-interest funds to full-time farmers to lease or purchase the land of non-farmers or those who are retiring. These policies have helped increase the proportion of farms with more than three hectares from 4.7 per cent in 1995 to 6.1 per cent in 2000. The gradual upward trend in the average farm size, which is rising less than 1 per cent a year, should accelerate following the removal in January 2003 of the five-hectare limit on farms outside the agricultural promotion zones, which account for nearly half of arable land.

Encouraging inflows of foreign direct investment

Foreign direct investment (FDI) fell by a quarter in 2001 to \$11.3 billion, well below its objective of \$15 billion, in the context of a general decline in the worldwide total of direct investment flows. Indeed, inflows of FDI in the OECD area fell by 56 per cent in 2001. The decrease in Korea was due to a contraction in investment in the manufacturing sector, while inflows into the service sector

Figure 33. **Producer support estimates and transfers to agriculture**



1. 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. Transfers from consumers plus transfers from taxpayers less budget revenues.

3. Korea is not included in the OECD average.

Source: OECD.

Table 39. **Farm size**
Number of farm households in thousands

	1995	2000
Total	1 501	1 383
More than 3 hectares	70	85
Per cent of total	4.7	6.1
More than 5 hectares	16	24
Per cent of total	1.0	1.7
Average farm size	1.32	1.37

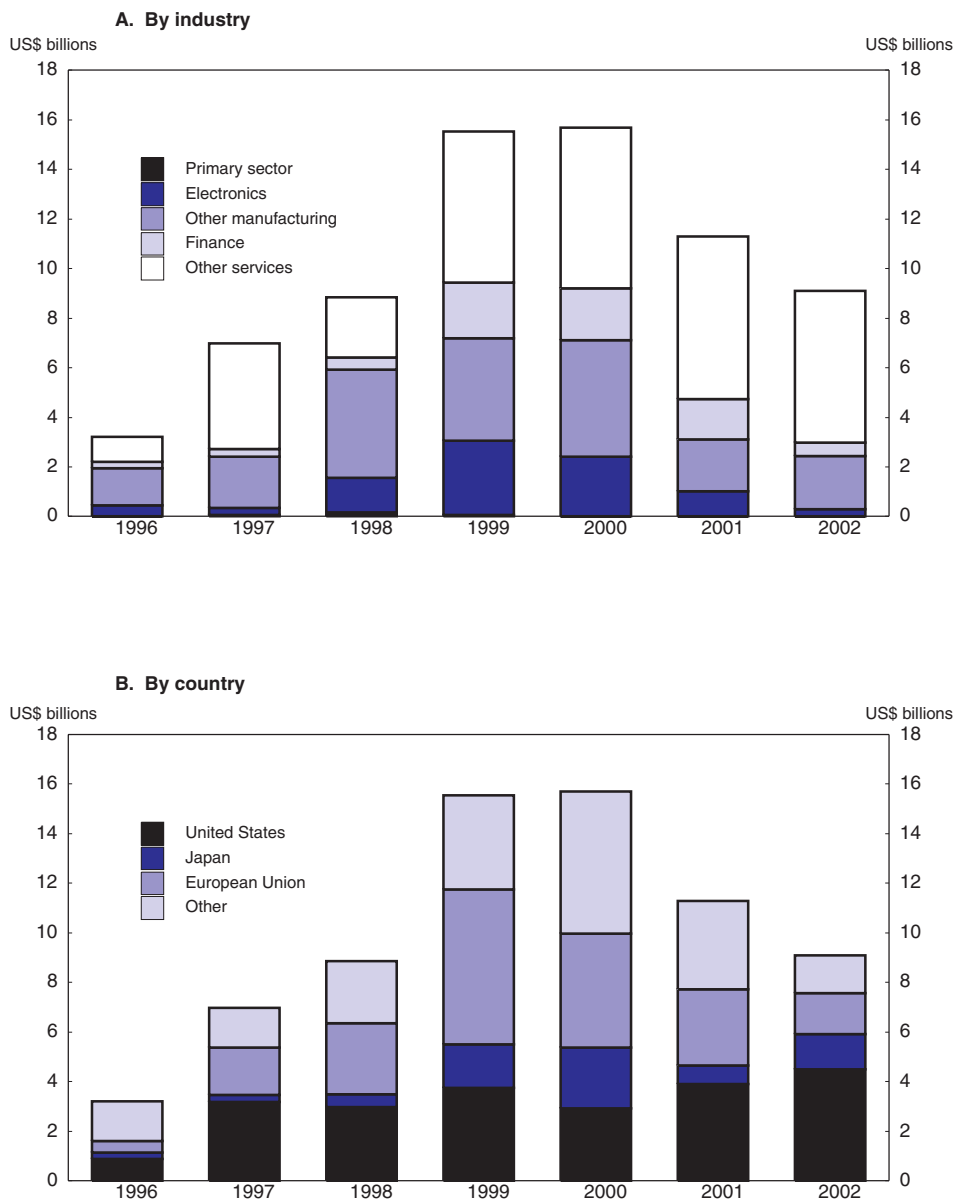
Source: Ministry of Agriculture and Forestry.

continued to rise, led by financial services (Figure 34). By source country, there were significant declines in inflows from the European Union and Japan, although that was partially offset by an increase from the United States (Panel B). Inflows of FDI in Korea fell by another 20 per cent in 2002 to \$9.1 billion. The declines in 2001 and 2002 were the first since the crisis, which marked a fundamental change in the environment for direct investment in Korea. As noted in previous *Surveys*, FDI had played a minor role prior to the crisis, reflecting legal restrictions and a generally hostile attitude toward foreign investors.¹⁰⁴ Since 1998, though, the authorities have reduced legal restrictions and created incentives, such as tax holidays, to encourage FDI inflows.¹⁰⁵ Perhaps even more importantly, the negative attitudes toward direct investment changed, as reflected in the creation of the Korea Investment Service Centre, a “one-stop shop” to assist potential investors. Consequently, FDI surged to more than \$15 billion in 1999 and 2000, driven by the large number of M&As and joint ventures that occurred as part of corporate restructuring. At present, 8 per cent of the manufacturing labour force is employed at foreign-invested firms.

However, in 2000, after three years of significant inflows, the stock of inward direct investment relative to domestic GDP nonetheless remained the third lowest in the OECD at less than 10 per cent (Figure 35). The authorities have taken some additional steps to increase incentives for FDI in foreign investment zones (FIZ). With only two business lines – radio and television broadcasting – still closed to direct investment (out of a total of more than 1 100), the importance of legal restrictions has diminished. However, 27 business lines are partially restricted. In addition, 78 firms are designated as defence-related companies in which foreign investment requires prior approval.

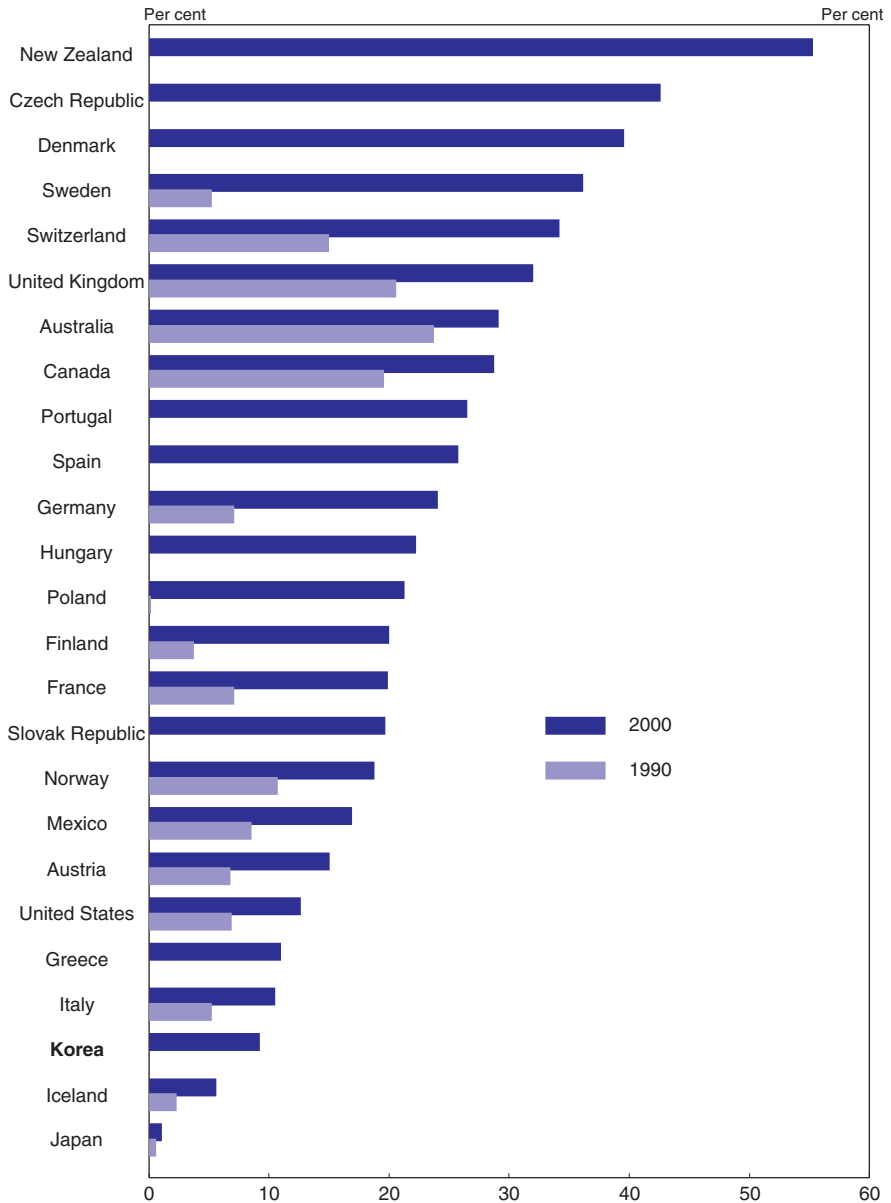
While legal restrictions may remain a problem in some areas, perhaps even more important is maintaining the positive attitude toward FDI investment that has generally prevailed among officials and the public since the crisis. In addition, it is important to resolve problems such as difficult labour-management

Figure 34. **Foreign direct investment inflows**
US\$ billions on a notification basis



Source: Ministry of Commerce, Industry and Energy.

Figure 35. **Stock of inward forward direct investment position**
Per cent of domestic GDP



Source: OECD.

relations, unfair regulations and practices and a lack of educational opportunities, which may hinder investment inflows. In order to create an attractive investment environment that satisfies the requirements of investors, Korea has introduced additional measures since 2001 to improve the management and living environment, by addressing issues of taxation, finance, labour, education and entry into and departure from the country. Major measures include:

- Expanding the number of areas designated as business and industrial complexes for foreign companies.
- Establishing systematic procedures to investigate unfair international trade practices.
- Improving the license acquisition system for foreigners.
- Creating a “Free Economic Zone” around Incheon international airport and Busan-Gwangyang port that can act as business hubs for Northeast Asia.
- Establishing the office of Foreign Investment Ombudsman.¹⁰⁶
- Developing an annual FDI Environment Improvement Plan.

As noted above, improving transparency and regulatory practices is essential to encourage investment inflows. Reforming regulations has been a priority in Korea since the crisis, resulting in a significant reduction in the number of regulations (see 2000 *Survey*). According to a survey of firms, 70 per cent have been positively affected by regulatory reform, which has been directed by the Regulatory Reform Committee (RRC). The Committee consists of seven government officials and 13 private-sector representatives and is located in the Prime Minister’s office. During the past year, the focus has been on quasi-regulations that, although issued by government-affiliated organisations, are enforced to the same extent as regulations originating in the government. The quality of the Regulatory Impact Analysis statements has improved, although the Prime Minister’s office still finds their quality unsatisfactory, and they are now available to the public. Despite the progress recorded in the past few years, the RRC still has an important role to play in reviewing proposed regulations and improving existing ones:

- The FSC plan announced in November 2002 to have banks set aside 10 per cent of their net profits to improve their financial structure was rejected by the RRC on the grounds that the banking laws do not authorise such a regulation. This measure would have forced banks to set aside an additional 500 billion won (\$400 million).
- The Ministry of Information and Communication is preparing an auction to allocate radio frequencies to telecom companies, as recommended by the RRC. Previously, these frequencies were allocated based on the Ministry’s assessment of firms’ business proposals.

- The RRC instructed the Financial Supervisory Service in July 2002 to lift the ban prohibiting credit card companies from soliciting new customers on the street. Moreover, such a ban would have put around 80 000 sales persons out of work.

For the business sector, a priority is the removal of entry barriers, notably in some service sectors such as finance and areas where the public sector dominates. A second area of concern is regulations on location, which are primarily related to measures aimed at preventing concentration in the Seoul area. A third issue is controls on investment, notably those enforced against chaebol-affiliated firms. In terms of process, holding public hearings on all issues might be considered to increase the transparency of the regulatory reform process.

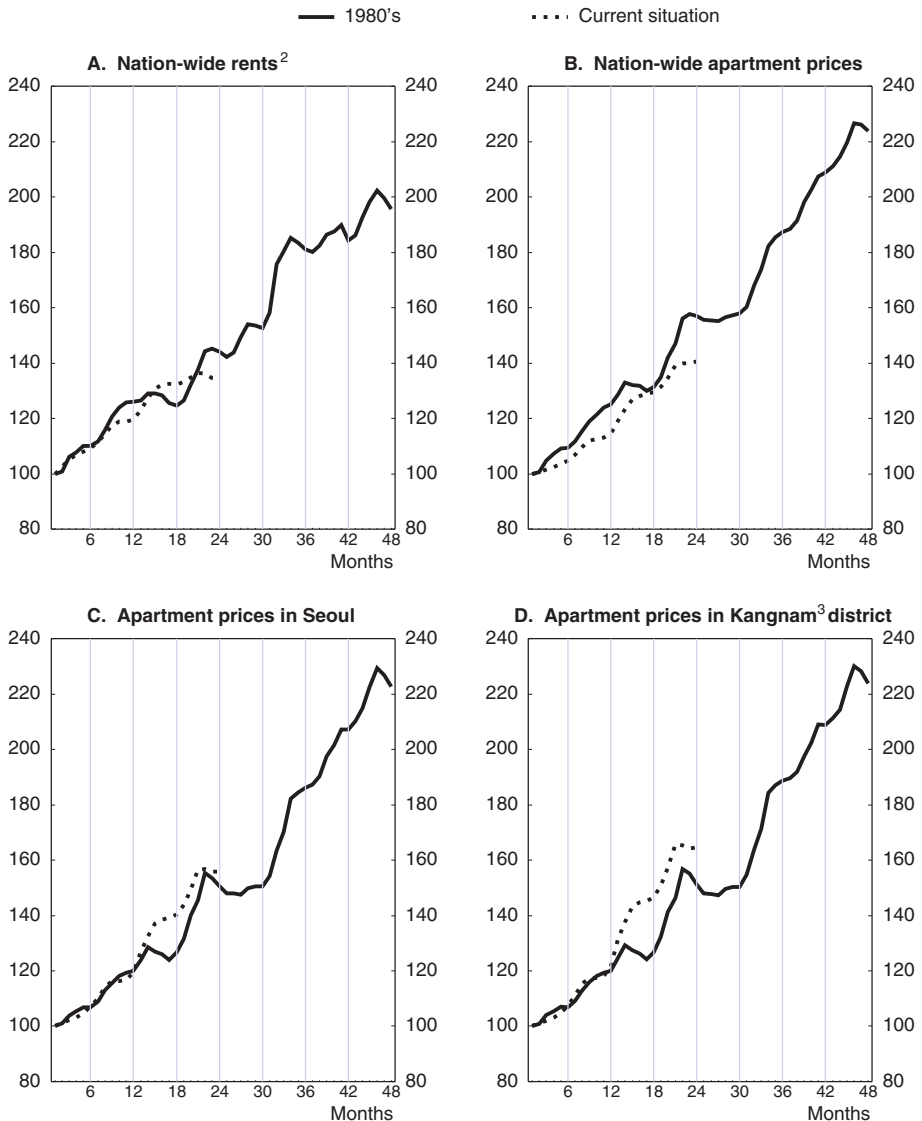
The land market

Land use is an important issue in Korea, which has the third-highest population density in the world (excluding city-states) at 485 inhabitants per square kilometre. Effective use of land is all the more important given that two-thirds of the country is mountainous and nearly half of the population is concentrated in the capital region. Korea has recently taken several initiatives to improve land use. *First*, it has conducted environmental impact assessments of Restricted Development Zones, covering more than 5 300 square kilometres (5 per cent of the national land area), in 14 urban areas. Following this review, more than a quarter was re-classified so as to permit its eventual development. *Second*, the “Act on Planning and Utilisation of the National Territory” was passed in December 2001 and will take effect in 2003. The Act is intended to develop a coherent planning system for the entire country, including semi-agricultural and semi-urban zones where planning had been weak.

Land use is an important issue in the context of the recent surge in real estates prices, which follows similar experiences in the latter part of the 1970s and the second half of the 1980s. As in the previous episode, the current cycle started with rising rents, which encouraged more households to buy dwellings, particularly in a period of low interest rates. Consequently, the rising trend of rents spread to house prices (Figure 6). Since the beginning of 2001, apartment prices nation-wide have risen 40 per cent on average, compared to a 55 per cent increase in the first two years of the last real estate boom, which started in mid-1987 (Figure 36). There are a number of similarities in the two episodes. *First*, both were preceded by a period of falling housing construction (see Chapter I). *Second*, both occurred when monetary conditions were relaxed (Chapter II). *Third*, both were linked to major international events, such as the Seoul Olympics in 1988 and the Korea-Japan World Cup and the Asian Games in 2002.

In some respects, though, the current real estate price increase differs from previous experiences, notably because it is more concentrated in the Seoul

Figure 36. **Price trends in the real estate market**
 A comparison of the late 1980's episode¹ with the current situation



1. The 1980's episode began in July 1987. The current rise in real estate prices began in January 2001.

2. For apartments under the *chonsei* system.

3. A district of Seoul.

Source: Kookmin Bank.

region (Panel C). This reflects the fact that the “housing supply rate” – the ratio of households to the number of houses – has risen from 86 per cent nation-wide in 1995 to an estimated 98 per cent in 2001, thus limiting upward pressure on prices. In Seoul, in contrast, the ratio, though increasing in recent years, remains below 80 per cent. Housing price hikes have been most concentrated in the Kangnam area of Seoul (Panel D), due to demographic changes and the importance placed on education. The proportion of the population in the 40 to 50 age category is increasing rapidly, from 12 per cent in 1995 to 15 per cent in 2000. For people in this age group, the education of their children is the most important criteria in choosing a house.¹⁰⁷ The Kangnam area is considered to have excellent schools as well as the highest concentration of private educational institutes (*hakwon*). Thus, the real estate market boom is linked to the problems in the education system (see below).

Given that the demand for housing is concentrated in Seoul, there appear to be two options to contain the upward trend in house prices and avoid the problems that typically accompany asset price bubbles. One option would be to increase the supply of housing in the Seoul region, paying attention to the demand for high-quality education.¹⁰⁸ An alternative approach would be to adopt new policies to decrease the concentration in the capital region, which now accounts for 46 per cent of the nation’s population. Despite policies during the past twenty years to limit the growth of the Seoul area, the concentration has continued to increase. The present approach focuses on regulatory measures to restrict the construction of new factories, universities and government institutions in the capital region. More emphasis on economic instruments, such as congestion charges, may be more effective in reducing concentration. In addition, the opening of the high-speed train system in 2004 offers an important opportunity for regional development.

During the past year, the government has introduced numerous policy packages to limit the upward trend in housing costs (Table 40). These have focused on regulatory measures, such as increased use of tax audits to discourage speculators and changes in the “parcelling system” for allocating new houses (see Chapter I). In addition, a number of measures were taken to strengthen the capital gains tax. *First*, the “standard price” used to calculate the tax was raised to about 90 per cent of the market price in April 2002.¹⁰⁹ *Second*, the conditions under which property can be exempted from the capital gains tax were tightened.

In addition, the property holding tax will be increased from its current low level. Property taxation consists of separate levies on buildings and land. For buildings, the tax is based on standard building costs, which are set at about 30 per cent of actual building costs, with some adjustment for the value of the building.¹¹⁰ The tax rate for houses ranges from 0.3 to 7 per cent depending on the size of the tax base. In the case of land, local governments apply an “Application

Table 40. Government policies to stabilise the real estate market¹

Contents	Time of action
Re-introduced the compulsory ratio for the number of small houses built in new housing construction projects	December 2001
Strengthened the capital gains tax	
– Raised standard prices used to assess the tax	April 2002 and September 2002
– Shortened the period in which houses must be sold to gain an exemption	March 2002
– Lowered the threshold at which the tax is based on the actual transaction price rather than the standard price	October 2002 and November 2002
– Introduced a requirement on the amount of time one must live in a house to gain an exemption	October 2002
Expected to raise tax base of the property holding taxes (at the local government level)	First half of 2003
Favoured non-homeowners in parcelling rights	April 2002 and November 2002
Limited the right to transfer parcelling rights	September 2002
Adopted stricter requirements for reconstruction of old houses	November 2002
Strengthened tax audits	On-going

1. Excludes measures to expand the supply of housing.

Source: Ministry of Finance and Economy.

Ratio” to the standard price estimated by the Ministry of Construction and Transportation. While each local government has the authority to set the ratio, the Ministry of Government Administration and Home Affairs instructed local authorities to adopt a ratio of 32.9 per cent in May 2002. The tax base is taxed at a rate of between 0.2 and 5 per cent, depending on its amount. Given the low level of the tax base relative to market prices, the effective tax rate is quite low. According to some estimates, the effective rate of the tax on buildings is between 0.1 and 0.3 per cent, while for land, it is around 0.1 per cent.¹¹¹ International comparisons are difficult because the relation between the market price and the value assessed for tax purposes is not fixed in many countries and may vary by region. However, effective rates appear higher in several countries such as Portugal (0.8 to 1.3 per cent of market rent), Sweden (1.1 per cent of the market price) and Finland (0.55 per cent). In addition to the low level in Korea, the effective rate may be regressive despite the adjustment for the price of the building noted above and the progressive rate system. The regressive nature is due to the fact that the tax base for buildings is proportional to size. Consequently, larger dwellings in less expensive areas are assessed relatively high tax bases.¹¹²

The government announced two changes to raise the effective tax on property. *First*, the adjustment factor for setting the tax base on buildings is to be

increased in the capital region in the first half of 2003. *Second*, the Ministry of Government Administration and Home Affairs has decided that the application ratio for the land tax should be increased, with each local government setting its own rate. While these measures should increase the effective tax rate on property, it may not reduce the regressive nature of property taxes.

Developing a knowledge-based economy

In 2000, Korea launched a three-year plan to promote the development of a knowledge-based economy (see 2000 *Survey*). One objective was to develop the information infrastructure. There has been progress in that regard as reflected in the increase in the number of Internet users to more than half of the population in 2001. Indeed, Korea has the third-highest rate of Internet use in the OECD area. Other tasks in the 2000 plan included improving the education system and strengthening the R&D framework. This section will discuss those two issues, followed by a review of policies towards SMEs and venture businesses, which play a leading role in developing new industries, and the telecommunications sector. This section concludes with a discussion of another network industry, the electricity sector.

Improving the education system

Korea's educational system has achieved remarkable success in expanding student enrolments at all levels of schooling. Universal education was achieved at the primary school level by 1970 and at the lower secondary school level by 1985 (Table 41).¹¹³ The advancement rate to universities exceeded 70 per cent of the age cohort in 1995, a rate surpassed only by the United States. Today, the proportion of young adults between 25 and 34 years old with university degrees is one of the highest in the OECD area. This expansion has also been accompanied by exceptionally good student achievement on international standardised tests. In the OECD's PISA study, Korean fifteen-year-olds have one of the highest scores in math and reading, with strikingly low disparities between and within schools (Figure 37). These results have been achieved at a relatively low level of public spending at around 4 per cent of GDP, below the OECD average of 5¼ per cent (Figure 38). However, the level of private spending is the highest in the OECD area, reflecting the high co-payments required by the private sector (see Chapter III) and the large role of private universities.

However, there is widespread public discontent over a number of issues. *First*, class sizes at the elementary and secondary levels are the largest in the OECD area (Figure 39). *Second*, the quality of physical facilities is low, reflecting insufficient capital investment in the current framework for financing education, which discourages investment by local governments (see Chapter III). The govern-

Table 41. **Enrolment and advancement rates**
Per cent¹

	Kindergarten	Elementary school		Middle school		High school		
	Enrolment rate	Enrolment rate	Advancement rate	Enrolment rate	Advancement rate	Enrolment rate	Advancement rate: academic	Advancement rate: vocational
1953	–	59.6	–	21.1	–	12.4	–	–
1955	–	77.4	44.8 ²	30.9 ²	64.6 ²	17.8	–	–
1960	–	86.2	39.7 ³	33.3 ³	73.3 ³	19.9	–	–
1965	–	91.6	45.4 ⁴	39.4 ⁴	75.1 ⁴	27.0	–	–
1970	1.3	100.7	66.1	51.2	70.1	28.1	40.2	9.6
1975	1.7	105.0	77.2	71.9	74.7	41.0	41.5	8.8
1980	4.1	102.9	95.8	95.1	84.5	63.5	39.2	11.4
1985	18.9	99.9	99.2	100.1	90.7	79.5	58.8	13.3
1990	31.6	101.7	99.8	98.2	95.7	88.0	47.2	8.3
1995	39.9	100.1	99.9	101.6	98.5	91.8	72.8	19.2
1999	37.3	98.6	99.9	98.8	99.4	97.3	84.5	38.5

1. For enrolment rates, per cent of corresponding school-aged children. For advancement rates, percentage of students who advance to the next level of schooling.

2. 1956-57.

3. 1959-60.

4. 1964-65

Source: Sun-woong Kim and Ju-ho Lee (2002).

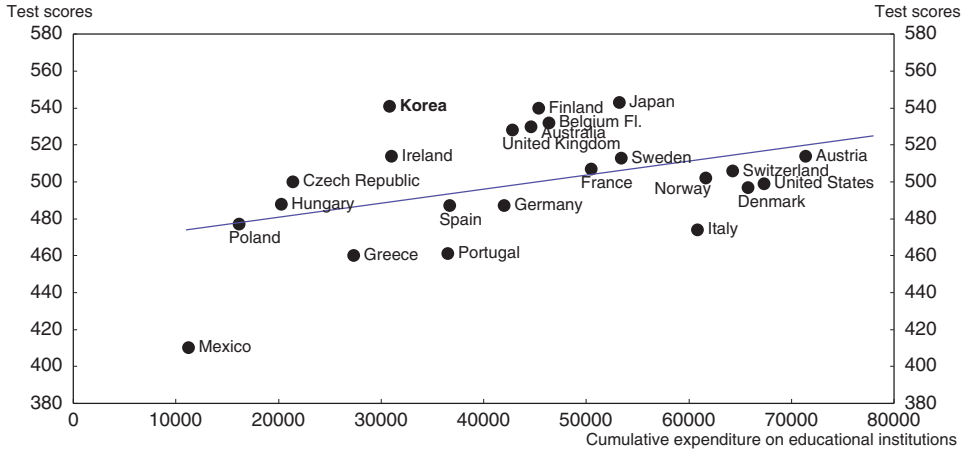
ment launched a programme in 2001 to reduce the maximum number of students per class to a still high 35 in elementary and secondary schools by 2003. The 12.3 trillion won (2.3 per cent of GDP) programme envisages building a total of 1 208 schools and expanding existing facilities. However, the shortage of teachers at the elementary school level, reflecting in part the reduction in the mandatory retirement age from 65 to 62 in 2001, has to be addressed in order to meet the target.

While large class sizes and a lack of physical infrastructure can be dealt with through more investment, issues such as the quality of teaching and the diversity of choices in schools and curriculum raise more fundamental questions. The education system has aimed at providing equal opportunities for all youth by replacing competitive entrance exams for secondary schools with the random allocation of students by lottery.¹¹⁴ This “equalisation policy” is intended to discourage schools from focusing on preparing students for admission exams to secondary school. In general, however, the highly centralised education policies reduce diversity and competition among schools, which focus on preparing students for university entrance exams. School choice is further limited by the absence of independent private schools.¹¹⁵ Indeed, the situation has led some Koreans to emigrate in search of better educational opportunities abroad.

Most students attend private educational institutes (*hakwon*) after school hours to prepare for university entrance exams. Expenditures for such institutes

Figure 37. **Student performance and spending per student**

Relationship between average performance on reading, mathematical and scientific literacy tests and cumulative expenditure on educational institutions¹ up to age 15

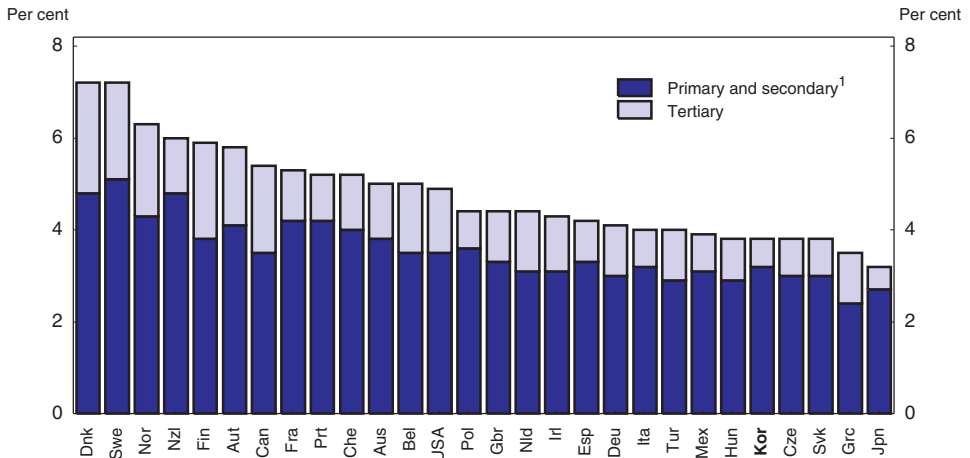


1. In US\$ converted using PPP exchange rates.

Source: OECD, *Knowledge and Skills for Life: First Results from PISA 2000*.

Figure 38. **Public spending on education**

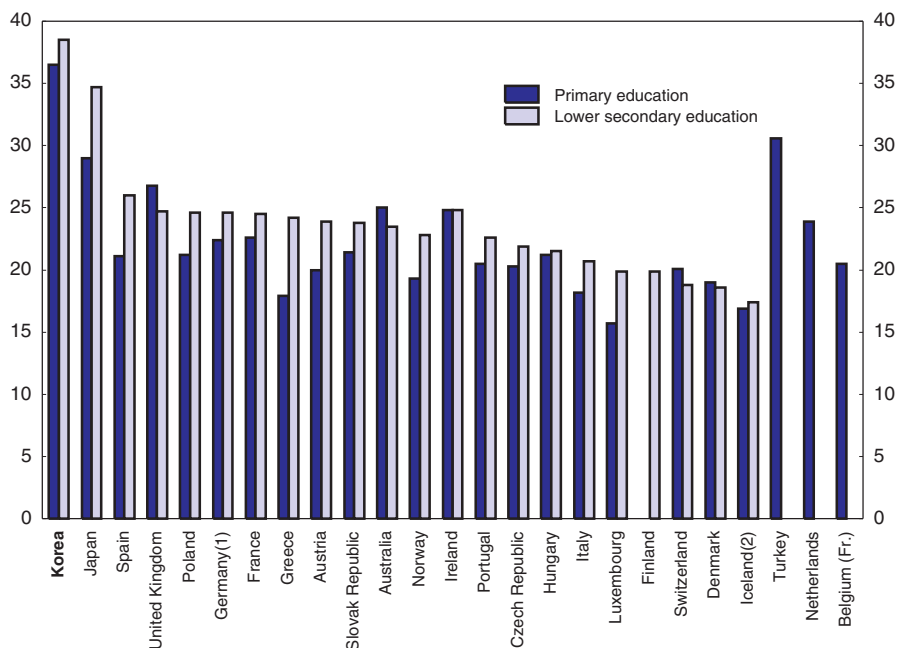
Per cent of GDP in 1999



1. Includes post-secondary non-tertiary education.

Source: OECD, *Education at a Glance, 2001*.

Figure 39. **The ratio of students to teaching staff**
Average class size in public and private institutions in 2000



1. Public institutions only.

2. Year of reference 2001.

Source: OECD, *Education at a Glance*, 2002.

account for 5 per cent of total household spending,¹¹⁶ thus adding to the already high level of private spending on education. The extent of private spending on education, perhaps the highest in the world, reflects the rigid hierarchy of universities in Korea and the key role that university affiliation plays in determining career success and social status. However, the important role of *hakwon* has created a number of problems. *First*, it has undermined the goal of equalisation since students from wealthier families can spend more time and money on private tutoring. *Second*, the equalisation policy and the reliance on *hakwon* have made it difficult for teachers to function in classrooms with students of widely differing educational levels. The government has repeatedly tried to ban private tutoring by individuals, but the Supreme Court has ruled that such measures were unconstitutional. At

the same time, the government has introduced policies to enhance the quality of public education.

At present, there are increasing demands from teachers' unions, parents, students and educational specialists for significant changes in the current system. Education is too important a priority to delay reform, given its importance in developing a knowledge-based economy. However, any reform must be based on a broad public consensus, given the fundamental importance of education. Past experience shows that reform efforts can be frustrated by special interest groups.¹¹⁷

One principle that should guide reform is the liberalisation of the highly centralised and bureaucratic control that limits the autonomy and flexibility of schools. Tight central supervision over school administration gives educators little incentive to cut costs or raise the quality of teaching. School officials thus need more autonomy and accountability to improve efficiency. Large classes and standardised national syllabi seriously constrain diversity in school programmes. The central government, though, has taken steps to increase the autonomy of individual schools. In 2001, it introduced school-based budgeting in public elementary and secondary schools, which grants them lump sums that they can allocate at their own discretion. These moves go in the right direction and hopefully the government's plan to make schools more autonomous by 2005 will accelerate progress. In particular, it is important that local school districts should be able to hire and fire administrators, as well as teachers. However, increased autonomy should be accompanied by greater accountability for performance.

A second principle guiding reform should be the introduction of greater diversity and competition between schools. Increased autonomy for schools would be beneficial in this regard. In addition, allowing independent private schools would provide more choice for students. While such schools were allowed in 1995, significant opposition delayed the creation of a pilot programme of independent private schools until 2000. At present, there are six independent private schools. While some argue that such schools will undermine the equalisation principle, the heavy reliance on *hakwon* noted above already makes access to education and entrance to high-ranked universities unequal. Equality could be better promoted by providing vouchers for education, while letting students choose between schools in a more competitive environment. Finally, further deregulation of university entrance requirements may allow more differentiation in curriculum at the secondary level and encourage universities to develop their own niche in the higher education market.

Tertiary education

Another challenge is to correct the serious deficiencies at the tertiary level, which is the weakest link in the Korean education system. In 2001, IMD

rated the competitiveness of Korean higher education in 47th position out of 49 countries, suggesting that it is not training a future generation of workers to be productive in the emerging knowledge-based economy. This partly reflects the longstanding emphasis on primary and lower secondary schools that keeps spending on tertiary education relatively low. Indeed, at 0.6 per cent of GDP, such spending is only half of the OECD average (Figure 38). Korean universities are characterised by high student to professor ratios and substandard facilities. Moreover, government funding for universities is fragmented between different ministries with little co-ordination between them. In 2000, 70 per cent of tertiary education funding came from the Ministry of Education and 30 per cent from other ministries, resulting in overlapping investments and subjective allocation of funds (Yoo, *et al.*, 2001). Greater co-ordination would improve allocative and cost efficiency.

The share of private co-payments – at 78 per cent of total tertiary education costs – is the highest in the OECD, creating an equity issue given the lack of public loans and grants. The co-payments are primarily a feature of private universities, which account for three-quarters of tertiary education institutions and student enrolments. Public funding comprised only 4.8 per cent of private university financing, compared to 67 per cent for student-paid tuition. Many private universities have weak financial bases, in part because the government has kept tuition low. The funding situation is reversed for public universities: 58 per cent of their revenue came from the government in 1999, with the remainder paid by students.¹¹⁸ The funding structure favouring public universities raises issues of efficiency and equity, especially since they offer essentially the same courses as private universities. In addition, Korea should follow the trend in other OECD countries of shifting funding away from tertiary institutions in favour of direct transfers to students, such as grants and concessionary loans, which would improve equity and efficiency (Blondal, *et al.*, 2002).

The provision of additional resources should be accompanied by governance reforms. With the planned liberalisation of tuition in 2003, stronger incentive systems to encourage better teaching and research at both public and private universities should be established. In addition, there will soon be a problem of over-capacity as the university age cohorts begin to shrink. Downsizing should be accomplished in a way that promotes the quality of tertiary education.

Improving the research and development framework

R&D is an important priority in Korea, rising to 2.7 per cent of GDP in 2000 (Table 42), one of the highest levels in the OECD area. The private sector has taken the lead, accounting for three-quarters of R&D outlays. However, spending by the public sector has also increased and R&D outlays now account for 4 per cent of government outlays. R&D spending is divided between a number

Table 42. R&D expenditures

	1995	1996	1997	1998	1999	2000
A. Total						
Billion won	9 440.6	10 878.0	12 185.8	11 336.6	11 921.8	13 848.5
Growth rate	19.6	15.2	12.0	-7.0	5.2	16.2
Ratio to GDP	2.50	2.60	2.69	2.55	2.47	2.65
B. By source of funds (per cent)¹						
Public sector						
Growth rate	41.6	34.7	18.9	7.1	5.0	7.8
Share	18.8	22.0	23.4	26.9	26.9	24.9
Private sector						
Growth rate	15.4	10.5	10.1	-11.2	5.3	19.2
Share	81.1	77.8	76.5	73.0	73.1	75.0
C. By institution carrying out R&D (per cent)						
Government research institutions						
Growth rate	14.7	7.3	9.1	1.5	-5.7	2.7
Share	18.7	17.4	17.0	18.5	16.6	14.7
Universities						
Growth rate	26.6	32.2	24.8	-0.5	13.1	9.1
Share	8.2	9.4	10.4	11.2	12.0	11.3
Private industries						
Growth rate	20.2	15.4	11.1	-9.9	6.8	20.5
Share	73.1	73.2	72.6	70.3	71.4	74.0
D. By type (per cent)						
Basic						
Growth rate	4.0	22.3	12.3	-1.9	2.5	7.4
Share	12.5	13.2	13.3	14.0	13.6	12.6
Applied						
Growth rate	25.6	23.9	18.6	-17.9	7.6	9.9
Share	25.0	26.9	28.5	25.1	25.7	24.3
Development						
Growth rate	20.9	10.3	9.0	-2.8	4.8	20.8
Share	62.5	59.9	58.2	60.9	60.7	63.1

1. Total of public and private sector does not reach 100 per cent due to a small share from foreign sources.

Source: OECD.

of ministries, with Science and Technology, Commerce, Industry and Energy, Education, Defence and the Prime Minister's Office accounting for 80 per cent. The Science and Technology Framework Law of 2001 established a co-ordinating body – the National Science and Technology Council – to set priorities in this area.

In addition to the new framework law, Korea's first Five-year Science and Technology Plan, created for the 1997 to 2002 period, was updated in 2000. The Plan includes a number of short-term objectives. *First*, government R&D spending was to rise to 5 per cent of total spending in 2002. The budget, though, suggests that it will fall short at 4.7 per cent. *Second*, basic research is to be

increased to 20 per cent of the government R&D budget by 2006 from around 18 per cent in 2001, to balance the strong emphasis on industrial technology development. *Third*, the number of R&D researchers is to be increased to 200 000 by 2006 from around 160 000 in 2000. Achieving this goal will be complicated by the fact that the number of young people pursuing careers in science and technology has been falling. Indeed, the proportion of students taking the university entrance exam in the area of natural science and engineering has fallen from 42 per cent in 1998 to 27 per cent in 2002. This may reflect concerns about job security in the more uncertain economic environment following the crisis.

As noted above, R&D is concentrated in the private sector, where three-quarters of such activities take place. The government encourages such activities through grants and a tax credit equal to 40 per cent of the expenses for R&D each year that exceed the average spent during the preceding four years.¹¹⁹ Government Research Institutes account for about 14 per cent of R&D activities, while universities account for a surprisingly small share, given that they employ about a quarter of the nation's R&D manpower. The limited role of universities reflects the heavy teaching load of professors, poor research facilities and weak incentives to publish. The government is trying to strengthen the universities' role in research through the *Brain-Korea 21 programme*, which is spending 1.4 trillion won on selected universities during the 1999 to 2005 period. Another problem is the lack of interaction between R&D in the private sector, Government Research Institutes and universities, which is due in part to weak labour mobility. Given the rewards for remaining at the same institution, the intersectoral mobility of scientists and engineers remains low. A final concern is weak international linkages. According to the Ministry of Science and Technology, Korea is one of the least internationally-linked countries in science and technology in the OECD area. To increase such links, the government established the *S&T Globalisation Strategy* in 2001, which is aimed at increasing the number of foreign researchers in national programmes and establishing off-shore research activities.

Another aspect of the R&D effort was the 1999 launch of the *21st Century Frontier Programme*, a ten-year project that is to spend 2 trillion won on about twenty research projects that are expected to be a new source of industrial innovation. The programme targets aspects of life science, biotechnology, nanotechnology, new materials and environmental technology. The research is conducted by joint teams from the private and public sectors. However, the risks attached in selecting winning technologies may be similar to those in picking winning industries for investment. Moreover, there are challenges in commercialising the results as suggested by the government's decision to launch a project to commercialise the results of the national research activities in the HAN project, a decade-long programme that ended in 2002.

Encouraging a dynamic small and medium-sized enterprise and venture business sector

Small and medium-sized enterprises (SMEs)¹²⁰ make up the core of the Korean economy, accounting for 99.7 per cent of enterprises, 84 per cent of the workforce, 48 per cent of output and 43 per cent of exports. Moreover, smaller companies have an important role to play in the development of a knowledge-based economy. Korea has adopted a wide range of policies to assist SMEs, including credit guarantees, the provision of credit at preferential rates, subsidies and protection from larger companies. The authorities have acknowledged, however, that some of these programmes have restricted competition and made SMEs dependent on government assistance. The objective now is to promote deregulation and competition to bring the management of smaller companies up to world standards. In line with this goal, the number of business lines reserved for SMEs was reduced from 88 to 45 in September 2002, reflecting the fact that protecting small companies from competition has become less feasible in a market that is increasingly open to imports. Moreover, the number of goods that the government must purchase from co-operatives of SMEs was lowered from 154 in 2000 to 149 in 2002.

Public expenditures to support SMEs rose by 5 per cent in the 2002 budget. There are 88 SME assistance programmes administered by 12 ministries, reflecting the fact that each ministry is responsible for different economic activities (Table 43). The government is making efforts to co-ordinate views between ministries on major issues so as to prevent waste and duplication in assistance programmes. However, there appears to be little evaluation of the effectiveness of these programmes. It is important to use the "Integrated SME Policy Funds Database" to prevent overlap and pursue an effective follow-up of assisted companies. This database provides data on almost 100 000 companies (4 per cent of total SMEs) that receive support.

Financial conditions have improved considerably for SMEs in recent years as banks and other institutions have become more willing to lend to smaller enterprises. This reflects increased awareness of the risks associated with chaebol-affiliated companies as well as the reduced demand from larger firms focusing on reducing debt. In 2002, for example, lending to SMEs rose by 37 trillion (6 per cent of GDP), boosting their share to more than four-fifths of lending by financial institutions to the business sector. The government continues to guarantee more than a quarter of lending to smaller companies, through the Korea Credit Guarantee Fund and the Korea Technology Credit Guarantee Fund, to ensure their access to funds. Such guarantees amounted to 42 trillion won (8 per cent of GDP) in 2001 (Table 44). With a default rate of almost 4 per cent, the two funds had net losses of 1.5 trillion won, a substantial portion of their combined 4.9 trillion won of assets, which had been supplied by the

Table 43. **Programmes to assist small and medium-sized enterprises**
Billion won in 2002

Ministry	Outlays	Number of programmes	Selected programmes
Small and Medium Business Administration	2 939	18	<ul style="list-style-type: none"> – Restructuring support – Start-up support – Stable operation support – Regional SME support – Technology development support – Venture company support
Ministry of Commerce, Industry, Energy	947	23	<ul style="list-style-type: none"> – Industrial technology development support – Modernisation of distribution network support – Activation of industrial complex support – Energy saving support
Ministry of Agriculture and Forestry	113	3	<ul style="list-style-type: none"> – Rice processing factory support – Agricultural product processing support – Agricultural machine product support
Ministry of Information and Communication	493	8	<ul style="list-style-type: none"> – Information and communication technology development support – Leading technology development and distribution support – Multi-media industry support – Software development support
Ministry of Labour	173	7	<ul style="list-style-type: none"> – Workplace accident prevention support – Workplace environment improvement support – Company nursery facility support
Ministry of Environment	149	5	<ul style="list-style-type: none"> – Anti-pollution facility support – Environmental technology development support – Recycling industry support
Ministry of Culture and Tourism	260	6	<ul style="list-style-type: none"> – Film promotion fund support – Sporting goods development support
Ministry of Science and Technology	206	4	<ul style="list-style-type: none"> – Technology development support – New technology project investment support
Ministry of Marine and Fishery	80	3	<ul style="list-style-type: none"> – Marine product distribution support – Fishing net support
Ministry of National Defence	17	1	<ul style="list-style-type: none"> – Defense industry support
Ministry of Construction and Transportation	140	1	<ul style="list-style-type: none"> – Standardising construction material support – General freight terminal construction support
Ministry of Health and Welfare	8	2	<ul style="list-style-type: none"> – New drug development support
Total	5 525	88	

Source: Small and Medium Business Administration.

Table 44. **Credit guarantees for small and medium-sized enterprises**
Trillion won¹

	(1) Balance of guarantees	(2) Defaults	(2)/(1) Default rate (%)	Net loss
1995	11.7	0.9	8.1	0.8
1996	13.8	0.8	5.7	0.7
1997	17.1	1.2	6.9	1.2
1998	32.8	3.0	9.2	2.6
1999	30.9	1.1	6.0	1.3
2000	35.1	1.2	3.4	0.8
2001	41.7	1.6	3.9	1.5

1. Guarantees are provided by the Korean Credit Guarantee Fund and the Korea Technology Credit Guarantee Fund.
Source: Small and Medium Business Administration.

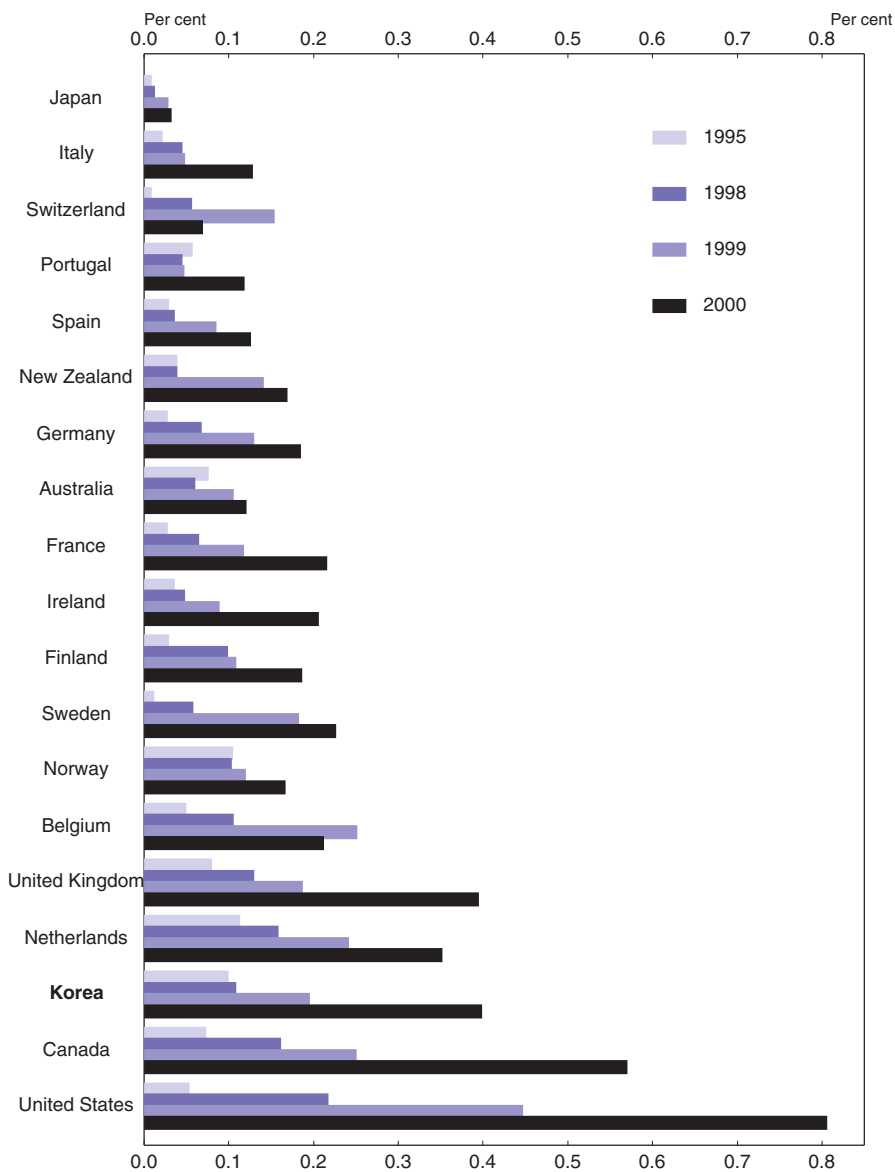
government and financial institutions. In 2002, new guarantees of 36 trillion won are planned.

The most dynamic segment of SMEs is driven by the venture capital market.¹²¹ With venture capital investment amounting to around 0.4 per cent of GDP in 2000, Korea ranked third among OECD countries (Figure 40). By sector, almost two-thirds is concentrated in the information and communications technology sector (Figure 41). The government plays a key role in providing equity, both directly and through generous guarantees for private equity and tax incentives. The authorities' role in the development of a venture business sector is part of its effort to accelerate restructuring of the business sector and shift the weight of the economy from the large chaebol to new start-ups in knowledge-based industries. However, such support did not prevent the severe slump in this sector, as in many other countries. Indeed, the venture index in the KOSDAQ stock market is now about 85 per cent below its peak in March 2000.

Venture capital is invested through *venture capital firms* (VCF) and *limited partnership funds* (LPFs). A VCF is a corporation that provides capital primarily to start-ups and is eligible for government assistance in the form of low-interest loans, equity funding and tax benefits. The number of VCFs reached 145 in 2001 and accounted for 53 per cent of venture capital investment. VCFs have established and operate most of the 395 LPFs, which are pooled funds in which each investor benefits in proportion to the amount invested. In addition, VCFs have provided about 17 per cent of LPF funding.

The government has provided about 1.5 of the equity of the VCFs and 20 per cent of the LPFs' resources. The significant government support helped the venture capital industry to weather the downturn that affected most other OECD countries in 2001. The Small and Medium Business Fund (SMBF), under the

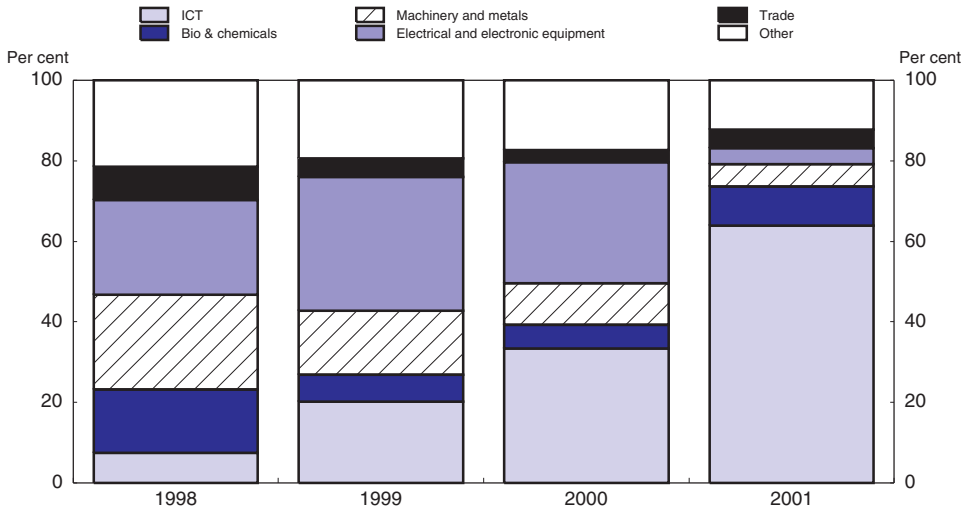
Figure 40. **Venture capital**
Investment in early stages and expansion as per cent of GDP¹



1. "Country of management" approach.

Source: Baygan, 2003.

Figure 41. Korean venture capital investment by sector



Source: Baygan, 2003.

responsibility of the Small and Medium Business Administration, directs most of the government equity funding. Most important is *Dasan Venture*, established in 2001 to provide seed money and management know-how to promising start-ups. Between 1998 and 2001, the SMBF also invested in 131 LPFs, which receive additional public money from various special funds. For example, the Information Promotion Fund has established LPFs to invest in start-ups in the ICT sector. In addition to equity investments, the government provides equity guarantees through the Korea Technology Credit Guarantee Fund. The Fund guarantees 70 to 100 per cent of the equity investments in technology-intensive small firms.

Besides the government, the other players in the venture capital investment sector are large companies, which own 11 per cent of the equity of VCFs. The roles of institutional investors, such as pension funds,¹²² and individuals (business angels) are relatively minor. In total, business angels account for 8 per cent of investment in VCFs and LPFs, despite the tax advantages offered.¹²³ The foreign share is even smaller at 5 per cent. However, this proportion may increase given the recent decision to abolish the requirement that foreign investors obtain special approval for investment in venture business and instead treat it as regular direct investment. At present, though, the players in the venture capital industry tend to be interlinked and publicly financed.

The venture capital industry is centred on firms that qualify as venture businesses. Between 1997 and November 2002, firms were so designated by the Small and Medium Business Administration if they met one of four criteria; i) they sell goods produced using patents; ii) R&D spending exceeds 10 per cent of revenue; iii) they have received equity investment from venture capitalists; and iv) they use advanced technology as verified by independent entities. Of the 10 000 firms designated as venture businesses by mid-2001, around half qualified under the fourth criteria. Firms that qualify receive a number of benefits in addition to the tax benefits available to all SMEs.¹²⁴ *First*, they get preferential treatment in qualifying for the KOSDAQ stock exchange. Specifically, they are exempted from requirements as to the number of years of operation, minimum capital account, profitability and liability ratios. As a result, venture businesses account for nearly half of the firms listed on the KOSDAQ and nearly 70 per cent of the trading. *Second*, venture businesses are more likely to be included in government technology projects and other programmes.

In general, the venture business sector has been a dynamic area of the economy, with the growth of sales, employment and exports exceeding that of other firms (Table 45). However, it appears that a number of unqualified firms have attempted, and in some cases, succeeded in being designated as venture businesses, reducing the credibility of this sector among investors. In mid-2001, the government announced that it was reviewing the status of 1 000 venture

Table 45. **Venture businesses**

A. Profitability and employment (per cent)						
	1999			2000		
	Sales growth	Current profits ¹	Employment growth	Sales growth	Current profits ¹	Employment growth
Venture businesses	36.8	7.3	18.8	44.3	4.9	24.3
SMEs	10.8	2.9		12.5	3.3	
Big companies	6.6	1.0	1.4	16.7	0.3	3.8

B. Exports						
	US\$ billion			Growth rates		
	2000	2001	2002	2000	2001	2002
Venture businesses	4.9	5.6	5.6	42.8	14.5	28.1
SMEs	63.5	64.6	55.3	29.5	1.7	2.8
Big companies	108.6	85.7	77.0	15.1	-21.1	6.4

1. As per cent of sales.

Source: Small and Medium Business Administration.

businesses to see if they still met one of the four criteria. The objective is to protect investors against firms that should not be included in the venture business sector. Moreover, some firms that originally qualify may not follow through on their business plans. With 11 000 venture businesses by the end of 2001, and perhaps as many as 50 000 by 2005,¹²⁵ the task of monitoring venture businesses is enormous and likely to increase.

These challenges and problems raise the question of whether it is necessary or beneficial to have such extensive government involvement in the venture capital industry. Such intervention appears to have developed a venture business sector that is stable, rather than risky and high return in nature. Indeed, only around 500 venture businesses have shut down operations thus far, a low death rate considering that there are more than 11 000 such companies, many in their early stages of operation, and the more than 80 per cent fall in KOSDAQ. This suggests difficulty in closing companies with government equity and guarantees. The market may be mature enough to identify the companies with promising potential without the government's certification, suggesting that it may be unnecessary to continue with the current framework until 2007, when it is scheduled to end. Moreover, the designation of weak companies as venture businesses by authorities anxious to expand this sector tended to devalue the whole market. The Small and Medium Business Administration has announced reforms to overcome the problems in the current framework. *First*, the criteria for designation as a venture company were tightened in November 2002, by making the fourth criterion – the use of advanced technology – mandatory. *Second*, the monitoring of designated companies is to be enhanced and unqualified companies expelled. *Third*, the assistance policies are to be more market-oriented.

Promoting competition in the telecommunications sector

Telecommunications has been an important engine of growth despite a relatively high degree of government intervention and insufficient competition. The authorities have taken some major steps, including the privatisation of Korea Telecom, the dominant firm with market shares of 98.5, 79.2 and 56.8 per cent in the local, national long-distance and international telephone service markets, respectively. The ceiling on foreign ownership in Korea Telecom was raised from 33 to 49 per cent in April 2002, the same limit as for other service providers, and the government's remaining 28 per cent share was sold in May. To allow fair competition in the local market, a framework for the unbundling of the local loop and sharing the broadband Internet market was introduced. Competition will also be facilitated by the introduction of number portability for local telephone services in certain areas in the first half of 2003 and nation-wide in 2004. The framework for setting interconnection charge was revised in April 2002, resulting in a 23 per cent decline.¹²⁶ By 2004, the government plans to shift from the *fully distributed cost*

approach for setting interconnection charges to the *long-run incremental cost* (LRIC) methodology, which is used in most OECD countries. The cost of entry for new fixed-line providers was lowered in 2002 by abolishing up-front contributions. Finally, the mandatory contributions from service providers for R&D was reduced from 1 per cent of revenue in 2001 to between 0.5 and 0.75 per cent in June 2002.

While there has been progress, additional steps are necessary to enhance competition in the telecommunications sector, which would promote the development of a knowledge-based economy. *First*, an independent regulator, with authority over licensing, pricing and other regulatory safeguards, is needed to ensure a smooth transition from a monopoly to a competitive market. The Korea Communications Commission, a candidate to play this role, is located within the Ministry of Information and Communication (MIC). *Second*, the current system of *a priori* examinations of applicants should be replaced by a class-licensing system or the establishment of minimum standards in order to reduce entry barriers. *Third*, the authorities should introduce price-cap regulation in markets where Korea Telecom remains dominant, such as local calls, leased lines and national long-distance. However, price controls in the mobile market should be abolished. Korea is one of the few OECD countries that regulate prices in the mobile market, reflecting the goal of preventing predatory pricing by the largest firm.¹²⁷ *Fourth*, the limits on foreign ownership of service providers should be raised. *Fifth*, the government should avoid intervening in the decisions of telecommunication service providers and end the emphasis on promoting a domestic manufacturing industry.

Promoting competition in the electricity industry

In an effort to promote the efficiency of the electric power industry, the government has initiated the restructuring of the Korea Electric Power Corporation (KEPCO). Since the passage of the implementing legislation in December 2000, the ten-year plan has been advancing, though somewhat behind the original time schedule (see 2000 *Survey*). In April 2001, the generation sector of KEPCO was split into six subsidiaries and the international bidding process for the sale of the Korea South-East Power Co. is currently underway. The design of the two-way bidding pool has been completed. The distribution sector of KEPCO will also be formally divided in April 2004 after a yearlong test-run, which starts in April 2003. In February 2002, the labour union of the generation sector staged an illegal strike. However, the government and the generating companies took a firm stance in dealing with the strike, demonstrating the strong commitment to restructuring the electricity industry.

The Korea Electricity Commission was established in April 2001 to execute the reform plan and monitor and regulate the electricity market. The Commission, although legally independent, is operating as an institute within the Ministry of Commerce, Industry and Energy (MOCIE). The authorities also introduced in

January 2003 a first step towards a cost-based tariff system that is aimed at minimising cross-subsidisation. In addition, a new government fund was established in June 2001 to support public objectives, such as keeping reasonable electricity tariff levels for consumers in remote areas, thus making such support more transparent.

Assessment of progress in structural reform

Progress in structural reform has made an important contribution to Korea's strong growth performance since the 1997 crisis. However, there remain important items on the agenda that should be addressed to maintain Korea's high growth potential in the face of slowing inputs of labour and capital. A key priority should be to accelerate the restructuring of the corporate sector through ensuring that the corporate governance framework is effectively implemented and by continuing to improve the bankruptcy framework. Perhaps most important in this regard is the privatisation of the state-owned banks, which as a group, are now in good financial health. At the same time, it is necessary to ensure good prudential supervision to deal with potential emerging problems of asset quality and to exercise prompt corrective action over the non-bank financial institutions. Restructuring will also be enhanced by labour market flexibility. The growing share of non-regular workers creates concerns about the development of a dualistic labour market, which would pose both equity and efficiency concerns. Such problems may be avoided by ensuring that the social safety net covers non-regular workers and that there is adequate employment flexibility for regular workers.

Increasing Korea's openness to international competition will also help promote productivity growth. The trend toward trade liberalisation should continue, particularly in the service and agricultural sectors. Shifting support for farmers from trade-distorting measures to direct payments is crucial in this regard. The growing stock of foreign direct investment is also a positive development and the authorities should ensure an open environment that will continue to attract investment inflows. Regulatory transparency is a key aspect in maintaining such an environment, making the work of the Regulatory Reform Committee crucial in this regard. Competition policy should also be strengthened, in part through the "Clean Market Project" (Annex II).

Korea has developed a large and vibrant information and communications technology sector. Further progress in the development of a knowledge-based economy will be promoted by improving the education system and the framework for R&D. While the education system shows excellent results in terms of student performance, it can be improved by expanding the scope of choices in schools and curriculum. Granting schools more autonomy may help develop more competition and diversity at the secondary level, while using vouchers to address equity concerns. The weakest part of Korean education is the university system and this

should be upgraded to make it an effective part of the R&D system. Moreover, increased mobility between researchers in academia, the private sector and government institutes would likely boost the returns from investment in science and technology. Small companies, particularly venture businesses, have a key role to play in the development of new industries. While venture businesses have proven to be dynamic, there is a tendency for excessive government involvement in providing financing and guarantees. Encouraging the participation of other participants, such as institutional investors and individuals, would help develop vibrant new enterprises.

Sustainable development in Korea

There is growing concern that long-run sustainable development may be compromised unless measures are taken to achieve balance between economic, environmental and social outcomes. This section looks at two specific issues of sustainable development – air pollution and waste management – that are of particular importance for Korea.¹²⁸ In both cases, indicators are presented to measure progress and the evolution of potential problems, and an assessment is made of government policies in that area. The section also considers whether institutional arrangements are in place to integrate policy-making across the different elements of sustainable development (see Box 10).

Air pollution

Main issues

Air quality has gradually improved over the past decade due to a variety of air pollution reduction policies, including promoting the use of cleaner fuel, low sulphur oil and lower emission vehicles. However, air pollution continues to have adverse health effects. Concentrations of various pollutants remain higher than in many other OECD countries, making this a pressing problem. Policies have to be judged not just by whether they reduce pollution but by whether the marginal costs of new policies are less than the benefits and whether the policies are implemented in a cost-effective way.

Performance

As in many other countries, emissions of sulphur dioxide have fallen considerably in the 1990s (Figure 42). However, emissions of nitrogen oxides increased substantially, mainly as a result of a rapidly growing reliance on motor vehicles,¹²⁹ while emissions of particulate matter have been roughly stable. In relation to GDP, emissions of major air pollutants are on a par with the OECD average, after having fallen slightly faster (Table 46). However, concentrations of conventional air pollutants are high compared to the rest of the OECD (Figure 43).¹³⁰

Box 10. The integration of environmental concerns into government policy*

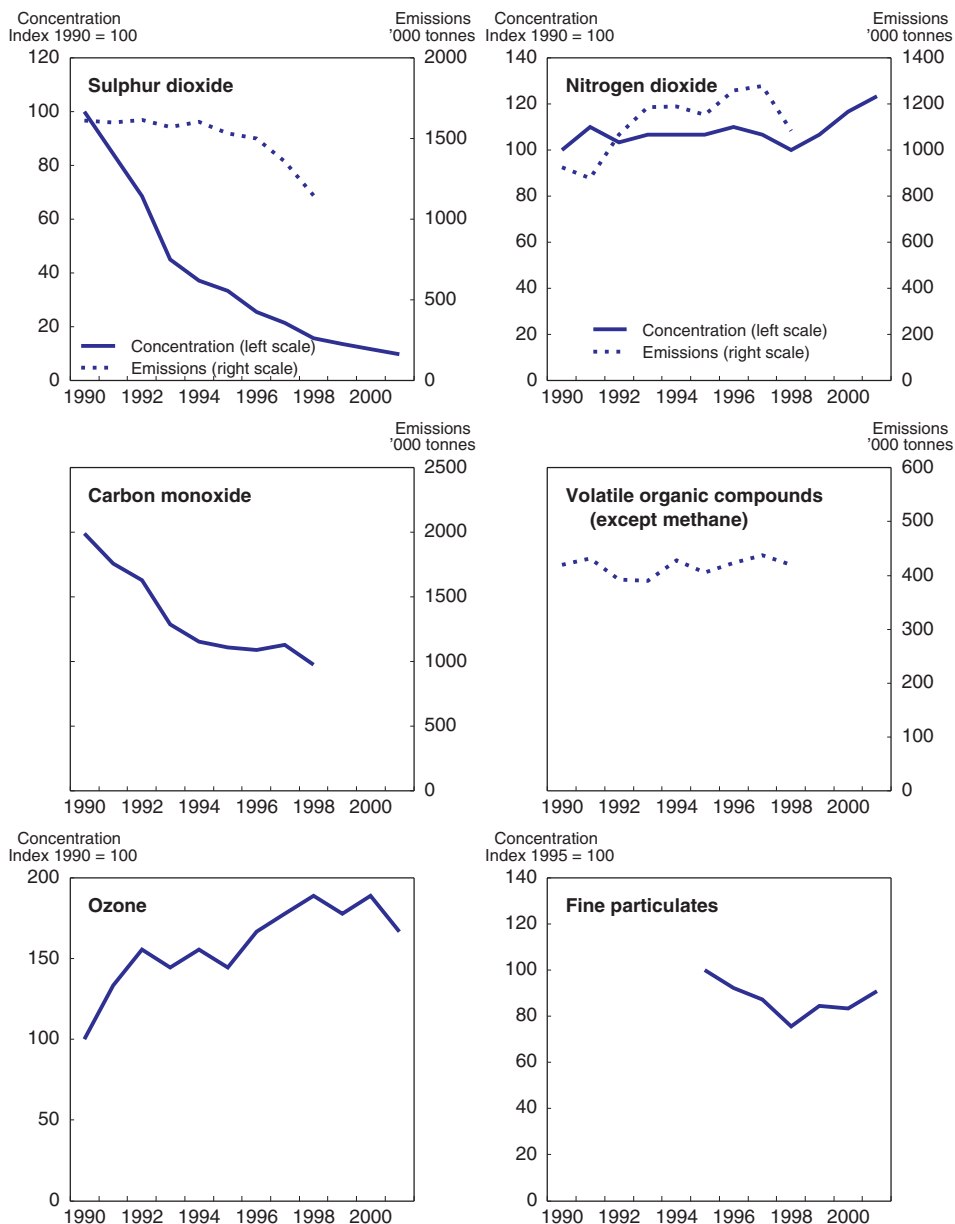
Environmental issues and sustainable development did not become a key part of the national policy agenda until relatively recently. Although framework legislation in these areas was introduced in the late 1970s and 1980s, it was not until the 1990s that supporting acts and ordinances imposed more binding rules to protect the environment. Policy integration is enhanced by the Basic Environmental Policy Act, which requires that all levels of government prepare five and ten-year environmental management plans. The Ministry of the Environment reviews these plans and presents annual reports on progress to parliament. The Korean Environment Institute prepares environmental impact assessments on behalf of the Ministry for major policies and projects and evaluates environmental policy. To this end, cost-benefit analysis has been used occasionally and new guidelines are being developed. Sustainable development plans were introduced in 1996 and updated in 2000.

In 2000, a Presidential Commission for Sustainable Development was established in order to set major policy directions and formulate plans to promote the simultaneous consideration of development and preservation issues. The objective is to reorient policies and establish plans from a longer-term perspective based on a balanced consideration of economic, social and environmental values. The Commission aims to break away from the two extremes of past environmental policies that disregarded economic considerations, and development policies that ignored their impact on the environment. The Commission has the authority to review major mid-to-long-term state policies and programmes prior to their adoption. Sustainability reviews of policies are now mandatory from the design stage in the following areas: major and basic mid-to-long-term state plans; large-scale state development projects affecting large land areas; and major policies and plans approved by other committees.

The division of responsibilities between the Ministry of the Environment and local authorities for the implementation and monitoring of environmental policies was revised in late 2002. Under the new system, the local authorities are responsible for issuing permits for pollution-emitting facilities, monitoring and inspection. Given the local authorities' differing priorities, conflict of interests in monitoring their own performance, and limited experience in environmental issues, this allocation of responsibilities constitutes a significant weakness in environmental policy. However, regional offices of the Ministry of the Environment now have enhanced power in overseeing the implementation of environmental policy by the local authorities. Non-governmental organisations play an active role in environmental policy, challenging all levels of government over proposed projects and policies, or lack of policies. This has prompted government action in several areas, but has also imposed constraints on improving environmental outcomes in some cases, notably for the siting of waste disposal units.

* The sections of this report dealing with air pollution, waste management and ensuring sustainable retirement income (in Chapter II) are inputs into the Organisation's follow up on Sustainable Development as mandated by the Ministerial Council decision in May 2001.

Figure 42. Performance indicators: air pollution



Source: OECD.

Table 46. Performance indicators: air pollution

	Change in emissions per unit of GDP, 1990-99 ¹			Level of emissions, 1999 ²			Improvement in productive efficiency, 1990-1999	
	Sulphur dioxide	Nitrogen dioxide	VOC	Sulphur dioxide	Nitrogen dioxide	VOC	Sulphur dioxide per unit of electricity output	Nitrogen dioxide per vehicle
	Per cent per year			Grams per dollar of GDP				
Australia	3.1	-1.9	-2.9	3.9	5.5	4.1	n.a.	n.a.
Austria	-10.2	-3.5	-6.5	0.2	0.9	1.2	-77.2	-32.5
Belgium	-9.2	-3.6	-4.8	0.8	1.2	1.1	-64.4	-22.6
Canada	-5.3	-2.8	-2.9	3.2	2.6	3.5	n.a.	n.a.
Czech Republic	-19.1	-6.6	-5.7	2.1	3.0	1.9	n.a.	n.a.
Denmark	-14.2	-4.9	-5.2	0.4	1.6	1.0	-79.8	-38.9
Finland	-13.0	-3.8	-4.1	0.7	2.1	1.4	-65.3	-28.7
France	-8.3	-3.8	-5.1	0.5	1.2	1.4	-52.0	-37.8
Germany	-20.1	-7.1	-8.8	0.4	0.9	0.9	-85.2	-43.7
Greece	-1.4	-0.3	-0.2	3.6	2.5	2.6	-4.6	-22.3
Hungary	-6.1	-1.1	-3.8	5.5	2.1	1.4	n.a.	n.a.
Iceland	-1.1	-1.7	-4.9	3.7	3.9	1.4	n.a.	n.a.
Ireland	-8.1	-6.3	-7.9	1.7	1.3	1.0	-35.8	-19.0
Italy	-7.6	-4.3	-4.4	0.8	1.2	1.4	-52.8	-31.3
Japan	-1.7	-1.3	-2.4	0.3	0.5	0.6	n.a.	n.a.
Korea	-8.9	-3.3	-9.7	1.6	1.9	0.2	n.a.	n.a.
Luxembourg	-18.7	-9.1	-7.9	0.2	0.9	0.9	n.a.	n.a.
Mexico	-0.4	-0.9	-9.3	1.6	1.6	1.4	n.a.	n.a.
Netherlands	-10.1	-6.5	-8.8	0.3	1.1	0.7	-50.2	
New Zealand	-0.4	-0.5	-1.6	0.7	3.0	2.6	n.a.	n.a.
Norway	-9.7	-2.8	-1.8	0.2	2.0	3.0	n.a.	n.a.
Poland	-10.0	-6.6	-4.8	5.1	2.8	2.2	n.a.	n.a.
Portugal	-2.1	-0.9	0.1	2.4	2.3	3.1	-17.7	-18.3 ³
Slovakia	-13.7	-7.4	-5.6	3.3	2.4	2.0	n.a.	n.a.
Spain	-5.8	-2.1	-3.5	2.2	1.7	3.6	-39.4	-14.4
Sweden	-8.3	-4.3	-3.9	0.3	1.3	2.1	-26.0	
Switzerland	-6.0	-5.4	-6.3	0.1	0.5	0.9	n.a.	n.a.
Turkey	3.2	1.0	0.0	3.4	2.3	1.6	n.a.	n.a.
United Kingdom	-13.9	-7.9	-6.6	1.0	1.3	1.4	-72.8	-51.0
United States	-5.5	-2.5	-4.7	2.0	2.7	1.9	n.a.	n.a.
European Union	-11.1	-5.0	-5.3	0.8	1.2	1.5		
OECD Europe	-10.1	-4.8	-5.0	1.2	1.4	1.5		
OECD	-6.7	-2.9	-4.4	1.5	1.9	1.6		

Note: For the OECD average, in the case of countries with missing data for either 1990 or 1999, data for the latest year has been substituted. Estimated data for 1999 represents about 5 per cent of the area total. GDP is measured in 1995 prices. Cross-country aggregations use 1995 purchasing power parity exchange rates.

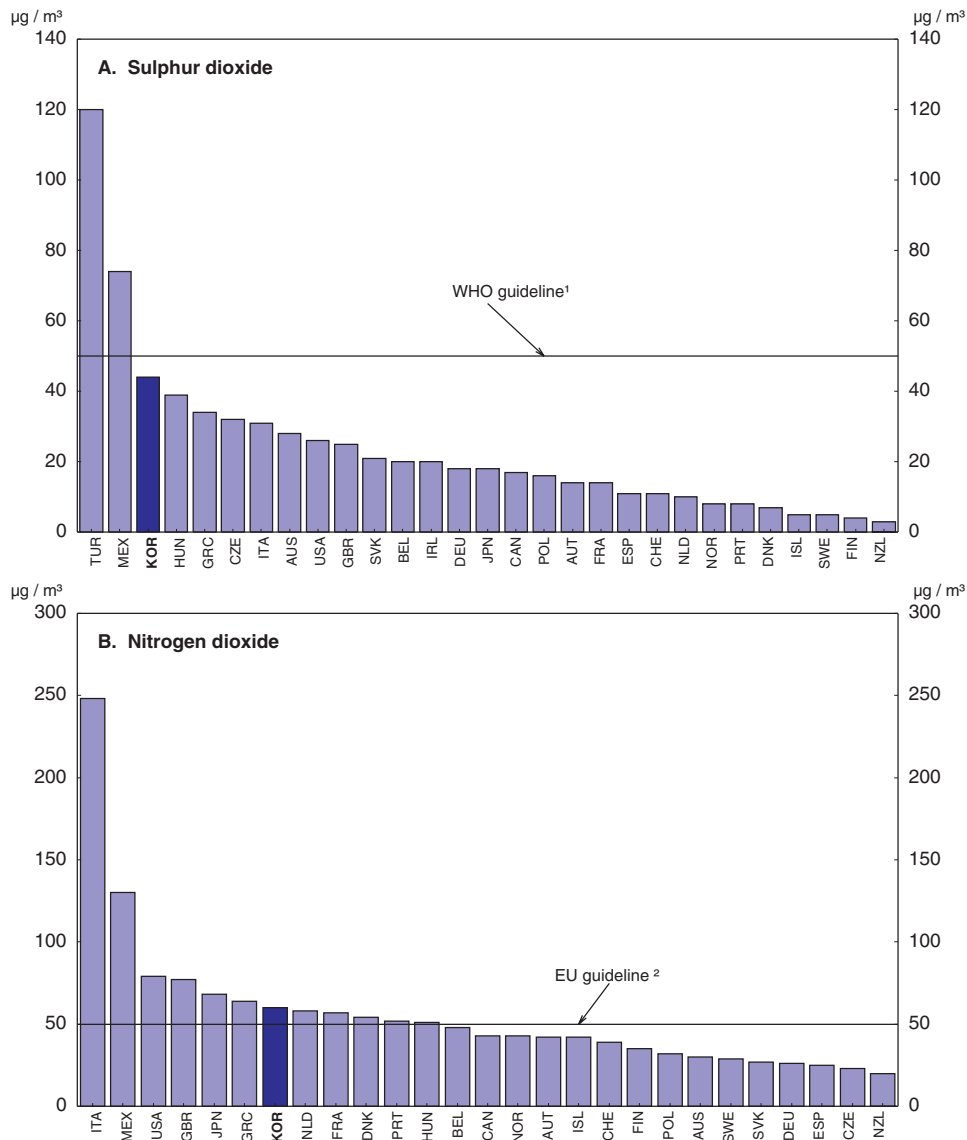
1. Australia: 1995-99 for sulphur dioxide; New Zealand: 1990-98; Mexico: 1994-98 for sulphur dioxide and VOC and 1990-98 for nitrogen dioxide; Slovakia: 1990-98 for sulphur dioxide and nitrogen dioxide and 1990-97 for VOC.

2. 1998 for Mexico, New Zealand and sulphur dioxide and nitrogen dioxide in Slovakia; 1997 for VOC in Slovakia.

3. Between 1990 and 1997 for Portugal.

Source: Cooperative Programme for Monitoring and Evaluating of Long-Range Transmission of Air Pollutants in Europe (EMEP); World Health Organisation; OECD.

Figure 43. Air pollutant concentrations in major cities of OECD countries 1995



1. Mean value for one year.
 2. Median of annual data of one hour values for concentrations.
 Source: World Bank.

Annual average ozone concentrations rose considerably during the 1990s (Figure 42), though there was a slight drop in 2001 that may be related to the downward trend in transport-related emissions.¹³¹ The high levels of air pollution have had grave consequences on health, with the estimated impact on mortality and morbidity valued at up to \$50 billion (12 per cent of GDP) annually.¹³²

Policies

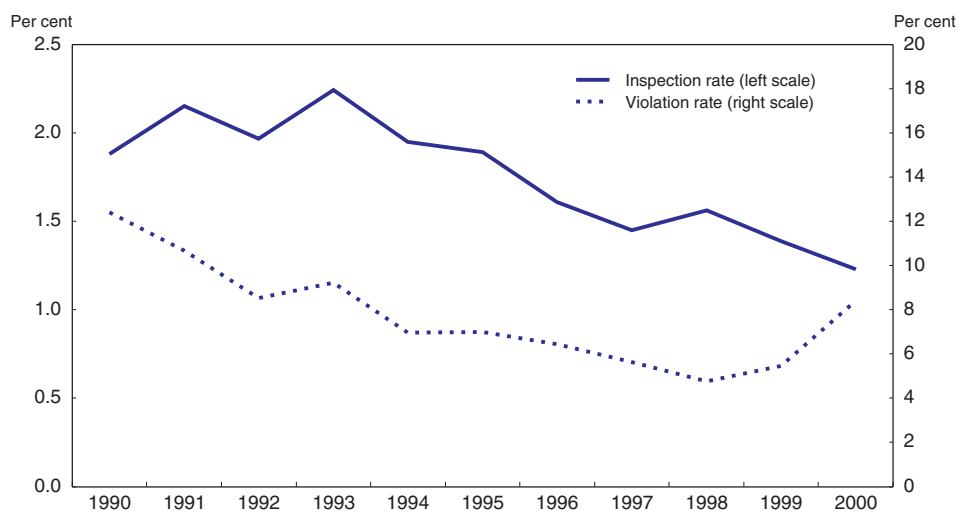
The current system for addressing air quality mainly relies on the application of command-and-control measures for point-source emitters. Enterprises are required to apply for permits from regional offices of the Ministry of the Environment or from local authorities, which establish permitted emission levels.¹³³ More recently, the government has lowered the permitted emission threshold to induce polluters to increase their abatement efforts. In areas where air pollution has been particularly high, enterprises have been required to install telemetric monitoring equipment to give a more accurate and timely picture of actual emissions. Infringement results in an emission charge that escalates with each violation. Enforcement has been targeted at the major polluters with inspections being more frequent for large plants and plants that have violated emission limits in the past (Aden, Ahn and Rock, 1999).

The regulatory system for point-source emitters is reasonably comprehensive. However, economic incentives need to be strengthened to enhance efficiency and enforcement should be tougher.

- Marginal abatement costs vary considerably between enterprises within and across sectors, implying that control methods for point-source emitters are inefficient. For example, marginal abatement costs in the power generation sector vary by over 40 times for particulate matter, by 14 times for nitrous oxides, and by five times for sulphur oxides (Kwon and Yun, 1999), suggesting that trading systems would help to equalise abatement costs.
- Violations of regulations have been numerous (Figure 44). This suggests that non-compliance fines have been too low to be a significant constraint.¹³⁴ A particular problem is the emission of dioxin from waste incinerator plants.¹³⁵ In this case, local governments both operate and monitor local incineration plants, perhaps creating a conflict of interests.

Recently proposed measures are aimed at harnessing market forces to reduce the costs of abatement. The Seoul Metropolitan area is planning to introduce a cap-and-trade system that will involve both point and mobile source emissions.¹³⁶ This policy innovation can potentially equalise marginal abatement costs, thus attaining emission reductions at least cost. The extension of the trading system to cover mobile sources is particularly important in Seoul where a small number of diesel-powered heavy-duty buses and trucks (3 per cent of the total) account for one-third

Figure 44. Air pollution inspections and violation rates



Source: Korea National Statistical Office.

of total vehicular emissions. The government is considering extending the scheme to other regions, depending on the results of the preliminary trial in the capital region.

Transport-related pollution is the major problem for urban air quality, generating the bulk of emissions of particulate matter and ozone precursors.¹³⁷ Diesel commercial vehicles account for the majority of such emissions, but receive favourable treatment in tax and emission control legislation.¹³⁸ Although the Air Quality Preservation Law tightens standards for sulphur content of fuels, it nonetheless allows standards to be above the level that allows the use of an efficient filter system. The government is committed to reducing the sulphur content of fuel in line with planned standards in the EU, which will require substantial further reductions.¹³⁹ In addition, current standards for the emission characteristics of vehicle engines impose considerably stricter limits for petrol than diesel.¹⁴⁰ Given that cost-benefit studies suggest that benefits from a large reduction in particulate emissions from diesels outweigh costs markedly,¹⁴¹ such differentials are not justified. Finally, diesel fuel prices are only half of petrol fuel prices, although the government is reducing this gap by raising diesel fuel prices to 75 per cent of petrol fuel prices by 2006.

A major initiative is to ensure that, by 2007, all city buses are fuelled by compressed natural gas (CNG), thereby reducing pollution. This scheme is

projected to have a direct cost of over \$600 million for the purchase of buses and the construction of CNG refuelling stations, in addition to considerable tax breaks.¹⁴² While this project will reduce emissions of air pollutants, it remains to be seen whether this is a cost-efficient measure. A cost-benefit analysis should be undertaken to compare the costs of CNG and requiring the use of filter systems on buses, which could also address the remaining problems stemming from emissions of other diesel vehicles.¹⁴³ Furthermore, policies barely deal with congestion, which both contributes to heightened emission levels (Transportation Research Board, 2002) and incurs significant economic costs estimated at around \$10 billion annually (M.K. Lee, 2001). Although the government has introduced tolls on two tunnels, an effective road management scheme needs to extend road pricing much further.¹⁴⁴

Conclusions

Air pollution remains a significant problem, despite some successes in reducing certain emissions. The current system of point-source emission control has weaknesses, suggesting that the Seoul emission permit-trading scheme should be extended to other major metropolitan areas. The quality of monitoring needs to be upgraded for it to act as the base for a trading system. The government should strengthen enforcement by increasing the role of independent inspections, and separating the monitoring and ownership functions of local authorities. While such reforms would be important, measures are most needed in the field of transportation. Taxation should be altered to reflect better the externalities of the use of diesel vehicles based on their emission characteristics, while engine emission and fuel standards should be tightened further towards the levels demanded of petrol engines – measures that seem to have very good cost-benefit ratios in other countries. In particular, heavy-duty vehicle emission standards should be brought down further, bringing them into alignment with those in other countries, such as the United States or the European Union. Finally, better traffic management policies, including more extensive road pricing, is an important means of reducing both pollution and congestion costs.

Waste management

Main issues

Waste disposal, if not handled correctly, can cause long-lasting damage to the environment and human health. In Korea, limited available space for landfill and strong public opposition to the construction of new landfill and waste incineration sites has led to a policy of targeting waste minimisation and recovery. Weak enforcement of regulations has also resulted in problems of hazardous waste

disposal. Continued rapid growth of consumption may add to pressure on the waste management system.

Performance

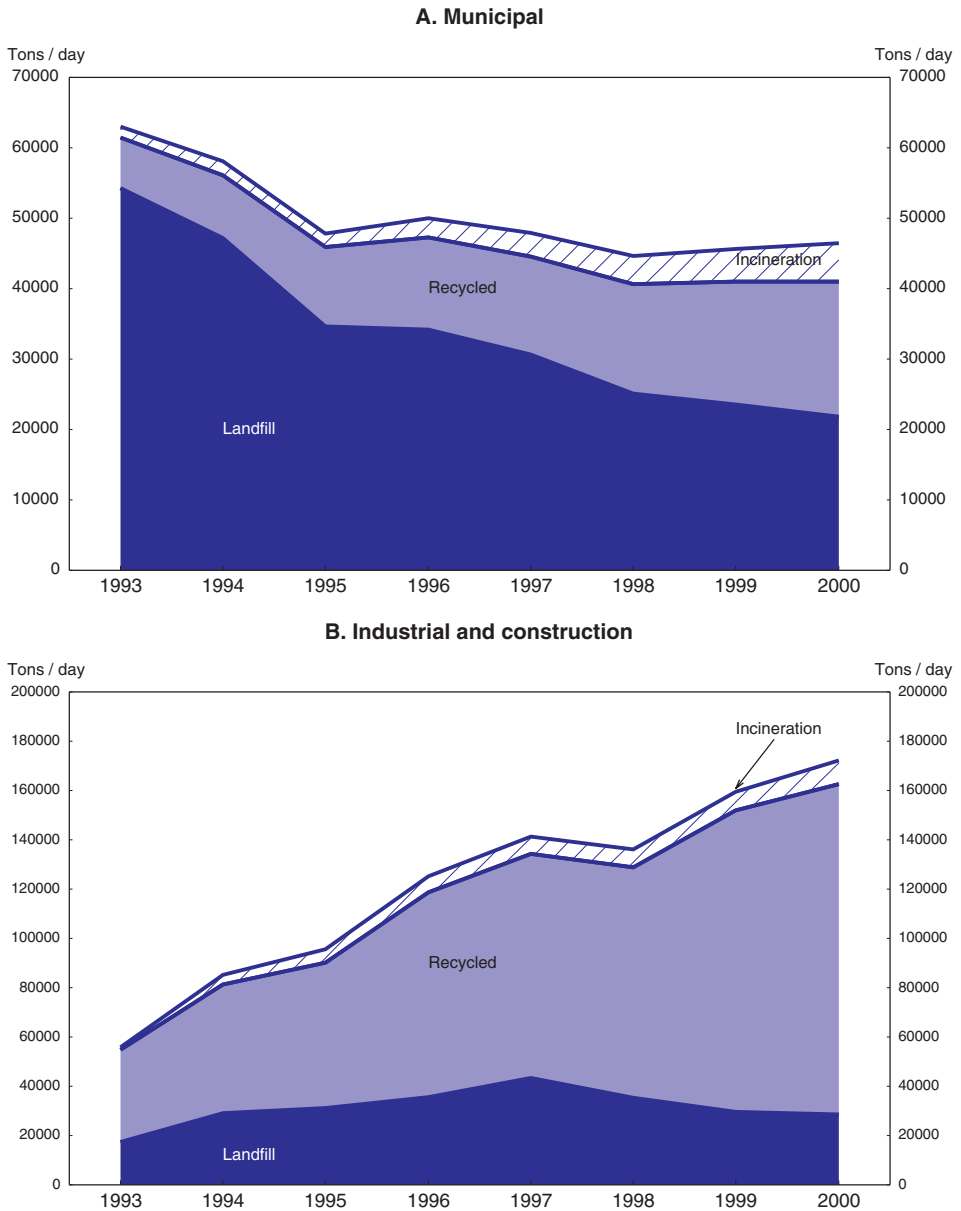
After a period of rapid economic growth, the waste disposal system was running out of capacity by the 1980s. An increasing amount of waste was deposited in uncontrolled landfills, leading to problems with environmental despoliation. As waste management policies have developed, the use of landfill has gradually diminished and the share of recycling has increased (Figure 45). The generation of municipal waste is currently in line with the average of the OECD area relative to each dollar of private consumption, after a remarkable reduction in the absolute level of waste production during the 1990s (Table 47), a performance that was helped by the pricing of waste collection. At the same time, the share of municipal waste going to recycling is among the highest in the OECD, partly as the result of deposit refund schemes and product charges. Most food waste is composted to produce organic fertiliser. Waste that is made into compost is counted as recycled waste, in contrast to other countries, so boosting the proportion of overall waste that is recycled. Incineration plays a small but growing role. Industrial waste has grown strongly throughout the past decades, reflecting rapid economic growth.¹⁴⁵ The majority of this type of waste is recycled but there have been concerns about the illegal dumping of hazardous waste (Table 48).

Policies

Since the implementation of the Waste Management Act in 1993, government policy has pursued a waste hierarchy approach, targeting minimisation and recovery over incineration and landfill. The striking decline in the amount of municipal waste followed the introduction of a volume-based refuse collection fee, which requires households above a certain income threshold to purchase special refuse collection bags to dispose of their waste.¹⁴⁶ The price of the garbage bag has risen over time, but still represents only a small fraction – officially estimated at 30 per cent – of the total cost of municipal waste management. Other policies include banning the use of materials or imposing fees on products that are difficult to recycle, such as batteries and lubricating oil. A deposit-refund system is also in operation, which refunds producers and importers in relation to their success in recycling goods. Finally, the government also provides soft loans to the recycling industry.

The volume-based collection fee system has also promoted recycling of municipal waste. As households do not pay for the collection of recyclable materials, there is an incentive to separate waste. Private companies collect the separated recyclable materials, which include paper, iron, aluminium, glass and plastics. Food waste also has to be placed in separate bags. From 2003, a system

Figure 45. Evolution of waste treatment



Source: Ministry of the Environment.

Table 47. Performance indicators: waste

	Municipal waste						Recycling		
	Kg per capita		Annual growth		Level, 1 000 tonnes	Relative to private consumption, annual growth	Level		
	Year	Level	Period	Percentage	Latest year	Percentage	Year	1 000 tonnes	Percentage of total
Australia									
Austria	1999	549	1990-1999	3.7	4 436	1.2	1999	1 061	24
Belgium	1999	535	1991-1999	3.1	5 462	1.3	1998	1 982	37
Canada							1998	2 937	
Czech Republic	2000	330			3 434				
Denmark	1999	627	1994-1999	3.5	3 329	1.7	1999	820	25
Finland	1999	465	1990-1999	-2.8	2 400	-4.1			
France	1999	539	1993-1999	1.7	30 744	-0.1	1999	3 198	10
Germany	1998	485	1996-1998	0.8	39 801	-0.4	1998	14 872	41
Greece	1997	372	1990-1997	3.8	3 900	1.8	1997	307	8
Hungary	2000	450	1990-2000	-1.9	4 552	-2.2			
Iceland	2000	713	1992-2000	2.8	199	-1.1	2000	17	9
Ireland	2000	608	1995-2000	4.5	2 302	-3.1	2000	192	8
Italy	1999	492	1990-1999	4.0	28 364	2.3	1997	1 874	7
Japan	1999	410	1990-1999	0.2	51 446	-1.5	1999	4 428	9
Korea	2000	360	1990-2000	-5.8	16 950	-10.5	2000	6 996	41
Luxembourg	1999	648	1991-1999	3.1	278	0.7	1999	1	0
Mexico	2000	310	1991-2000	4.3	30 733	1.3	2000	724	2
Netherlands	2000	611	1991-2000	2.9	9 691	-0.1	2000	2 191	23
New Zealand									
Norway	2000	615	1992-2000	2.7	2 755	-0.7	2000	606	22
Poland	2000	320	1990-2000	1.0	12 226	-3.9	2000	13	0
Portugal	2000	453	1992-1999	4.2	4 364	1.5	1999	190	4
Slovakia	2000	320	1992-2000	0.8	1 706		2000	36	2
Spain	1999	621	1991-1999	8.4	24 470	6.1	1999	4 390	18

Table 47. Performance indicators: waste (cont.)

	Municipal waste						Recycling		
	Kg per capita		Annual growth		Level, 1 000 tonnes	Relative to private consumption, annual growth	Level		
	Year	Level	Period	Percentage	Latest year	Percentage	Year	1 000 tonnes	Percentage of total
Sweden	1998	452	1990-1998	2.8	4 000	2.2	1998	1 000	25
Switzerland	2000	650	1990-2000	1.4	4 681	0.3	2000	1 500	32
Turkey	1998	390	1989-1998	2.8	24 945				
United Kingdom	1999	558			33 200		1999	2 880	9
United States	1999	760	1990-1999	1.3	208 520	-1.9	1999	46 068	22
OECD average		505			20 700			4 095	20
EU average		534			13 116			2 331	18

Source: OECD, Eurostat.

Table 48. **Waste treatment**
2000

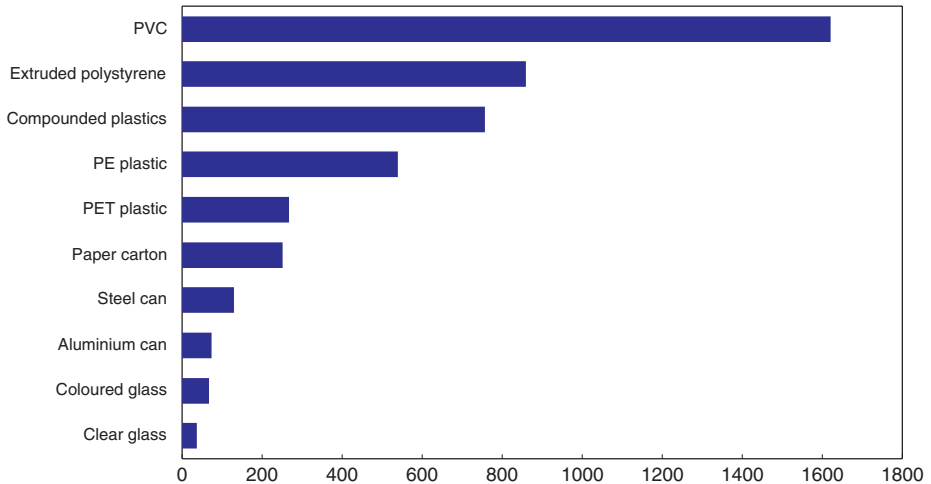
	Total waste		Waste treatment			
	Tons/day	Share of total	Landfill	Incineration	Recycled	Other
		(in per cent)				
Municipal	46 438	19.8	47.0	11.7	41.3	0
Industrial	101 453	43.3	16.1	5.6	74.4	3.9
Construction	78 777	33.6	15.8	5.0	74.3	4.9
Hazardous	7 614	3.2	12.0	24.0	53.0	11.0
Total	234 282	100.0	22.0	7.2	67.1	3.7

Source: Ministry of the Environment.

of extended producer responsibility will replace the deposit-refund system. The government initiated this change as it has faced problems in increasing the deposits sufficiently to induce producers and importers to strengthen their recycling efforts. In the new system, the government in consultation with the firms affected will establish recycling targets. As in other countries, recycling costs (net of revenues from selling the recycled material) are around € 100 per tonne, much higher than incineration (Figure 46). The high cost of recycling certain materials suggests that the new system of extended producer responsibility should allow delivery to an incineration plant, where heat can be recuperated, as one means of complying with recycling targets.

The central government has established a target of increasing the share of incineration to 20 per cent of waste treatment, meeting up to half of the construction cost of new facilities. However, due to the poor operational record of existing facilities, the government faces considerable difficulties in obtaining public support for new landfill sites¹⁴⁷ and incineration facilities.¹⁴⁸ In the face of opposition from residents over accepting waste from other districts, policy has targeted the construction of smaller incinerators in each administrative district, resulting in low capacity utilisation – as low as 34 per cent in Seoul – and excessive costs (Seoul Green Vision 21). In some cases, local governments have attempted to allay residents' concerns by actively involving them in the operation of waste disposal plants and compensating them for the resulting externality. To this end, a 1995 law allows residents to be involved in the management of a waste facility and be compensated from a Resident Support Fund, which is composed of a share of the waste management fee charge by the facility.¹⁴⁹ The Seoul government is also sponsoring research to evaluate the impact of incineration facilities on local property values and health that might eventually form the base for a compensation system.

Figure 46. **Recycling costs in Korea**
Euro per tonne



Source: Ministry of the Environment.

Responsibility for the disposal of industrial waste has been delegated to industry. One concern is the illegal dumping of industrial waste in unregulated sites, which was often found in the 1990s. The scale of this problem is difficult to determine, and requires further investigation. In addressing this issue, the Ministry of the Environment in 2001 introduced a waste manifest system to track industrial waste from generation to final deposit. By 2005, this system will cover all entities that generate, transport and dispose of industrial waste.

Conclusions

Waste management policy has made considerable progress in the reduction and processing of municipal waste in a sustainable manner. However, cost efficiency in municipal waste management needs to be improved through expanding the scale of operations and a gradual increase in the cost recovery of waste collection and disposal. The introduction of an extended producer responsibility system for recyclable products should help to reduce waste further, but care is needed in ensuring that costs do not move out of line with other disposal methods as appears to be happening with plastics. There is a need to raise public acceptance of new, modern, waste disposal facilities. The current system of compensating residents to gain their approval of new facilities should be continued,

with the cost passed onto consumers. Accompanying measures to allay public fears, such as independent and tougher monitoring, should be introduced. In addressing concerns over the illegal dumping of industrial waste, the government should investigate the possibility and associated costs of requiring enterprises to contract waste disposal to licensed third parties.

Notes

1. According to the Korea Federation of Banks, the problem is concentrated among credit cards, where the overdue ratio was 7.4 per cent. In contrast, the ratio for bank loans was only 1 per cent.
2. According to one estimate, a 10 per cent rise in share prices results in a 0.6 per cent increase in private consumption within three to six months (Kim and Moon, 2001).
3. A recent study (Shim, 2001) concludes that the close correlation between share prices and consumption since the crisis reflects the improved ability of share prices to signal the future income stream of consumers.
4. The rates on cars, air conditioners and jewellery were cut, while home electronic products were exempted. The rationale for this tax is to promote energy conservation and curb conspicuous consumption.
5. The Ministry of Construction and Transportation has developed the “parcelling” system to allocate newly constructed houses. When a housing project is announced, those who do not own homes are eligible to apply if they meet other conditions, such as having sufficient savings. The winners are decided by lottery. Following the crisis, this system was changed to boost the housing market. *First*, parcelling prices, which had been subject to price ceilings, were liberalised in 1999. *Second*, the parcelling right, which is priced below the market level of the finished dwelling, could be sold, thus allowing speculators to buy and re-sell those rights. *Third*, in 2000, those who have already purchased houses under this system were allowed to apply again. *Fourth*, the requirement to open special accounts at banks in order to be eligible was relaxed.
6. In contrast, non-residential construction has been subdued, falling in the first half of 2002, after a modest 3 per cent increase in 2001.
7. Investment in machinery and equipment accounts for about two-thirds of business investment, which is defined as total investment minus residential construction and government investment.
8. The deadline for implementing the new system depends on the size of firms. For example, firms with more than 1 000 employees would have to implement the new system by July 2003, but those with more than 20 workers would not have to comply until July 2007. Companies with less than 20 workers would have until the end of 2010.
9. In the *chonsei* system, the renter gives the owner a lump sum, typically equivalent to 60 to 70 per cent of the cost of the dwelling. The interest earned on this lump sum provides income to the owner for two years, at which point the lump sum is returned to the renter. The “rent” thus generated depends on the size of the lump sum and interest rates.

10. The price index has a relatively small weight for apartments, which have been at the heart of the recent price hikes. Indeed, the *chonsei* rent category in the price index gives a 28 per cent weight to apartments compared to 57 per cent in the Kookmin Bank index.
11. If the overall contribution of housing costs – including monthly rent and other charges – are included, it contributed 0.8 percentage point of inflation, or almost a third of the total.
12. The risk weight attached to loans to households has been increased, thus forcing banks to hold more reserves. For example, the loss reserves required for “normal” home mortgage loans is being increased from 0.75 per cent to 1 per cent. In addition, seven banks were singled out for over-evaluating the collateral of households seeking loans.
13. The calculation of export market growth is based on a weighted average of the growth of import volumes in Korea's markets. The weights are determined by the country's share of Korea's exports. Such a pick-up was projected in the OECD *Economic Outlook* (No. 72) released in December 2002.
14. OECD projections are made on the basis of unchanged exchange rates, except in the case of some high inflation countries.
15. Although the central bank has shifted to an interest-rate based policy, it still monitors the monetary aggregates, particularly M3, which is thought to be linked to inflation expectations.
16. The benefits of moving to a medium-term target in New Zealand is discussed in Drew, 2001.
17. Indeed, a 1992 World Bank study placed Korea second from the bottom of 72 countries ranked in terms of central-bank independence (Cukierman, Webb and Neyapti, 1992).
18. “Report on the Observance of Standards and Codes (ROSC): Republic of Korea, Fiscal Transparency” (Washington, DC: International Monetary Fund, 23 January 2001).
19. In 2001, lending to SMEs rose by 16 trillion (3 per cent of GDP), while lending to large firms declined. This trend continued in 2002, as SMEs received 37 trillion won of the 99 trillion won rise in lending, while large companies' share did not change. As of December 2002, SMEs had received 192 trillion won in loans from financial institutions, more than four-fifths of their total lending to businesses.
20. Under this system, the exchange rate was determined within a certain range of the weighted average of the foreign exchange rates of the previous day.
21. At the end of March 2002, Moody's upgraded Korea from Baa2 to A3. This was followed by Fitch and S&P, which upgraded Korea from BBB+ to A and A- grade in June and July, respectively.
22. There is no evidence of policy measures to maintain the parity of the won and the yen (Moon, 2002).
23. Under the GFS system used in Korea, the receipts generated from privatisation carried out for policy purposes are included in the item “net lending”, thus boosting the government surplus. Privatisation revenues have totalled 24.1 trillion won since 1998, of which 14.5 trillion won has flowed into the budget.
24. Moreover, privatisation receipts are not considered to be part of government revenue under the 1993 System of National Accounts.

25. The five social security funds are the National Pension Fund, Korea Teachers' Pension Fund, Industrial Workers' Accident Compensation Fund, Employment Insurance Fund and Merit Reward Fund. The National Pension Fund accounts for 90 per cent of the total.
26. It can be argued that the increased contributions to the NPS by the self-employed are to some extent voluntary. In 2000, 11.8 million persons – a little over half of the number of employed persons – contributed to the NPS. About a quarter of the employed – family workers, those covered by the public occupational schemes, those over 60 or under 18 years of age – are exempted from the NPS. This leaves another quarter of the employed – primarily the self-employed – that did not contribute. The decision of a growing number of self-employed to contribute reflects a decision to save for their retirement by qualifying for an NPS pension, which is partially determined by the individual's contributions.
27. Total outlays, including the supplementary budgets, were expected to be 147.2 trillion won, a 14 per cent rise from the 2000 outcome, which also had significant undershooting of spending. Relative to the 2000 initial budget, the initial budget for 2001 contained a 5.4 per cent increase in spending. The government introduced two supplementary budgets in 2001, including one after the 11 September attack in the United States that boosted spending by 1.6 trillion won.
28. The objective is to boost the price of diesel from 54 per cent of that of gasoline in 2001 to 75 per cent by 2006 and to raise the price of LPG from 34 to 60 per cent over the same period.
29. Since the social security surplus is projected at 3 per cent in both 2002 and 2003, the extent of consolidation is the same regardless of whether it is included.
30. Compared to the 2002 initial budget, the increase in spending in 2003 is only 1.4 per cent excluding the cost of financial sector restructuring.
31. If outlays using credit cards exceed 10 per cent of income, 20 per cent of that amount can be deducted from income tax. In addition, there is a lottery drawn from credit card receipts in order to promote their use.
32. The Call Centre handled an average of 4 417 cases per day in 2001.
33. Reductions of capital gains for business conversion, the relocation of a factory and the transfer of real estate during the process of restructuring were abolished. In addition, the reduction of the corporate income tax for business conversion was ended.
34. Previously, all firms with sales of less than 48 million won were allowed to pay the VAT based on sales. Under the new system, firms in certain industries, such as manufacturing, mining and real estate, are treated as regular taxpayers regardless of the amount of their sales.
35. For a much fuller description of retirement income policies and challenges, see the 2001 OECD *Economic Survey of Korea*.
36. Another 12 per cent of the elderly qualified for old-age allowance payments of about 3 per cent of the average wage.
37. This does not include the elderly that receive the military public pension or the old-age allowance.
38. In 1996, just over 25 per cent of the elderly had an income lower than half of median household income, compared to 10 per cent for the population as a whole (see Kwon, 1999).

39. While the replacement rate for a worker with average income is 60 per cent, this rises to 90 per cent for a worker earning half of the average income.
40. Roughly 5 million of the 21.1 million employed persons in 2000 were exempted from the NPS. This includes those covered by the public occupational pension schemes (1.1 million), family workers (1.9 million), those over the age of 60 (1.7 million) and those under 18 (0.2 million).
41. Those who have had exemptions are able to make contributions at a later date to cover those periods.
42. Public pension expenditure is projected to rise by 5 percentage points of GDP and the occupational pension schemes by 3 percentage points over the next three decades. Age-related healthcare spending is also likely to increase pressure on state budgets, while the potential costs of reunification are large but uncertain.
43. According to official estimates, the current scheme would require contributions of 19 per cent to achieve balance with a 60 per cent replacement rate.
44. Over the period 1998 to 2001, the rate of return on invested assets has been below the average market return, mainly as a result of considerable lending to the government. The average rate of return on investment over the period 1988 to 2001 was estimated at 9.87 per cent on average. This was achieved by returns of 9.32 per cent for public-sector deposits and 10.78 per cent in the financial sector. The obligatory deposit to the government was abolished in 2001. In 2002, 26 per cent of lending from the National Pension Fund was to the government and this is scheduled to be repaid by 2005.
45. Complete external funding is practised by only 8 per cent of companies, while 19 per cent fund only internally (Choi, 1999). Following the crisis, around a quarter of eligible workers reported they had not received this payment (Phang, 2001). As a result, the government introduced a Wage Guarantee Fund to partially compensate workers whose employers had defaulted.
46. The government reformed the pension taxation system in 2000 (see the 2001 OECD *Economic Survey of Korea*) to put it on a so-called EET basis. While the reforms moved from the taxation of contributions to the taxation of benefits, significant tax deductions are allowed.
47. Low inflation has been found to have the benefit of reducing real interest rates and encouraging investment, while damping the volatility of output growth. Moreover, low inflation levels tend to reduce the volatility of inflation, which imposes efficiency costs.
48. For an overview of public expenditure management issues in OECD countries, see Atkinson and Van den Noord (2001).
49. The establishment of the social safety net reflected a widening of basic priorities to include social welfare as well as economic growth. This led to the establishment of a national pension system in 1988, national health insurance in 1992 and unemployment insurance in 1995. The current low level of publicly funded social expenditures reflects the immaturity of the pension system, which has few beneficiaries at present.
50. In most OECD countries, public social expenditure is lower on a *net* (after tax) than on a *gross* (before tax) basis since governments tend to claw back more money through taxation of public transfer income than the value of the tax advantages awarded for social purposes. In contrast, net public social expenditure is estimated to be higher in Korea and the United States. In 1997, net public social expenditure in Korea was 4.6 per cent of GDP, whereas gross public social expenditure was 4.4 per cent of GDP (Adema, 2001).

51. When private spending on extra-curricular education – accounting for 5 per cent of total household income – is added, spending on education in Korea might be the highest in the world.
52. To assist the unemployed, the authorities expanded the unemployment insurance programme, created temporary public works jobs, provided more vocational training opportunities and established a “Temporary Livelihood Protection Programme”.
53. In most OECD countries, the establishment and expansion of programmes and provision of services in the social policy domain and increasing debt interest payments led to a persistent rise in general government expenditure until the 1980s. For a review of trends in public expenditure in OECD countries, see Tanzi and Schuknecht (2000) and Atkinson and Van den Noord (2001).
54. Quasi-taxes refer to a wide range of fees, charges and contributions that are not imposed by the tax laws. The amount of quasi-taxes is estimated at around 1 per cent of GDP (see Chapter II).
55. Revisions to the *Fund Management Act* in December 2001 require that the public funds be subject to parliamentary approval beginning in the 2003 budget. This reform also increased the coverage of public funds by transforming a number of “extra-budgetary” funds into public funds.
56. Until the 2002 budget, the total amount of government spending on a consolidated basis was unknown when the budget was passed.
57. Approval is only required from the Ministry of Planning and Budget.
58. Cash-based accounting provides little recognition of financial commitments because liabilities and receipts are accounted only in the year when they are realised.
59. Two major features of the new GFS standards set by the IMF are accrual-based accounting and harmonisation with the 1993 SNA system. The adoption of the new GFS standards will thus move the GFS-based government accounts closer to the SNA-based accounts (see Annex I).
60. During the 1970s and 1980s, the Economic Planning Board (EPB) assumed the central role in budget drafting and execution, as well as in preparing and implementing economic development plans. In the early 1990s, EPB and the Ministry of Finance were merged into the Ministry of Finance and Economy (MOFE), which exercised the same degree of centralising power in budgeting as EPB.
61. This explains why the initial budget announced each year by MPB until 2002 was limited to the general account and one special account, the Fiscal Financing Special Account. For the 2003 budget, the MPB used only the general account.
62. Between 1999 and 2002, 19 funds were abolished and 14 funds were merged into six funds. But during the same period, ten new funds were created.
63. For example, the 2003 budget guideline asked ministries to restrict their budget requests to one-digit growth from the 2002 budget. But the total budget requests amounted to an increase of 26 per cent.
64. This refers to the number of detailed appropriation accounts (*Se-Hang*) specified in the Budget and Accounts Act. In practice, however, the MPB negotiates with line ministries concerning over 6 000 appropriation accounts (*Se-Se-Hang*).
65. The Credit Guarantee Fund was also used to provide guarantees for low-income households setting up businesses after the financial crisis in 1997.

66. In addition, the bill would require the budget to include information on the costs of quasi-fiscal activities with a view to improving transparency. It would further provide details of contingent liabilities, including expected costs and likely beneficiaries.
67. The scope for the carry-over of unused operating costs was set at 5 per cent in 1999, in an effort to limit spending binges at the end of the year.
68. In Korea, the term “performance-oriented budgeting” refers to the practice of asking ministries or agencies participating in pilot projects to prepare and submit “performance plans” that specify strategies, objectives and indicators. The MPB, which is in charge of this project, may use this as an input for the following year’s budget for these ministries or agencies.
69. In practice, however, the flexibility and autonomy given to these agencies has been relatively limited, compared to the case in other countries that have adopted this system, such as the United Kingdom.
70. The number of these accounts increased from 18 in 1997 to 49 in 2001, boosting the amount of their outlays from 4.2 trillion won to 9.3 trillion won. In 2002, the size of these accounts fell to 4.3 trillion won.
71. One major improvement in strengthening *ex ante* evaluation has been the introduction of pre-feasibility studies for large construction projects (see Box 4).
72. The government reports that between 1998 and 2002, 76 areas of the government sector have been contracted out, in addition to 209 activities of public enterprises and government-funded entities.
73. One aspect has been the privatisation of state-owned enterprises (see Chapter II).
74. In addition, it permits all types of participation including Build-Operate-Transfer, Build-Transfer-Operate and Build-Operate-Own and requires feasibility studies on projects open to private-sector firms. The Private Infrastructure Investment Centre of Korea (PICKO) was established to support the new initiative.
75. The failure of the Millennium Dome in the United Kingdom is a good example in this regard (OECD, 2001b). In addition, local governments in Japan have created over 4 000 third-sector companies, many of which suffer from large deficits.
76. The funding sources for private schools include tuition fees, government subsidies to cover the shortage of remuneration and operating costs, and resources from school foundations. In practice, private schools rely heavily on government subsidies, while transfers from school foundations remain very limited due to their generally weak financial capacity.
77. The wider public sector includes all bodies that are part of local and national government and have been given some autonomy and/or independence from reporting ministries and/or are subject completely or partially to management and financial rules from vertically-integrated ministries. The governance problems of the wider public sector have been identified as systematic in OECD countries (OECD, 2002a).
78. This figure excludes education, which remains separate from the general budget of local governments in Korea. If education is included, this figure is increased to around 50 per cent.
79. Local borrowing is restricted to infrastructure projects, disaster relief and certain welfare enhancing projects. There are limits to the amount of debt and the shortfall allowed in tax revenues from the previous year. Local government debt was 17.8 trillion won (3.3 per cent of GDP) in 2001.

80. There is, however, a general distribution formula specified in the law.
81. The large number of central ministries – 19 in 1999 – involved in the grant system, together with the lack of inter-ministerial co-ordination, also hinders the efficiency of the system.
82. The average matching rate (paid by the central government) is around 60 per cent. The share of conditional grants is the highest for counties (Gun), where conditional grants comprise close to 30 per cent of total revenue. This puts a heavy burden on these poorer local governments.
83. Between 1991 and 1998, the central government devolved 2 008 out of 12 978 government functions to local levels. In 1998, the newly elected government set up the Presidential Commission on Promotion of Decentralisation, which devolved another 493 functions between 1999 and 2001.
84. The overlap in spending and financing responsibilities has also been identified as a problem in other OECD countries, for example, Switzerland, Italy, Germany and Greece.
85. The *Local Autonomy Act* assigns 87 functions to both upper-level and lower-level local governments. These overlapping functions represent 28 per cent of the upper-level local government functions and 25 per cent of lower-level local government functions (Hong, 1998).
86. For example, the regulation on lower-level governments' investment in education – requiring *ex ante* approval by the upper-level government – has been relaxed. The central government has also allowed lower-level local governments to assess flexible tax rates for the education tax, and will not include those funds in the definition of local income used in the calculation of local government transfers.
87. Reforms in the fourth area – the public sector – were analysed in the previous chapter.
88. Outside directors must account for a quarter of the board in listed companies and half of the board in listed companies with more than 2 trillion won in assets.
89. The study (Black, Jang and Kim, 2002) created an overall index of corporate governance practices in 540 companies based on: i) shareholder rights; ii) boards of directors; iii) outside directors; and iv) disclosure and transparency. The study found that an increase of 10 points in the index, which is scaled from 0 to 100, boosted a company's book value of common equity by 7 per cent.
90. Firms are required "to exhaust all means to avoid" dismissals and to notify workers' representatives at least sixty days before any workers are made redundant. During that period, management must have discussions with workers aimed at avoiding layoffs. Moreover, firms are required to establish fair and reasonable procedures for choosing the employees to be dismissed. These provisions resemble those in countries with high employment protection. Layoffs must be reported to the government if they pass certain thresholds.
91. In a survey in February 2002, 21.5 per cent of firms did not have plans to hire workers in 2002. More than half of these enterprises cited problems of excess manpower, primarily due to difficulties in reducing their existing workforce. See *Korea Business Review*, May 2002, p. 38.
92. There has been criticism that the new law has actually made it more, not less, difficult to reduce employment (Dae Il Kim, 2002). Sung-Hee Jwa, president of the Korea Economic Research Institute, which is associated with the Federation of Korean Industries, wrote, "The actual implementation of layoffs is still extremely difficult" (Jwa, 2001).

93. This figure includes those on fixed-term contracts, those without a fixed-term contract where employment is not expected to continue for involuntary reasons, temporary agency workers and on-call workers.
94. In a survey on the reasons for hiring non-regular workers (*Korea Business Review*, May 2002, p. 38), 32 per cent of employers cited the need to fill vacant positions for increased work volume. This response implies difficulty in laying off regular workers during periods of decreased work volume. Another 23 per cent of employers cited the increased number of simple and repetitive jobs as a result of computerisation and automation. Another 17 per cent of employers cited excessive welfare expenses for regular employees and 13 per cent noted the cost of laying off regular workers.
95. According to the Office of the Investment Ombudsman, nearly a quarter of the complaints from foreign businesses during the first half of 2002 concerned labour problems.
96. The government has sometimes intervened in labour disputes involving large companies, as these can have a severe impact on small firms that supply larger ones (Dae Il Kim, 2002).
97. About four-fifths was financed by the Employment Insurance System, which receives contributions from employers and employees, with the remainder from the general account of the budget.
98. According to the president of the Korea Labour Institute: "... diverse training programs that were loosely regulated and lacked appropriate monitoring and inspection led to moral hazard of some training institutions and trainees. Some unqualified training institutions took advantage of the training programs and provided time-killing courses in order to receive reimbursement from the government, thus limiting the(ir) effectiveness... Little consideration was given either to changing demands in the labour market or to the needs of potential participants. Training institutions tended to routinely provide the same training programs as were conducted in the past. As a result, some programs did not significantly aid in the reemployment of the trainees" (Lee *et al.*, 2001).
99. Almost a third of employees – daily workers, employees over 65, part-time workers and civil servants and teachers – are legally exempted from unemployment insurance, which was introduced in 1995.
100. For example, Federation of Korean Industries, "Business Support for Japan-Korea FTA", 8 January 2002.
101. One of Korea's priorities in the Doha Round is to clarify and strengthen rules related to anti-dumping, which account for 106 of the 128 measures imposed on Korean exports as of the end of 2002. In contrast, Korea has made relatively limited use of this instrument, with 11 anti-dumping duties in effect at present.
102. The twelve sectors are 1) business, 2) communications, 3) construction and related engineering, 4) distribution, 5) educational, 6) environmental, 7) financial, 8) health-related and social, 9) tourism and travel-related, 10) recreation, culture and sports, 11) transport, and 12) other.
103. In the terminology of WTO, Korea is largely open to Mode 3 – commercial presence – but less open to Mode 1 (cross-border supply).
104. FDI accounted for less than 10 per cent of capital inflows over the period 1962 to 1992. During the five years prior to the crisis, FDI inflows accounted for less than 1 per cent of total fixed capital formation.
105. Foreign investors are granted a complete exemption from the corporate income tax during the first seven years after achieving a profit and a 50 per cent reduction for the

- following three years. Moreover, they are exempted from the acquisition tax, property tax and aggregate land tax during the first five years after achieving profitability and a 50 per cent reduction for the following three years.
106. During 2001, 428 of the 430 complaints from foreign firms in Korea to the Ombudsman were resolved.
 107. According to a poll by Kookmin Bank, 23.6 per cent of those in their forties cited their children's education as the most important criteria, followed by transportation and the size and kind of house. For those in their thirties – a declining share of the population – the top criteria were transportation, size and kind of house and their children's education, in that order.
 108. This approach was adopted in the late 1980s with the construction of five new towns – Bundang, Ilsan, Jungdong, Pyungchon and Sanbon – with a total population of 1.2 million.
 109. Market prices are used for those with more than three houses or for “luxurious” homes. The latter criterion was strengthened by lowering the threshold for homes to qualify as luxurious.
 110. Standard building costs were set at 165 000 won per square meter in 2002. An adjustment of between 2 and 10 per cent is added to the tax base for apartments valued at more than 300 million won.
 111. These estimates were by Roh (1997) and Yoon *et. al* (1998). This is consistent with the government's September 2002 package in which examples of the effective tax rate in different regions of Seoul ranged from 0.052 to 0.2 per cent.
 112. In the example used in the September 2002 package, the rate was 0.052 per cent for an apartment in Seoul and 0.195 per cent in Yongin.
 113. Free education at middle school level, which had previously been available only in rural and remote areas, will be expanded nation-wide gradually between 2002 and 2004.
 114. The lottery was introduced for lower secondary schools in 1969 and for upper secondary schools in 1974.
 115. While “private schools” do exist, in practice they are subject to the same rules and regulations as public schools and also receive some public financing (Table 25).
 116. This figure, which is from the Urban Household Survey, is probably an underestimate, since payments to individual tutors are not likely to be fully incorporated.
 117. For example, the introduction of a merit-based pay for teachers in 2001 was effectively blocked by the teachers' union, which returned the merit-based portion of their salaries for distribution among all teachers (Sun-woong Kim and Ju-ho Lee, 2002).
 118. This suggests that central funding to private universities is between 18 to 25 per cent of total public spending on universities, despite the fact that they enrol 3.5 times as many students.
 119. SMEs may choose instead a tax credit equal to 15 per cent of R&D expenditures in each business year.
 120. In Korea, the definition of SMEs varies between sectors. In manufacturing, it includes firms with less than 300 employees and no more than 8 billion won in paid-in capital (the limit is 3 billion in mining, construction and transport). In the service sector, the maximum number of workers that an SME can have varies between 30 and 300 employees, depending on the industry, and between 2 and 30 billion won in

annual sales. Finally, in the primary sector, SMEs are defined as firms with a maximum of 50 to 200 workers and 5 to 20 billion won in annual sales.

121. This section draws on Baygan (2003), "Venture Capital Policy Review: Korea", *STI Working Papers*, 2003/02, OECD, Paris.
122. The importance of pension funds, though, is likely to increase following the 2001 decision to allow the National Pension Fund to invest in LPFs.
123. Since 1999, business angels have been allowed to deduct 20 per cent of their investments from their income tax. In addition, corporate and institutional investors in VCFs and LPFs are allowed to deduct 15 per cent of their investments from their consolidated income tax base. In addition, taxes are not levied on the capital gains of individuals investing in VCFs and LPFs. Finally, the VCFs and LPFs themselves receive preferential tax treatment.
124. All SMEs, including venture businesses, receive a 50 per cent reduction in income or corporate tax in the first six years once they generate a profit. Other tax preferences include a 50 per cent cut in property taxes during the first five years after establishment and exemption from local acquisition and registration taxes on assets acquired during the first two years.
125. This estimate was made in *Business Korea*, August 2001.
126. This resulted in an 18 per cent fall in the price of land to mobile service, providing a benefit to consumers estimated at 677 billion won.
127. MIC is considering a shift from the current approval system to a reserved notification system, under which price changes would be automatically approved if there were no opposition from the MIC within a certain time period after notification.
128. A third issue – sustainable retirement income – is discussed in Chapter II.
129. During the 1990s, car ownership quadrupled, and since the early 1980s it has risen almost twenty-fold.
130. Concentrations of particulate matter are also affected by yellow sand blown in from abroad. Such transboundary issues are beginning to be addressed on a regional basis. Solving this particular problem would require major reforestation in China.
131. Following the introduction of monitoring stations in the mid-1990s, the number of ozone warnings issued increased from 24 in 1997 to 52 in 2000.
132. This is an estimate from a special study using 1999 data on the social cost of air pollution conducted by the Korea Environment Institute on behalf of the Ministry of the Environment. The bulk of the social costs of air pollution are due to increased mortality, with the loss of a life being valued at around \$500 000.
133. Emission limits are set in national laws, but may vary depending on the local environment. See OECD (1999a) for a description of the permitting system.
134. Voluntary agreements, in which enterprises are exempt from inspection if they agree to set more stringent emission targets and undertake measures to achieve these targets, were introduced in September 2002. Although the aims are laudable, in the current situation where monitoring is weak, such a system may undermine efforts to achieve lower emission levels.
135. Dioxin emissions, particularly in fly ash, have been a concern (Cho *et al*, 1999, Soo, 2001). The government's intention to ratify the Stockholm convention on persistent organic pollutants (POPs) will require a national strategy to improve monitoring and reduce emissions of POPs, including dioxin.

136. Under this scheme, tradable permits for limited amounts of emissions of particulate matter, nitrogen oxides and volatile organic compounds will be allocated to both major point-source emitters and companies that operate a large number of vehicles. The first step in this process will be to establish an accurate measurement system for point-source emitters.
137. In 1998, the transportation sector produced 84 per cent of air pollution in Seoul, up from 55 per cent in 1991. The topographical features of the city complicate addressing ozone problems.
138. Diesel engine vehicles, principally buses and trucks, contribute more than half of the pollution. Owners of such vehicles pay an annual fee (averaging about \$60) based on emissions, the age of the vehicle and area.
139. At present, the sulphur content standard for petrol is 130 parts per million (ppm) and for diesel fuel 430 ppm (IEA, 2002). Proposed EU standards are to reduce the sulphur content of fuels to 50 ppm from 2005 and to 10 ppm from 2011.
140. Current standards in Korea are equivalent to EURO III and US LEV standards and cover a similar range of pollutants – carbon monoxide, oxides of nitrogen, particles and VOCs. Requirements for diesel vehicles are weaker, however (Jeon, 2002). Standards for diesel vehicles will comply with EURO III standards in 2003, with the exception of passenger cars, where regulations are similar to US LEV (Jeong, 2001).
141. The United States Environmental Protection Agency has undertaken such studies.
142. CNG buses are exempt from acquisition taxes and the tax on CNG is lower than that on diesel (M.K. Lee, 2001).
143. The cost efficiency of using advanced filters and CNG were evaluated for California in Sierra Research (2000).
144. The Transportation Research Board (2002) reports that generalised road pricing would be one of the most cost-effective means of reducing congestion and emissions.
145. Unlike other OECD countries, waste is classified into only two broad categories – municipal and industrial. Industrial waste consists of general waste and special (hazardous) waste. During the 1990s, there were changes in the methodology for measuring both municipal and industrial waste, which may overstate the reduction in both types of waste. However, subsequent trends appear robust to these changes.
146. Other measures that also contributed to the decline in municipal waste included prohibiting the use of solid fuels for heating in some urban areas and restricting the use of disposable packaging.
147. Public opposition to new landfills has been intense and has also restricted the operation of existing landfills by limiting the types of waste and by attempting to block waste from other areas. Due to bad odours, food waste was banned from the Kimpo landfill in Seoul and the ban is to be generalised by 2005.
148. Emissions of dioxin from incinerators, mainly smaller and older facilities, have been a periodic concern. Replacing these incinerators could help alleviate the problem. Dioxin emissions from incineration of municipal waste in small low-technology incinerators, without air pollution control systems, are 7 000 times greater than high-technology incinerators with sophisticated air pollution control systems. For hazardous waste, the difference is nearly 50 000 times (UNEP, 2001).
149. In Seoul, residents receive 7 per cent of the fee for locally generated waste and 10 per cent of fees from waste from other districts.

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BASIC STATISTICS OF KOREA

THE LAND

Area (thousand sq. km)	100	Major cities, 2001 (million inhabitants):	
Agricultural area (thousand sq. km)	14	Seoul	10.3
Forests (thousand sq. km)	65	Pusan	3.8
		Inch'on	2.6
		Taegu	2.5

THE PEOPLE

Population, 2001 (million)	48.3	Civilian labour force, 2001 (million)	22.4
Per sq. km, 2001	485	Civilian employment	21.7
Annual rate of change of population, 2001	0.7	Agriculture, forestry and fishing	1.8
		Industry	4.2
		Construction	1.8
		Services	13.9

PRODUCTION

GDP, 2001 (trillion won)	545.0	Origin of GDP, 2001 (per cent of total):	
GDP per head (US\$)	8 900	Agriculture, forestry and fishing	4.4
Gross fixed investment, 2001 (trillion won)	147.5	Industry	33.4
Per cent of GDP	27.1	Construction	8.2
Per head (US\$)	2 420	Services	54.0

THE GOVERNMENT

Public consumption, 2001 (per cent of GDP)	10.4	Composition of the National Assembly: February 2003	<u>Number of seats</u>
Central government revenue, 2001, consolidated basis (per cent of GDP)	26.4	The Grand National Party	151
Central government budget balance, 2001, consolidated basis (per cent of GDP)	1.3	The Millennium Democratic Party	103
		Other	18
			<hr style="border: none; border-top: 1px solid black; margin: 0;"/> 272

FOREIGN TRADE

Commodity exports, 2001, f.o.b. (per cent of GDP)	35.6	Commodity imports, 2001, c.i.f. (per cent of GDP)	32.7
Main exports (per cent of total exports):		Main imports (per cent of total imports):	
Light industry products	17.5	Consumer goods	11.8
Heavy industry products	74.1	Industrial materials and fuels	51.0
Electronic products	31.5	Crude petroleum	15.1
Cars	7.6	Capital goods	37.2

THE CURRENCY

Monetary unit: Won		Currency unit per US\$, average of daily figures:	
		2000	1 131
		2001	1 291
		2002	1 251

Note: An international comparison of certain basic statistics is given in an annex table.

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of Korea were reviewed by the Committee on 16 January 2003. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 6 February 2003.

The Secretariat's draft report was prepared for the Committee by Randall Jones, Yongchun Baek, Young-Sook Nam and Douglas Sutherland under the supervision of Yutaka Imai.

The previous Survey of Korea was issued in September 2001.



From:
OECD Economic Surveys: Korea 2003

Access the complete publication at:
https://doi.org/10.1787/eco_surveys-kor-2003-en

Please cite this chapter as:

OECD (2003), "Structural Reform to Maintain High Growth", in *OECD Economic Surveys: Korea 2003*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/eco_surveys-kor-2003-6-en

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