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INFOKOREA

AN ESSENTIAL GUIDE FOR EDUCATORS

Edited by the Understanding Korea Project

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Aerial view of Changgyeonggung Palace

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On the Cover: This illustration of Gyeongbokgung Palace and Gwanghwamun Plaza highlights a key feature of Korea's royal palaces—harmony with the natural landscape.

All statistics and descriptions in the statistics part refer to *Korea Statistical Yearbook 2015* by STATISTICS KOREA (kostat.go.kr).

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01 Population and Household

Changes in Korea's Population Structure

Since population drives both production and consumption, demographic changes—both the size of a population and its structure—can have profound and far-reaching effects on a country, including an economic and social impact. A decline in the population because of a low birthrate can undermine growth potential, as it weakens the labor market in the long term. In addition, an aging population can cause a decline in labor productivity because there are fewer economically active people. An aging population will therefore sustain a heavier burden in supporting its elderly members.

In an effort to gauge trends that might affect Korea's demographics in the future, factors that affect a population—births, deaths, and international movement—have been projected within a range of estimates (low, midrange, and high). The graph shows midrange projections.

If the midrange projections turn out to be accurate, Korea's population will peak at 52,160,000 in 2030 and then fall gradually to 43,960,000 in 2060. (By way of comparison, Korea had 43.75 million people in 1992.)

Table 1-1 Population Structure: Midrange Projections[1]

Year	Population scale (1,000 people)	Population growth (%)	Population structure by age group (%)			Aging index[2] (per 100 people)	Dependency ratio[3] (per 100 people)
			Age 0-14	Age 15-64	Age over 65		
1980	38,124	1.57	34.0	62.2	3.8	11.2	6.1
1990	42,869	0.99	25.6	69.3	5.1	20.0	7.4
2000	47,008	0.84	21.1	71.7	7.2	34.3	10.1
2005	48,138	0.21	19.2	71.7	9.1	47.3	12.6
2010	49,410	0.46	16.1	72.8	11.0	68.4	15.2
2011	49,779	0.75	15.6	73.0	11.4	72.8	15.6
2012	50,004	0.45	15.1	73.1	11.8	77.9	16.1
2013	50,220	0.43	14.7	73.1	12.2	83.3	16.7
2014	50,424	0.41	14.3	73.1	12.7	88.7	17.3
2015	50,617	0.38	13.9	73.0	13.1	94.1	17.9
2020	51,435	0.28	13.2	71.1	15.7	119.1	22.1
2030	52,160	0.01	12.6	63.1	24.3	193.0	38.6
2040	51,091	-0.39	11.2	56.5	32.3	288.6	57.2
2050	48,121	-0.76	9.9	52.7	37.4	376.1	71.0
2060	43,959	-1.00	10.2	49.7	40.1	394.0	80.6

Notes:
1) The chart is based on a midrange growth scenario.
2) The aging index is the proportion of people 65 and over to those between the ages of 0 and 14. It is calculated by dividing the former figure by the latter and multiplying by 100.
3) The dependency ratio is the proportion of people 65 and over to people between the ages of 15 and 64. It is calculated by dividing the former figure by the latter and multiplying by 100.
Source: Statistics Korea, Population Projections

Figure 1-1 Changes in Korea's Population Structure: Midrange Projections[1]

Note: 1) Medium level projection
Source: Statistics Korea, *Population Projections*

According to the medium-level scenario, Korea's total population was 50,617,000 in 2015, marking a year-on-year increase of 0.38 percent. In terms of population structure, Koreans under the age of 15 accounted for 13.9 percent of the country's population. Economically active people between the ages of 15 and 64 made up 73.0 percent of the total, whereas 13.1 percent were over 65.

A society in which citizens over the age of 65 make up more than 7 percent of the population is considered an aging society. If 14 percent of the population is over 65, it is an aged society, and at 20 percent it is a super-aged society. Korea became an aging society in 2000 when the figure reached 7.2 percent.

The aging index measures the relative percentages of people over 65 and people under 15. In 2015, this figure increased 5.4 percent year on year to 94.1 percent, indicating a very narrow gap compared with past years. The dependency ratio, an indicator of the number of elderly people who require support and the number of working-age people who are capable of supporting them, rose 0.6 percent year on year to reach 17.9 percent. This suggests that fewer working-age people are being forced to shoulder a heavier burden as time passes.

Population Growth Trends and Fertility

In addition to the problem of an aging population, Korea is facing a decline in natural population growth as a result of fewer births.

The total number of births in 2014 was 435,435, a decrease of 1,020 from the 2013 level. Accordingly, the natural population growth rate (the crude birth rate minus the crude death rate) recorded 3.3 per thousand. This was a decrease of 0.1 from the

Parents stand in line to enter a baby goods expo.

Table 1-2 Population Growth Trend[1]

(People, per 1,000 people)

	1985	1990	1995	2000	2005	2010	2011	2012	2013	2014
Live birth	655,489	649,738	715,020	634,501	435,031	470,171	471,265	484,550	436,455	435,435
Crude birth rate	16.1	15.2	15.7	13.3	8.9	9.4	9.4	9.6	8.6	8.6
Natural growth rate	10.2	9.5	10.3	8.2	3.9	4.3	4.3	4.3	3.4	3.3
Total fertility rate	1.660	1.570	1.634	1.467	1.076	1.226	1.244	1.297	1.187	1.205

Note: 1) Including infant deaths
Source: Statistics Korea, *Annual Report on Live Births and Deaths Statistics* (Based on the chapter "Vital Registration")

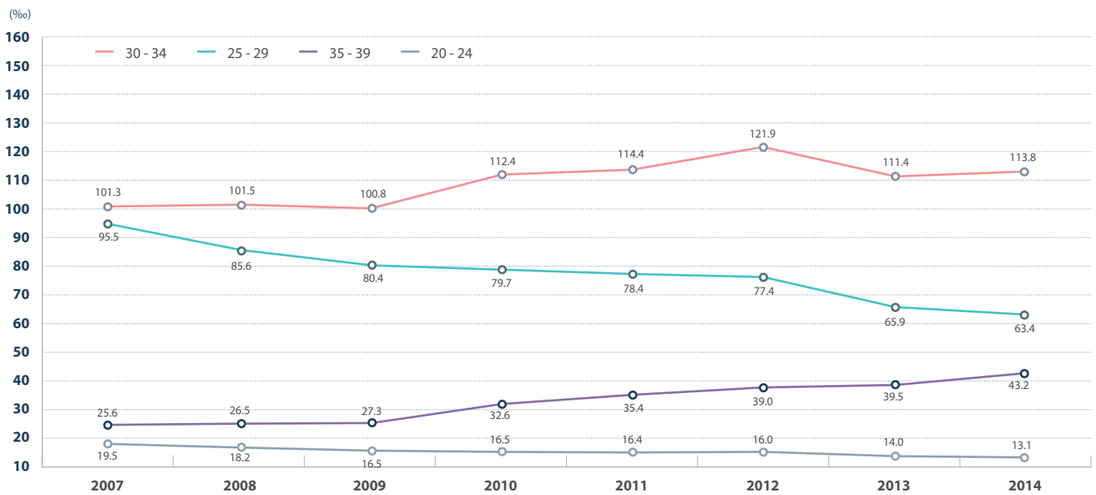
Table 1-3 Status of Fertility

(1,000 people, people)

		2007	2008	2009	2010	2011	2012	2013	2014
Number of fertile women (15~49)		13,579	13,532	13,461	13,347	13,215	13,096	13,002	12,909
Women in the most fertile age group (25~39)		7,875	7,727	7,570	7,417	7,279	7,171	7,070	5,363
Mean age at first marriage(female)		28.1	28.3	28.7	28.9	29.1	29.4	29.6	29.8
Fertility rate(‰)	**20-24**	19.5	18.2	16.5	16.5	16.4	16.0	14.0	13.1
	25-29	95.5	85.6	80.4	79.7	78.4	77.4	65.9	63.4
	30-34	101.3	101.5	100.8	112.4	114.4	121.9	111.4	113.8
	35-39	25.6	26.5	27.3	32.6	35.4	39.0	39.5	43.2

Source: Statistics Korea, *Annual Report on Live Births and Deaths Statistics* (Based on the chapter "Vital Registration")

Figure 1-2 Fertility Rates



Source: Statistics Korea, *Annual Report on Live Births and Deaths Statistics* (Based on chapter "Vital Registration")

Figure 1-3 Marriage and Divorce

Source: Statistics Korea, *Annual Report on Marriage and Divorce Statistics*

A scene from an outdoor wedding

Table 1-4 Marriage and Divorce

(Number, %)

	2007	2008	2009	2010	2011	2012	2013	2014
Number of marriages	343,559	327,715	309,759	326,104	329,087	327,073	322,807	305,507
Year-on-year increase	3.9	-4.6	-5.5	5.3	0.9	-0.6	-1.3	-5.4
Composition of first marriage (m) + first marriage (f)	77.3	76.1	76.4	78.1	78.6	78.6	79.2	78.4
Composition of remarriage (m) + first marriage (f)	4.3	4.6	4.5	4.3	4.2	4.1	4.0	3.9
Composition of first marriage (m) + remarriage (f)	5.7	6.3	6.1	5.6	5.7	5.8	5.6	6.0
Composition of remarriage (m) + remarriage (f)	12.2	12.8	12.8	12.0	11.5	11.5	11.2	11.6
Number of divorces	124,072	116,535	123,999	116,858	114,284	114,316	115,292	115,510
Year-on-year increase	-0.4	-6.1	6.4	-5.8	-2.2	0.0	0.9	0.2

Source: Statistics Korea, *Annual Report on Marriage and Divorce Statistics*

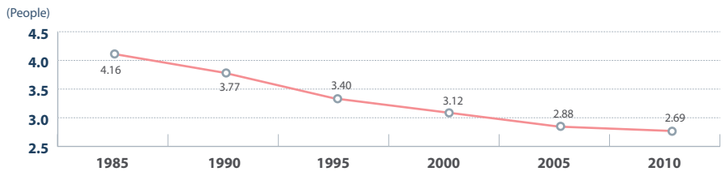
previous year's level. The fertility rate, which is the average number of children that a woman is expected to have in her lifetime, increased 0.02 person in 2014 to 1.205 per thousand, from 1.187 per thousand in 2013.

In 2014, the age group with the highest fertility rate (the highest number of births per thousand women) was women in their early thirties. The fertility rate for women in that age group was 113.8 in 2014, representing an increase of 2.4 year on year.

The fertility rate for women between 25 and 29 was 63.4, a decrease of 2.5 from the previous year. The fertility rate for women between 35 and 39 was 43.2, a 3.7 increase from the previous year. The fertility rate of women in that age group has seen a steady increase.

In 2007, the fertility rate for women in their early thirties (30 to 34) exceeded that of women in their late twenties (25 to 29). The gap between the two groups' fertility rates is growing.

Figure 1-4 Average Number of Household Members



Source: Statistic Korea, *Report on Population and Housing Census*

Table 1-5 General Households

(1,000 households, people, %)

	1985	1990	1995	2000	2005	2010	Rate of change (2010/2005)
Number of general households	9,571	11,355	12,958	14,312	15,887	17,339	9.1
Average number of household members	4.16	3.77	3.40	3.12	2.88	2.69	-6.6

Source: Statistic Korea, *Report on Population and Housing Census*

Marriage and Divorce

In 2014 there were 305,507 marriages, 5.4 percent lower than the 2013 level. Those were first marriages for 84.4 percent of the men and 82.3 percent of the women.

First marriages comprised 78.4 percent of all marriages, remarriages 11.6 percent.

The number of divorces in 2014 was 115,510, a 0.2 percent increase compared with the 2013 level.

Households

According to the 2010 Population and Housing Census, the number of households in Korea was 17,339,000. This was a 9.1 percent increase from the number recorded in the 2005 Population and Housing Census, which was 15,887,000. However, the average number of members in each household declined by 0.19 person, from 2.88 in 2005 to 2.69 in 2010.

Life Expectancy

The life expectancy of children (the average for both sexes) born in 2014 was 82.4 years, half a year longer than the corresponding figure a year earlier. The life expectancy of men was 79.0 years and the life expectancy of women was 85.5 years. Compared with 2013, life expectancy was half a year higher for men and 0.4 year higher for women; moreover, compared with 1980, life expectancy for men and women had risen by 17.2 and 15.5 years, respectively.

Acquisition and Loss of Korean Nationality

In 2014, the number of naturalizations was 11,420, a 0.9 percent year-on-year decrease, and the number of foreigners who acquired Korean nationality recorded 359, a 16.3 percent decrease from the previous year. The number of people who lost or relinquished their Korean nationality was 18,292 in 2014, a decline of 11.6 percent from the previous year, while the number of people who recovered their Korean nationality recorded 2,940, representing a 9.6 percent increase year on year.

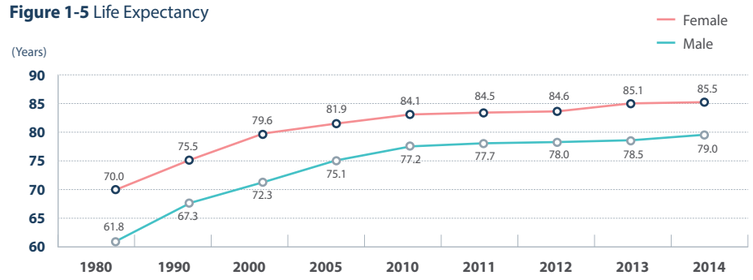
Major Causes of Death and Average Number of Deaths a Day

The total number of deaths in 2014 was 267,692 and an average of 733 people died each day.

In 2014, 153,542 people died from the five major causes of death in Korea: cancer, heart disease, cerebrovascular diseases, deliberate self-injury (suicide), and pneumonia. Together, those deaths accounted for 57.4 percent of the 267,692 deaths during the year.

The crude death rate (the number of deaths per 100,000 people) in 2014 was 527.3 people, an increase of 0.7 person, from 526.6 in 2013.

Figure 1-5 Life Expectancy



Source: Statistics Korea, *Life Table*

Table 1-6 Life Expectancy in Years

(Years)

	1980	1990	2000	2005	2010	2011	2012	2013	2014	Year-on-year increase
Total	65.7	71.3	76.0	78.6	80.8	81.2	81.4	81.9	82.4	0.5
Male	61.8	67.3	72.3	75.1	77.2	77.7	78.0	78.5	79.0	0.5
Female	70.0	75.5	79.6	81.9	84.1	84.5	84.6	85.1	85.5	0.4
(Female-male)	8.2	8.2	7.3	6.8	6.9	6.8	6.6	6.6	6.5	-0.1

Source: Statistics Korea, *Life Table*

Table 1-7 Acquisition and Loss of Korean Nationality

(Number)

	Naturalization	Acquisition of Korean nationality	Loss of Korean nationality	Recovery of Korean nationality	Others
2005	11,792	339	27,034	4,457	-
2006	7,426	423	21,990	1,090	-
2007	8,828	312	24,513	1,754	-
2008	11,610	275	23,070	3,531	171
2009	24,475	351	19,938	1,887	1,564
2010	16,807	796	25,325	1,004	2,047
2011	15,980	1,235	21,917	2,330	2,969
2012	10,507	863	16,768	2,037	2,098
2013	11,528	429	20,695	2,683	1,876
2014	11,420	359	18,292	2,940	2,778
Year-on-year increase (%)	-0.9	-16.3	-11.6	9.6	48.1

Source: Supreme Court, Office of Court Administration,*Judicial Yearbook*

Table 1-8 Number of Deaths by Five Major Causes of Death (2014)

Ranking	Cause of death	Number of deaths (people)	Ratio[1] (%)	Crude death rate[2] (per 100,000 people)	Average number of deaths a day (people)
	Total	267,692	100.0	527.3	733
	Five major causes of death	153,542	57.4	302.5	421
1	**Malignant neoplasm (cancer)**	76,611	28.6	150.9	210
2	**Heart diseases[3]**	26,588	9.9	52.4	73
3	**Cerebrovascular diseases**	24,486	9.1	48.2	67
4	**Deliberate self-injury[4] (suicide)**	13,836	5.2	27.3	38
5	**Pneumonia**	12,021	4.5	23.7	33

Note: 1) The compositions of deaths whose cause can be categorized, to total deaths.
2) Number of deaths per 100,000 people
3) Heart diseases include ischemic heart disease and other types of cardiac disorders
4) Deliberate injuries (suicide) per 100,000 people over the age of 5
Source: Statistics Korea, *Annual Report on Cause of Death Statistics*

02 Employment, Labor, and Wages

Economic Activity

Economic activity is important to maintain and develop a society. Labor is important not just as a means of living, but also as a means of self-realization. Higher employment rates greatly improve individuals' economic power and render a society more stable.

The number of people over the age of 15 in 2015 was 43,017,000, a 1.2 percent increase from the previous year. The economically active population amounted to 26,913,000 people, an increase of 1.4 percent. The economically inactive population consisted of 16,105,000 people, a 0.8 percent increase.

The economic participation rate, which refers to the ratio of the economically active population to the population of people over the age of fifteen, was 62.6 percent, a 0.2 percentage point increase year on year. The economic participation rate for men decreased by 0.2 percentage point from the previous year to 73.8 percent, while the rate for women increased by 0.5 percentage points to 51.8 percent.

The number of unemployed people in 2015 recorded 976,000, an increase of 4.2 percent year on year and the unemployment rate was 3.6 percent, representing an increase of 0.1 percentage point from the previous year's level.

Employment Levels for Different Industries

In 2015, the number of employed people in different industries was 25,936,000, an increase of 1.3 percent year on year. Broken down in more detail, the number of people employed in the mining and manufacturing industry increased 3.6 percent, and the number in the social overhead capital and other services industries increased 1.4 percent. Conversely, the number of people employed in agriculture, forestry, and fisheries decreased 7.4 percent.

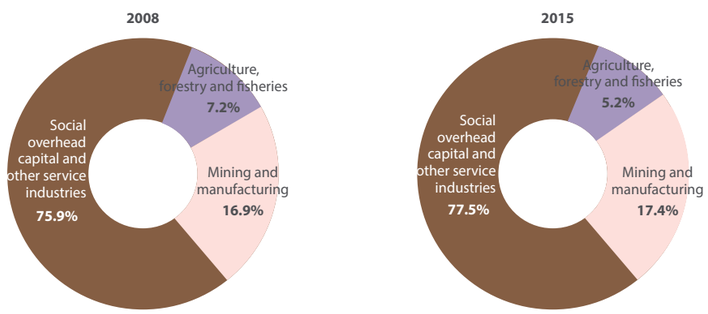
Table 2-1 Economic Activity

(1,000 people, %)

	Population over 15[1)]	Economically active population	Economically inactive population	Economic participation rate	Male	Female	Unemployed people	Unemployment rate
2008	39,598	24,347	15,251	61.5	73.5	50.0	769	3.2
2009	40,092	24,394	15,698	60.8	73.1	49.2	889	3.6
2010	40,590	24,748	15,841	61.0	73.0	49.4	920	3.7
2011	41,052	25,099	15,953	61.1	73.1	49.7	855	3.4
2012	41,582	25,501	16,081	61.3	73.3	49.9	820	3.2
2013	42,096	25,873	16,223	61.5	73.2	50.2	807	3.1
2014	42,513	26,536	15,977	62.4	74.0	51.3	937	3.5
2015	43,017	26.913	16,105	62.6	73.8	51.8	976	3.6
Year-on-year increase(rate)	1.2	1.4	0.8	0.2%p	-0.2%p	0.5%p	4.2	0.1%p

Note: 1) Excluding soldiers, riot police, public service workers, and prisoners whose jail terms are confirmed
Source: Statistics Korea, *Annual Report on Economically Active Population Survey*

Figure 2-1 Employed People by Industry



Source: Statistics Korea, *Annual Report on Economically Active Population Survey*

Workers at an oil refinery

Table 2-2 Employed People by Industry[1)]

(1,000 people)

	2008	2009	2010	2011	2012	2013	2014	2015	Year-on-year increase (%)
Total	23,577	23,506	23,829	24,244	24,681	25,066	25,599	25,936	1.3
Agriculture, forestry and fisheries	1,686	1,648	1,566	1,542	1,528	1,520	1,452	1,345	-7.4
Mining and manufacturing	3,985	3,859	4,049	4,108	4,120	4,200	4,343	4,500	3.6
Manufacturing	3,963	3,836	4,028	4,091	4,105	4,184	4,330	4,486	3.6
Social overhead capital and other services	17,906	17,998	18,214	18,595	19,033	19,347	19,805	20,092	1.4
Construction	1,812	1,720	1,753	1,751	1,773	1,754	1,796	1,823	1.5
Wholesale and retail trade/hotels and restaurants	5,675	5,536	5,469	5,492	5,595	5,630	5,889	5,962	1.2
Electricity, transport, telecom and finance	2,786	2,761	2,834	2,956	2,997	3,059	3,041	3,063	0.7
Business, personal, public, service and others	7,633	7,981	8,158	8,396	8,668	8,903	9,079	9,244	1.8

Note: 1) The data from the Ninth Revision of Standard Industrial Classification
Source: Statistics Korea, *Annual Report on Economically Active Population Survey*

Employment Levels for Different Classes of Workers

In 2015, the number of regular (or permanent) employees increased 3.6 percent compared with 2014 figures, and temporary (or non-regular) workers increased 1.1 percent. The number of daily workers increased 0.1 percent. Conversely, the number of unpaid family workers decreased 5.1 percent and the number of self-employed small business owners decreased 1.6 percent.

Employment Levels for Different Age Groups

In 2015, the number of employed people between the ages of 15 and 19 increased 0.4 percent compared with 2014 levels. For those between 20 and 29, the figure was 1.9 percent; between 50 and 59, it was 2.5 percent; and for people over the age of 60, it was 4.9 percent. However, the number of employed people aged between 30 and 39 decreased 0.7 percent and for those between 40 and 49, the figure decreased 0.2 percent.

Wages and Hours Worked

The average number of days an employee worked in a month at businesses with five or more employees in all industries excluding agriculture, forestry, and fish-

Table 2-3 Employed People by Working Status

	Total	Regular workers	Temporary workers	Daily workers	Self-employed small business owners	Unpaid family workers
2007	23,433	8,620	5,172	2,178	6,049	1,413
2008	23,577	9,007	5,079	2,121	5,970	1,401
2009	23,506	9,390	5,101	1,963	5,711	1,341
2010	23,829	10,086	5,068	1,817	5,592	1,266
2011	24,244	10,661	4,990	1,746	5,594	1,254
2012	24,681	11,097	4,988	1,627	5,718	1,251
2013	25,066	11,713	4,892	1,590	5,651	1,221
2014	25,599	12,156	5,032	1,555	5,652	1,205
2015	25,936	12,588	5,086	1,556	5,563	1,144
Year-on-year increase (%)	1.3	3.6	1.1	0.1	-1.6	-5.1

Source: Statistics Korea, *Annual Report on Economically Active Population Survey*

Table 2-4 Employed People by Age Group

(1,000 people)

	2008	2009	2010	2011	2012	2013	2014	2015	Year-on-year increase (%)
Total	23,577	23,506	23,829	24,244	24,681	25,066	25,599	25,936	1.3
15-19	190	178	204	227	231	224	244	245	0.4
20-29	3,894	3,779	3,710	3,652	3,612	3,569	3,625	3,693	1.9
30-39	6,010	5,837	5,833	5,786	5,756	5,735	5,714	5,676	-0.7
40-49	6,548	6,524	6,553	6,611	6,622	6,644	6,682	6,668	-0.2
50-59	4,300	4,498	4,792	5,083	5,353	5,606	5,845	5,994	2.5
Over 60	2,636	2,690	2,737	2,886	3,108	3,289	3,489	3,661	4.9

Source: Statistics Korea, *Annual Report on Economically Active Population Survey*

Table 2-5 Wage and Hours Worked[1)2)]

(Days, 1,000 won)

	2008	2009	2010	2011	2012	2013	2014	2015	Year-on-year increase (%)
Average monthly days worked	21.5	21.5	21.5	21.5	21.3	21.1	20.9	21.1	1.0
Total amount of wages	2,802	2,863	3,047	3,019	3,178	3,299	3,378	3,490	3.3

Note: 1) Regular employees of businesses with five or more employees in entire industries except for agriculture, forestry, and fisheries
2) The Ninth Revision of Standard Industrial Classification
Source: Ministry of Employment and Labor

eries was 21.1 days in 2015. This was an increase of 1.0 percent from the 2014 level. The total average monthly wage per regular worker increased 3.3 percent from 2014.

Employment Insurance and Unemployment Allowances

As of the end of December 2014, the number of business establishments covered by employment insurance was 1,935,302, an increase of 10.7 percent from 2013. The number of insured employees saw a 3.1 percent increase from 2013, reaching a total of 11,930,602. The number of unemployment allowance beneficiaries in 2014 was 1,296,505, which was a 0.5 percent increase from 2013.

Industrial Accidents

In 2014, among 17,062,000 workers who worked at 2,187,391 businesses that are covered by industrial accident compensation insurance, there were a total of 90,158 accidents that required four or more days of recuperation, a decrease of 1.0 percent from the previous year. The number of injured people decreased 1.0 percent, compared with 2013, to 90,909.

Table 2-6 Coverage by Employment Insurance

(Places, people)

	Number of establishments covered by employment insurance	Year-on-year increase (%)	Number of workers covered by insurance[1]	Year-on-year increase (%)	Number of unemployment allowances received	Year-on-year increase (%)
2006	1,176,462	2.4	8,436,408	5.9	943,542	16.1
2007	1,288,138	9.5	8,941,639	6.0	1,009,180	7.0
2008	1,424,330	10.6	9,271,701	3.7	1,162,534	15.2
2009	1,385,298	-2.7	9,653,678	4.1	1,528,407	31.5
2010	1,408,061	1.6	10,131,058	4.9	1,336,439	-12.6
2011	1,508,669	7.1	10,675,437	5.4	1,278,106	-4.4
2012	1,610,713	6.8	11,152,354	4.5	1,267,427	-0.8
2013	1,747,928	8.5	11,571,213	3.8	1,290,686	1.8
2014	1,935,302	10.7	11,930,602	3.1	1,296,505	0.5

Note: 1) The statistics on insured workers are on regular workers, excluding daily workers.
Source: Korea Employment Information Service, *Yearly Statistics of Employment Insurance*

Table 2-7 Industrial Accidents[1]

	Number of workplaces	Worker (1,000 people)	Number of accidents (case)	Injured people (people)	Death (people)[2]	Physical disability, injury, and disease (people)
2004	1,039,208	10,473	87,039	88,874	2,825	86,049
2005	1,175,606	12,070	84,161	85,411	2,493	82,918
2006	1,292,696	11,689	88,821	89,910	2,453	87,457
2007	1,429,885	12,529	89,106	90,147	2,406	87,741
2008	1,594,793	13,490	94,745	95,806	2,422	93,384
2009	1,560,949	13,885	96,984	97,821	2,181	95,640
2010	1,608,361	14,199	97,923	98,645	2,200	96,445
2011	1,738,196	14,362	92,657	93,292	2,114	91,178
2012	1,825,296	15,548	91,417	92,256	1,864	90,091
2013	1,977,057	15,449	91,097	91,824	1,929	89,591
2014	2,187,391	17,062	90,158	90,909	1,850	88,775
Year-on-year increase (%)	10.6	10.4	-1.0	-1.0	-4.1	-0.9

Note: 1) Death or accident that required four or more days of recuperation, which is recognized to have resulted from a work-related accident or disease under the Industrial Accident Compensation Insurance Act
2) The number of deaths after 2012 excludes deaths from a traffic accident outside the business establishment, sports event, act of physical violence, and deaths from an accident that took place one year ago or before. (However, it does include those who died from traffic accidents that occurred in the transportation business and outside restaurant and hotel business establishments.)
Source: Ministry of Employment and Labor, *Yearbook of Employment & Labor Statistics*

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Morning commuters

03 Prices and Household Economy

Prices

Prices, in general, mean what different kinds of necessities cost collectively. Price statistics show comprehensive price trends and indicate average prices for different products.

More specifically, prices are measured using the price index, a number calculated on the basis of the average prices for different products. To measure changes in the prices, economists set a certain price at the baseline level, 100, and consider changes in other prices relative to that baseline.

The price index is calculated objectively and systematically, but figures shown here may differ somewhat from actual prices in daily life.

Consumer Price Index

The consumer price index (CPI) is a number that is calculated to measure price changes for 481 items. It is also used to understand trends affecting the prices of goods and services purchased by households for use in everyday life.

For this purpose, 2010 was used as the baseline year and assigned a value of 100. The 2015 consumer price index recorded 109.81, having increased 0.7 percent year on year. When broken down by sector, the indices for transportation, housing/water/power/fuel, recreation and culture, and telecommunications decreased year on year by 7.8 percent, 0.6 percent, 0.5 percent, and 0.2 percent, respectively. However, indices for other sectors, including alcoholic beverages and cigarettes, other goods and services, household equipment and routine household maintenance, and restaurants and hotels increased by 50.1 percent, 2.7 percent, 2.6 percent, and 2.3 percent, respectively.

Table 3-1 Consumer Price Indexes

(2010=100)

	Weight	2009	2010	2011	2012	2013	2014	2015	Year-on-year increase (%)
All items	1,000.0	97.129	100.0	104.0	106.28	107.67	109.04	109.81	0.7
Food and nonalcoholic beverages	139.0	93.974	100.0	108.1	112.43	113.39	113.72	115.60	1.7
Alcoholic beverages and cigarettes	11.8	99.601	100.0	100.8	102.29	104.00	103.92	155.97	50.1
Clothing and footwear	66.4	97.149	100.0	103.3	108.27	111.43	115.90	117.45	1.3
Housing, water, electricity and fuels	173.0	97.696	100.0	104.5	109.34	113.21	116.45	115.71	-0.6
Household equipment and routine household maintenance	38.2	99.659	100.0	103.7	106.69	106.98	109.25	112.08	2.6
Health	72.9	98.280	100.0	101.8	102.69	103.06	103.78	105.08	1.3
Transportation	111.4	95.313	100.0	107.0	110.45	109.87	108.10	99.63	-7.8
Communications	59.1	100.973	100.0	98.4	95.90	95.78	95.72	95.53	-0.2
Recreation and culture	53.0	99.129	100.0	101.6	101.83	102.88	103.32	102.81	-0.5
Education	103.5	97.794	100.0	101.7	103.18	104.39	105.92	107.74	1.7
Restaurants and hotels	121.6	97.736	100.0	104.3	105.54	107.18	108.73	111.27	2.3
Other goods and services	50.1	96.613	100.0	103.2	99.87	100.33	103.43	106.18	2.7

Source: Statistics Korea, *Monthly Consumer Price Index Report*


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A traditional market

Consumer Price Index for Living Necessities

Prices that consumers experience daily are subjective, depending on an individual's lifestyle. Consumers tend to think that price changes for the goods that they buy frequently reflect larger price trends.

To measure consumers' subjective perception of prices, Statistics Korea compiled a list of 142 items for which price changes would have a significant impact on consumers. This list formed the basis for the consumer price index for necessities. These products also account for a high proportion of consumer spending.

The consumer price index for necessities in 2015 was 107.57 (2010 = 100), a 0.2 percent decrease year on year. The overall consumer price index increased 0.7 percent to record 109.81 in 2015.

Items on display in a supermarket

Table 3-2 Consumer Price Index for Necessities and Overall Consumer Price Index

(2010=100)

	2010	2011	2012	2013	2014	2015
Consumer Price Index for Necessities	100.0	104.4	106.14	106.91	107.81	107.57
Year-on-year increase (%)	3.4	4.4	1.7	0.7	0.8	-0.2
Consumer price index	100.0	104.0	106.28	107.67	109.04	109.81
Year-on-year increase (%)	3.0	4.0	2.2	1.3	1.3	0.7

Source: Statistics Korea, *Monthly Consumer Price Index Report*

Figure 3-1 Consumer Price Index for Necessities and Overall Consumer Price Index

Source: Statistics Korea, *Consumer Price Index Yearbook*

Average Income and Expenditures of Salary and Wage Earning Households in Urban Areas

The average monthly income of households with two or more people earning salaries or wages in urban areas in 2015 was KRW 4,817,000, an increase of 1.7 percent from the previous year, and their disposable income—that is, annual monthly average income minus non-consumption expenditures—was KRW 3,877,000, a 1.8 percent increase year on year.

In 2015, the surplus value (KRW 1,154,000) increased 6.6 percent and the surplus rate (29.8 percent) increased 1.4 percentage points year on year. The average propensity to consumption was 70.2 percent, a decrease of 1.4 percentage points from the previous year.

Table 3-3 Producer Price Index

(2010=100)

	Weight	2009	2010	2011	2012	2013	2014	2015	Year-on-year increase (%)
All items	1,000.0	96.3	100.0	106.7	107.5	105.7	105.2	101.0	-4.0
Products	643.6	95.6	100.0	108.7	108.9	106.2	104.8	98.0	-6.4
Agricultural, forestry, and marine products	34.2	91.8	100.0	107.4	108.3	101.9	102.5	104.9	2.3
Mining products	2.5	90.2	100.0	102.1	105.7	108.2	110.5	110.9	0.4
Manufacturing products	546.6	95.9	100.0	109.0	108.6	105.3	103.1	96.2	-6.7
Electric power, water supply and gas	60.3	96.1	100.0	105.8	113.7	120.2	126.6	116.6	-7.9
Services	356.4	98.3	100.0	102.5	104.2	104.5	106.1	107.5	1.2

Source: The Bank of Korea

Table 3-4 Incomes and Expenditures

(1,000 won, %)

	2008	2009	2010	2011	2012	2013	2014	2015
Income	3,900.6	3,853.2	4,007.7	4,248.6	4,492.4	4,606.2	4,734.6	4,816.7
Consumption expenditure	2,308.5	2,310.3	2,435.1	2,531.4	2,621.9	2,655.4	2,723.9	2,722.8
Disposable income[1]	3,183.6	3,126.8	3,233.3	3,415.3	3,619.4	3,714.0	3,806.6	3,876.9
Value of surplus[2]	875.1	816.5	798.2	883.9	997.5	1,058.6	1,082.8	1,154.1
Rate of surplus[3]	27.5	26.1	24.7	25.9	27.6	28.5	28.4	29.8
Average propensity to consumption[4]	72.5	73.9	75.3	74.1	72.4	71.5	71.6	70.2

Note: 1) Disposable income: income-nonconsumption expenditures
2) Value of surplus: disposable income-consumption expenditures
3) Rate of surplus: (value of surplus/disposable income) *100
4) Average propensity to consumption: (consumption expenditures/disposable income) *100
Source: Statistics Korea, *Household Economy Survey*

Average Monthly Consumption Expenditures of Urban Salary-and-wage-earner Households

In terms of the monthly average consumption expenditures of urban salary-and-wage-earner households with two or more people in 2015, the expenditures for restaurants and hotels accounted for the largest proportion at 13.9 percent, followed by food and non-alcoholic drinks (13.3 percent), transportation (12.4 percent), and education (11.9 percent).

The total value of consumption expenditures in 2015 was KRW 2,723,000, similar to the previous year's level. Expenditures increased year on year in all categories except for clothing and footwear, household equipment and housekeeping services, transportation, and telecommunications.

Average Monthly Income and Expenditures by Income Quintile for Urban Salary-and-wage-earner Households

In 2015, the annual income of urban salary-and-wage-earner households with two or more people increased year on year in all income quintiles, while consumption expenditures increased year on year in all quintiles except for the second and fifth.

Income for households in the second quintile increased at a higher rate (3.1 percent) than for those in other income quintiles (ranging from 0.6 to 2.1 percent). Consumption expenditures increased most significantly for the fourth income quintile (2.8 percent), whereas they decreased for the second and fifth income quintiles (-1.8 percent, -2.2 percent).

For the lowest income quintile, expenditures on food and non-alcoholic drinks, housing/water/heating, restaurants and hotels, and transportation accounted for the most significant percentages of the total (in the specified order). For the top income quintile, expenditures on education, restaurants and hotels, transportation, and food and non-alcoholic drinks ranked high as percentages of the total (in the specified order).

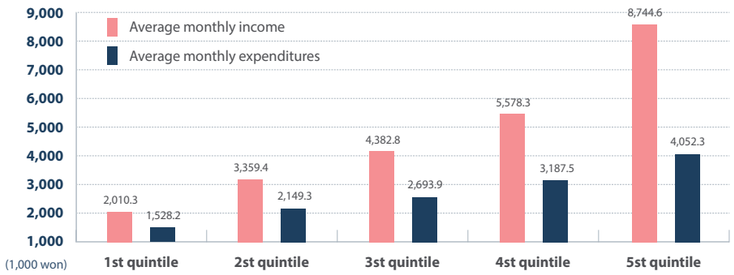
Table 3-5 Average Monthly Consumption Expenditures of Urban Salary-and-wage-earner Households (of two or more people)

(1,000 won, %)

	2013	Composition	2014	Composition	2015	Composition	Year-on-year increase (%)
Consumption expenditures	2,655.4	100.0	2,723.9	100.0	2,722.8	100.0	-0.0
Foods and non-alcoholic drinks	357.1	13.4	358.8	13.2	361.1	13.3	0.6
Alcoholic beverages and cigarettes	28.4	1.1	28.3	1.0	33.7	1.2	19.1
Clothing and footwear	186.6	7.0	183.6	6.7	175.4	6.4	-4.5
Housing, water, heating	272.9	10.3	269.7	9.9	284.3	10.4	5.4
Household equipment and housekeeping services	109.6	4.1	116.0	4.3	112.3	4.1	-3.2
Health	163.5	6.2	173.8	6.4	174.7	6.4	0.5
Transportation	333.9	12.6	364.7	13.4	336.4	12.4	-7.8
Communications	159.3	6.0	157.1	5.8	153.4	5.6	-2.4
Entertainment and culture	151.5	5.7	160.0	5.9	163.0	6.0	1.9
Education	319.8	12.0	316.0	11.6	323.0	11.9	2.2
Restaurants and hotels	359.5	13.5	371.2	13.6	379.3	13.9	2.2
Other miscellaneous goods and services	213.2	8.0	224.7	8.2	226.0	8.3	0.6

Source: Statistics Korea, *Household Economy Survey*

Figure 3-2 Monthly Average Income and Expenditures by Income Quintile (with two or more people, 2015)



Source: Statistics Korea, *Household Economy Survey*

Table 3-6 Average Monthly Income and Expenditure of Urban Salary-and-wage-earner Households (with two or more people) by Income Quintile

(1,000 won, %)

	2014					2015				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
Income	1,981.2	3,256.9	4,291.9	5,542.5	8,587.8	2,010.3	3,359.4	4,382.8	5,578.3	8,744.6
Change rate	3.8	2.3	3.1	2.0	3.0	1.5	3.1	2.1	0.6	1.8
Ratio to 1st quintile	1.00	1.64	2.17	2.80	4.33	1.00	1.67	2.18	2.77	4.32
Consumption expenditures	1,512.4	2,188.4	2,669.3	3,100.0	4,144.3	1,528.2	2,149.3	2,693.9	3,187.5	4,052.3
Change rate	1.6	2.8	3.8	-0.9	4.6	1.0	-1.8	0.9	2.8	-2.2
Ratio to 1st quintile	1.00	1.45	1.76	.2.05	2.74	1.00	1.41	1.76	2.09	2.65

Source: Statistics Korea, *Household Economy Survey*

04 Health and Welfare

Number of Licensed Health Care Providers and Pharmacists

In 2014, the number of licensed medical doctors increased by 2.7 percent from 2013, to reach 112,476. The number of licensed dentists increased by 2.6 percent to 28,134 and Korean medicine doctors by 3.4 percent to 22,074. The number of licensed pharmacists decreased by 0.2 percent year on year to 63,150, while the number of licensed nurses increased by 5.0 percent to 323,041.

Recipients of National Basic Livelihood Security Benefits and Total Expenditures

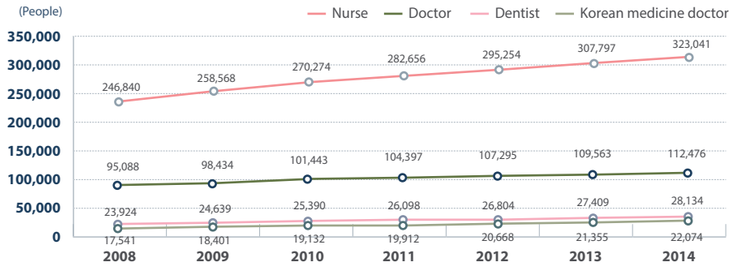
The number of recipients of national basic livelihood security benefits in 2014 was 1,329,000, a decrease of 22,000 (-1.6 percent) year on year. The number of general recipients was 1,237,000. There were 91,000 institutionalized recipients.

The ratio of the recipients of national basic livelihood security benefits to the entire registered population in Korea was 2.6 percent in 2014.

The total value of national basic livelihood security paid to recipients in 2014 was KRW 4,072 billion, a 0.4 percent decrease over the previous year. Of all benefits paid, 94.6 percent went to general recipients and the remaining 5.4 percent went to institutionalized recipients.

In 2014, the minimum cost of living for four-person households was KRW 1,631,000, an increase of 5.5 percent from 2013, which was 1.23 times higher than KRW 1,327,000 five years ago in 2009.

Figure 4-1 Number of Health Care Providers



Source: Ministry of Health and Welfare, *Ministry of Health and Welfare Yearbook*

Table 4-1 Number of Licensed Health Care Providers and Pharmacists[1)]

(People)

	Medical doctors	Dentists	Korean Medicine Doctors	Nurses	Pharmacists
2000	72,503	18,039	12,108	160,295	50,623
2005	85,369	21,581	15,271	213,644	54,829
2008	95,088	23,924	17,541	246,840	58,363
2009	98,434	24,639	18,401	258,568	59,717
2010	101,443	25,390	19,132	270,274	60,956
2011	104,397	26,098	19,912	282,656	62,245
2012	107,295	26,804	20,668	295,254	63,647
2013	109,563	27,409	21,355	307,797	63,292
2014	112,476	28,134	22,074	323,041	63,150
Year-on-year increase (%)	2.7	2.6	3.4	5.0	-0.2

Note: 1) Including Koreans living overseas
Source: Ministry of Health and Welfare, *Ministry of Health and Welfare Yearbook*

Table 4-2 Total Recipients of National Basic Livelihood Security Benefit and Total Expenditure[1)]

(1,000 people, Billion won, %)

	2007	2008	2009	2010	2011	2012	2013	2014
Number of total recipients	1,550	1,530	1,569	1,550	1,469	1,394	1,351	1,329
(Change rate)	(1.0)	(-1.3)	(2.5)	(-1.2)	(-5.2)	(-5.1)	(-3.1)	(-1.6)
Rate of recipients	3.1	3.1	3.2	3.2	2.9	2.7	2.6	2.6
General recipients	1,463	1,444	1,483	1,458	1,380	1,300	1,259	1,237
Institutionalized recipients	87	86	86	92	89	94	92	91
Total benefits	3,438	3,676	3,923	3,998	4,017	3,930	4,088	4,072
(Change rate)	(8.3)	(6.9)	(6.7)	(1.9)	(0.5)	(-2.2)	(4.0)	(-0.4)
General benefits	3,313	3,536	3,791	3,854	3,856	3,761	3,899	3,853
Benefits to institutions	125	140	132	144	161	170	189	218
Minimum cost of living (1,000 won)	1,206	1,266	1,327	1,363	1,439	1,496	1,546	1,631
(Change rate)	3.0	5.0	4.8	2.7	5.6	4.0	3.3	5.5

Note: Recipient rate = Number of national basic livelihood security benefit recipients/number of registered residents*100, Minimum cost of living for four-person households
Total benefits are from government expenses and local expenses, and they include benefits for livelihood, housing, education, childbirth, and funeral.
Source: Ministry of Health and Welfare, *Ministry of Health and Welfare Yearbook*

Welfare Institutions for the Elderly

As medical technology develops and people become more conscious of their health, the average Korean's lifespan has increased, resulting in a consistent increase in the population over the age of 65.

The number of welfare facilities for the elderly at the end of 2014 was 5,255, increasing by 5.2 percent year on year. The number of residential welfare institutions for the elderly was 414, increasing by 1.0 percent from the previous year. The number of medical welfare institutions for the elderly was 4,841, a 5.6 percent increase year on year.

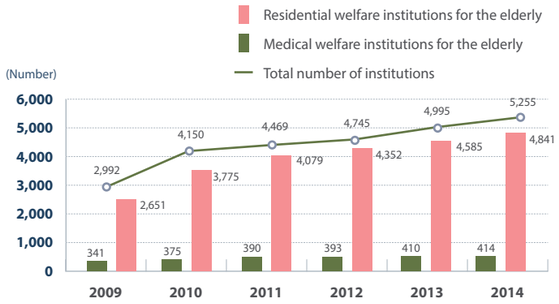
Child Welfare Institutions

Child welfare institutions include those that specialize in bringing children up, providing vocational training, providing care and treatment, assisting residents in living independently, providing temporary protection, and providing comprehensive care. As of the end of 2014, 14,630 children were under protection at 278 such institutions.

(Top) Children take free health examinations before starting school.

(Bottom) Foreign wives married to Korean husbands make rice cakes as part of a Korean cultural experience program for multicultural families.

Figure 4-2 Number of Residential Welfare Institutions for the Elderly



Source: Ministry of Health and Welfare, *Ministry of Health and Welfare Yearbook*

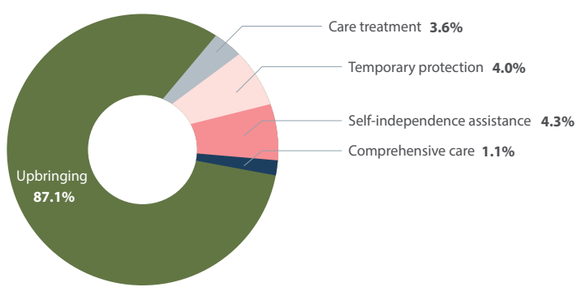
Table 4-3 Welfare Institutions for the Elderly and Their Residents

(People, establishments)

	Population over 65[1)]	Total number of establishments	Facilities of residential welfare institutions for the elderly		Medical welfare facilities for the elderly	
			Number of facilities	Residents	Number of facilities	Residents
2009			341	8,069	2,651	71,369
2010	5,452,490	4,150	375	9,019	3,775	94,110
2011	5,655,990	4,469	390	9,478	4,079	103,973
2012	5,889,675	4,745	393	9,943	4,352	112,650
2013	6,137,702	4,995	410	9,428	4,585	118,713
2014	6,385,559	5,255	414	9,968	4,841	127,356
Year-on-year Increase rate (%)	4.0	5.2	1.0	5.7	5.6	7.3

Note: 1) Based on population projections (medium-level scenario)
Source: Statistics Korea, *Population Projections*, Ministry of Health and Welfare, *Ministry of Health and Welfare Year Book*

Figure 4-3 Number of Children Welfare Institutions (2014)



Source: Ministry of Health and Welfare, *Ministry of Health and Welfare Yearbook*

05 Environment

Overall Weather

The annual mean temperature for 2015 was 13.4 degrees Celsius (°C). The mean maximum temperature for the year was 18.8°C and the mean minimum temperature was 8.7°C. The annual mean temperature, mean maximum temperature, and mean minimum temperature in 2015 were higher by 0.9°C, 0.7°C, and 1.0°C, respectively, than average levels.

Nationwide, annual average precipitation in 2015 was 948.2 millimeters (mm), 359.5 mm less than the average level. The number of days with 30 mm or more of hourly precipitation was 0.6 in 2015, less than average by 1.1 days. The number of days with 80 mm or more daily precipitation was 0.8, which was 1.5 days less than average.

The annual average temperature was at its second-highest level in 2015, with 1973 holding the record. Annual precipitation was at its third-lowest level in 2015, with 1973 holding that record as well.

Air Pollution Levels in Major Cities

Under Korea's *Clean Air Conservation Act*, a total of 61 substances are designated as air pollutants. These include gas-phase contaminants, many of which give off offensive odors, and particle-phase contaminants such as dust. Gas-phase contaminants include sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen dioxide (NO_2). Of those, 35 are classified as harmful to human health and growth of animals and plants and are regulated as such—for example, cadmium. The city atmosphere measuring network was established to measure the average air quality concentration in metropolitan areas to judge whether the air quality meets environmental standards. Currently, pollutants are being measured at 257 locations in 80 cities and counties across the nation.

SO_2 concentrations, generally, have declined consistently in seven major cities for the past 20 years. In 2014, the SO_2 concentration level decreased 0.001 parts per million (ppm) in Gwangju from the 2013 level, whereas the figure in other cities and provinces remained the same. The annual average pollution level decreased, staying in the range between 0.004 and 0.008 ppm, which is thought to be attributable to the expansion of the supply of clean fuels such as low-sulfur oil and LNG (liquefied natural gas), as well as the government's consistent fuel control system, including strengthened emission control.

NO_2 concentrations are becoming more stable, with no remarkable changes recorded since 1990. In 2014, the annual average NO_2 concentration posted its highest level at 0.033 ppm in Seoul, where traffic volume is at its highest as is the number of registered cars. NO_2 concentrations in Incheon were second highest at 0.028 ppm. Levels in Gwangju were at their lowest at 0.019 ppm.

Until 2010, annual average concentrations of ozone (O_3) had remained steady since 1998, but since 2010 levels have increased 0.001 ppm every year and reached 0.027 ppm in 2014. O_3 levels are affected not only by emissions, but also by weather factors such as temperature, precipitation, diffusion of pollutants, and atmospheric stability. For more precise analysis of correlations in those areas, further studies are needed. The annual average O_3 concentration level in Busan and Gwangju recorded 0.029 ppm, the highest level for Korea's seven major cities. The level was lowest in Seoul, at 0.023 ppm.

Annual average particulate matter (PM-10) concentrations have been on a consistent decrease every year since 2007 in major cities, indicating a trend toward improved air quality. In 2014, the annual average PM-10 levels in major cities in Korea were similar to the previous year's levels. Annual average PM-10 concentrations for 2014 were at their highest in Incheon at 49 micrograms per cubic meter ($\mu g/m^3$), and lowest in Gwangju and Daejeon at 41 $\mu g/m^3$.

Table 5-1 Weather Factors by Decade[1)]

(°C, mm, days)

	Average temperature	Mean maximum temperature	Mean minimum temperature	Precipitation	Number of days of precipitation	Number of days with 30mm or more hourly precipitation	Number of days with 80mm or more daily precipitation
1973-1980	12.1	17.6	7.3	1,209.6	104.6	1.2	1.7
1981-1990	12.2	17.8	7.4	1,284.1	104.2	1.6	2.1
1991-2000	12.5	18.2	7.6	1,280.5	99.3	1.6	2.4
2001-2010	12.8	18.3	8.1	1,358.5	106.9	2.0	2.5
Level of average years (a) (1981~2010)	12.5	18.1	7.7	1,307.7	103.5	1.7	2.3
2015(b)	13.4	18.8	8.7	948.2	112.6	0.6	0.8
2015's value – level of average years (b-a)	0.9	0.7	1.0	-359.5	9.1	-1.1	-1.5

Note: 1) Average of values measured at 45 largest weather observatories on land, excluding island areas
Source: Korea Meteorological Administration

Table 5-2 Air Quality in Major Cities

	SO_2(ppm)		O_3(ppm)		NO_2(ppm)		PM-10(mg/m³)	
	2013	2014	2013	2014	2013	2014	2013	2014
Air quality standard	0.02		0.06[1)]		0.03		50	
Seoul	0.006	0.007	0.022	0.023	0.033	0.033	45	46
Busan	0.007	0.007	0.029	0.029	0.021	0.020	49	48
Daegu	0.004	0.004	0.025	0.026	0.023	0.024	45	45
Incheon	0.007	0.007	0.025	0.026	0.028	0.028	49	49
Gwangju	0.005	0.004	0.029	0.029	0.020	0.019	42	41
Daejeon	0.004	0.004	0.024	0.026	0.021	0.020	42	41
Ulsan	0.008	0.008	0.028	0.028	0.024	0.023	47	46

Note: 1) Average for eight hours
Source: Ministry of Environment, National Institute of Environmental Research, *Annual Report of Air Quality in Korea*

The Hangang River, a major source of water

Figure 5-1 Water Quality of Major Water Supply Sources (BOD)

Source: Ministry of Environment

Water Quality of Major Water Supply Sources

Water quality standards are measured according to the biological oxygen demand (BOD) of rivers and lakes: Water with a BOD of 1 milligram (mg) or lower per liter is classified as a first-grade water supply source, and 3 mg or lower is considered second grade. Second-grade water is not potable without treatment, although it is clear and odorless.

When examining contamination levels for major water supply sources as of 2015, Paldang Dam recorded 1.3 mg per liter, Mulgeum 2.1 mg, Daecheong Dam 0.9 mg, and Damyang 1.6 mg.

Waste

The total amount of waste (excluding specified wastes) generated in 2013 was 382,081 tons (t) per day, similar to the previous year's level. In terms of waste composition, construction waste made up 48.0 percent, waste from industrial facilities 39.2 percent, and household waste 12.8 percent.

Household waste generated in 2013 recorded 48,728t per day, a 0.5 percent decrease from the previous year. The amount had been on the increase until 2008, but began to decrease in 2009. In 2012, however, it increased again slightly. In 2013, the amount of waste from industrial facilities recorded 149,815t per day, a year-on-year increase of 2.3 percent. Construction waste generated in 2013 amounted to 183,538t per day, decreasing 1.7 percent from the previous year.

As of 2013, a total of 4,532,106t of specified wastes were generated, 12,417t per day, decreasing by 0.7 percent from the previous year's volume.

The rate of household waste recycling had increased consistently every year, but in 2010 it declined slightly. The rate in 2013 was 59.1 percent, the same as in 2012. The incineration rate for that year was 25.3 percent, increasing by 0.3 percentage point from 25.0 percent in the previous year. The landfill rate decreased by 0.3 percentage points to 15.6 percent.

For industrial facilities' waste, the recycling rate had been increasing since 2007, except for 2009. In 2013, it decreased by 0.9 percentage point year on year to 75.6 percent. The rate of landfill disposal in 2013 recorded 16.4 percent, increasing by 1.5 percentage points, from 14.9 percent in the previous year. The incineration rate recorded 6.2 percent, decreasing 0.3 percentage points from the previous year's level.

The recycling rate for construction waste was 97.5 percent, a 0.3 percentage point increase year on year. The incineration rate was 0.7 percent, an increase of 0.2 percentage points from the previous year's level. The landfill rate decreased 0.4 percentage points to 1.8 percent.

Table 5-3 Air Quality in Major Cities

	Total	Household wastes[1]	Wastes from industrial facilities[2]	Construction wastes	Specified wastes
2004	303,514	50,007	105,018	148,489	8,152
2005	295,723	48,398	112,419	134,906	8,635
2006	318,928	48,844	101,099	168,985	10,026
2007	337,158	50,346	114,807	172,005	9,511
2008	359,296	52,072	130,777	176,447	9,594
2009	357,861	50,906	123,604	183,351	9,060
2010	365,154	49,159	137,875	178,120	9,488
2011	373,312	48,934	137,961	186,417	10,021
2012	382,009	48,990	146,390	186,629	12,501
2013	382,081	48,728	149,815	183,538	12,417
Year-on-year increase (%)	0.0	-0.5	2.3	-1.7	-0.7

Note: 1) Household wastes includes wastes from homes, daily life-related wastes from industries and daily life-related wastes from construction sites
2) Industrial facilities' wastes exclude specified wastes
Source: Ministry of Environment, National Institute of Environmental Research, *Generation & Treatment of Wastes*, *Generation & Treatment of Specified Wastes*

Table 5-4 Disposal of General Wastes

(%)

	Household wastes			Wastes from industrial facilities				Construction wastes			
	Landfill	Incineration	Recycling	Landfill	Incineration	Recycling	Discharge of waste at sea	Landfill	Incineration	Recycling	Discharge of waste at sea[1]
2004	36.4	14.4	49.2	13.0	6.7	69.7	10.6	7.4	2.0	90.6	0.005
2005	27.7	16.0	56.3	14.8	6.5	68.5	10.3	2.6	0.6	96.7	0.069
2006	25.8	17.0	57.2	8.8	7.6	73.9	9.6	2.3	0.7	97.0	-
2007	23.6	18.6	57.8	19.6	6.5	66.9	7.0	1.8	0.7	97.5	-
2008	20.3	19.9	59.8	18.6	5.3	70.8	5.3	1.7	0.8	97.5	-
2009	18.6	20.3	61.1	22.3	5.6	66.5	5.6	1.5	0.7	97.8	-
2010	17.9	21.6	60.5	16.9	5.8	72.3	5.0	1.2	0.5	98.3	-
2011	17.2	23.7	59.1	16.7	6.0	73.0	4.3	1.4	0.5	98.1	-
2012	15.9	25.0	59.1	14.9	6.5	76.5	2.1	2.2	0.5	97.3	-
2013	15.6	25.3	59.1	16.4	6.2	75.6	1.7	1.8	0.7	97.5	-

Note: 1) The rate of discharge of construction wastes at sea (%) is low, so it is excluded from the table.
Source: Ministry of Environment, National Institute of Environmental Research, *Generation & Disposal of Wastes Nationwide*

06 Agriculture, Forestry, and Fisheries

Farming Population and Cultivated Land Area

Farming households and population have been decreasing every year because of urbanization and industrialization. In 2014, the number of farming households and the farm population decreased 1.9 percent and 3.4 percent year on year, respectively.

On the other hand, because of the declining number of farming households, cultivated land area per farming household increased, to reach 150.9 a (100 m²) in 2014, which is a 0.7 percent year-on-year increase.

Table 6-1 Farming Households

(Households, people, a)

	Farming households	Farming population	Household size	Area per household
2005	1,272,908	3,433,573	2.70	143.3
2006	1,245,083	3,304,173	2.65	144.6
2007	1,231,009	3,274,091	2.66	144.7
2008	1,212,050	3,186,753	2.63	145.1
2009	1,194,715	3,117,322	2.61	145.4
2010	1,177,318	3,062,956	2.60	145.7
2011	1,163,209	2,962,113	2.55	146.0
2012	1,151,116	2,911,540	2.53	150.3
2013	1,142,029	2,847,435	2.49	149.9
2014	1,120,776	2,751,792	2.46	150.9
Year-on-year increase (%)	-1.9	-3.4	-1.5	0.7

Source: Statistics Korea, *Agriculture, Forestry, and Fisheries Census*, *Agricultural Area Statistics*

Structure of Farming Household Income

In 2014, the income for farming households was KRW 34,950,000 per household, an increase of 1.2% from the previous year's KRW 34,524,000. Compared with 2013 levels, agricultural income increased by 2.7 percent; transfer income by 16.7 percent; and irregular income by 3.0 percent. Non-farming income decreased by 5.8%. In 2014, dependence on agriculture—that is, the proportion of the agricultural income in a farming household's total income—was 29.5 percent, 0.4 percentage points higher than the previous year's level.

Table 6-2 Structure of Farming Household Income

(1,000 won, %)

	1990	2000	2005	2010	2011	2012	2013	2014	Year-on-year increase
Farming household income	11,026	23,072	30,503	32,121	30,148	31,031	34,524	34,950	1.2
Farming income	6,264	10,897	11,815	10,098	8,753	9,127	10,035	10,303	2.7
Non-farming income	2,841	7,432	9,884	12,946	12,949	13,585	15,705	14,799	-5.8
Transfer income	1,921	4,743	4,078	5,610	5,453	5,614	5,844	6,819	16.7
Irregular income	-	-	4,725	3,467	2,993	2,705	2,940	3,029	3.0
Dependence on agriculture	56.8	47.2	38.7	31.4	29.0	29.4	29.1	29.5	0.4%p

Source: Statistics Korea, *Farm Household Economy Survey Report*

Trend of Agricultural Production

In 2014, 4,828,000t of food crops were produced, a 0.1 percent increase from the previous year's 4,825,000t.

By the type of crop, the production volume of rice increased by 0.3 percent; vegetables by 5.6 percent; fruits by 6.9 percent; and special-purpose crops by

Table 6-3 Trend of Agricultural Production

(1,000 tons)

	Food crops	Rice[1]	Vegetables	Fruits	Special-purpose crops[2]
2007	5,034	4,408	8,829	2,750	53
2008	5,498	4,844	9,343	2,698	51
2009	5,553	4,916	9,353	2,881	51
2010	4,836	4,295	7,894	2,489	61
2011	4,775	4,224	9,120	2,458	51
2012	4,565	4,006	7,518	2,374	49
2013	4,833	4,230	8,189	2,523	57
2014	4,828	4,241	8,659	2,697	68
Year-on-year increase (%)	0.1	0.3	5.6	6.9	19.3

Note: 1) Polished rice
2) Sesame, perilla seeds, peanuts
Source: Statistics Korea, *Crop Production Statistics*

19.3 percent.

In 2014, the cultivation area was 1,753,900 hectares (ha), up 0.3 percent from 1,749,400 ha in the previous year.

Among the total cultivation areas, food crops accounted for 57.7 percent; vegetables, 16.3 percent; fruits, 9.2 percent; special-purpose/medicinal crops, 5.1 percent; catchment area, 3.0 percent; and other crops, 8.6 percent.

While the cultivation area for fruits, special-purpose/medicinal crops, and other types of crops increased 0.7 percent, 20.8 percent, and 16.2 percent, respectively, the area for cultivation of food crops declined by 2.6 percent; vegetables, by 1.6 percent; and catchment area, by 2.4 percent.

Forest Land Area and Growing Stock

In 2010, Korea's forestland area was 6,369,000 ha, of which national forests accounted for 24.2 percent. Growing stock per hectare was on a consistent increase year after year and recorded 125.6 cubic meters (m^3) in 2010, an increase of 14.8 percent from the 2009 level.

Number of Fishing Households and Fishing Household Income

The number of fishing households in 2014 was 59,000, a year-on-year decrease of 1.7 percent, and the fishing population decreased 4.1 percent from the previous year to 141,000. In 2014, the income of fishing households increased by 6.3 percent from the previous year to reach KRW 41,015,000.

A farmer harvesting rice

Table 6-4 Cultivation Area by Crop

(1,000ha, %)

	Total	Food crops	Rice	Vegetables	Fruits	Special-purpose/ medicinal crops	Catchment area	Others[1]
2008	1,833.8	1,145.2	935.8	300.2	155.5	75.7	43.7	113.5
2009	1,873.5	1,126.7	924.5	294.2	157.1	85.9	50.1	159.6
2010	1,825.0	1,095.0	892.1	284.4	162.5	85.9	52.0	145.3
2011	1,802.4	1,055.8	853.8	307.3	161.2	79.4	55.6	143.2
2012	1,766.1	1,051.7	849.2	287.3	159.7	76.1	55.4	136.0
2013	1,749.4	1,039.7	832.6	291.0	160.8	73.4	54.4	130.2
2014	1,753.9	1,012.6	815.5	286.4	161.9	88.7	53.1	151.3
Composition	100.0	57.7	46.5	16.3	9.2	5.1	3.0	8.6
Year-on-year increase	0.3	-2.6	-2.1	-1.6	0.7	20.8	-2.4	16.2

Note: 1) Other crops include feed grains, ginseng, tobacco, flowers, etc.
Source: Statistics Korea, *Agricultural Area Statistics*

Table 6-5 Forest Land Area and Growing Stock[1]

(1,000ha, 1,000m^3, %)

	Forest land area					Growing stock	
	Total	National forests	Composition	Non-national forests	Composition	Total	Growing stock per hectare (m^3)
2003	6,406	1,457	22.7	4,949	77.3	468,168	73.1
2004	6,400	1,470	23.0	4,930	77.0	489,061	76.4
2005	6,394	1,484	23.2	4,910	76.8	506,377	79.2
2006	6,389	1,497	23.4	4,892	76.6	525,832	82.3
2007	6,382	1,509	23.6	4,873	76.4	624,398	97.8
2008	6,375	1,518	23.8	4,857	76.2	659,120	103.5
2009	6,370	1,530	24.0	4,840	76.0	696,828	109.4
2010	6,369	1,543	24.2	4,825	75.8	800,025	125.6

Note: 1) 2015 Forest Basic Statistics will be released, according to the five-year cycle of national forest inventory survey.
Source: Korea Forest Service, *Statistical Yearbook of Forestry*

Table 6-6 Major Indicators of Fishing Households

	Fishing households (1,000)	Fishing population (1,000 people)	Fishery workers (1,000 people)	Fishery workers per household (people)	Fishing household income (1,000 won)	Fishery income (1,000 won)	Fishery income (1,000 won)
2006	77	212	128	1.7	30,006	11,603	38.7
2007	74	202	123	1.7	30,668	11,975	39.1
2008	71	192	119	1.7	31,176	13,801	44.3
2009	69	184	116	1.7	33,945	16,220	47.8
2010	66	171	107	1.6	35,696	16,607	46.5
2011	63	159	104	1.6	38,623	20,432	52.9
2012	61	153	100	1.6	37,381	19,539	52.3
2013	60	147	98	1.6	38,586	18,538	48.0
2014	59	141	96	1.6	41,015	20,987	51.2
Year-on-year increase (%)	-1.7	-4.1	-2.0	0.0	6.3	13.2	-

Source: Statistics Korea, *Census of Agriculture, Forestry and Fisheries, Agriculture, Forestry and Fisheries Research Report, Statistics of Fishing Household Economy*

07 Mining and Manufacturing Industry, and Energy

Mining and Manufacturing

In 2014, the number of mining and manufacturing business establishments with 10 or more employees was 68,989, a 4.9 percent increase from 2013. The number of employees at those establishments, as of the end of December 2014, was 2,915,775, an increase of 3.2 percent from the 2013 level.

Annual wages and salaries paid to those employees recorded KRW 111,329 billion, having increased 6.6 percent from 2013. The value of shipments in the mining and manufacturing industry decreased 0.3 percent from 2013 to KRW 1,489,572 billion.

Number of Business Establishments by Size

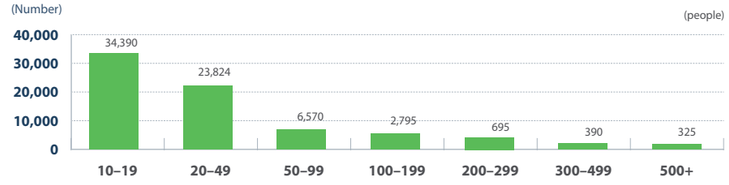
Looking into the number of business establishments with 10 or more employees in the mining and manufacturing sector in 2014 by the size of the workforce, there were 34,390 establishments with 10 to 19 employees; 23,824 establishments with 20 to 49 employees; 6,570 establishments with 50 to 99 employees; 2,795 establishments with 100 to 199 employees; 695 establishments with 200 to 299 employees;

Table 7-1 Mining and Manufacturing[1]

Industry	Year	Number of establishments	Number of workers (people)	Wages and salaries (billion won)	Value of shipments (billion won)
Mining and Manufacturing	2011	63,406	2,705,918	94,373	1,494,210
	2012	64,235	2,764,060	99,020	1,510,608
	2013	65,742	2,824,352	104,440	1,494,750
	2014	68,989	2,915,775	111,329	1,489,572
	Year-on-year increase (%)	4.9	3.2	6.6	-0.3
Manufacturing	2011	63,047	2,694,782	93,966	1,491,351
	2012	63,907	2,753,684	98,612	1,507,834
	2013	65,389	2,813,575	104,023	1,491,736
	2014	68,640	2,904,914	110,895	1,486,574
	Year-on-year increase (%)	5.0	3.2	6.6	-0.3

Note: 1) Ninth Revision of Korea Standard Industrial Classification
Source: Statistics Korea, *Report on Mining and Manufacturing Survey*

Figure 7-1 Number of Business Establishments by Employee Size (2014)



Source: Statistics Korea, *Report on Mining and Manufacturing Survey*

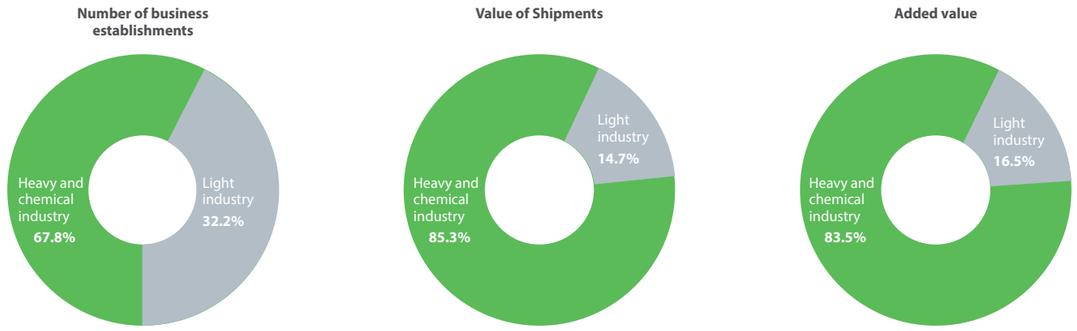
Table 7-2 Number of Business Establishments by Employee Size[1]

(EA., %)

By employee size	2011		2012		2013		2014	
	Number of establishments	Composition	Number of establishments	Composition	Number of establishments	Composition	Number of establishments	Composition
Total	63,406	100.0	64,235	100.0	65,742	100.0	68,989	100.0
10–19	32,311	51.0	32,379	50.4	32,758	49.8	34,390	49.8
20–49	21,210	33.5	21,794	33.9	22,653	34.5	23,824	34.5
50–99	5,939	9.4	5,993	9.3	6,210	9.4	6,570	9.5
100–199	2,622	4.1	2,698	4.2	2,730	4.2	2,795	4.1
200–299	686	1.1	689	1.1	713	1,1	695	1.0
300–499	325	0.5	373	0.6	372	0.6	390	0.6
500+	313	0.5	309	0.5	306	0.5	325	0.5

Note: 1) Ninth Revision of Korea Standard Industrial Classification, statistics on companies with 10 or more workers
Source: Statistics Korea, *Report on Mining and Manufacturing Survey*

Figure 7-2 Manufacturing by Structure of Industry (2014)



Source: Statistics Korea, *Report on Mining and Manufacturing Survey*

390 establishments with 300 to 499 employees; and 325 establishments with 500 or more employees.

Manufacturing by Industry Structure

When looking at the structure of the manufacturing industry in 2014, the number of heavy and chemical industry establishments was 46,564, an increase of 5.1 percent from the 2013 level, and the proportion of heavy and chemical industry establishments was 67.8 percent, the same level as in 2013.

Meanwhile, the number of light industry establishments in 2014 was 22,076, a 1.0 percent decrease from 2013, and the proportion of light industry establishments was 32.2 percent, the same level as in 2013.

Shipbuilding Performance

The volume of ship orders in 2014 was 21,077,000 gross tonnage (G/T), a 23.4 percent decrease from 27,513,000 G/T in 2013.

The year 2014 recorded 20,390,000 G/T of ship completions, a decrease of 3.9 percent from 21,225,000 G/T in 2013. As of the end of 2014, the number of ship orders that had not been delivered yet recorded 63,322,000 G/T, a 0.2 percent decrease from 63,432,000 G/T in 2013.

Table 7-3 Manufacturing by Industry Structure[1)]

(EA, billion won, %)

	Structure	Number of establishments	Composition	Value of shipments	Composition	Added value	Composition
2012	Manufacturing	63,907	100.0	1,507,834	100.0	480.713	100.0
	Light industry	20,930	32.8	204,974	13.6	73,926	15.4
	Heavy and chemical industry	42,977	67.2	1,302,861	86.4	406,786	84.6
2013	Manufacturing	65,389	100.0	1,491,736	100.0	479,281	100.0
	Light industry	21,071	32.2	209,946	14.1	76,310	15.9
	Heavy and chemical industry	44,318	67.8	1,281,790	85.9	402,971	84.1
2014	Manufacturing	68,640	100.0	1,486,574	100.0	484,485	100.0
	Light industry	22,076	32.2	218,161	14.7	80,038	16.5
	Heavy chemical industry	46,564	67.8	1,268,413	85.3	404,447	83.5

Note: 1) Ninth Revision of Korea Standard Industrial Classification, statistics on companies with 10 or more employees
Source: Statistics Korea, *Report on Mining and Manufacturing Survey*

Figure 7-3 Shipbuilding Performance

Source: Korea Offshore & Shipbuilding Association, *Shipbuilding Yearbook*

Energy Supply and Dependence on Imported Energy

In 2014, the volume of primary energy supply was 283 million tonnage of oil equivalent (toe), increasing by 3 million toe year-on-year. The volume of final energy consumption in 2014 was 214 million toe, increasing by 4 million toe from the previous year. Per capita energy consumption was 5.61 toe, a 0.03 toe increase year-on-year.

The ratio of dependence on imported energy in 2014 was 95.2 percent, a 0.5 percentage point decline from 2013.

Oil Imports and Unit Cost

In 2014, Korea imported 927.5 million barrels of oil, which was a 1.4 percent increase from the previous year. The value of oil imports in 2014 was US$92,374 million, which was a 5.4 percent year-on-year decrease.

The annual average unit cost of oil import decreased by 6.6 percent, from US$106.67 per barrel in 2013, to US$99.59 in 2014.

Consumption Structure by Energy Source

When looking at energy consumption structure in 2014, petroleum accounted for the greatest percentage of the total at 37.1 percent. Coal was 29.9 percent, liquefied natural gas (LNG) 16.9 percent, and nuclear energy 11.7 percent. Compared with 2013, the proportion of coal increased by 0.7 percentage point; nuclear energy by 1.3 percentage point; and new and renewable energy by 0.7 percentage point, while the proportion of petroleum and LNG decreased by 0.7 percentage point and 1.8 percentage points, respectively.

Power Sales by Usage

The amount of electric power sold in 2014 was 477,592 Gigawatt hours (GWh), representing a 0.6 percent increase from the previous year.

Inside an automobile factory

Table 7-4 Shipbuilding Performance

(10,000 G/T)

	2007	2008	2009	2010	2011	2012	2013	2014	Year-on-year increase (%)
Ship orders	4,999.0	3,377.5	372.5	1,890.4	2,104.7	1,260.0	2,751.3	2,107.7	-23.4
Ship completions	1,895.5	2,311.9	2,480.3	2,639.7	2,986.4	2,795.2	2,122.5	2,039.0	-3.9
Remaining orders	10,334.9	11,766.9	9,626.7	8,067.5	7,176.0	5,560.2	6,343.2	6,332.2	-0.2

Source: Korea Offshore & Shipbuilding Association, *Shipbuilding Yearbook*

Table 7-5 Energy Consumption and Dependence on Imported Energy[1)]

	Energy consumption (million toe)		Per-capita energy consumption (toe)	Dependence on imported energy (%)
	Primary energy	Final energy		
1990	93	75	2.17	87.9
1995	150	122	3.34	96.8
2000	193	150	4.10	97.2
2005	229	171	4.75	96.6
2007	236	181	4.87	96.6
2008	241	183	4.92	96.4
2009	243	182	4.95	96.4
2010	264	196	5.34	96.5
2011	277	206	5.56	96.5
2012	279	208	5.57	96.0
2013	280	210	5.58	95.7
2014	283	214	5.61	95.2
Year-on-year increase	3	4	0.03	-0.5%p

Note: 1) Since 2007, based on revised Calorific Value which is revised every five years
Source: Korea Energy Institute, *Energy Statistics Yearbook*

Table 7-6 Oil Imports and Unit Price of Import

	1990	2000	2005	2009	2010	2011	2012	2013	2014
Oil import (million barrels)	308.4	893.9	843.2	835.1	872.4	927.0	947.3	915.1	927.5
Year-on-year increase (%)	4.0	2.3	2.1	-3.4	4.5	6.3	2.2	-3.4	1.4
Value of oil import (FOB, million dollars)	6,164	24,174	41,266	49,517	67,283	98,572	105,212	97,610	92,374
Year-on-year increase (%)	31.5	71.5	44.9	-40.2	35.9	46.5	6.7	-7.2	-5.4
Unit price of imported oil (dollars/barrel)	19.99	27.04	48.94	59.30	77.12	106.33	111.07	106.67	99.59
Year-on-year increase (%)	26.4	67.6	41.9	-38.1	30.1	37.9	4.5	-4.0	-6.6

Source: Korea Energy Institute, *Energy Statistics Yearbook*

Seoul at night

A refinery

By usage, the amount of power sold for mining was 1,571 GWh, a 6.3 percent increase from the previous year. The amount sold for farming, forestry, and fishing was 13,556 GWh, a 3.8 percent of year-on-year increase, and the amount sold for the manufacturing industry was 249,490 GWh, a 3.0 percent increase year on year.

Table 7-7 Energy Consumption Structure by Source[1)]

(%)

	Coal	Petroleum	LNG	Hydro	Nuclear	New and renewable
1995	18.7	62.5	6.1	0.9	11.1	0.7
2000	22.2	52.0	9.8	0.7	14.1	1.1
2005	24.0	44.4	13.3	0.6	16.1	1.7
2008	27.4	41.6	14.8	0.5	13.5	2.2
2009	28.2	42.1	13.9	0.5	13.1	2.3
2010	29.2	39.5	16.3	0.5	12.1	2.3
2011	30.2	38.0	16.7	0.6	12.0	2.4
2012	29.1	38.1	18.0	0.6	11.4	2.9
2013	29.2	37.8	18.7	0.6	10.4	3.2
2014	29.9	37.1	16.9	0.6	11.7	3.9
Year-on-year increase (%)	0.7	-0.7	-1.8	0.0	1.3	0.7

Note: 1) Since 2007, based on revised Calorific Value that is revised every five years
Source: Korea Energy Institute, *Energy Statistics Yearbook*

Figure 7-4 Power Sales

Source: Korea Electric Power Co., *Statistics of Electric Power in Korea*

Table 7-8 Power Sales by Usage

(Gwh)

	Total	Residential	Public	Service	Agriculture, forestry and fishery	Mining	Manufacturing
2008	385,070	56,228	16,577	117,635	8,389	1,446	184,795
2009	394,475	57,595	17,932	121,203	9,145	1,350	187,249
2010	434,160	61,194	19,872	129,923	10,042	1,683	211,447
2011	455,070	61,564	20,539	130,762	10,575	1,928	229,701
2012	466,593	63,536	21,422	132,499	12,074	1,616	235,445
2013	474,849	63,970	21,982	132.055	13,062	1,478	242,301
2014	477,592	62,675	21,669	128,630	13,556	1,571	249,490
Year-on-year increase (%)	0.6	-2.0	-1.4	-2.6	3.8	6.3	3.0

Source: Korea Electric Power Co., *Statistics of Electric Power in Korea*

08 Construction, Housing, and Land

Construction Permits Issued

The total land area for which construction permits are issued is a leading indicator of the construction business. In 2015, this figure amounted to 189,840,000 m², an increase of 34.3 percent year on year. Land for residential use amounted to 85,520,000 m², an increase of 40.3 percent year on year. The area for commercial use was 52,450,000 m², an increase of 40.2 percent from the previous year, and the area for industrial use was 16,710,000 m², a 6.7 percent increase from the previous year.

Housing Construction and Investment

In 2015, 765,328 houses were constructed, representing a 48.5 percent increase from 2014. By type of house, construction of apartments and multi-unit houses increased by 53.9 percent and 53.5 percent, respectively. Construction of detached houses increased by 17.8 percent. The housing investment ratio, which refers to the proportion of housing investment to real GDP, was 3.9 percent in 2014, up 0.2 percentage point from 2013.

Construction on a "New Town"

Table 8-1 Land Area of Construction Permit

(1,000m²)

	Total area	Residential	Commercial	Industrial	Cultural, educational, and social	Others
1985	38,215	20,606	9,497	4,140	-	3,972
1990	116,419	70,927	26,408	10,569	-	8,514
1995	117,327	62,614	28,549	13,727	-	12,438
2000	81,055	41,283	18,882	11,645	-	9,245
2005	111,506	50,281	23,368	13,576	-	24,280
2008	120,658	38,462	33,265	18,504	-	30,427
2009	105,137	41,917	24,399	11,542	-	27,279
2010	125,447	51,464	26,617	15,484	12,062	19,820
2011	137,868	56,557	34,002	16,499	10,452	20,358
2012	137,142	59,256	32,334	15,940	10,459	19,152
2013	127,066	50,238	33,719	16,092	10,319	16,697
2014	141,348	60,935	37,418	15,655	9,351	17,986
2015	189,839	85,520	52,449	16,710	10,334	24,828
Year-on-year increase (%)	34.3	40.3	40.2	6.7	10.5	38.0

Source: Ministry of Land, Infrastructure, and Transport

Table 8-2 Housing Construction and Investment

(Dwellings, %)

	Number of constructed houses[1)]	House (including multi-household)	Apartment	Multi-unit[2)]	Ratio of housing investment
1995	619,057	55,710	497,273	66,074	8.9
2000	433,488	34,777	331,579	67,132	5.0
2005	463,641	27,799	415,511	20,331	6.1
2010	386,542	62,173	276,989	47,380	3.6
2011	549,594	73,097	356,762	119,735	3.2
2012	586,884	71,255	376,086	139,543	3.1
2013	440,116	69,759	278,739	91,618	3.7
2014	515,251	74,979	347,687	92,585	3.9P)
2015	765,328	88,293	534,931	142,104	-
Year-on-year increase (%)	48.5	17.8	53.9	53.5	-

Note: 1) Based on construction permits and approval of construction plans
2) Includes row houses
Source: Ministry of Land, Infrastructure, and Transport, Bank of Korea

Table 8-3 Value of Overseas Construction Orders Received by Site of Construction[1)]

(Billion won, %)

	2000	2005	2009[2)]	2010	2011	2012	2013	2014	Composition
Total	4,730	9,322	51,660	50,027	59,062	69,158	57,096	47,403	100.0
Middle East	529	5,927	37,650	32,492	32,680	35,047	24,465	23,601	49.8
Asia	2,468	1,853	7,933	13,323	17,772	24,779	23,800	12,912	27.2
Europe	11	190	361	138	184	414	826	1,469	3.1
Africa	209	843	1,747	976	1,077	2,841	740	6,947	14.7
Oceania	622	1	2,968	58	38	52	5,280	6	0.0
America	42	277	968	3,016	7,304	5,987	1,966	2,450	5.2
Others	848	232	33	25	8	38	20	18	0.0

Note: 1) Contract value (general contract, subcontract)
2) From 2008, the ninth revision of Korea Standard Industrial Classification was applied.
Source: Statistics Korea, *Report on Construction Survey*

Burj Khalifa, a skyscraper in Dubai known as the tallest manmade structure in the world, was constructed by a Korean enterprise.

Value of Overseas Construction Orders Received

When comparing the value of overseas construction orders received in 2014 by region, the Middle East and Asia accounted for 49.8 percent and 27.2 percent, respectively. Africa followed at 14.7 percent and then Americas at 5.2 percent.

Utilization of Land

64 percent of Korea's land mass is covered by forests. A national land utilization plan helps the country allocate the land properly, and the country is constantly pursuing the balanced development of its national territory.

As of the end of 2014, forests made up 63.9 percent; dry paddy fields and paddy fields, 19.2 percent; road and railroad sites, 3.2 percent; and building sites, 2.9 percent of Korea's land mass.

If examining Korea's land area by 17 cities and provinces in Korea at the end of 2014, Gyeongsangbuk-do had the highest share of land area, at 19.0 percent; Gangwon-do was second at 16.8 percent; and then Jeollanam-do at 12.3 percent. In terms of population, Gyeonggi-do had the highest share, at 24.4 percent.

Table 8-4 Land Utilization by Land Category

(km², %)

	Total area	Dry paddy fields & paddy fields	Forests	Orchards & pastures	Building sites	Factory sites	Road & railroad sites
1990	98,730	21,484	65,139	817	1,937	246	1,922
(Composition)	100.0	21.8	66.0	0.8	2.0	0.2	1.9
1995	99,286	21,057	65,506	931	2,124	386	2,127
(Composition)	100.0	21.2	66.0	0.9	2.1	0.4	2.1
2000	99,461	20,507	65,139	1,088	2,349	514	2,397
(Composition)	100.0	20.6	65.5	1.1	2.4	0.5	2.4
2005	99,646	20,108	64,805	1,108	2,553	622	2,685
(Composition)	100.0	20.2	65.0	1.1	2.5	0.6	2.7
2010	100,033	19,617	64,504	1,128	2,744	749	2,981
(Composition)	100.0	19.6	64.5	1.1	2.7	0.7	3.0
2014	100,284	19,234	64,081	1,168	2,930	896	3,233
(Composition)	100.0	19.2	63.9	1.2	2.9	0.9	3.2

Source: Ministry of Land, Infrastructure and Transport, *Cadastral Statistical Annual Report, Statistical Yearbook of MLTM*

Table 8-5 Statistics by Cities and Provinces (2014)

	Land area (km²)	Composition (%)	Estimated population[1] (1,000)	Composition (%)	Population density (People/km²)	No. of business establishments (1,000)	Composition (%)
2014	100,284	100.0	50,424	100.0	503	3,812.8	100.0
Seoul	605	0.6	9,891	19.6	16,348	812.8	21.3
Busan	770	0.8	3,412	6.8	4,431	277.7	7.3
Daegu	884	0.9	2,460	4.9	2,783	198.8	5.2
Incheon	1,048	1.0	2,858	5.7	2,727	183.6	4.8
Gwangju	501	0.5	1,516	3.0	3,026	111.3	2.9
Daejeon	539	0.5	1,546	3.1	2,868	109.5	2.9
Ulsan	1,061	1.1	1,138	2.3	1,073	78.6	2.1
Sejong	465	0.5	134	0.3	288	9.1	0.2
Gyeonggi-do	10,173	10.1	12,281	24.4	1,207	810.3	21.3
Gangwon-do	16,826	16.8	1,501	3.0	89	133.3	3.5
Chungcheongbuk-do	7,407	7.4	1,559	3.1	210	119.5	3.1
Chungcheongnam-do	8,214	8.2	2,079	4.1	253	154.0	4.0
Jeollabuk-do	8,067	8.0	1,797	3.6	223	144.9	3.8
Jeollanam-do	12,309	12.3	1,758	3.5	143	142.9	3.7
Gyeongsangbuk-do	19,029	19.0	2,640	5.2	139	213.8	5.6
Gyeongsangnam-do	10,538	10.5	3,273	6.5	311	258.7	6.8
Jeju-do	1,849	1.8	581	1.2	314	53.9	1.4

Note: 1) Data from Population Projections for Cities and Provinces, December 2014
Source: Ministry of Land, Infrastructure and Transport, *Cadastral Statistical Annual Report*, Statistics Korea *Report of the Census on Business Establishments*

Marine City, a high-rise apartment complex in the Haeundae district of Busan

Seoul was second at 19.6 percent, followed by Busan at 6.8 percent and Gyeongsangnam-do at 6.5 percent.

Korea's population density at the end of 2014 was 503 people per square kilometer (km²). Seoul's population density was 16,348 people per km². This makes Seoul about 184 times denser than that of Gangwon-do, which has 89 people per km². Seoul had the highest number of business establishments together with Gyeonggi-do at 21.3 percent, and then Busan, at 7.3 percent.

In 2014, Seoul, Incheon, and Gyeonggi-do, all of which belong to the capital area, accounted for 11.8 percent of Korea's entire land area. However, they had 49.6 percent of the population and 47.4 percent of the number of business establishments.

City Planning

As of 2014, 17.5 percent of the total land in Korea was designated as a city planning district under the National Land Planning and Utilization Act. With regard to classification, 72.0 percent of the land consists of green areas, 14.7 percent residential, 6.5 percent industrial, and 1.9 percent commercial. The remaining 4.9 percent was undesignated.

Table 8-6 Urban Planning

(km², %)

	Urban planning area	Proportion to land area	Residential area	Commercial area	Industrial area	Green area	Undesignated area
1990	13,901.52	14.1	1,540.65	194.34	492.80	10,868.13	805.60
1995	14,790.74	14.9	1,764.46	224.41	654.31	11,265.08	882.48
2000	15,806.43	15.9	1,897.74	244.80	715.28	11,751.24	1,197.37
2005	17,039.77	17.1	2,121.85	264.04	793.11	12,607.49	1,253.29
2010	17,492.20	17.5	2,494.27	310.55	1,048.62	12,666.46	972.30
2013	17,593.38	17.5	2,579.65	324.71	1,122.31	12,682.83	883.87
2014	17,596.85	17.5	2,594.69	328.11	1,141.83	12,662.06	870.17
Composition	100.0	-	14.7	1.9	6.5	72.0	4.9

Source: Ministry of Land, Infrastructure, and Transport, *Status of Urban Planning*

09 Transportation, and Information and Communications

Number of Registered Cars

As of the end of 2015, the number of cars registered in Korea was 20,990,000, an increase of 4.3 percent from the end of the previous year. The number of passenger cars was 16,562,000, which accounted for 78.9 percent of all cars in Korea. Of those, the number of private cars was 15,808,000, for a ratio of 8.5 cars to every ten households.

Table 9-1 Number of Registered Cars

(1000 cars, cars)

	2000	2005	2010	2011	2012	2013	2014	2015
Total	12,059	15,397	17,941	18,437	18,871	19,401	20,118	20,990
Passenger cars	8,084	11,122	13,632	14,136	14,577	15,078	15,747	16,562
Private passenger cars	7,798	10,759	13,125	13,602	14,011	14,460	15,060	15,808
Vans	1,427	1,125	1,050	1,015	987	971	947	920
Freight vehicles	2,511	3,102	3,204	3,226	3,244	3,286	3,354	3,433
Special-purpose vehicles	37	48	56	59	63	66	70	75
Number of private passenger cars per 10 households[1]	5.4	6.7	7.7	7.7	7.8	7.9	8.2	8.5

Note: 1) Calculated based on the number of households stated in the "Future Household Projections"
Source: Statistics Korea, Ministry of Land, Infrastructure, and Transport, *Statistical Yearbook of MLTM*

Domestic Traffic by Type of Transportation

In 2013, passenger traffic carried 30,067 million people, a 1.6 percent increase year on year, while freight traffic recorded 1,704.34 million tons, a 1.4 percent decrease from the previous year.

Among different modes of transportation, road traffic accounted for 87.6 percent of the total; subways, 8.2 percent; railways, 4.1 percent; air traffic, 0.1 percent; and marine traffic, 0.1 percent. Road traffic accounted for 90.7 percent of the freight traffic, followed by ships at 6.9 percent and railways at 2.3 percent.

Table 9-2 Domestic Traffic by Type of Transportation and Share Rate

	Passenger (million people)	Share rate (%)					Freight (1,000t)	Share rate (%)			
		Railroad	Subway	Road[1]	Marine	Air		Railroad	Road[2]	Marine	Air
1995	13,803	5.7	12.2	81.8	0.1	0.2	595,272	9.7	68.6	21.7	0.1
2000	13,515	6.2	16.5	77.0	0.1	0.2	676,315	6.7	73.4	19.9	0.1
2005	11,801	8.1	17.1	74.6	0.1	0.1	687,451	6.1	76.5	17.4	0.1
2008	12,990	7.8	16.5	75.5	0.1	0.1	729,825	6.4	76.2	17.4	0.0
2009	12,959	7.9	16.8	75.0	0.1	0.1	766,679	5.1	79.2	15.7	0.0
2010	12,867	8.2	17.7	73.8	0.1	0.2	783,234	5.0	79.1	15.9	0.0
2011	29,456	3.8	8.0	88.1	0.0	0.1	1,605,584	2.5	89.7	7.8	0.0
2012	29,579	3.9	8.2	87.8	0.0	0.1	1,727,985	2.3	90.8	6.9	0.0
2013	30,067	4.1	8.2	87.6	0.1	0,1	1,704,342	2.3	90.7	6.9	0.0
2014	13,683	-	-	-	-	-	810,628p)	-	-	-	-
Year-on-year[3] Increase (rate)	1.6%	0.2%p	0.0%p	-0.2%p	0.1%p	0.0%p	-1.4%	0.0%p	-0.1%p	0.0%p	0.0%p

Note: 1) Including statistics on passenger cars since 2011, not including statistics on passenger cars for 2014
2) Including statistics on non-commercial freight cars since 2011, not including statistics on non-commercial freight cars for 2014
3) Increase from 2012 to 2013
Source: Ministry of Land, Infrastructure, and Transport, *Statistical Yearbook of MLTM*

International Shipping Traffic

Regarding international shipping traffic in 2015, the volume of freight transported internationally increased by 2.7 percent from 2014, to 1,216,262,000 tons.

Table 9-3 International Shipping Traffic

	Passengers(people)	International freight (1,000 R/T)		
		Total	Total	Total
1995	394,947	404,423	316,010	88,413
2000	999,163	569,599	418,821	150,778
2005	2,112,939	754,936	512,445	242,491
2007	2,549,874	862,523	576,501	286,022
2008	2,536,333	894,694	601,617	293,077
2009	2,088,967	848,299	566,082	282,217
2010	2,769,808	966,193	647,040	319,153
2011	2,702,432	1,069,565	703,753	365,812
2012	2,880,672	1,108,539	724,397	384,142
2013	2,737,201	1,123,205	735,854	387,351
2014	2,646,020	1,184,641	776,623	408,018
2015	-	1,216,262	799,446	416,816
Year-on-year increase (%)	-	2.7	2.9	2.2

Source: Ministry of Oceans and Fisheries, *Major Statistics on Marine and Fisheries Affairs*, SP-IDC

Civil Aviation Traffic

The number of passengers carried by international flights in 2014 was 54,500,000, an 11.9 percent year-on-year increase. The volume of air freight transport was 3,270,000t, up by 6.0 percent from the previous year.

For civil aviation traffic in 2014, the number of passengers carried by domestic lines was 23,850,000, a year-on-year increase of 11.1 percent. The volume of freight carried by domestic lines increased 12.2 percent, to 276,000t.

Production of Information and Communications Technology (ICT) Industry

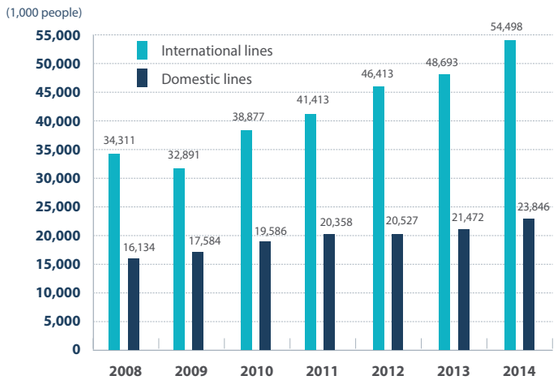
In 2014, the entire production of the information and communications technology industry recorded KRW 438,794.1 billion, an increase of 1.8 percent from 2013. By subsector, the production of ICT broadcasting services posted the highest growth rate at 2.6 percent. The production of package software and IT services, and ICT broadcasting equipment increased by 2.4 percent and 1.5 percent, respectively.

Table 9-4 Civil Aviation Traffic

	International lines		Domestic lines	
	Passengers (1,000 persons)	Freight[1] (1,000t)	Passengers (1,000 persons)	Freight[1] (1,000 t)
1990	9,383	761	10,833	180
1995	13,948	1,198	20,413	319
2000	18,905	1,886	22,289	431
2004	24,775	2,376	18,594	406
2005	27,505	2,412	16,691	367
2006	30,360	2,618	16,641	350
2007	35,450	3,001	16,202	310
2008	34,311	2,845	16,134	248
2009	32,891	2,729	17,584	264
2010	38,877	3,138	19,586	257
2011	41,413	2,913	20,358	275
2012	46,047	2,984	20,527	257
2013	48,693	3,083	21,472	246
2014	54,498	3,269	23,846	276
Year-on-year increase (%)	11.9	6.0	11.1	12.2

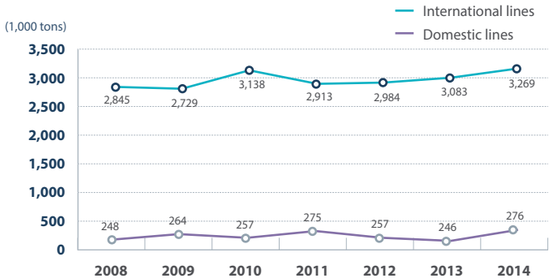
Note: 1) Includes the postal service
Source: Ministry of Land, Infrastructure, and Transport, *Statistical Yearbook of MLTM*

Figure 9-1 Civil Aviation Traffic



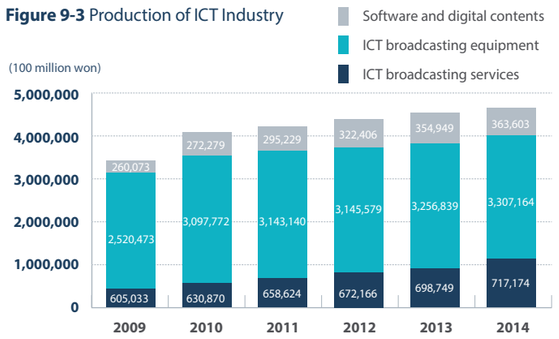
Source: Ministry of Land, Transport and Maritime Affairs, *Statistical Yearbook of MLTM*

Figure 9-2 Civil Aviation Freight Traffic[1]



Source: Ministry of Land, Infrastructure, and Transport, *Statistical Yearbook of MLTM*
Note: 1) Including postal service

Figure 9-3 Production of ICT Industry



Source: Korea Association for ICT Promotion, Korea Electronics Association, *ICT Survey, Report on Major ICT Items*

Table 9-5 ICT Production

(100 million won)

	2009	2010	2011	2012	2013	2014p)	Year-on-year increase (%)
Total[1]	3,385,579	4,000,921	4,096,993	4,237,411	4,310,537	4,387,941	1.8
ICT broadcasting services	605,033	630,870	658,624	672,166	698,749	717,174	2.6
Communications service	435,981	436,798	438,797	431,039	443,564	450,643	1.6
Broadcasting service	95,194	107,382	119,833	132,381	138,166	141,101	2.1
Broadcasting and communications convergence service	73,858	86,690	99,994	108,746	117,019	125,430	7.2
ICT broadcasting equipment[2]	2,520,473	3,097,772	3,143,140	3,145,579	3,256,839	3,307,164	1,5
Package software and IT services	260,073	272,279	295,229	322,406	354,949	363,603	2.4

Note: 1) Not including digital contents production in the total
2) Statistics on companies with 10 or more employees
Source: Korea Association for ICT Promotion, Korea Electronics Association, *ICT Survey, Report on Major ICT Items*

10 Wholesale and Retail, and Services

Wholesale and Retail Trade, Hotels and Restaurants

The number of wholesale and retail businesses in 2014 was 997,000, a 3.9 percent increase from 2013. The number of employees in those industries was 2,999,000, a 4.1 percent increase from 2013. The annual sales were KRW 920,173 billion, an increase of 0.7 percent from 2013.

The number of hotels and restaurants in 2014 was 703,000, an increase of 2.5 percent from 2013. The number of employees was 2,072,000, a 4.1 percent increase from 2013, and annual sales were KRW 95,529 billion, a 5.4% increase from 2013.

Volume of Trade through Cyber Shopping Malls

The total value of trade through cyber shopping malls in 2015 was KRW 53,889 billion, a 19.0 percent increase from the previous year. By product line, travel and reservation services recorded KRW 9,982 billion; clothes/fashion and related goods, KRW 8,468 billion; and household goods/motor vehicle parts and accessories, KRW 6,672 billion. These were three product lines with the biggest trade volume in the order specified. The volume of cyber trade for food and beverages and cosmetics showed high growth of 34.5 percent and 31.9 percent, respectively, while the cyber trade volume for books recorded 10.1 percent year-on-year decrease.

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Online shopping is especially popular in Korea.


© Yonhap News

Goods on display at a department store

Table 10-1 Wholesale and Retail Trade, Hotels and Restaurants[1)2)]

	Wholesale and Retail			Hotels and Restaurants		
	Number of establishments (1,000)	Number of workers (1,000)	Sales (billion won)	Number of workers (1,000)	Number of establishments (1,000)	Sales (billion won)
2007	868	2,516	586,418	623	1,717	67,791
2008	860	2,545	653,349	624	1,728	73,371
2009	862	2,626	666,412	628	1,758	79,308
2011	904	2,680	906,210	655	1,840	84,069
2012	942	2,774	918,585	674	1,915	88,180
2013	960	2,880	913,882	686	1,991	90,630
2014	997	2,999	920,173	703	2,072	95,529
Year-on-year increase (%)	3.9	4.1	0.7	2.5	4.1	5.4

Note: 1) Survey was not carried out in 2010 because the economic census was conducted that year.
2) The Ninth Revision of Korea Standard Industrial Classification (Dec. 28, 2007) was applied.
Source: Statistics Korea, *Report on the Wholesale and Retail Trade Survey*

Table 10-2 Volume of Trade through Cyber Shopping Malls by Product Line[1)]

(Billion won)

	2010	2011	2012	2013	2014	2015 p)	Composition (%)	Year-on-year increase (%)
Total	25,203	29,072	34,068	38,498	45,302	53,889	100.0	19.0
Home electric appliances/electronics/ telecommunication equipment	3,117	3,238	3,751	4,105	4,962	5,880	10.9	18.5
Travel arrangements and reservation services	3,445	4,066	5,577	6,419	8,383	9,982	18.5	19.1
Clothes/fashion and related goods	4,248	4,869	5,610	6,281	7,346	8,468	15.7	15.3
Household goods/motor vehicle parts and accessories	2,572	3,044	3,655	4,279	5,175	6,672	12.4	28.9
Computer and computer-related appliances	2,388	2,808	3,079	3,084	3,414	3,543	6.6	3.8
Cosmetics	1,414	1,605	1,946	2,100	2,669	3,520	6.5	31.9
Food and beverages	1,642	2,142	2,892	3,289	3,611	4,857	9.0	34.5
Books	1,169	1,274	1,273	1,196	1,280	1,151	2.1	-10.1
Others	1,179	1,663	1,207	1,614	1,469	1,708	3.2	16.3
Goods/toys for infants and children	1,512	1,539	1,658	1,947	2,227	2,711	5.0	21.7
Sports/leisure items	1,076	1,215	1,275	1,639	1,899	2,089	3.9	10.0

Note: 1) Products lines with a small share in trade are not included in the list.
Source: Statistics Korea

11 Economy and Business Management (Companies)

Business Management Analysis

During 2014, the growth index of domestic non-financial profit-making corporations decreased, but their profitability and stability indices maintained the similar level with the previous year. First, the sales growth rate slowed down to 1.3 percent in 2014 from 2.1 percent in 2013. In terms of the profitability index, the ratio of operating profit to the net sales slightly decreased from 4.1 percent in 2013 to 4.0 percent in 2014, while the ratio of net income before tax to sales increased to 3.3 percent in 2014 from 2.9 percent in 2013.

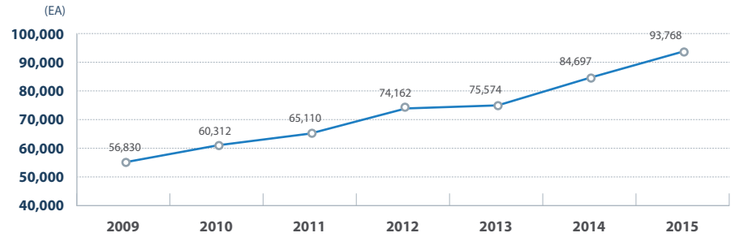
In the meantime, the debt ratio of domestic corporations decreased to 134.5 percent at the end of 2014 from 141.0 percent at the end of 2013, while the ratio of total borrowings and bond payables to total assets increased from 31.5 percent at the end of 2013 to 32.2 percent at the end of 2014.

Newly Established Corporations

The number of newly established corporations in 2015 was 93,768, a 10.7 percent increase from the previous year. This set the highest record since 2000 when the compilation of newly established corporation data began.

By industry, year-on-year, the number of newly established corporations in the electricity, gas, steam and water supply industry recorded a 29.1 percent decrease. The number of newly established corporations in the agriculture, forestry, fishery, and mining industry increased by 21.9 percent and the number in the construction industry, by 19.6 percent.

Figure 11-1 Number of Newly Established Corporations



Source: Small and Medium Business Administration

Table 11-1 Number of Newly Established Corporations by Industry[1)]

(EA)

	Total	Agriculture, forestry, fishery, and mining	Manufacturing	Electricity, gas, steam and water supply	Construction	Services	Others
2007	53,483	435	10,396	869	7,330	34,424	29
2008	50,855	749	10,128	738	6,001	33,232	7
2009	56,830	1,087	14,047	373	6,978	34,345	-
2010	60,312	1,077	14,818	234	6,790	37,393	-
2011	65,110	1,768	15,557	299	6,593	40,893	-
2012	74,162	2,067	17,733	391	6,996	46,975	-
2013	75,574	1,637	18,721	711	7,069	47,436	-
2014	84,697	2,593	19,509	1,363	8,145	53,087	-
2015	93,768	3,161	20,155	967	9,742	59,743	-
Year-on-year increase (%p)	10.7	21.9	3.3	-29.1	19.6	12.5	-

Note: 1) From March 2008, the ninth revision of the Korea Standard Industrial Classification was applied.
Source: Small and Medium Business Administration

Table 11-2 Business Management Analysis[1)2)]

(%)

	Debt ratio	Stockholders' equity to total assets	Total borrowings and bonds payable to total assets	Operating income to sales	Net income before taxes to sales	Rate of sales growth
2007	114.9	46.5	26.3	5.4	5.6	9.5
2008	129.8	43.5	28.3	5.0	2.9	18.6
2009	158.7	38.7	32.8	4.6	3.9	-
2010	150.1	40.0	32.2	5.3	4.9	15.3
2011	152.7	39.6	32.2	4.5	3.7	12.2
2012	147.6	40.4	31.9	4.1	3.4	5.1
2013	141.0	41.5	31.5	4.1	2.9	2.1
2014	134.5	42.6	32.2	4.0	3.3	1.3
Year-on-year increase (%p)	-6.5	1.1	0.7	-0.1	0.4	-0.8

Note: 1) As of Dec. 31, 2014
2) From 2009, data are from total inspection.
Source: Bank of Korea, *Financial Statement Analysis*

12 National Accounts, Regional Accounts, and State Assets

(National Wealth)

GDP & GNI

GDP (gross domestic production) is one of the indicators used to understand a country's economic scale, and per capita GNI (gross national income) which is calculated by dividing the gross national income by population is used to measure the country's living standards.

In 2014, GDP (nominal GDP) recorded KRW 1,485,100 billion, an increase of 3.9 percent from the previous year, and based on the U.S. dollar, the figure was USD 1,410 billion, an 8.0 percent year-on-year increase. This was influenced by the drop in the exchange rate (at a yearly average of -3.8 percent). Per capita GNI increased by USD 2,001 from the previous year (USD 26,179), to reach USD 28,180.

Table 12-1 GDP and GNI[1)]

	GDP		GNI		Per-capita GNI	
	KRW 1 billion	USD 1 billion	KRW 1 billion	USD 1 billion	KRW 10,000	USD
1970	2,795	8.2	2,843	8.3	9	257
1980	39,471	65	39,083	64	103	1,686
1990	197,712	279	197,415	279	461	6,505
2000	635,185	562	630,614	558	1,342	11,865
2003	810,915	680	807,778	678	1,688	14,161
2004	876,033	765	874,239	764	1,820	15,898
2005	919,797	898	912,609	891	1,896	18,508
2006	966,055	1,011	962,447	1,007	1,990	20,823
2007	1,043,258	1,123	1,040,092	1,119	2.140	23,033
2008	1,104,492	1,002	1,104,414	1,002	2,256	20,463
2009	1,151,708	902	1,148,982	900	2,336	18,303
2010	1,265,308	1,094	1,266,580	1,095	2,563	22,170
2011	1,322,681	1,203	1,340,530	1,210	2,693	24,302
2012	1,377,457	1,222	1,391,596	1,235	2,783	24,696
2013	1,429,445	1,305	1,439,644	1,315	2,867	26,179
2014[p)]	1,485,078	1,410	1,496,593	1,421	2,968	28,180

Note: 1) Based on the current price of the year
Source: The Bank of Korea

Economic Growth Rate and GDP Deflator

In 2015, even though private consumption and construction investment showed higher growth than the previous year and capital investment maintained solid growth, real GDP posted only 2.6 percent growth, lower than the previous year (3.3 percent). This can be attributed to a slowdown in exports and investment in intellectual property products. By sector, although the construction industry posted strong growth and the service industry maintained steady growth compared with the previous year, growth in the mining and manufacturing industry declined significantly.

In 2014, the GDP deflator recorded 0.6 percent growth, which was 0.3 percentage points lower than the previous year's figure (0.9 percent).

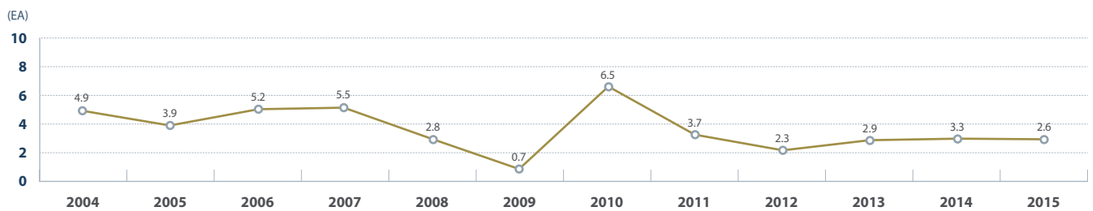
Table 12-2 Growth Rate by Sector of Economic Activity[1)] and GDP Deflator

(2010=100) (%)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014[p)]	2015[p)]
Economic growth rate	4.9	3.9	5.2	5.5	2.8	0.7	6.5	3.7	2.3	2.9	3.3	2.6
Agriculture, forestry, and fishery	9.0	1.4	1.6	4.1	5.6	3.2	-4.3	-2.0	-0.9	3.1	2.6	-1.6
Mining and manufacturing	9.6	5.8	7.7	8.3	3.7	-0.5	13.5	6.5	2.4	3.6	3.9	1.4
Electricity, gas and water	7.0	7.1	2.0	4.2	3.4	5.0	5.9	0.2	4.0	-0.3	2.2	5.6
Construction	1.4	-0.6	1.7	2.5	-2.6	2.3	-3.7	-5.5	-1.8	3.0	0.6	3.2
Services	2.8	3.9	4.6	5.2	3.2	1.5	4.4	3.1	2.8	2.9	3.1	2.8
GDP Deflator[2)]	88.0	88.9	88.8	90.9	93.6	96.9	100.0	101.6	102.6	103.5	104.1	-
Increase rate	3.0	1.0	-0.1	2.4	3.0	3.5	3.2	1.6	1.0	0.9	0.6	-

Note: 1) Based on prices in 2010
2) GDP Deflator = (Nominal GDP/Real GDP) *100
Source: The Bank of Korea

Figure 12-1 Economic Growth Rate



Source: The Bank of Korea

The 2016 G20 Finance Ministers and Central Bank Governors Meeting held in Chengdu, China

National Balance Sheet

The national balance sheet measures the nation's real assets, both tangible and intangible, as of the end of every year. In addition, it reveals the financial assets and debts held by each of the nation's economic entities and those of Korea as a whole, as well as any changes in such metrics of the nation's wealth. The national balance sheet allows us to clearly and comprehensively understand the country's financial picture and assess whether it is improving or worsening.

In 2013, the total value of nonfinancial assets (nominal) was KRW 11,078.5 trillion, which represents a year-on-year increase of KRW 310 trillion. Compared with a decade earlier, the figure has more than doubled (from KRW 129 trillion in 2003).

Broken down by type of asset, land and construction assets accounted for the majority 88.4 percent of the total. Land represented the majority of this subcategory at KRW 5,848 trillion (52.8 percent), followed by construction at KRW 3,942 trillion (35.6 percent), plants at KRW 649 trillion (5.9 percent); inventories at KRW 322 trillion (2.9 percent); intellectual property products at KRW 273 trillion (2.5 percent); underground natural resources at KRW 23 trillion (0.2 percent); and standing timber at KRW 22 trillion (0.2 percent).

Table 12-3 National Balances Sheet (Net-asset Stock by Asset Type)[1)]

(Trillion won, %)

		2003(A)	Composition	2009	2010	2011	2012	2013[p)] (B)	Composition	Ratio(B/A)
Total value of non-financial assets		5,128.8	100.0	8,822.9	9,574.0	10,374.9	10,768.8	11,078.5	100.0	2.2
Produced assets	**Tangible fixed assets**	2,281.3	44.5	3,863.3	4,181.7	4,489.5	4,668.5	4,863.4	43.9	2.1
	Construction assets	1,777.6	34.7	3,108.8	3,385.8	3,636.8	3,776.4	3,941.5	35.6	2.2
	Plant assets	391.7	7.6	562.4	585.5	623.1	640.6	648.7	5.9	1.7
	Intellectual property products	112.0	2.2	192.1	210.3	229.6	251.4	273.2	2.5	2.4
	Inventories	144.0	2.8	252.5	282.0	324.5	325.4	321.6	2.9	2.2
Non-produced assets	**Land**	2,680.3	52.3	4,671.7	5,067.6	5,516.6	5,727.6	5,848.0	52.8	2.2
	Subsoil assets	15.9	0.3	21.8	23.5	24.0	26.0	23.2	0.2	1.5
	Standing timber6.6	7.2	0.1	13.6	19.1	20.4	21.3	22.3	0.2	3.1

Note: 1) Prices as of the end of the year
Source: Statistics Korea, Bank of Korea

Gross Savings Rate and Investment Rate

The gross savings rate in 2014 recorded 34.7 percent, an increase of 0.4 percentage point from the previous year (34.3 percent). The gross savings rate in the private sector increased by 0.8 percentage point from the previous year (27.0 percent) to 27.8 percent, while the rate in the public sector decreased by 0.4 percentage point from the previous year (7.3 percent) to 6.9 percent. The gross domestic investment rate recorded 29.0 percent, identical to the 2013 figure.

In 2014, the gross national disposable income (nominal) recorded at KRW 1,490.8 trillion, an increase of 3.9 percent year on year, and final consumption expenditures increased 3.3 percent from the previous year.

Gross Regional Domestic Product

The gross regional domestic product (nominal) of 16 cities and provinces in Korea in 2014 was KRW 1,485 trillion, an increase of KRW 54 trillion (3.8 percent) from the previous year. By city and province, Gyeonggi-do accounted for the largest proportion with KRW 329 trillion, followed by Seoul with KRW 328 trillion, and Jeju-do recorded the smallest with KRW 14 trillion. The proportion of the gross regional domestic product in the capital area (Seoul, Gyeonggi-do, and Incheon) was 48.9 percent, increasing by 0.2 percentage points from 48.7 percent in the previous year.

Examining growth by city and province, a few locations recorded high growth rates over the national average (3.8 percent): Incheon (5.8 percent), Jeju-do (5.3 percent), Gyeonggi-do (5 percent), and Jeollabuk-do (5.0 percent). Others, however, recorded lower growth rates compared with the average. These include Jeollanam-do (1.3 percent), Ulsan (1.8 percent), Seoul (2.8 percent), and Gyeongsangbuk-do (2.8 percent).

Table 12-4 Gross Savings Rate and Investment Rate[1)]

(%)

	2007	2008	2009	2010	2011	2012	2013	2014[p)]	Year-on-year increase (%p)
Gross savings rate[2)]	33.2	32.9	32.9	35.0	34.6	34.2	34.3	34.7	0.4
Private	22.4	23.9	25.2	27.1	26.6	26.6	27.0	27.8	0.8
Government	10.8	9.0	7.6	7.8	8.0	7.6	7.3	6.9	-0.4
Total domestic investment rate	32.8	33.0	28.6	32.1	32.9	30.8	29.0	29.0	0.0
Independence of investment resources	101.3	99.5	115.0	108.7	105.1	110.9	118.5	119.6	1.1

Note: 1) Based on current prices of the year
2) (gross savings by sector/gross national disposable income)*100
Source: Bank of Korea

Table 12-5 Gross National Disposable Income and Final Consumption Expenditures[1)]

(Billion won)

	2008	2009	2010	2011	2012	2013	2014[p)]	Year-on-year increase (%)
Gross national disposable income	1,103,618.6	1,146,509.6	1,260,454.9	1,335,321.2	1,385,445.3	1,435,097.6	1,490,793.9	3.9
Final consumption expenditures	740,804.6	769,588.6	819,821.2	873,522.6	911,938.2	942,267.2	972,951.7	3.3
Private	579,053.4	594,882.6	636,712.7	679,141.5	707,614.0	727,799.9	748,906.5	2.9
Government	161,751.2	174,706.0	183,108.5	194,381.2	204,324.2	214,467.3	224,045.2	4.5

Note: 1) Based on current prices of the year
Source: The Bank of Korea

Table 12-6 Gross Regional Domestic Product[1)2)]

(Billion won)

Region	2009	2010	2011	2012	2013	2014[p)]	Year-on-year increase (%)	Composition (%)
Entire country	1,151,367.4	1,265,146.1	1,330,888.2	1,377,040.5	1,430,254.9	1,484,542.0	3.8	100.0
Seoul	273,198.8	289,718.7	303,812.5	313,478.5	318,607.0	327,602.2	2.8	22.1
Busan	60,694.8	63,737.2	66,647.6	67,999.0	70,337.9	73,743.8	4.8	5.0
Daegu	36,016.9	38,579.9	41,448.0	43,021.0	44,753.5	46,592.2	4.1	3.1
Incheon	53,795.7	60,708.1	61,854.4	62,207.9	64,654.2	68,373.6	5.8	4.6
Gwangju	23,834.1	26,400.8	27,789.0	28,913.8	29,763.2	30,998.4	4.2	2.1
Daejeon	25,534.7	27,631.7	29,683.9	30,884.5	31,455.7	32,722.6	4.0	2.2
Ulsan	52,555.6	62,852.4	68,747.9	70,783.4	68,347.7	69,548.4	1.8	4.7
Gyeonggi-do	237,318.5	266,562.1	276,155.0	288,146.8	313,670.6	329,448.7	5.0	22.2
Gangwon-do	29,110.9	30,628.1	32,438.5	33,853.5	35,357.5	36,886.2	4.3	2.5
Chungcheongbuk-do	34,836.7	39,469.5	42,488.9	43,628.0	47,401.8	49,136.7	3.7	3.3
Chungcheongnam-do	71,756.1	83,166.8	91,816.4	95,307.9	99,154.3	103,740.0	4.6	7.0
Jeollabuk-do	34,739.1	36,632.5	39,960.1	40,431.8	42,512.7	44,623.4	5.0	3.0
Jeollanam-do	51,543.9	59,901.0	62,689.4	64,642.2	62,289.5	63,094.6	1.3	4.3
Gyeongsangbuk-do	72,973.0	80,839.0	82,276.4	85,401.0	89,132.4	91,653.1	2.8	6.2
Gyeongsangnam-do	83,162.7	87,419.4	91,233.3	95,634.5	99,619.4	102,484.1	2.9	6.9
Jeju-do	10,295.8	10,898.9	11,847.1	12,706.8	13,197.5	13,894.1	5.3	0.9

Note: 1) Based on current prices of the year
2) Sejong City is included in Chungcheongbuk-do and Chungcheongnam-do, according to past administrative district system
Source: Statistics Korea, *Regional Income Statistics*

13 Public Finance, Finance, and Insurance

Consolidated Budget Balance

Consolidated public finance is a method of tracking all revenues and expenditures of the central government to understand the national economy at a glance. The consolidated budget balance is calculated by subtracting the consolidated public expenditures over a year from the consolidated public revenues for the same year.

In 2014, the consolidated public finance balance decreased by KRW 5,699 billion to record KRW 8,501 billion of surplus, which was 0.6 percent of the gross domestic product (GDP).

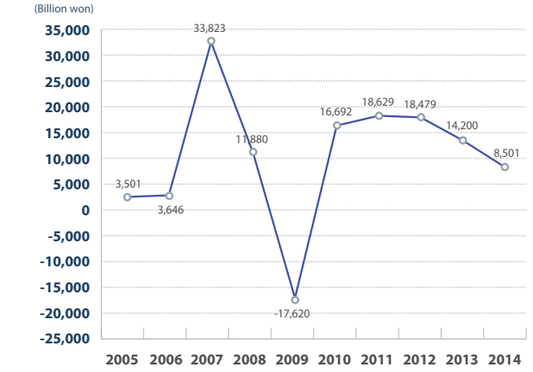
Tax Burden Ratio

The tax burden ratio measures the extent of the tax burden that the people of a given country must shoulder, and it is calculated by measuring gross tax (national taxes plus local taxes) against current GDP. In 2014, the tax burden ratio to current GDP (excluding social insurance programs) was 18.0 percent, an increase of 0.1 percentage point from 2013.

Official Development Assistance

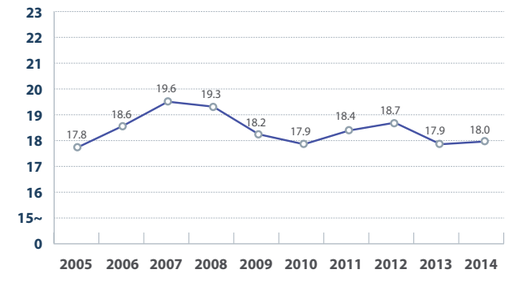
In 2014, the scale of Korea's official development assistance (ODA) increased by 5.5 percent to record US$1,850 million, and the ratio of ODA to gross national income (GNI), which indicates the level of a country's ODA compared with its economic scale, recorded 0.13 percent, the same as the previous year.

Figure 13-1 Trend of Consolidated Central Government Balance



Source: Ministry of Strategy and Finance, *Government Finance Statistics in Korea*

Figure 13-2 Tax Burden Ratio (to current GDP)



Source: Ministry of Strategy and Finance

Table 13-1 Consolidated Budget Balance

(Billion won)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Consolidated budget balance	3,501	3,646	33,823	11,880	-17,620	16,692	18,629	18,479	14,200	8,501
Total revenue	191,447	209,573	243,633	250,713	250,811	270,923	292,323	311,456	314,438	320,895
Total expenditure and net lending	187,946	205,928	209,810	238,834	268,431	254,231	273,694	292,977	300,238	312,394

Source: Ministry of Strategy and Finance, *Consolidated Budget Balance of Korea*

Table 13-2 Tax Receipt and Tax Burden Ratio

(Trillion won, %)

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gross Tax	Total	163.4	179.3	205.0	212.8	209.7	226.9	244.7	257.0	255.7	267.2
	National taxes	127.5	138.0	161.5	167.3	164.5	177.7	192.4	203.0	201.9	205.5
	Local taxes	36.0	41.3	43.5	45.5	45.2	49.2	52.3	53.9	53.8	61.7
Tax burden ratio (to GDP)	Total	17.8	18.6	19.6	19.3	18.2	17.9	18,4	18.7	17.9	18.0p)
	National taxes	13.9	14.3	15.5	15.1	14.3	14.0	14.4	14.7	14.1	13.8p)
	Local taxes	3.9	4.3	4.2	4.1	3.9	3.9	3.9	3.9	3.8	4.2p)

Source: Ministry of Strategy and Finance

Bilateral assistance, in which assistance funds and goods are delivered directly to developing countries, increased 6.2 percent year on year to US$1,390 million; and multilateral assistance, which is given through organizations such as international financial institutions, increased 2.9 percent year on year to US$460 million.

Money Supply

Monetary policy is an indirect method of controlling a country's economy by adjusting the money supply or interest rates, which affects the country's national income. The primary methods are open-market operations, rediscount policies, and so on. In such cases, an indicator for management of the money supply is necessary and base money can be used for this.

Base money refers to cash held in the private sector, vault cash held by private banks, and private banks' deposits at a central bank. Narrow money (M1), which refers to the general money supply, is a combination of cash currency, demand deposits, and cash-management time and savings deposits. When financial instruments with maturities of less than two years, such as installment deposits and savings, are included in the previously mentioned combination, they are called broad money (M2). Broad money, when added to other types of deposits received by commercial banks and nonbank financial institutions, constitutes financial institutions' liquidity (Lf).

In terms of the scale of the money supply in 2015, the value of base money increased by 12.5 percent to reach KRW 131,438.8 billion, and M1 increased by 20.9 percent year-on-year. M2 increased by 8.2 percent, and Lf increased by 9.0 percent.

Table 13-3 Official Development Assistance (Based on Net Expenditure)

(Million dollars)

	Total ODA			ODA/GNI[1](%)
		Bilateral ODA	Multilateral ODA	
1995	116	71	45	0.02
2000	212	131	81	0.04
2005	752	463	289	0.10
2006	455	376	79	0.05
2007	696	491	206	0.07
2008	802	539	263	0.09
2009	816	581	235	0.10
2010	1,174	901	273	0.12
2011	1,325	990	335	0.12
2012	1,597	1,183	414	0.14
2013	1,755	1,310	446	0.13
2014[p]	1,851	1,391	459	0.13
Year-on-year increase (%)	5.5	6.2	2.9	-

Note: 1) Based on nominal figures
Source: The Export and Import Bank of Korea, Economic Development Cooperation Fund, *ODA in Numbers*

Table 13-4 Money Supply

(Billion won)

	Bank notes and coins in circulation	Base money	Narrow money (M1)	Broad money (M2)	Financial institutions' liquidity (Lf)
2005	26,135.8	43,249.0	332,344.9	1,021,448.7	1,391,559.6
2008	30,758.3	64,846.3	330,623.7	1,425,887.5	1,845,199.1
2009	37,346.2	67,779.1	389,394.5	1,566,850.0	2,018,785.0
2010	43,307.2	74,545.7	427,791.6	1,660,530.0	2,137,197.9
2011	48,657.6	80,055.9	442,077.5	1,751,458.4	2,277,679.0
2012	54,334.4	88,342.0	470,010.6	1,835,641.6	2,456,120.5
2013	63,365.9	104,262.0	515,643.4	1,920,795.0	2,615,093.5
2014	74,944.8	116,793.7	585,822.6	2,077,234.0	2,841,785.1
2015	86,757.2	131,438.8	708,452.9	2,247,375.0	3,098,929.4
Year-on-year increase (%)	15.8	12.5	20.9	8.2	9.0

Source: Bank of Korea

Table 13-5 Credit to Households

(Billion won)

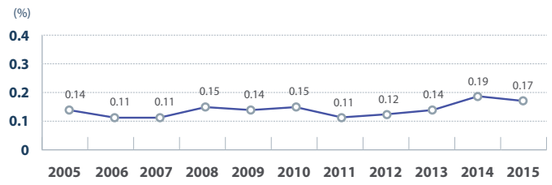
	2009	2010	2011	2012	2013	2014	2015P)	Year-on-year increase (%p)
Credit to house holds	775,985.3	843,189.6	916,162.2	963,794.4	1,019,040.5	1,085,259.2	1,206,979.8	11.2
Loans to house holds	734,291.9	793,778.9	861,387.9	905,944.1	962,896.8	1,025,076.2	1,141,833.7	11.4
Merchandise credit	41,693.5	49,410.8	54,774.3	57,850.3	58,460.8	60,183.0	65,146.1	8.2

Source: The Bank of Korea, *Monthly Statistical Bulletin*

Figure 13-3 Credit to Households

Source: The Bank of Korea, *Monthly Statistical Bulletin*

Figure 13-4 Dishonored Checks and Bills Ratio



Source: The Bank of Korea, *Economic Statistics Yearbook*

Credit to Households

Total credit to households in 2015 recorded KRW 1,206,979.8 billion, an increase of KRW 121,720.6 billion (11.2 percent) from the end of 2014. The rate increased by 4.7 percentage points from the rate end of 2014 (6.5 percent). As of the end of 2015, outstanding loans to households recorded KRW 1,141,833.7 billion, an increase of 11.4 percent from the end of 2014, and outstanding merchandise credits, sold by credit card companies, sales finance companies, etc., increased by 8.2 percent compared with the end of 2014, to reach KRW 265,146.1 billion.

Dishonored Checks and Bills Ratio

One of the indicators of the current market-fund condition is the ratio of dishonored checks and bills. The dishonored checks and bills ratio refers to the ratio of checks and bills that have not been paid, and, consequently, have been dishonored, to the total amount in checks and bills that are due. The ratio is calculated by dividing the dishonored bills and checks by the total amount in checks and bills that are due.

A high ratio indicates bad conditions for the funds that are being circulated in the market. The nationwide dishonored checks and bills ratio in 2015 was 0.17 percent, a decrease of 0.02 percentage points from 2014.

Transactions in Securities

As of the end of 2015, the Korea Composite Stock Price Index (KOSPI) recorded 1,961.3 points (p), an increase of 2.4 percent from 1,915.6p at the end of 2014.

Assets of Insurance Companies

In 2014, life insurance companies held KRW 662,075.2 billion worth of assets, a 10.8 percent increase from 2013 (KRW 597,480.1 billion). Nonlife insurance companies' assets in 2014 were KRW 200,307.6 billion, a 17.4 percent increase from 2013 (KRW 170,556.3 billion).

Table 13-6 Dishonored Checks and Bills Ratio[1]

(%)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Nationwide dishonored checks and bills ratio	0.14	0.11	0.11	0.15	0.14	0.15	0.11	0.12	0.14	0.19	0.17

Note: 1) Based on dishonored value
Source: The Bank of Korea, *Economic Statistics Yearbook*

Table 13-7 Transactions in Securities

	Stocks		Bond market		KOSPI[1] By end of the year
	Trading volume (million shares)	Trading value (billion won)	Trading volume (par value) (billion won)	Traded value (Billion won)	
1995	7,656.0	142,914.1	1,353	1,430	882.9
2000	73,785.3	627,132.9	26,878	27,170	504.6
2003	133,876.4	547,509.1	48,821	48,415	810.7
2004	92,850.8	555,795.1	377,443	384,069	895.9
2005	116,439.7	786,257.9	366,590	363,799	1,379.4
2006	68,936.8	848,489.6	295,450	294,933	1,434.5
2007	89,506.1	1,362,877.1	355,828	351,395	1,897.1
2008	88,149.1	1,287,164.8	376,373	374,007	1,124.5
2009	122,871.3	1,466,274.8	504,382	510,194	1,682.8
2010	95,595.7	1,410,561.8	584,268	585,206	2,051.0
2011	87,732.4	1,702,060.3	815,152	824,827	1,825.7
2012	120,646.9	1,196,263.4	1,351,281	1,376,365	1,997.1
2013	81,096.4	986,375.3	1,312,827	1,321,989	2,011.3
2014	68,130.1	975,977.1	1,373,214	1,394,893	1,915.6
2015	112,903.4	1,327,229.9	1,762,425	1,792,233	1,961.3
Year-on-year increase (%)	65.7	36.0	28.3	28.5	2.4

Note: 1) Jan. 4, 1980 = 100
Source: Korea Exchange

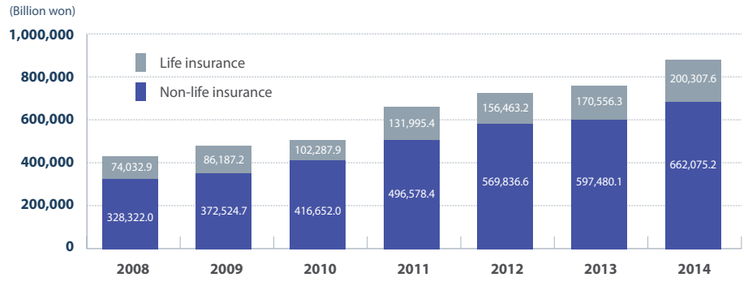
Table 13-8 Assets of Insurance Companies[1]

(Billion won)

	2008	2009	2010	2011	2012	2013	2014	Year-on-year increase (%p)
Total	402,354.9	458,711.9	518,939.9	628,573.8	726,299.8	768,036.4	862,382.8	12.3
Life insurance	328,322.0	372,524.7	416,652.0	496,578.4	569,836.6	597,480.1	662,075.2	10.8
Non-life insurance	74,032.9	86,187.2	102,287.9	131,995.4	156,463.2	170,556.3	200,307.6	17.4

Note: 1) From January 1 to December 31 in fiscal year. Before 2013, standard fiscal year from April 1 to March 31 next year was applied. For 2013, the fiscal year was from April 1 to December 31.
Source: The Financial Supervisory Service, *Monthly Financial Statistics Bulletin*

Figure 13-5 Assets of Insurance Companies



14 Trade and International Balance of Payments

Trade Volume

Foreign trade enhances the profits of both trading partners through the international exchange of goods and services. Since Korea lacks natural resources, it receives raw materials through international trade and exports goods after processing the imported raw materials. For Korea, therefore foreign trade is of immense importance.

The total trade volume in 2015 recorded US$963,260 million, a decrease of 12.3 percent year on year. The value of exports recorded US$526,760 million, an 8.0 percent decrease from the previous year, and the value of imports recorded US$436,500 million, a 16.9 percent decrease from the previous year. The surplus in trade account in 2015 was US$90,260 million, a US$43,100 million increase from the previous year.

A container ship

Table 14-1 Trade Volume

(100 million dollars)

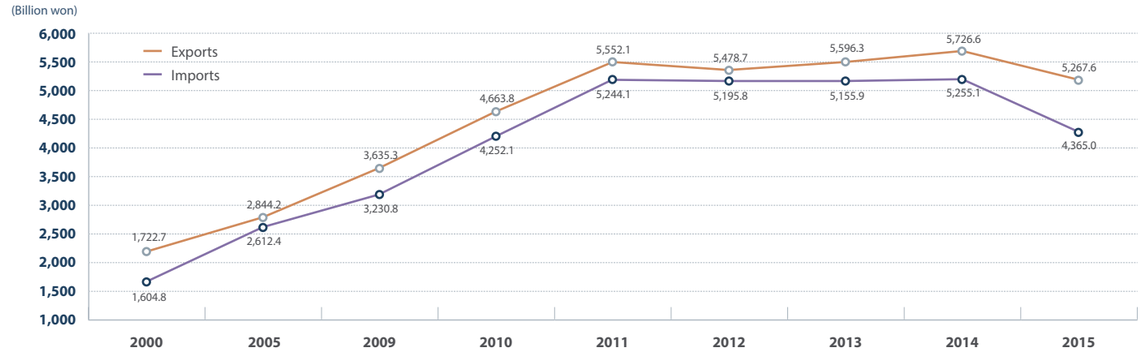
	Total	Exports	Imports	Exports-Imports
2000	3,327.5	1,722.7	1,604.8	117.9
2005	5,456.6	2,844.2	2,612.4	231.8
2009	6,866.2	3,635.3	3,230.8	404.5
2010	8,916.0	4,663.8	4,252.1	411.7
2011	10,796.3	5,552.1	5,244.1	308.0
2012	10,674.5	5,478.7	5,195.8	282.9
2013	10,752.2	5,596.3	5,155.9	440.5
2014	10,981.8	5,726.6	5,255.1	471.5
2015	9,632.6	5,267.6	4,365.0	902.6
Year-on-year increase (%)	-12.3	-8.0	-16.9	-

Source: The Korea International Trade Association

Export and Import Trends by Item

With regard to trends for different export items in 2015, heavy chemical products accounted for 91.3 percent of the total and light industry products made up 6.5 percent. Primary products accounted for 2.3 percent. Looking at imports, crude materials comprised the highest proportion of the total with 50.5 percent. Capital goods were next with 34.6 percent, followed by consumer goods with 14.7 percent.

Figure 14-1 Trade Volume



Source: The Korea International Trade Association

Exports and Imports by Country

When looking at exports and imports by country in 2015, exports to China accounted for the greatest proportion of the total at US$137,100 million. Imports from China also accounted for the greatest proportion at US$90,300 million.

China was Korea's top export destination, followed by the United States, Hong Kong, Vietnam, and Japan. The largest proportions of imports, after China, came from Japan, the United States, Germany, and Saudi Arabia.

Balance of International Payments

The current account surplus for 2015 showed a year-on-year increase of US$21,590 million, having jumped from US$84,370 million to US$105,960 million.

Table 14-2 Trend of Exports and Imports by Item

(100 million dollars, %)

	Exports						Imports				
	2012	2013	2014	2015	Composition		2012	2013	2014	2015	Composition
Total exports	5,478.7	5,596.3	5,726.6	5,267.6	100.0	**Total imports**	5,195.8	5,155.9	5,255.1	4,365.0	100.0
Primary products	146.8	121.2	128.4	119.1	2.3	**Crude material**	3,281.6	3,158.7	3,133.4	2,204.9	50.5
Light industry products	353.1	368.3	366.3	340.3	6.5	**Capital goods**	1,401.5	1,447.6	1,495.7	1,511.9	34.6
Heavy and chemical products	4,978.8	5,106.9	5,231.9	4,808.1	91.3	**Consumer goods**	509.3	546.1	621.7	643.1	14.7
(IT products)	1,202.3	1,308.7	1,366.5	1,362.7	25.9	**Others**	3.4	3.5	4.4	5.1	0.1

Source: The Korea International Trade Association

Table 14-3 Exports and Imports by Country (2015)[1)]

(100 million dollars)

Ranking	Country	Exports	Ranking	Country	Imports
	Total	5,268		Total	4,365
1	China	1,371	1	China	903
2	United States	698	2	Japan	459
3	Hong Kong	304	3	United States	440
4	Vietnam	278	4	Germany	210
5	Japan	356	5	Saudi Arabia	196
6	Singapore	150	6	Taiwan	167
7	India	120	7	Qatar	165
8	Taiwan	120	8	Australia	164
9	Mexico	109	9	Russia	113
10	Australia	108	10	Vietnam	98

Note: 1) Excludes countries ranked lower than 10th place.
Source: The Korea International Trade Association

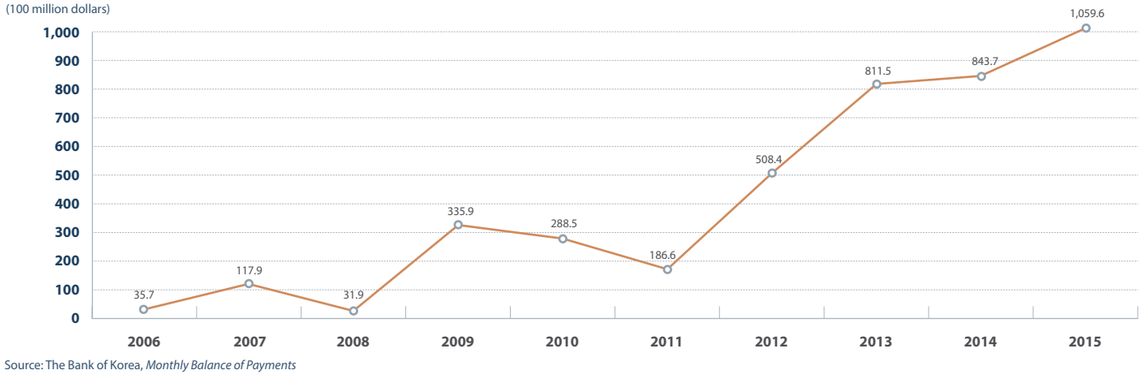
Table 14-4 Balance of Payments

(100 million dollars)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015[p)]
Current account balance	35.7	117.9	31.9	335.9	288.5	186.6	508.4	811.5	843.7	1,059.6
Goods balance	251.7	328.4	122.0	478.1	479.2	290.9	494.1	827.8	888.9	1,203.7
Service balance	-132.1	-132.5	-65.4	-95.9	-142.4	-122.8	-52.1	-65.0	-36.8	-157.1
Income balance	-40.1	-34.1	-12.0	-24.4	4.9	65.6	121.2	90.6	41.5	59.0
Transfer balance	-43.8	-43.9	-12.7	-21.9	-53.2	-47.2	-54.7	-41.9	-49.8	-46.1
Capital balance	-69.0	5.7	26.4	-69.6	-63.2	-112.0	-41.7	-27.0	-8.9	-64.7
Financial account[1)]	125.5	174.9	-65.9	271.7	231.9	243.2	515.8	801.0	893.3	1,096.3

Note: 1) Net assets ((+) for increase in assets/debuts, (-) for decrease in assets/debts)
Source: The Bank of Korea, *Monthly Balance of Payments*

Figure 14-2 Current Account Balance



Source: The Bank of Korea, *Monthly Balance of Payments*

Figure 14-3 Overseas Investments and Foreign Direct Investments

Source: The Bank of Korea, *Monthly Statistical Bulletin*

The goods account recorded a surplus of US$120,370 million, continuing the previous year's trend, while the service balance recorded a deficit of US$15,710 million, also continuing the previous year's trend.

Overseas Investment and Foreign Direct Investment

At the end of 2015, Korea's overseas investment balance stood at US$11,039,880 million, a 5.4 percent increase from the previous year, and the foreign direct investment balance was US$941,080 million, a decrease of 5.4 percent year on year.

International Reserves

At the end of 2015, the international reserves recorded US$367,962 million, an increase of US$4,369 million from US$363,593 million at the end of the previous year.

Table 14-5 Overseas Investments and Foreign Direct Investments

(100 million dollars)

	2009	2010	2011	2012	2013	2014	2015 p)	Year-on-year increase (%)
Overseas investments (A)	6,304.1	6,970.9	7,595.3	8,610.4	9,675.4	10,819.5	11,398.8	5.4
Foreign direct investments (B)	7,302.8	8,282.0	8,405.6	9,554.1	10,047.6	9,943.8	9,410.8	-5.4
Net international investment position (A-B)	-998.7	-1,311.0	-810.3	-943.7	-372.2	875.7	198.8	-

Source: The Bank of Korea, *Monthly Statistical Bulletin*

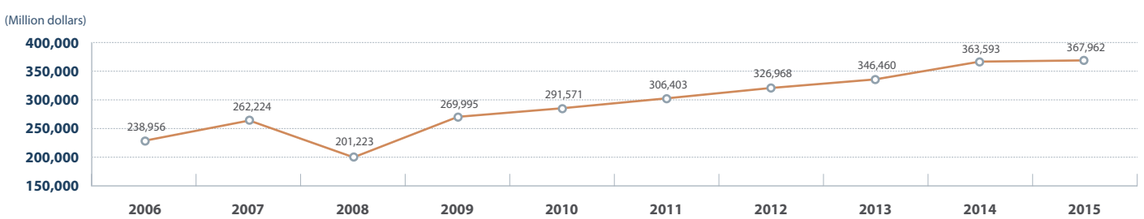
Table 14-6 International Reserves

(million dollars)

	Total	Gold	Special drawing rights	IMF reserve position 1)	Foreign currency reserves
2004	199,066	72	33	786	198,175
2005	210,391	74	44	306	209,968
2006	238,956	74	54	440	238,388
2007	262,224	74	69	311	261,771
2008	201,223	76	86	583	200,479
2009	269,995	79	3,732	982	265,202
2010	291,571	80	3,540	1,025	286,926
2011	306,403	2,167	3,447	2,556	298,233
2012	326,968	3,761	3,526	2,784	316,898
2013	346,460	4,795	3,490	2,528	335,648
2014	363,593	4,795	3,281	1,917	353,601
2015	367,962	4,795	3,241	1,412	358,514
Year-on-year increase (%)	1.2	0.0	-1.2	-26.3	1.4

Note: 1) Asset that can be drawn from the IMF on demand
Source: The Bank of Korea, *Monthly Statistical Bulletin*

Figure 14-4 International Reserves



Source: The Bank of Korea, *Monthly Statistical Bulletin*

15 Science and Culture

Research and Development Investment

The total research and development (R&D) expenditures of Korea in 2014 amounted to KRW 63,734.1 billion, an increase by KRW 4,432.2 billion from the previous year (7.5 percent). The proportion of R&D investment in GDP was 4.29 percent, representing an increase of 0.14 percentage points from the previous year (4.15 percent).

In 2014, the amount of R&D expenditures from the government and public financial resources was KRW 15,275 billion. The ratio of R&D expenditures financed by the government/public sector to R&D expenditures financed by the private and foreign sectors was 24:76, the same as the previous year. By the R&D stage, the expenditures for basic R&D accounted for 17.6 percent; applied R&D, 18.9 percent; and development R&D, 63.4 percent.

Research and Development Manpower

In total R&D manpower in 2014, the number of workers engaged in R&D was 605,604, an increase of 6.4 percent year-on-year. Among that number, there were 437,447 researchers, an increase of 6.6 percent from the previous year. By sector, the number of researchers working for private companies increased by the most

Table 15-1 R&D Investment

(Billion won, %)

	R&D expenditures	By source			By research stage			R&D expenditure to GDP
		Government/Public	Private	Foreign	Basic	Applied	Development	
2000	13,849	27.6	72.4	0.06	12.6	24.3	63.1	2.18
2005	24,155	24.3	75.0	0.71	15.3	20.8	63.8	2.63
2009	37,929	28.7	71.1	0.21	18.1	20.0	62.0	3.29
2010	43,855	28.0	71.8	0.22	18.2	19.9	61.8	3.47
2011	49,890	26.1	73.7	0.22	18.1	20.3	61.7	3.74
2012	55,450	24.9	74.7	0.34	18.3	19.1	62.6	4.03
2013	59,301	24.0	75.7	0.30	18.0	19.1	62.9	4.15
2014	63,734	24.0	75.3	0.71	17.6	18.9	63.4	4.29
Year-on-year increase (%)	7.5	0.0%p	-0.4%p	0.41%p	-0.4%p	-0.2%p	0.5%p	0.14%p

Source: Ministry of Science, ICT, and Future Planning, Korea Institute of Science and Technology Evaluation and Planning, *Survey of Research and Development in Korea*

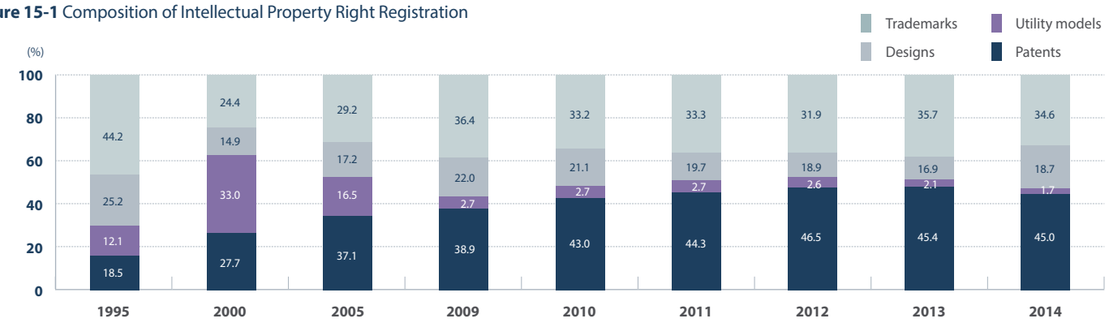
Table 15-2 Research and Development Manpower

(People)

	Total personnel engaged in R&D activities	Researchers		Number by sector of performance		
				Public research Institutes	Universities and colleges	Business enterprises
1995	201,661	128,315	27.4	15,007	44,683	68,625
2000	237,232	159,973	28.8	13,913	51,727	94,333
2005	335,428	234,702	24.7	15,501	64,895	154,306
2009	466,824	323,175	23.7	24,318	88,554	210,303
2010	500,124	345,912	23.5	26,235	93,509	226,168
2011	531,131	375,176	22.6	28,800	95,750	250,626
2012	562,601	401,724	21.8	28,822	96,916	275,986
2013	569,333	410,333	21.7	31,140	97,319	281,874
2014	605,604	437,447	21.1	33,322	99,317	304,808
Year-on-year increase (%)	6.4	6.6	-0.6%p	7.0	2.1	8.1

Source: Ministry of Science, ICT, and Future Planning, Korea Institute of Science and Technology Evaluation and Planning, *Survey of Research and Development in Korea*

Figure 15-1 Composition of Intellectual Property Right Registration



Source: Korea Intellectual Property Office, *Intellectual Property Statistics*

significant margin, 8.1 percent. This was followed by public research institutes (7.0 percent) and universities and colleges (2.1 percent). Meanwhile, the proportion of doctorate holders against total researchers was 21.1 percent, a decrease of 0.6 percentage points from the previous year.

Registration of Intellectual Property Rights

In 2014, a total of 288,542 intellectual property rights were registered, an increase of 2.8 percent from the previous year. In terms of composition of registered intellectual property rights, patent registrations took up 45.0 percent, followed by trademark registrations, 34.6 percent; design registration, 18.7 percent; and utility model registrations, 1.7 percent.

Tourism Balance

In 2015, the number of visitors to Korea was sharply reduced because of the MERS (Middle East Respiratory Syndrome) outbreak. However, the number recovered the level higher than recent yearly average, at 13,230,000 which was 6.8 percent decrease year-on-year. The number of Korean departures in 2015 increased 20.1 percent to 19,310,000. This was attributable to the rise in the number of short-distance travelers moving by low-cost carriers, as well as to the increased number of holidays including substitute holidays.

In 2015, the tourism balance recorded a US$6,100 million deficit. In detail, tourism receipts decreased 14.3 percent year on year to record US$15,200 million, while tourism expenditures rose by 9.3 percent to reach US$21,300 million.

Foreign reporters look at a model of the *Arirang-3A*, the Korean-made multipurpose satellite.

Table 15-3 Intellectual Property Right Registration

(Cases)

	Total	Patents	Utility models	Designs	Trademarks
1990	54,325	7,762	8,846	13,927	23,790
1995	67,458	12,512	8,149	16,986	29,811
2000	126,395	34,956	41,745	18,845	30,849
2005	198,094	73,512	32,716	33,993	57,873
2009	145,927	56,732	3,949	32,091	53,155
2010	159,977	68,843	4,301	33,697	53,136
2011	214,013	94,720	5,853	42,185	71,255
2012	243,869	113,467	6,353	46,146	77,903
2013	280,691	127,330	5,959	47,308	100,094
2014	288,542	129,786	4,955	54,010	99,791
distribution(%)	100.0	45.0	1.7	18.7	34.6

Source: Korea Intellectual Property Office, *Intellectual Property Statistics Yearbook*

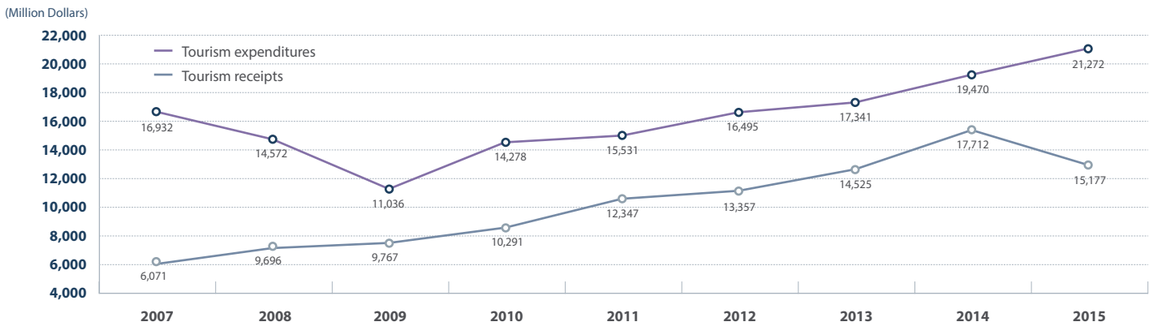
Table 15-4 Tourism Balance

(1,000 people, Million dollars)

	Visitor arrivals	Korean[1] departures	Margin (Korean departures–visitor arrivals)	Tourism balance[2] (receipts – expenditures)		
					Tourism receipts	Tourism expenditures
2007	6,448	13,325	6,877	-10,860	6,071	16,932
2008	6,891	11,996	5,105	-4,876	9,696	14,572
2009	7,818	9,494	1,676	-1,269	9,767	11,036
2010	8,798	12,488	3,690	-3,987	10,291	14,278
2011	9,795	12,694	2,899	-3,184	12,347	15,531
2012	11,140	13,737	2,597	-3,138	13,357	16,495
2013	12,176	14,846	2,670	-2,816	14,525	17,341
2014	14,202	16,081	1,879	-1,758	17,712	19,470
2015[p]	13,232	19,310	6,078	-6,095	15,177	21,272
Year-on-year increase (%)	-6.8	20.1	-	-	-14.3	9.3

Note: 1) Including crew members
2) Excluding expense of students studying overseas
Source: Ministry of Culture, Sports & Tourism, Korea Tourism Organization, *Korea Statistical Report on Tourism*

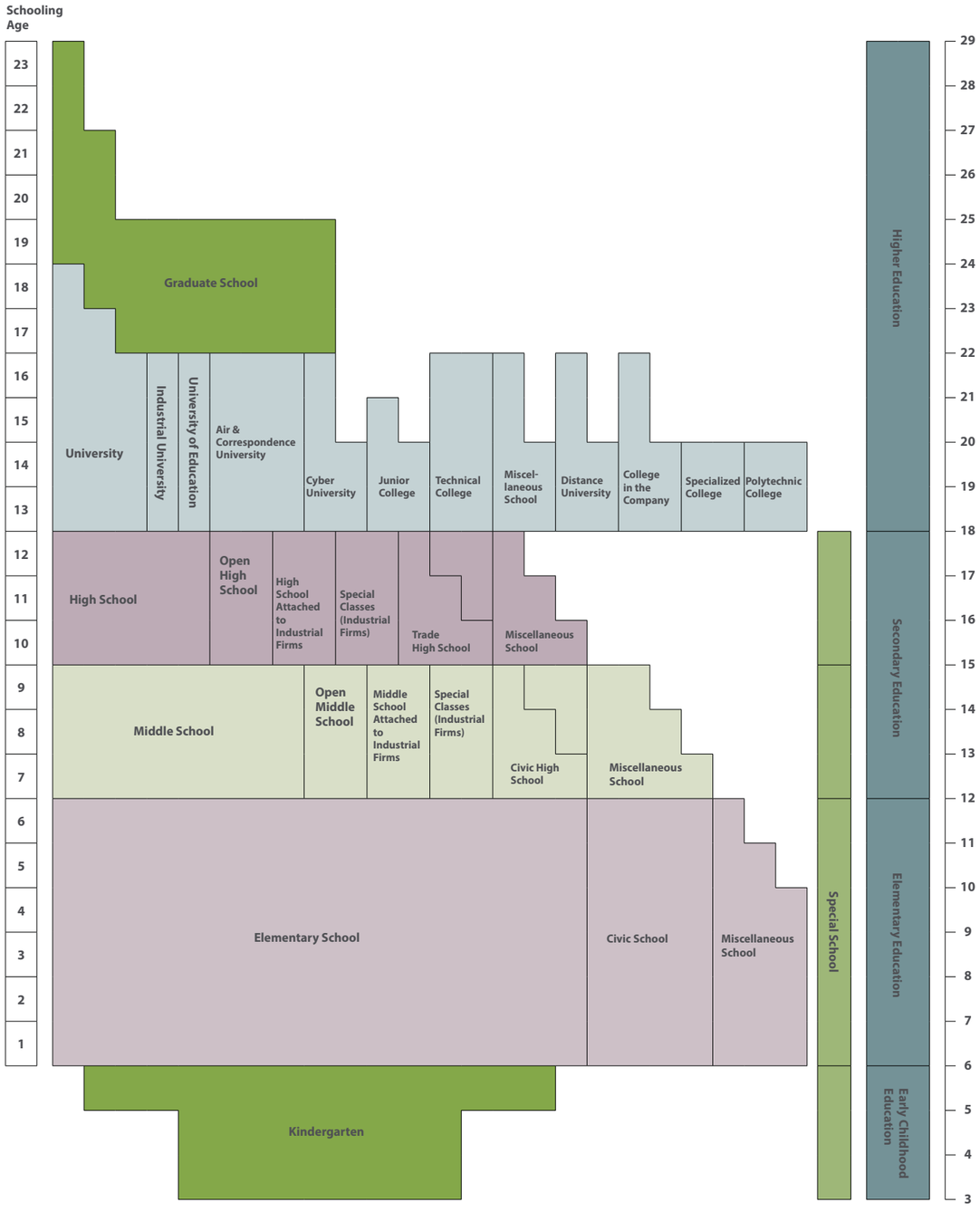
Figure 15-2 Tourism Balance



Source: Ministry of Culture, Sports & Tourism, Korea Tourism Organization, *Korea Statistical Report on Tourism*

Statistics on Korean Education

1. School System



All Statistics in this article refer to *2015 Brief Statistics on Korean Education.*

Elementary school students in class

Students enjoy a sports event at a high school in Seoul.

2. Schools, Students and Teachers (2015)

(Unit : School, Person)

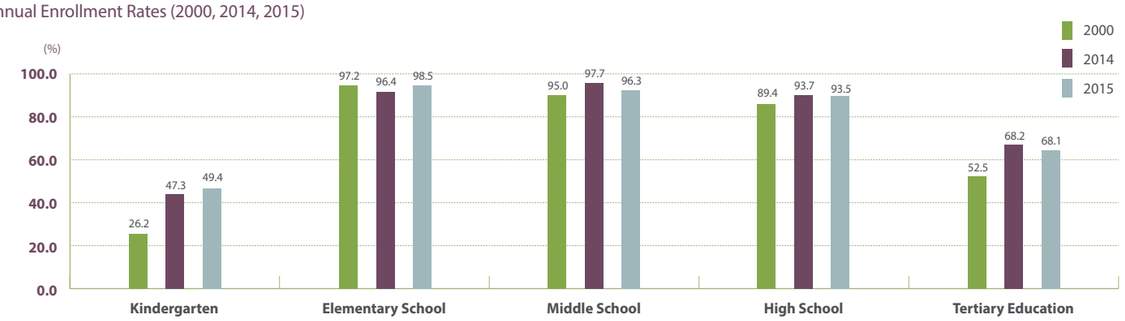
Classification		No. of Schools	No. of Students		No. of Teachers	
			Total	Female	Total	Female
Kindergarten, Elementary, Secondary		20,729	6,819,927	3,277,876	489,515	340,994
Kindergarten		8,930	682,553	333,072	50,998	50,145
Elementary school		5,978	2,714,610	1,310,066	182,658	140,516
Institutions offering middle school instruction	Subtotal	3,219	1,588,110	757,675	111,257	76,302
	Middle schools	3,204	1,585,951	756,033	111,247	76,298
	Civic high schools	3	85	49	10	4
	Air and correspondence middle schools	12	2,074	1,593	-	-
Institutions offering high school instruction	Subtotal	2,393	1,800,648	863,386	135,096	67,607
	General high schools	1,537	1,278,008	636,169	90,878	46,983
	Special-purposed high schools	148	67,529	34,953	7,245	3,204
	Specialized high schools	498	302,021	133,335	26,588	5,146
	Autonomous high schools	161	140,708	51,589	10,288	5,146
	Trade high schools	7	940	248	97	32
	Air and correspondence high schools	42	11,442	7,092	-	-
Special schools		167	25,536	8,798	8,542	5,825
Miscellaneous schools		42	8,470	4,879	964	599
Special programs requested by industrial firms		[6]	[96]	[38]	[14]	[-]
Tertiary education subtotal		433	3,608,071	1,549,193	90,215	21,984
Institutions offering undergraduate instruction	Subtotal	226	2,505,190	1,081,775	67,499	15,124
	Universities	189	2,113,293	848,423	65,423	14,440
	Universities of Education	10	15,967	10,892	849	224
	Industrial universities	2	44,679	10,616	357	99
	Technical colleges	1	103	29	-	-
	Air and correspondence universities	1	214,347	143,739	154	48
	Miscellaneous schools	2	3,489	2,099	145	48
	Distance universities	1	1,080	546	10	5
	Cyber-universities	17	111,924	65,298	558	260
	In-company colleges	3	308	133	3	-
Institutions offering junior college instruction	Subtotal	160	769,403	305,044	14,165	5,020
	Junior colleges	138	720,466	290,941	12,991	4,774
	Technical colleges	-	19	1	-	-
	Miscellaneous schools	-	9	5	-	-
	Distance universities	1	2,195	1,556	17	9
	Cyber-universities	2	5,604	3,516	38	16
	In-company colleges	5	474	54	4	-
	Specialized colleges	3	11,763	6,839	239	151
	Polytechnic colleges	11	28,873	2,132	876	70
Graduate school course	Subtotal	47	333,478	162,374	8,551	1,840
	Graduate school colleges	47	9,102	4,332	1,322	247
	Graduate schools	[1,150]	324,376	158,042	7,229	1,593

Notes
1 Figures in brackets are not included in totals.
2 Special programs requested by industrial firms record only the total number of teachers without providing a gender breakdown.

3. Enrollment, Advancement, Employment and Discontinuation Rates

A. Enrollment

Annual Enrollment Rates (2000, 2014, 2015)



(Unit: %)

Classification	2000	2005	2010	2013	2014	2015
Kindergarten	26.2	30.9	40.2	47.4	47.3	49.4
Elementary school	97.2	98.8	99.2	97.2	96.4	98.5
Middle school	95.0	94.6	97.0	96.2	97.7	96.3
High school	89.4	91.0	91.5	93.6	93.7	93.5
Tertiary education	52.5	65.1	70.1	69.0	68.2	68.1

Note
1 Enrollment rate (%) = (number of enrolled students of appropriate age / number of people of appropriate age) × 100
2 Information about enrollment ages is taken from "Population Projections for Korea" (2010), Korea National Statistical Office. Figures up to 2010 are fixed, and figures from 2011 are estimated.
3 Enrollment ages: 3–5 for kindergarten, 6–11 for elementary school, 12–14 for middle school, 15–17 for high school, and 18–21 for tertiary educational institutions.

B. Advancement Rates

Advancement Rates by Level of Education, Year

(Unit: %)

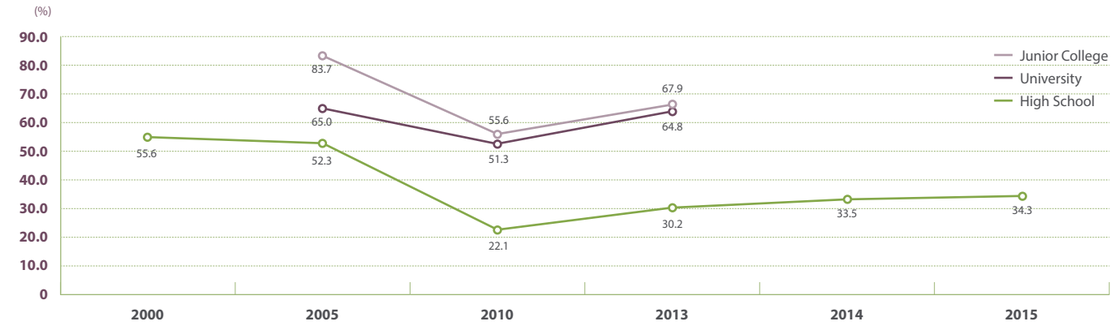
Classification		2000	2005	2010	2013	2014	2015
Elementary to middle school		100.0	100.0	100.0	100.0	100.0	100.0
Middle to high school		99.6	99.7	99.7	99.7	99.7	99.7
High school to tertiary education	Total	62.0	73.4	75.4	70.7	70.9	70.8
	General high schools	-	-	-	(77.7)	78.7	78.9
	Special-purposed high schools	-	-	-	(60.0)	59.6	58.4
	Specialized high schools	-	-	-	(41.7)	37.9	36.1
	Autonomous high schools	-	-	-	(74.7)	75.7	75.8
	General high schools*	83.9	88.3	81.5	77.5	-	-
	Vocational high schools	42.0	67.6	71.1	46.8	-	-

Notes
1 Advancement rate (%) = (Number of graduates of pertinent year who advance / total number of graduates of pertinent year) × 100
2 Advancement rates are rounded to two decimal places. The 100.0% figure in advancement rates from elementary to middle school is an approximate value.
3 The total advancement rate of high school students is calculated based on the number of college registrants. However, advancement rates for high school students attending general and vocational high schools are calculated based on the number of students admitted to a college prior to 2010 and registered after 2011.
4 Graduates: A new system of classification for high schools was adopted in 2011, but graduates up to 2013 will follow the previous classification. Figures in ( ) are the advancement rates of high school students as calculated according to the current high school classification system, and are provided for reference.
5 Middle school includes middle schools and other institutions that offer instruction at the middle school level.
6 High school includes high schools and other institutions that offer instruction at the high school level.
7 Tertiary education includes junior colleges, universities, industrial universities, universities of education, air & correspondence universities, polytechnic colleges, and other institutions offering tertiary-level instruction (from 2005, education in a foreign country is included).

* At the end of June of 2010, high school classification was revised. Before the revision, there were two categories; General high school and Vocational high school. However, since 2011, there have been four categories; General high school, Special-purposed high school, Specialized high school, and Autonomous high school.

C. Employment Rates

Employment Rates by Level of Education, Year



(Unit: %)

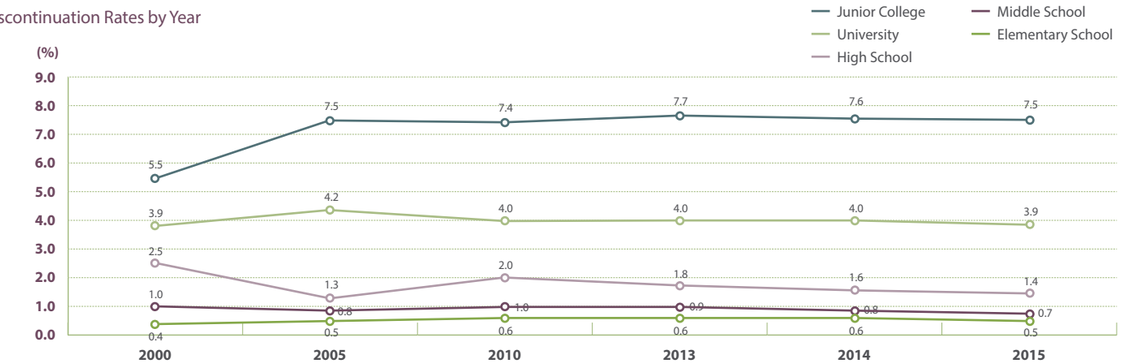
Classification		2000	2005	2010	2013	2014	2015
High School	Total	55.6	52.3	22.1	30.2	33.5	34.3
	General high schools	-	-	-	(8.1)	9.4	10.1
	Special-purposed high schools	-	-	-	(43.7)	44.9	48.7
	Specialized high schools	-	-	-	(70.1)	72.3	72.2
	Autonomous high schools		-	-	(3.4)	4.1	3.1
	General high schools*	15.5	12.1	4.9	4.9	-	-
	Vocational high schools	88.8	86.3	67.7	68.2	-	-
Tertiary education		-	74.1	55.0	67.4	-	-
University		-	65.0	51.9	64.8	-	-
Junior College		-	83.7	55.6	67.9	-	-
General graduate schools		-	-	70.7	78.5	-	-

Employed	~2009	Permanent Full-time+Temporary Full-time+Self-employed
	2010	Employee insured
	2013~	Employee insured+Employed at alma mater+Employed abroad+Agriculturist+Sole proprietor+ Freelancer+Creative activity
Subject to employment	~2009	Graduates-(Advanced+Enlisted+Unable to work+Foreign students)
	2010~	Graduates-(Advanced+Enlisted+Unable to work+Foreign students+Exempted)

Notes
1 Employment rate of high school students (%) = [Number of students employed among graduates of pertinent year / (number of graduates –advanced – enlisted students)] x 100
2 High school graduates: A new system of classification for high schools was adopted in 2011, but graduates up to 2013 will follow the previous classification. Figures in ( ) are the advancement rates of high school students as calculated according to the current high school classification system, and are provided for reference.
3 College entrants among high school graduates: Until 2010, the number of total college entrants among high school graduates was defined as graduates of general and vocational high schools admitted to a college. The definition changed in 2011 to mean high school graduates who actually register for a college.
4 Statistical research on employment rates of higher education graduates was conducted by individual universities until 2009 (date of reference is April 1 of specified year). In 2010, the statistical research was linked to the health insurance database (date of reference is June 1). The statistical research was linked to the health insurance database & national tax database beginning in 2011 (date of reference is December 31 of specified year). The scope and criteria of the research vary accordingly.
5 Employment rate of higher education graduates (%) = (number employed / eligible for employment) × 100
6 Advancement refers to tertiary education at junior colleges, universities, industrial universities, universities of education, polytechnic colleges, general graduate schools and other institutions offering tertiary-level instruction.
Source(s): Employment rate of higher education graduates (%): Research for Employment Statistics 2005, Research for Employment Statistics 2010 (linked with Health Insurance Database), Research for Employment Statistics 2010 (linked with Health Insurance & National Tax Database) (KEDI).

D. Discontinuation Rates

Discontinuation Rates by Year



(Unit: %)

Classification (level of instruction)		2000	2005	2010	2012	2013	2014
Elementary school		0.4	0.5	0.6(0.3)	0.6(0.3)	0.6(0.3)	0.5(0.3)
Middle school		1.0	0.8	1.0(0.8)	0.9(0.8)	0.8(0.7)	0.7(0.6)
High school		2.5	1.3	2.0(1.7)	1.8(1.6)	1.6(1.4)	1.4(1.2)
Tertiary education	Total	6.1	7.1	6.7	6.7	6.6	6.6
	University	3.9	4.2	4.0	4.0	4.0	3.9
	Junior college	5.5	7.5	7.4	7.7	7.6	7.5

Notes
1 Discontinuation rate for elementary and secondary schools = (number of discontinued students / total number of students enrolled in the previous year) × 100
2 Discontinuation rate for tertiary education (expulsion rate) = (number of students expelled / total number of students enrolled in the previous year) × 100
3 Students who postpone or are exempt from enrolling in elementary and middle school programs of instruction are considered discontinued.
4 Reasons for discontinuing high school include dropping out (illness, problems at home, inability to adapt, studying abroad, etc.), expulsion (due to behavior problems), postponed enrollment, and exemption.
5 The death of a student is not counted as discontinuation.
6 Students studying abroad are included in discontinued students from 2011. Between 2011 and 2014, figures in ( ) reflect the criteria prior to 2010 (which excluded students studying abroad and those who left school due to immigration).
7 Enrolled students at the tertiary level are students who are not in the school register, including students who have not registered, are not returning to school, have dropped out, or are on academic probation.

4. Major Indicators

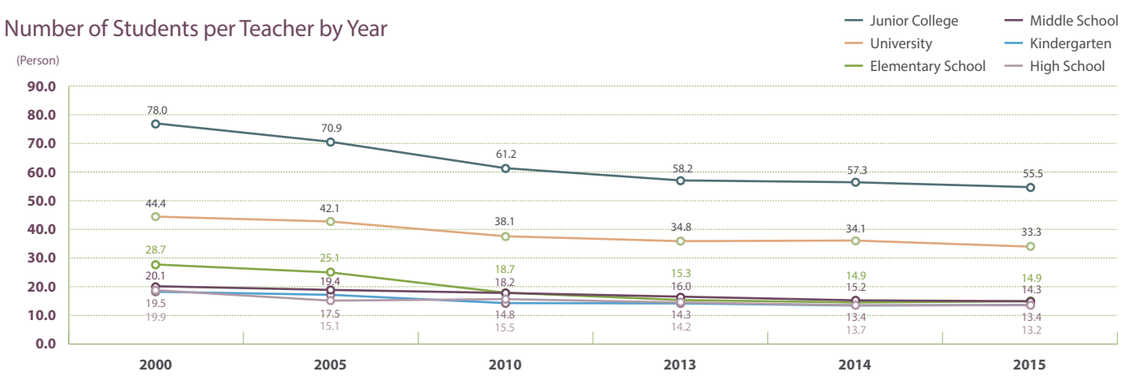
A. Number of Students per Class by Year

(Unit: Person)

Classification		2000	2005	2010	2013	2014	2015
Kindergarten		26.3	24.2	21.0	21.5	19.7	20.0
Elementary school		35.8	31.8	26.6	23.2	22.8	22.6
Middle school		38.0	35.3	33.8	31.7	30.5	28.9
High school	Total	42.7	32.7	33.7	31.9	30.9	30.0
	General high schools	-	-	-	33.6	32.4	31.3
	Special-purposed high schools	-	-	-	25.8	25.0	24.4
	Specialized high schools	-	-	-	27.6	26.9	26.4
	Autonomous high schools	-	-	-	31.5	30.7	30.3
	General high schools	44.1	33.9	35.5	-	-	-
	Vocational high schools	40.3	30.0	29.1	-	-	-

Note: The number of students per class = Number of enrolled students/Number of classes

B. Number of Students per Teacher by Year



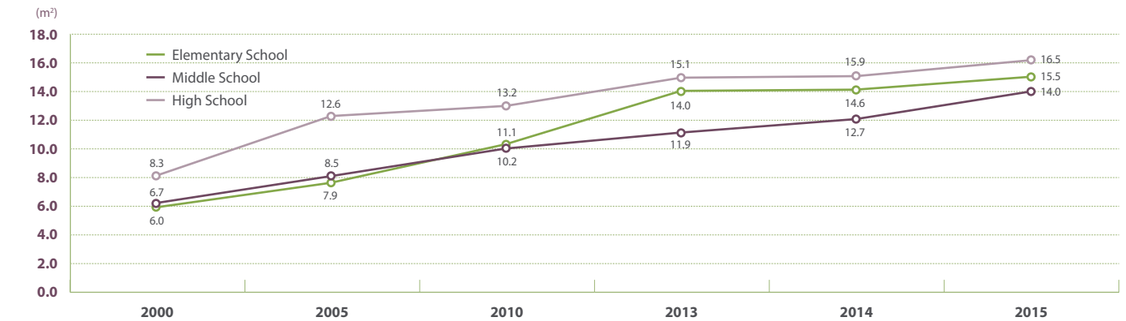
(Unit: Person)

Classification		2000	2005	2010	2013	2014	2015
Kindergarten		19.5	17.5	14.8	14.3	13.4	13.4
Elementary school		28.7	25.1	18.7	15.3	14.9	14.9
Middle school		20.1	19.4	18.2	16.0	15.2	14.3
High school	Total	19.9	15.1	15.5	14.2	13.7	13.2
	General high schools	-	-	-	15.2	14.6	14.1
	Special-purposed high schools	-	-	-	10.0	9.7	9.3
	Specialized high schools	-	-	-	12.0	11.6	11.4
	Autonomous high schools	-	-	-	14.3	13.9	13.7
	General high schools	20.9	15.9	16.5	-	-	-
	Vocational high schools	18.2	13.5	13.1	-	-	-
Tertiary education	Total	58.4 (39.9)	53.1 (36.1)	46.9 (32.7)	42.8 (30.3)	41.6 (29.8)	40.0 (28.7)
	University	44.4 (31.8)	42.1 (29.5)	38.1 (27.0)	34.8 (25.4)	34.1 (25.2)	33.3 (24.6)
	Junior College	78.0 (51.2)	70.9 (44.1)	61.2 (39.4)	58.2 (37.2)	57.3 (37.1)	55.5 (36.1)

Notes
1 Number of students per teacher = number of enrolled students / number of teachers
2 Teachers in the primary and secondary education categories do not include part-time instructors. Teachers at tertiary educational institutions do not include part-time instructors or teaching assistants.
3 Figures in ( ) for tertiary educational institutions indicate the ratio of students who are enrolled for the pertinent semester among total students registered (including students on leave of absence). University includes graduate school faculty and students.

C. Area of Building, School Grounds, and Gym per Student

Building Area per Student by Year



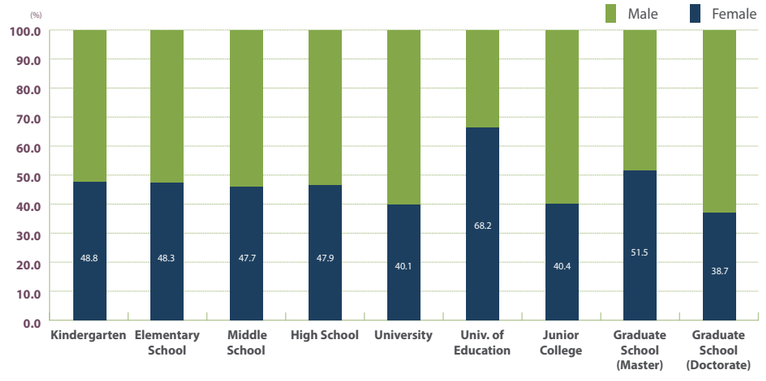
(Unit: square meters)

Classification		2000	2005	2010	2013	2014	2015
Building area	Elementary school	6.0	7.9	11.1	14.0	14.6	15.5
	Middle school	6.7	8.5	10.2	11.9	12.7	14.0
	High school	8.3	12.6	13.2	15.1	15.9	16.5
Area of school grounds	Elementary school	8.7	10.1	12.7	15.9	16.5	16.6
	Middle school	9.5	10.3	11.3	13.2	14.0	15.3
	High school	15.0	18.7	17.9	19.3	20.3	21.3
Gym Area	Elementary school	12.2	12.4	14.4	16.3	16.3	16.0
	Middle school	12.8	12.2	12.6	13.1	13.4	14.4
	High school	11.7	13.7	11.8	12.3	12.4	12.6

Notes
1 Building area per student = building area / number of enrolled students
2 Area of school grounds per student = area of school grounds / number of enrolled students
3 Gym area per student = gym area / number of enrolled students

5. Ratio of Female to Male

A. Ratio of Female Students to Male Students by Instruction Level (2015)



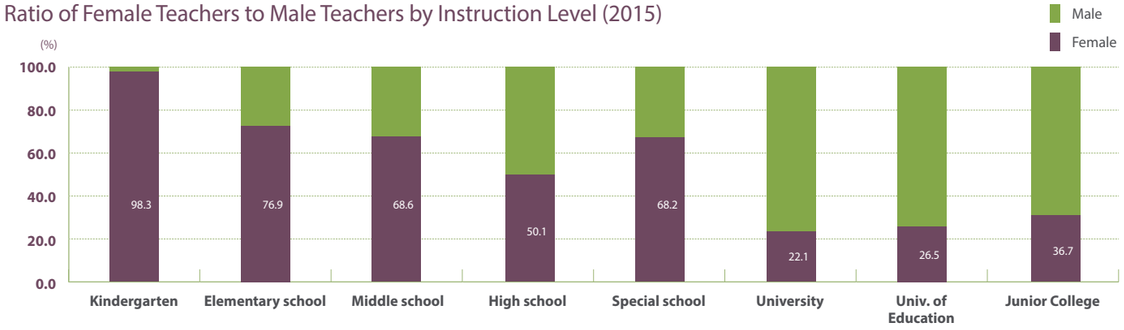
(Unit: %)

Classification		2000	2005	2010	2013	2014	2015
Kindergarten		46.9	47.7	48.3	48.7	48.8	48.8
Elementary school		47.0	47.2	47.7	48.0	48.1	48.3
Middle school		47.8	47.1	47.5	47.6	47.7	47.7
High school		48.0	47.2	46.8	47.6	47.8	47.9
Tertiary education	Total	38.3	39.4	41.8	42.4	42.6	42.9
	University	35.8	36.8	38.4	39.4	39.8	40.1
	Univ. of Education	71.9	71.0	68.1	67.6	67.6	68.2
	Junior College	37.1	37.1	39.7	40.0	40.1	40.4
	Graduate school (Master)	36.6	46.4	50.2	50.7	51.0	51.5
	Graduate school (Doctorate)	24.7	32.3	38.0	38.3	38.2	38.7

Elementary school students at an entrance ceremony

Note
1 Ratio of female students to male students = (number of enrolled female students / number of enrolled students) × 100

B. Ratio of Female Teachers to Male Teachers by Instruction Level (2015)



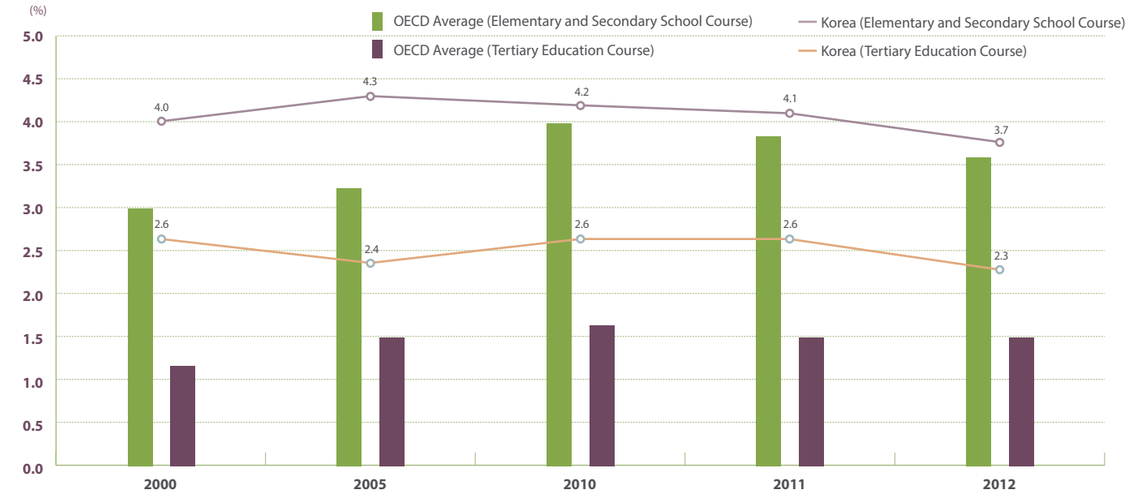
(Unit: %)

Classification	Kindergarten	Elementary school	Middle school	High school	Special school	University	Univ. of education	Junior college
Total	98.3	76.9	68.6	50.1	68.2	22.1	26.5	36.7
Seoul	98.8	86.3	69.9	49.9	67.7	22.0	27.1	40.2
Busan	98.7	80.9	73.1	47.9	70.5	21.1	22.9	35.0
Daegu	97.0	82.0	70.1	44.0	66.8	19.0	21.5	34.5
Incheon	99.0	75.3	73.8	55.5	69.2	18.1	32.6	34.2
Gwangju	98.5	80.4	68.7	43.4	73.5	22.3	23.8	35.0
Daejeon	97.5	87.5	69.7	47.1	65.7	20.7	-	36.0
Ulsan	98.1	77.2	73.6	56.4	71.5	14.0	-	41.0
Sejong	99.1	75.2	75.3	55.0	-	8.3	-	30.0
Gyeonggi-do	98.3	79.8	75.1	60.0	69.9	25.9	-	36.1
Gangwon-do	98.3	66.2	61.3	45.3	72.4	22.2	32.1	35.6
Chungcheongbuk-do	97.9	71.5	63.1	45.3	62.4	22.0	31.0	31.9
Chungcheongnam-do	97.6	67.5	59.4	42.6	67.1	24.7	27.9	38.7
Jeollabuk-do	98.4	72.0	60.0	39.7	71.8	20.8	23.7	40.1
Jeollanam-do	98.7	59.6	59.3	41.9	59.5	21.4	-	33.6
Gyeongsangbuk-do	97.9	63.5	60.8	41.2	57.7	21.5	-	42.0
Gyeongsangnam-do	98.7	73.6	62.6	46.9	71.8	22.1	18.1	35.5
Jeju-do	98.7	74.0	62.7	43.9	69.4	19.0	-	44.8

Notes
1 Teachers on leave and temporary teachers were included in calculations, but retired teachers and part-time instructors were excluded.
2 Graduate school faculty were included in calculations for universities and universities of education.

6. Expenditure on Educational Institutions as a percentage of GDP

A. Trends in Expenditure on Educational Institutions as a percentage of GDP by Year

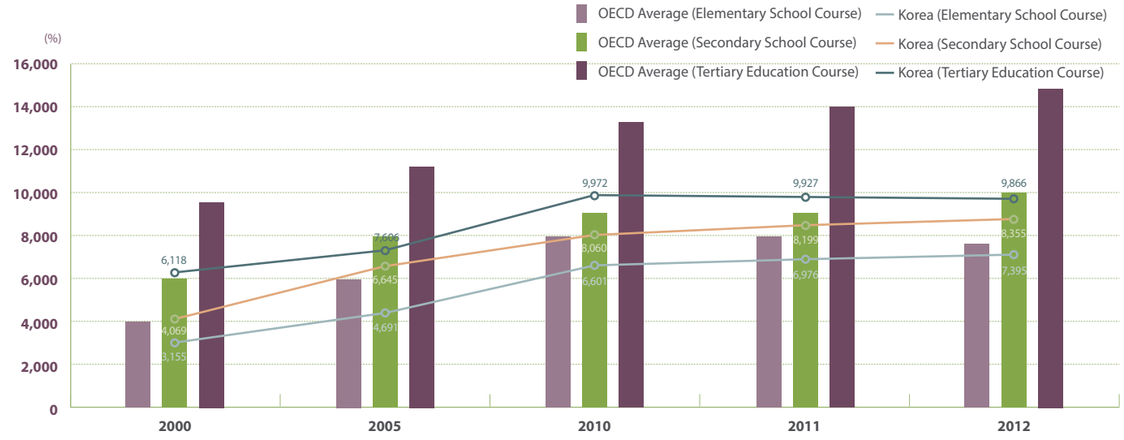


(Unit: %)

Classification		All levels of education			Elementary and secondary educational institutions			Tertiary educational institutions		
		Total	Public sources	Private sources	Total	Public sources	Private sources	Total	Public sources	Private sources
2000 (2003)	Korea	7.1	4.3	2.8	4.0	3.3	0.7	2.6	0.6	1.9
	OECD average	5.5	4.8	0.6	3.6	3.4	0.3	1.3	1.0	0.3
2005 (2008)	Korea	7.2	4.3	2.9	4.3	3.4	0.9	2.4	0.6	1.8
	OECD average	5.8	5.0	0.8	3.8	3.5	0.3	1.5	1.1	0.4
2010 (2013)	Korea	7.6	4.8	2.8	4.2	3.4	0.9	2.6	0.7	1.9
	OECD average	6.3	5.4	0.9	4.0	3.7	0.3	1.7	1.1	0.5
2011 (2014)	Korea	7.6	4.9	2.9	4.1	3.4	0.8	2.6	0.7	1.9
	OECD average	6.1	5.3	0.9	3.9	3.6	0.3	1.6	1.1	0.5
2012 (2015)	Korea	6.7	4.7	2.0	3.7	3.2	0.5	2.3	0.8	1.5
	OECD average	5.3	4.7	0.7	3.7	3.5	0.2	1.5	1.2	0.4

Notes
1 "All levels of education" spans from pre-primary education to administrative organizations until 2011 (2014) and from primary education to administrative organizations for 2012 (2015).
2 Expenditure on educational institutions as a percentage of GDP = (public sources + private sources) / GDP × 100.
3 Support from public sources for students and households is included in "public sources" from 2012.
4 Years in parentheses indicate the year the pertaining EAG (Education at A Glance) was released.
5 For information on the institutions included in each educational category, refer to the introductory remarks.
6 The GDP of Korea was KRW 522 trillion in 2000, KRW 811 trillion won in 2005, KRW 1.173 quadrillion in 2010, KRW 1.235 quadrillion in 2011, and KRW 1.377 quadrillion in 2012.
Source(s): OECD (pertinent year), Education at a Glance: OECD Indicators

B. Trends in Expenditure on Educational Institutions per Student



(Unit: US$, converted from KRW using PPPs for GDP; %)

Classification		Elementary School Course		Secondary School Course		Tertiary Education Course	
		Expenditure on educational institutions per student	Expenditure on educational institutions per student relative to GDP per capita	Expenditure on educational institutions per student	Expenditure on educational institutions per student relative to GDP per capita	Expenditure on educational institutions per student	Expenditure on educational institutions per student relative to GDP per capita
2000 (2003)	Korea	3,155	21	4,069	27	6,118	40
	OECD average	4,381	19	5,957	25	9,571	42
2005 (2008)	Korea	4,691	22	6,645	31	7,606	36
	OECD average	6,252	21	7,804	26	11,512	40
2010 (2013)	Korea	6,601	23	8,060	28	9,972	35
	OECD average	7,974	23	9,014	26	13,528	41
2011 (2014)	Korea	6,976	24	8,199	28	9,927	34
	OECD average	8,296	23	9,280	26	13,958	41
2012 (2015)	Korea	7,395	23	8,355	26	9,866	31
	OECD average	8,247	22	9,518	25	15,028	40

Notes
1 Years in parentheses indicate the year the pertaining EAG (Education at a Glance) was released.
2 For information on the institutions included in each educational category, refer to the introductory remarks.
3 Expenditure on educational institution per student = [(current expenditure + capital expenditure) / number of students] / PPP
4 The GDP of Korea was KRW 522 trillion in 2000, KRW 811 trillion won in 2005, KRW 1.173 quadrillion in 2010, KRW 1.235 quadrillion in 2011, and KRW 1.377 quadrillion in 2012.
5 The PPP exchange rate was KRW 731.19 per US$1 in 2000, KRW 788.92 per US$1 in 2005, KRW 823.67 per US$1 in 2010, KRW 854.59 per US$1 in 2011, and KRW 860.25 per US$1 in 2012
Source(s): OECD (pertinent year), Education at a Glance: OECD Indicators

Gyeongbokgung Palace, the main palace during the Joseon era

An Overview of Korea's Palaces

Written by **Kim Dong-uk** (Kyonggi University)

A History of Korean Palaces over Two Thousand Years

The Beginning

It was not until the first century BCE, with the emergence of three ancient states on the Korean Peninsula, that palaces were built there in earnest. The Goguryeo Kingdom covered the northern territory of the Korean Peninsula and the northeastern part of China;, whereas the Baekje and Silla kingdoms occupied the southern part of the peninsula. Historians believe that China's advanced architectural techniques influenced the architecture of the three kingdoms, which were based on their respective native building techniques.

Silla, the last of the three kingdoms to be founded on the peninsula, united the peninsula all three in 676. At this timeOnce that occurred, the kings of Unified Silla heldcame to hold almost absolute political power. The kings refurbished the capital city of Gyeongju by expanding its borders, extending its palaces, and creating a big pond around the palaces. More than a century later, Unified Silla's royal power weakened and the capital gradually lost its magnificent treasures after the local elite class rose up in nationwide rebellions.

With the rapid deterioration of Unified Silla's ruling power in the tenth century, the Korean Peninsula was again divided in three. In 936, however, it was unified once more under the Goryeo Dynasty (918–1392), which had arisen in the peninsula's central region.

It was not only Korea that underwent division and reunification during theose years; so did its neighbor China. As China entered its Five Dynasties and Ten Kingdoms period (907–960) after the collapse of the Tang dynasty (618–907), the Unified Silla Kingdom had just broken apart; when China was reunified under the Song Dynasty (960–1279), Korea also become one under the Goryeo Kingdom. Yet, whereas Korea and China experienced dynastic changes around the same time, their histories proceeded very differently thereafter. After the fall of the Song Dynasty in 1279, no subsequent Chinese dynasty lasted more than three hundred years. In contrast, Korea's Goryeo and Joseon dynasties lasted more than 470 years and five hundred years, respectively. This was an unprecedented level of stability in world history.

How Palace Sites Were Chosen in the Goryeo Dynasty: Geomancy

For most of the kingdom's duration, Goryeo's capital was Gaegyeong (present-day Gaeseong in North Korea). Gaegyeong was located in a basin surrounded by mountains in all four directions, with many slopes and extremely rugged land. The choice of capital was greatly influenced by the Chinese philosophical system known as feng shui, or geomancy based on topography. Feng shui (literally translated as "wind-water") was a way of harmonizing everything with the surrounding environment. The royal family of Goryeo was infatuated with feng shui and believed that the most auspicious land faced the river and had mountains at the backfaced . Before choosing a site on which to build, Goryeo royalty would carefully observe the structure of the mountains and the flow of the river. Mt. Songaksan, northwest of Gaegyeong, was considered the prime mountain, the most outstanding among many candidates. The royal palace faced south on a slope near the foot of Mt. Songaksan, where the water flows southeast down through the winding territory of the old capital. Architects arranged the palace buildings along different axes in consideration of the flow of the waterways—unlike their counterparts in China, who emphasized the center and cherished symmetry above all.

Goryeo suffered from frequent invasions by northern nomadic tribes and experienced political upheavals, including a military coup, in the twelfth century. Such political vicissitudes exerted a great influence on palace construction plans. As political turmoil continued, alternativetemporary palaces called detached palaces were built in the capital. Beginning in the late thirteenth century, many kings stayed at these detached palaces instead of the main palace at the foot of Mt. Songaksan.

The Palaces of the Joseon Dynasty

The Joseon Dynasty was launched in 1392, twenty-four years after the appearance of the Ming Dynasty in the Chinese Central Plain. One of the longest dynasties, enduring 518 years, Joseon set up its capital in the heart of the Korean Peninsula in what was then called Hanyang, where Seoul now stands. Like Gaegyeong, Hanyang was in a river basin and was surrounded by mountains. Mt. Bugaksan to the northwest was the principal mountain, and the official Joseon palace was built at its foot. Because of rampant political turmoil after its launch, detached palaces were built at several sites in the capital. Over the five hundred years that the Joseon Dynasty endured, seven palaces were built in the capital including the official palace, Gyeongbokgung. Five of those were still standing at the end of the Joseon Dynasty.

Palaces built during the Goryeo period and before that time have not survived to the present day. Although there are remnants of the palace site at the foot of Mt. Songaksan, it is hard to grasp what exactly the palaces may have looked like. On the other hand, the palaces built during Joseon times are true to their original forms. The palaces of Joseon, Korea's final dynasty, represent the final stage of a long tradition of Korean royal palaces.

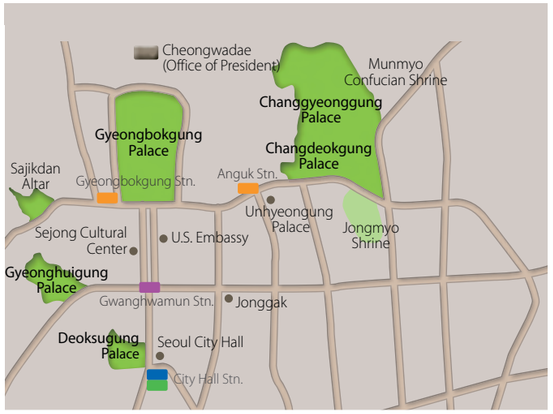
This article will examine the essence of Korean palaces through a discussion of those built in the Joseon era, but with much emphasis on the stories behind the palaces—that is, on the relationships between the palaces and the capital cities where they stand.

The Five Grand Palaces of Joseon in Hanyang

Construction of Gyeongbokgung Palace, the Main Palace

In 1394, two years after the inception of the Joseon Dynasty, King Taejo (r. 1392–1398) relocated the capital to Hanyang. Government officials and Buddhist monks well versed in geomancy and geography looked at candidate sites across the nation and finally chose Hanyang, downstream on the Hangang River, where the water flows from east to west through the heart of the nation. Like Gaegyeong, Hanyang was in a basin surrounded by mountains in all four directions.

The main palace was established facing south on a gentle slope at the foot of Mt. Bugaksan. Workers paved a wide, straight road that extended south of the palace and built major central government



Locations of Seoul's five main palaces

offices on each side. The offices framaced the palace, as if looking up to it, with the 342-meter Mt. Bugaksan towering at the back.

It was the new literati class, well versed in Neo-Confucian doctrines, that initiated the founding of the Joseon Dynasty. The literati had long called for the overthrow of Goryeo, where a few influential families had amassed a disproportionate amount of property and Buddhist forces had exerted undue influence over public affairs. While the people of Goryeo had believed in Buddhism—the royal family and commoners alike—Buddhist temples had owned vast tracts of land and exhausted state finances. Members of the new gentry class confiscated the property of Buddhist temples, using it to lay the economic foundation for their dynasty. Instead of Buddhist principles, they embraced Neo-Confucianism, from which they derivednow formed the cardinal tenets of Joseon governance.

Hanyang, the new capital, was an ideal place for the realization of this Neo-Confucian philosophygovernance. Likewise, the palace became a symbol of Neo-Confucian thought. Its position, overlooking the two rows of government offices with Mt. Bugaksan in the background, was the symbolic representation of a just ruler who governed the nation in consultation with his ministers. In 1395, one year after the relocation of the capital to Hanyang, King Taejo advanced into Gyeongbokgung Palace escorted by cheering soldiers.

The Launch of Changdeokgung Palace: A Detached Palace in the Eastern Part of the Capital

Less than three years after the construction of Gyeongbokgung Palace, King Taejo's living quarters, the royal family met with tragedy. The trouble began when King Taejo decided to abdicate the throne and chose as his successor the youngest of his eight sons. However, the king's fifth son, Yi Bang-won, was dissatisfied with his father's decision. He took pride in the meritorious role he had played in the launch of the Joseon Dynasty, and he believed the throne ought to go to him. In 1398, he led a revolt and killed the crown prince, his half-brother. Shattered by the incident, King Taejo renounced the throne and handed power to his second son. However, the actual power was in the hands of Yi Bang-won.

As soon as he ascended the throne, the new monarch, King Jeongjong (r. 1398–1400), abandoned Hanyang for the former capital, Gaegyeong (Gaeseong). Hanyang was in a state of chaos after the revolt, and the king's decision left Gyeongbokgung Palace barren only four years after its completion. This nominal monarch abdicated the throne in less than two years, and his younger brother Yi Bang-won went on to rule as King Taejong (r. 1400–1418).

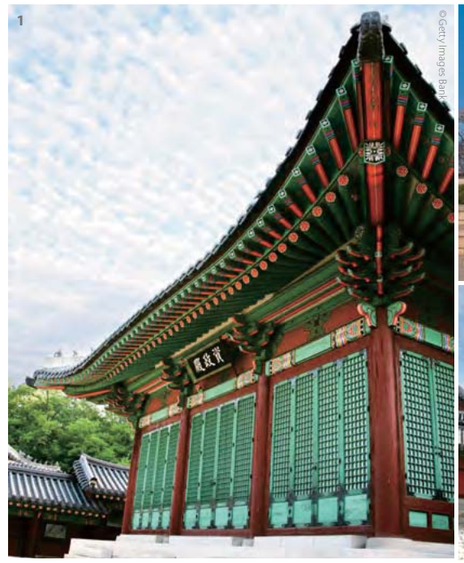
King Taejong relocated the capital back to Hanyang, but he was reluctant to go back to Gyeongbokgung Palace. He ordered the construction of a smaller palace in the eastern part of the capital, Changdeokgung Palace, and stayed there instead. Though originally intended as a modest home, the new palace was also the site of various court ceremonies, making it necessary to constructadd more buildings.

During his reign, King Taejong installed the main gate at Changdeokgung Palace and expanded it into a true palace deserving of the name. King Taejong also devoted himself to refurbishing the capital and soon ordered officials to rearrange its waterways and carry out a road maintenance and improvement project. When King Sejong (r. 1418–1450) ascended the throne in 1418, becoming the fourth Joseon monarch, he reorganized the state operating systems and promoted various institutions in an effort to reinvigorate the national Confucian rituals.

During King Sejong's reign, Gyeongbokgung Palace became the main royal residence and was refurbished as a place for performing Confucian rites. Thanks to the king's efforts, Gyeongbokgung Palace was equipped with all the amenities befitting an official palace. Changdeokgung Palace, for its part, was established as a cozy and comfortable structure blessed with a superb natural landscape featuring a dense forest and a pond.

Changgyeonggung Palace: A Detached Palace for Queen Dowagers

In 1469, the ninth monarch, King Seongjong (r. 1469–1495), ascended the throne at age thirteen. As queen dowagers of the royal family, his mother and grandmother protected him. His grandmother initiated a seven-year "regency by the queen mother from behind the veil," during which a queen dowager would act on the young ruler's behalf. During those years, a queen dowager would assume the helm of state indoors,, from behind a hanging screen,which was placed between her and the young monarch outside. At the age of twenty, King Seongjong began to manage state affairs himself and decided to build a new palace for his grandmother and the other queen dowagers. He situated this new palace on the eastern side of Changdeokgung Palace and named it Changgyeonggung Palace. After its construction in 1482, Changgyeonggung Palace became a residence not only for queen dowagers but also for court ladies, female palace attendants, and royal concubines. It was also used for subsidiary functions such as the three-year funeral ceremonies for deceased royal family members. Now the Joseon Dynasty had three palaces in its capital.



1. Sungjeongjeon Hall, Gyeonghuigung Palace
2. Injeongjeon Hall, Changdeokgung Palace
3. Myeongjeongjeon Hall, Changgyeonggung Palace

Gyeongbokgung Palace, as the main palace, was used for receiving foreign envoys and performing major state rituals. However, certain experts believed the palace site was inauspicious. Some claimed it was unsuitable as a royal residence, mainly because Mt. Bugaksan was not in the due north position relative to the capital. Some took issue with the slight northwestern direction in which the palace was situated relative to the city center. Other geomancy pundits even advised the king to build a new palace under a small peak named Eungbong Peak, which occupied the due north position. Even though the Eungbong Peak project never went forward, the feng shui masters' suggestions influenced the Joseon kings. Since the sixteenth century, the kings of Joseon frequented both Gyeongbokgung Palace and Changdeokgung Palace, but in general they preferred the latter.

The Construction of Gyeonghuigung Palace and the Development of Eastern and Western Palaces after the Japanese Invasion of Joseon

After a civil war that lasted nearly a century, Japan was united in the late sixteenth century. Soon afterward, Toyotomi Hideyoshi (豊臣秀吉) invaded Joseon in 1592 as a way to assert his military power. During the Japanese invasion, all three palaces were burned down. Although the war didn't last long and ended with the defeat of Japan, it would not be easy to restore the capital to its former state. It was not until the early seventeenth century that a renovation project kicked off. Despite the common view that the restoration of Gyeongbokgung Palace should take priority, Changdeokgung Palace was renovated first. Changdeokgung Palace was chosen partly because of its smaller size, making the project less costly, but also because of its auspiciousness in terms of feng shui. Restoring this auspicious site first was seen as a way to improve public morale after the war.

While the reconstruction of Changdeokgung Palace was under way, King Gwanghaegun (r. 1608–1623) came to the throne. After the work was completed in 1608, however, the king was reluctant to live in the palace. Instead, he built a new palace at the foot of Mt. Inwangsan in the western area of the capital, saying it was more auspicious in terms of geomancy. While it was still under construction, he built another palace just a few kilometers to the south and called it Gyeongdeokgung Palace (later renamed as Gyeonghuigung Palace). He also renovated Changgyeonggung Palace. A series of palace constructions, however, was seen as an insult to the poor. In addition, the king's reckless oppression of the other royal family members backfired and resulted in a coup. Finally, King Gwanghaegun was dethroned and replaced by King Injo (r. 1623–1649), the sixteenth monarch of Joseon.

After King Injo assumed the crown in 1623, those officials who had initiated the coup sought to take real power into their hands. As their power grew, they increasingly came into conflict with each other. Some of King Injo's successors succeeded in recovering the royal power to a certain extent, but were not able to turn the tables completely until the mid-nineteenth century. As the royal power was not strong enough to persuade officials, projects either to renovate the palaces or paint them in brilliant colors were

virtually impossible to undertake after the seventeenth century. Under these circumstances, Changdeokgung Palace and Changgyeonggung Palace in the eastern part of the capital and Gyeonghuigung Palace in the western part served as main palaces. The kings usually resided at Changdeokgung Palace, but on certain occasions—for example, during outbreaks of infectious disease—they would move to Gyeonghuigung Palace. As time passed, Changdeokgung Palace and Changgyeonggung Palace became known as the Eastern Palace *en bloc* and Gyeonghuigung Palace as the Western Palace.

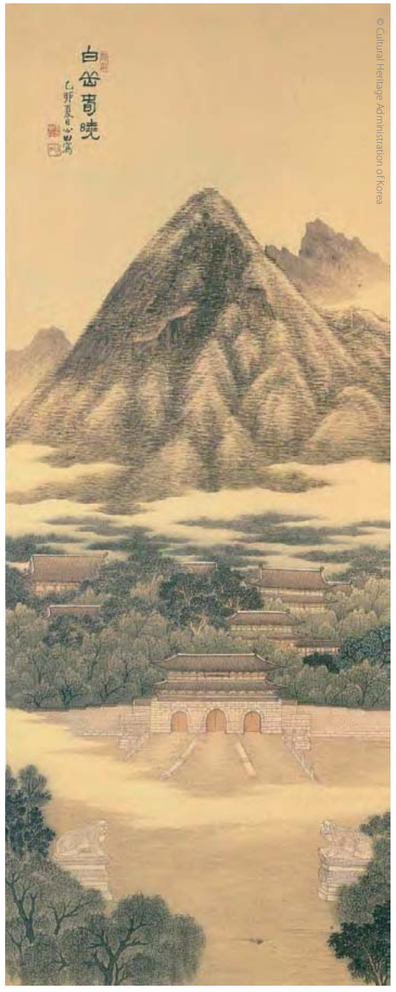
Reconstruction of Gyeongbokgung Palace in the Late Nineteenth Century

When King Gojong (r. 1863–1907) ascended the throne in 1863 at the young age of eleven, his father, the regent Heungseon Daewongun, took a high-profile role in politics after having been alienated in the power struggle for a long time. The Daewongun (literally, the "prince of the great court") moved decisively to close down the nation's private Neo-Confucian academies (*seowon*), the stronghold of the aristocratic bureaucrats who had long suppressed the royal power. But first he set out to reconstruct Gyeongbokgung Palace, which had been barren for nearly 250 years despite its status as the main palace. The reconstruction of the palace had a symbolic meaning: it showed that the Daewongun was determined to recover the centralized royal power that the early-Joseon-period kings had enjoyed.

The Daewongun's effort to recover the royal power, however, met strong challenges. Having been isolated from the outside world for a long time, Joseon was under increasing pressure to open its doors to neighboring Japan as well as to the United States, Britain, France, and Russia. Because those powers were armed with strong military forces, Joseon had no choice but to open its doors. Western and Japanese government officials visited Gyeongbokgung Palace and demanded unequal trade with the Joseon government. China and Japan intensified their political meddling in the domestic affairs of Joseon. Japan, as a rising superpower, attempted to put the brakes on China's influence, which had long impacted Joseon politics. After Japan won the first Sino-Japanese War (1894–1895), the island nation intensified its political intervention in the royal affairs of Joseon. All these political fluctuations happened on the stage of Gyeongbokgung Palace.

The Great Han Empire and the Construction of Gyeongungung Palace

In 1896, King Gojong left Gyeongbokgung Palace and temporarily moved to the Russian Consulate. The following year, he moved to Gyeongungung Palace—what is now Deoksugung Palace—adjacent to the U.S. Consulate. Located near the center of the capital, Gyeongungung Palace had been used as a living quarters for royal family members since the sixteenth century. Once he had relocated there, King Gojong proclaimed Joseon and empire and appointed himself emperor to express the will of full autonomy



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Baegakchunhyodo (Spring Dawn at Mt. Baegaksan), painted by An Jung-sik in 1915 in the modern "real landscape" style, depicts Gyeongbokgung Palace, Gwanghwamun Gate, and the surrounding area.

at home and abroad. He refurbished Gyeongungung Palace on a grand scale befitting an emperor's palace. He also constructed a Western-style building inside the palace.

Emperor Gojong needed to rely on Russia to keep Japan's increasing intervention in check. As Russia also wanted to reaffirm its presence in East Asia, it confronted Japan. Eventually, the two sides plunged into war, and Japan won. After the victory, Japan openly intervened in the domestic affairs of Joseon. At last, Gojong abdicated, passing on the emperor's throne to his son Sunjong (r. 1907–1910), and retreated to Gyeongungung Palace. Emperor Sunjong, the last monarch of Joseon, moved to Changdeokgung Palace. In 1910, the third year of his reign, Joseon was forcibly annexed to Japan and fell under Japanese colonial rule.


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Panoramic view of Deoksugung Palace

Palaces Backed by Mountains

Hanyang was surrounded by four mountains: Mt. Bugaksan to the north, Mt. Inwangsan to the west, Mt. Naksan to the east, and Mt. Mongmyeoksan to the south. At 342 meters, Mt. Bugaksan was the tallest. When it came to an imposing presence, however, Mt. Inwangsan outshined Mt. Bugaksan with its towering rocks. Compared with the impressive Mt. Inwangsan, Mt. Naksan is not very tall and had a less graceful shape. Mt. Mongmyeoksan, on the other hand, had a magnificently straight posture and stood right at the southern end of the capital, earning it a special place in the people's hearts. Because of its location, Mt. Mongmyeoksan came to be called Mt. Namsan. ("Nam" means "south" in Korean.)

In addition to the four mountains, Hanyang had Eungbong Peak in the due north position, directly opposite Mt. Mongmyeoksan. Because of its geographical position, feng shui experts maintained that Eungbong Peak deserved the honor of being the city's main mountain, under which the main palace should have been built.

Of the five grand palaces of the Joseon Dynasty, the first four were built at the feet of mountains: Gyeongbokgung Palace had Mt. Bugaksan in the background, and Eungbong Peak overlooked Changdeokgung Palace and Changgyeonggung Palace. The concept of feng shui heavily influenced these choices of location: Mountains could shut out the wind, and palace residents could use the water that flowed down from them. Such ideas also influenced court life.

Gyeongungung Palace: A New Perspective

The construction of Gyeongungung Palace in the early twentieth century was an exception, situated at the center of Hanyang with no mountain in the background. Why was this hitherto cherished tradition neglected? The reason had to do with the political situation of the Joseon Kingdom in the early twentieth century. Faced with a complex political reality and the need for decisive action to counter the bold aggression of Japan, King Gojong moved first to the Russian Consulate and then to Gyeongungung Palace, where he proclaimed the establishment of the Great Han Empire to show its full independence to the world. Given the circumstances, Gyeongungung Palace was built on the site where it could command the greatest political power and guarantee smooth traffic. Gyeongungung Palace stands at the heart of the capital, a place where many streets converge. Its geographical and political advantages led the emperor to disregard the time-honored principles of geomancy.

The Main Roads and the Palace Gates

When Hanyang was established as the new capital, city planners envisioned not one main road but several. They intended to build a road that would bisect the capital from east to west, and another that would stretch south from the city center. It was not easy to conceive of a pattern of intersecting straight lines in a city surrounded by mountains. The main roads of Hanyang therefore took a curved shape. Other than a few main roads, most of Hanyang's roads formed spontaneously along the waterways.

Hanyang was surrounded by eighteen-kilometer-long ramparts, which were heaped up along its ridges. Ramparts had two purposes: defending the capital from enemy attack, and controlling the flow of people in and out of the city gates. The city had eight gates, one in each of the four great directions and four others in between, which the king's officials opened every morning and closed in the evening. The number eight symbolized the king's authority over the whole land. But considering the mountainous terrain and the presence of so many ridges, it was virtually impossible to build the gates precisely at the designated points of due north, due east, due west, and due south. In some cases, people couldn't use a gate that was built on a ridge. For this reason, although the city's eastern, western, and southern gates were opened to the public, the northern gate almost always remained shut.

Doseongdo, produced by an unknown artist during the reign of King Jeongjo of Joseon Dynasty (r. 1776–1800), is a map of old Seoul. Palaces, roads, and major facilities are depicted along with the city's mountains and streams.

The Main Roads and the Palaces

The city's main road stretched from east to west. Along that road, a large bell hung on a tall building, tolling every hour to herald the time to the people on the street. The building was called Jongnu, and the main road was called Unjong-ga (literally meaning "a road where people flock together like clouds"). Later, the name changed to Jongno (literally, "bell street"). On the main road surrounding the Jongnu tower were shops that sold daily necessities. The people of Hanyang would go to Unjong-ga to buy the food and clothes they needed, and sometimes just for a stroll.

The four palaces of Hanyang were connected to the main road either directly or indirectly. Gyeongbokgung Palace was located at the end of a wide street that extended north from the main road, beginning at Jongnu. This wide street was called Yukjodaero, and government buildings stood on both sides. Changdeokgung Palace was at the end of another road that extended north from the main road, turning off at a point some two kilometers east of Jongnu. This street was called Donhwamun-ro and was named after the main gate of Changdeokgung Palace. At the main gate of Changgyeonggung Palace was a narrow street that ran from north to south; the southern end joined the western part of the main road. The main gate of Gyeonghuigung Palace was linked with the part of the main road.

Yukjodaero and *Jangnang*

King Taejong refurbished Hanyang's central street on a grand scale and built long, high corridors called *jangnang* (長廊) alongside it. The main purposes of the *jangnang* were road maintenance and the formation of a central shopping district at the heart of the capital. *Jangnang* had another utility: veiling the lives of the commoners from the eyes of foreign envoys.

The *jangnang* started at Jongnu and extended to Donhwamun Gate at Changdeokgung Palace to the east; to Gwanghwamun Gate at Gyeongbokgung Palace to the west; and to Namdaemun Gate to the south. With the establishment of the *jangnang*, Unjong-ga was equipped with an array of buildings, similar in form and height, on both sides of the street.

Gwanghwamun Gate, the main entrance to Gyeongbokgung Palace, faced Yukjodaero, which literally means "six-ministry street." On that street, arranged on both sides, were the six top government ministries. Additional buildings included the Hanseong Metropolitan Office or "Hanseongbu," the body in charge of the administrative affairs of Hanyang; and the Office of the Censor-General or "Saganwon," who was responsible for criticizing the king's policies and checking his power. In the early period after the founding of the dynasty, the State Council (Uijeongbu) and the Three Armies Command (Samgunbu) sat facing each other on either side of the street. The former was in charge of comprehensive state affairs across the nation and the latter dealt with military affairs. During the reign of the third monarch, King Taejong, the six government ministries virtually took charge of state affairs after the Three Armies Command was abolished and the State Council remained as a nominal government agency.

Yukjodaero was approximately 500 meters long and more than 50 meters wide. On either side was an array of *jangnang*; officials could enter the nation's top government buildings through the high gates built at several points along the *jangnang*. The street was the symbol of Hanyang, as it was here that the king issued orders and proclaimed them across the nation. Gwanghwamun Gate, at the end of Yukjodaero, was another major symbol as the entrance to Gyeongbokgung Palace, the residence of the king. The colorful royal parade started and ended at the gate. The envoys sent by the Chinese emperor also passed the gate via Yukjodaero.

Yukjodaero had its heyday during the golden age of Gyeongbokgung Palace in the fifteenth and sixteenth centuries. After Gyeongbokgung Palace burned down during the Japanese invasion in 1592, the site lay deserted for some 250 years; as a result, Yukjodaero lost its visitors and the once-dignified government buildings could not fulfill their functions properly. At this point, Donhwamun-ro (the street in front of Donhwamun Gate) took on the former role of Yukjodaero.

Parades in the Narrow Street: Donhwamun-ro

Donhwamun-ro extended some 700 meters from the main gate of Changdeokgung Palace to Unjong-ga. Donhwamun-ro did not have to be as wide as Yukjodaero considering the original purpose of Changdeokgung Palace as the king's temporary residence. However, with Gyeongbokgung Palace in need of reconstruction, the king had to use Changdeokgung Palace both as his residence and as the venue for all the ceremonies and festivities formerly held on Yukjodaero. Until Gyeongbokgung Palace was renovated in 1868, most royal parades took place on Donhwamun-ro.

The street's narrower width and the absence of government offices meant the ceremonies had to be performed less brilliantly and on a smaller scale. Gigantic parades were impossible, and decorations on the side streets had to be comparatively simple. Nevertheless, parades were grand enough to pack the streets and onlookers had a chance to see the king from up close when he passed by.

Sometimes people would block the parades and express their grievances directly to the king by playing noisy gongs in a tradition called *gyeokjaeng*. In *gyeokjaeng*, people who had been wrongfully accused or injured could beat drums or gongs outside the palace gate and tell their stories to those in charge. This tradition moved to Donhwamun-ro when royal parades were under way.

Changgyeonggung Palace: A Place for Royal Funeral Rites

Built as a residence for queen dowagers, Changgyeonggung Palace was later used for many different purposes. Next to Changdeokgung Palace and separated from it by a wall, Changgyeonggung Palace also functioned as a royal mansion that complemented Changdeokgung Palace. Queen dowagers and royal concubines resided at Changgyeonggung Palace. A palace for the crown prince was also established there. Furthermore, Changgyeonggung Palace served as a funeral home for deceased royal family members.

When a king, a queen, a queen dowager, or a crown prince passed away, the family would put the body inside the palace for five months to pay respects. *Pyeonjeon*, the king's office in the palace, was used for this purpose. After five months, the deceased family member was buried in the royal tomb. The memorial tablet was kept at a temporary shrine set up within the palace for a memorial service that lasted twenty-five months.

After the seventeenth century, deceased royal family members were carried out of the palace through Honghwamun Gate, the main gate of Changgyeonggung Palace, on splendidly decorated funeral palanquins. From Honghwamun Gate, the palanquins moved along Unjong-ga and then, in most cases, through Heunginjimun Gate, the city's east gate. During the Joseon Dynasty, royal tombs were scattered around the capital, but were mostly clustered in its eastern suburbs. Honghwamun Gate became the official entrance for funeral processions. It is believed that the royal family used Changgyeonggung Palace for this purpose in order to avoid bringing such sorrow into Changdeokggung Palace.

Honghwamun Gate was tall and wide in proportion to Changgyeonggung Palace because it had to accommodate funeral parades.

Confucian Rituals and Royal Parades outside the Palace

Five Neo-Confucian Rituals and Palaces

Having adopted Neo-Confucianism as the cardinal tenet of state ruling, Joseon prioritized Neo-Confucian rituals above all else. The rites broke down into five types: memorial services for the deities, festivities for congratulatory events, guest reception ceremonies, rites for the army going into battle, and funeral rites.

Of the five, memorial services for the deities stood out as the most important events. Being presided over by the king, those rituals for the deities were categorized into three ones according to the scale: big, middle, and small. First, the big rites included those offered either at Jongmyo Shrine or at Sajikdan Altar. Jongmyo Shrine was a Confucian royal shrine where they performed ancestor worship rites for the ghosts of the deceased kings, while Sajikdan Altar was used for worship services offered to the deities governing land and grain. The two rituals were the most symbolic events of the nation and "Jongmyo" and "Sajik" have become the household names symbolizing the dignity of the nation. The midsize rituals included a memorial service at the Altar of Agriculture, memorial rites at Munmyo Confucian Shrine in Hanyang, and worship of the deities of mountains and the sea. Last, the small-scale rituals included those for the deities of horse-raising or of the big rivers or mountains.

As the king presided over the Confucian rites, the palace had a symbolic meaning as a ritual hall. The rituals were performed not only at the palace but also at various altars, shrines, or royal tombs scattered outside the palace or around the capital. For this reason, the king would form a magnificent procession before leaving the palace and performed memorial rituals at the altars in and out of the capital. Those rituals were attractive spectacles for the residents of the capital and served as a chance for the king to communicate with his people directly. Although the palace was a forbidden territory for the commoners, the Confucian rituals offered a chance for two-way communication.

Jongmyo Shrine on the Left and Sajikdan Altar on the Right Side of the Palace

The architects who designed the palaces in Hanyang also established Jongmyo Shrine and Sajikdan Altar. Jongmyo Shrine and Sajikdan Altar were set up on the left side and the right side of Gyeongbokgung Palace when it faces south, according to the tradition established since the period of the Zhou dynasty in old China in the seventh century BCE. Following in the footsteps of the ancient dynasties of China, the Goryeo and Joseon dynasties also followed the principle. Due to the differences in terms of urban structure or palace construction, however, the structures of Jongmyo Shrine and Sajikdan Altar were different from their Chinese counterparts.

Similar to the architecture found in the Tang dynasty to the dynasties of Song, Yuan, Ming, and Qing in old China, Jongmyo Shrine (Imperial Ancestral Temple) and Sajikdan Altar (Shejitan Altar) had been set up symmetrically on both sides of the street outside the southern wall of the palace. The palaces of China had a double wall structure composed of palace walls (the inner court) and an imperial castle (the outer court). The Imperial Ancestral Temple and Shejitan Altar were set up between the two castles: outside of the palace walls and inside of the imperial castle. In the Forbidden City in Beijing, for example, when the visitors enter through the south gate (Tiananmen), the main gate of the outher court (the Imperial City), they can find the Imperial Ancestral Temple on the right side and Shejitan Altar on the left side of the street stretching north. As the general public was officially forbidden to enter the outer court, the rituals of the temple and the altar were not disclosed to the outside world.

With Gyeongbokgung Palace situated at the center, Jongmyo Shrine is located 1.2 kilometers east of the palace (south of Changdeokgung Palace) while Sajikdan Altar is 700 meters west of the palace. Both in terms of location and the size of the facilities, the layout of the buildings is by no means symmetrical. As one of the most conspicuous differences, the palaces of Hanyang in Joseon had palace walls but were devoid of an imperial castle, so Jongmyo Shrine and Sajikdan Altar were located at a site where private houses were densely concentrated. Therefore, the citizens of the capital could easily watch the royal parades moving to Jongmyo Shrine and Sajikdan Altar.

Currently, the structure of Jongmyo Shrine and Sajikdan Altar are still preserved intact at their original sites even some six hundred years after their construction. In May every year, the descendants of the royal family offer memorial services with sincerity at Jongmyo Shrine. These are accompanied by grandiose music and dance performances.

Memorial Services at Jongmyo Shrine and Sajikdan Altar: Joyous Festivals after Enshrining a Mortuary Tablet

With every changes of the seasons, the Joseon kings would chastely clear their minds and bodies and offer memorial services at Jongmyo Shrine and Sajikdan Altar. The ceremonies of invoking the deities and bowing to them with sincerity were done in the middle of the night when it became quiet. The king would arrive at the shrine, wore the ceremonial dress and cap, and bowed to the deities at the designated hour.

When the royal parade of the king, who rode on a colorfully decorated palanquin, left the palace gate and moved to Jongmyo Shrine, it offered a rare attraction for the public, which otherwise would not have a chance to see such a big spectacle. Nothing was more spectacular than the royal parade on the day when the company came back to the palace after keeping the dead royal family member's ancestral tablet at Jongmyo Shrine.

After the death of a king, the newly enthroned king and the central government bureaucrats were required to be prudent in their conduct and were prohibited from holding festivities or singing boisterously for up to three years. For three years, the mortuary tablet of the deceased king was enshrined with solemn daily rituals at the palace. After the three years, the mortuary tablet was enshrined at Jongmyo Shrine announcing the end of the funeral procedure. The new monarch left the palace holding the mortuary tablet of the deceased king and enshrined it at Jongmyo Shrine and returned to the palace rather lightheartedly. The royal parade at this time was accompanied by joyous music and dance performances that had been prohibited for up to three years. Government officials wrote essays eulogizing the new king and female artists sang songs or danced. The street and nearby facilities were decorated in five colors: yellow, blue, white, red and black (or green). They constructed a big mountain-shape installment with trees embellished with decorations in front of the main palace gate. At one corner of the street, clowns performed plays and other merrymaking events. All the festivities were open to the public to make them laugh and chat with each other. It was an exceptional day inside the capital that otherwise had no such uproarious occasions.

Specially designated officials carry out the Sajik Daeje (National Rite to Gods of Earth and Grain) at Sajikdan Altar.

The autumn Jongmyo Daeje, a royal ancestral memorial rite to honor the past kings of Joseon Dynasty, is performed at Jongmyo Shrine.

Midnight Ancestor Worship at the Altar of Agriculture outside the Capital and the King's Demonstration of Farming

The Altar of Agriculture where the deities of agriculture were enshrined was located at a wide area along the rice paddy on the eastern outskirts of the capital. As the king had to demonstrate farming himself, they could not set up the altar inside the capital.

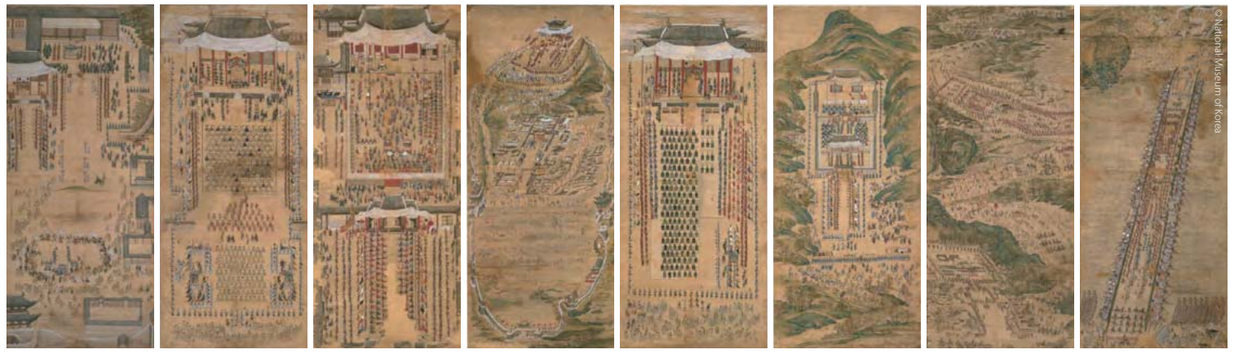
It was customary after midnight, when a new day began, that they invoked the deities and held ancestor rituals. As the altar was located outside the capital, the king arrived at the altar by riding on a palanquin, waited for some minutes near the altar, and performed the rite at a designated hour. When the day broke, the king moved to the rice paddy, pulled a plow, and drove cattle for demonstration. The royal demonstration was followed by the display of the same movements made by the crown prince and then the government officials in good order. Besides, farmers also participated in the program while soldiers guarded the location of the event by holding colorful flags. After the event, both the farmers and the soldiers were offered food as a reward for their labor. Inside the palace, food and wine were served for the high-ranking officials by the king. The worship service at the Altar of Agriculture was abolished in the twentieth century. Houses now stand in what used to be the rice paddy and the field used for the demonstrations. However, the altar still remains intact to make visitors feel and taste the mood and the atmosphere.

Confucian Shrine Where the Crown Prince's School Entrance Was Celebrated

Munmyo was a hall for worshiping the ancient Chinese sage-philosopher Confucius (as well as the general name for Confucian shrines) located at the back of Changgyeonggung Palace in the northeastern area of the capital. It included Seonggyungwan, the state-run Neoconfucian academy. Here, future high-ranking official hopefuls studied books for the civil service examinations. With every change of the seasons, the king visited Munmyo Shrine and bowed to the progenitor of Confucianism as a sign of respect.

A ceremony to celebrate the crown prince's first day of school was also held at Munmyo Shrine. At the ceremony, a prominent scholar, having been picked out as the future teacher of the prince, had a question-and-answer session with the prince on learning. The education of the prince had a special meaning because Joseon's state ideology of Neo-Confucianism emphasized the Confucian classics that formed the foundation of politics for government officials. Therefore, the ritual for the prince's entrance to school was one of the biggest events for the royal family. When the prince came back to the palace after the entrance ceremony, the king would throw a party for the government officials to celebrate the event. The king showed the utmost respect to the teacher of the prince. When the prince grew up and ascended the throne, his master usually took up an important government post.

Being a subsidiary organization of Munmyo Shrine, Seonggyungwan was the nation's highest standard academy. Seonggyungwan students were given a chance to work as the future leaders of the nation. Sometimes, students would take collective action against the king's policies. When students expressed their



Hwaseongneunghaengdo (Royal Procession to the Royal Tomb at Hwaseong Fortress) depicts King Jeongjo's visit to Hwaseong Fortress, where his father, the Crown Prince Sado, was buried at a royal tomb called Hyeollyungwon (today known as Yungneung Royal Tomb).

negative opinions in the form of declaring a class boycott, the king moved one step back and sought a proper compromise as he found it hard to use oppressive power.

Guan Yu Shrine in the East and the South of the Capital

Guan Yu, a general of Shu Han in the third century BCE in ancient China, was well known for his fidelity and loyalty to the nation. Shrines built in honor of the noted warrior emerged from the fifth and sixth centuries in old China. Thanks to the popular belief that Guan Yu masterminded wealth, he got great fame among the people and shrines devoted to him prospered across the nation. It was not until the outbreak of the Japanese invasion of Joseon in 1592 that a Guan Yu Shrine was built in Joseon. When the Ming dynasty sent its rescue forces to Joseon during the war, Chinese soldiers built a Guan Yu Shrine in their barracks in order to pray for the grace of war deities. Even after the war, the Guan Yu Shrine was preserved as a hall where the royal family held memorial services for Guan Yu. In Seoul, two Guan Yu Shrines were newly built, one each outside of the east and the west of the capital.

The kings of Joseon emphasized the importance of the memorial services at the Guan Yu Shrine since the eighteenth century and visited the hall, which was interpreted as the political ambition to displaying the sovereign dignity to the officials. By paying their respects to Guan Yu, who was faithful and loyal to the monarch, Joseon dynasty kings were emphasizing the virtue of loyalty to the king.

Royal Tombs Located Outside the Capital and the Royal Parade

Royal tombs of the Joseon dynasty kings were also the site of Neo-Confucian-style ancestor worship services. Over its more than five hundred years, Joseon produced twenty-seven kings and, accordingly, a great number of royal tombs. Royal tombs were also made in honor of those who were promoted to king status posthumously. In cases where a royal concubine gave birth to a son who later became the king, her tomb would be as large as a royal tomb. Those who died young as crown princes were buried in a royal manner as well.

The tombs of Chinese emperors in the Ming and Qing dynasties were clustered together under a huge mountain, but the royal tombs of Joseon were scattered in various places. Currently, as many as forty-two tombs remain intact, including those of queen dowagers, royal concubines whose sons became kings, and crown princes, as well as kings and queens. The royal tomb of King Taejo stands out as a model tomb.

After being enthroned, the new king customarily paid tribute at the royal tomb of his processor. The royal parade proceeded from a palace to a royal tomb in a grandiose style. Royal tombs were clustered together in the eastern and the western suburbs of the capital. Dongguneung Royal Tomb, located some 13 kilometers east of the capital, houses nine mausoleums, including the royal tomb of King Taejo. In the eighteenth century, there were many cases when, during the parade, some people would block the procession and express their grievances directly to the king. These incidents were frequent occurrences, despite officials' attempts to stop the people from expressing their voice. The king, however, paid attention to the opinions of the people in many cases.

Grandiose Parade at Hwaseong Fortress

One of the legendary royal parades to a royal tomb was the visit of the twenty-second monarch, King Jeongjo, to the tomb of his ill-fated father, Crown Prince Sado, at Hwaseong (Brilliant Castle) Fortress in Suwon City, south of Seoul. Upon assuming the throne, King Jeongjo (r. 1776–1800) relocated his father's tomb to a mountain behind the former town of Suwon, well known as the most auspicious site. Crown Prince Sado could not ascend the throne and died a tragic death, as he incurred the hatred of his own father, King Yeongjo (r. 1724–1776); his original tomb was shabby. With the establishment of the new tomb, the town of Suwon was relocated a little bit northward. Suwon was some 30 kilometers away from Changdeokgung Palace, the residence of King Jeongjo. To celebrate the establishment of his father's tomb, King Jeongjo visited the site with his officials and royal family members. In 1759, he celebrated the sixtieth anniversary of his mother, Lady Hyegyeonggung, in a party held in the city. All the grandiose festivities started and ended at Changdeokgung Palace. The ceremony was colorfully drawn and preserved in the form of a folding screen.

Gwanghwamun Plaza, located on Sejong-daero, is a venue for numerous events

The Silhouettes of the Five Grand Palaces Remaining in the Metropolitan City

The Five Grand Palaces Faced with Ordeals

The five grand palaces in Seoul were faced with ordeals during the Japanese colonial period between 1910 and 1945. With the ruler absent, the palaces lost their reason for existing. Changdeokgung Palace, the residence of Emperor Sunjong, remained relatively intact, but the other palaces were either used as parks or for other purposes by Japanese colonialists. Gyeonghuigung Palace lost its original shape after being used as a school. Gyeongungung Palace retained only part of its central building after its name was changed to Deoksugung Palace. Changgyeonggung Palace was changed into a playground with a zoo and a botanical garden. The appearance and the image of Gyeongbokgung Palace were severely tarnished when the Japanese Government-General of Korea building was established right in front of it.

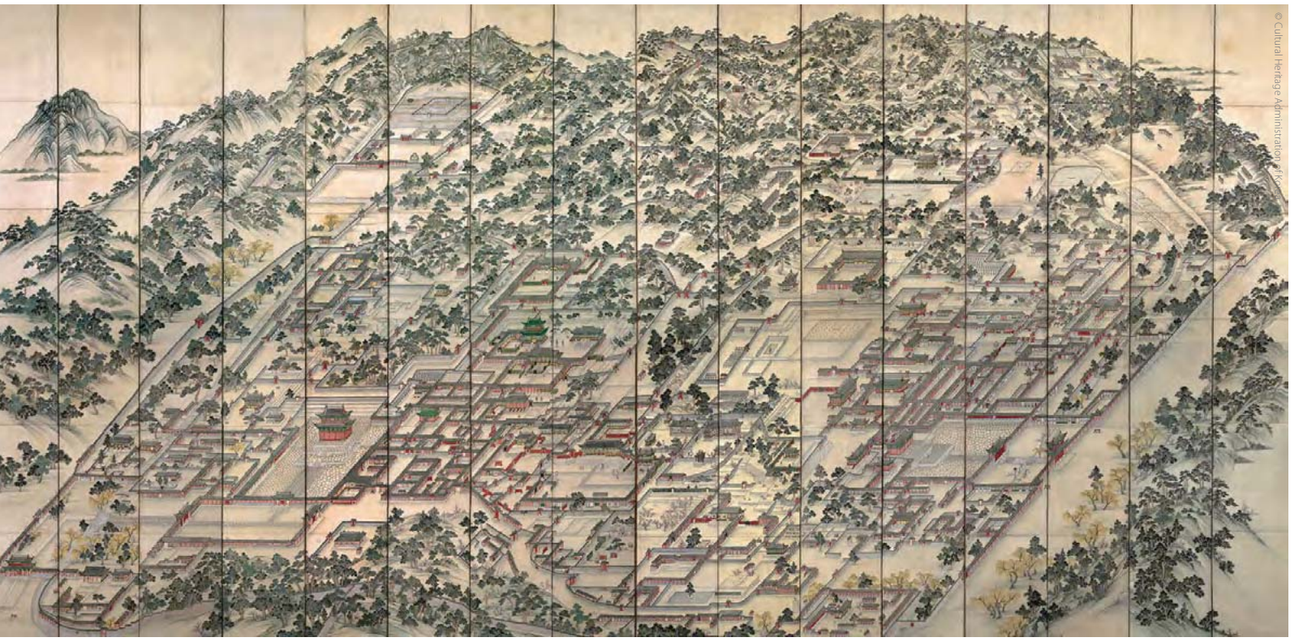
Renovation of the Palaces

Right after Korea's liberation from Japan in 1945, the palaces were still used as citizens' parks. It was not until the 1970s that the attempt to restore the sites to their former status was made in earnest. As part of the effort, four of the palaces (excluding Gyeonghuigung Palace) were designated as state-registered cultural properties to prevent them from being damaged or deformed further. With the establishment of the Seoul Grand Park, a large-scale zoo in the suburb of Seoul, in the mid-1980s, all the animals at Changgyeonggung Palace were relocated. Part of Changgyeonggung Palace, meanwhile, was restored to its original shape. In the 1990s, the hitherto neglected Changdeokgung Palace and Gyeongbokgung Palace were renovated. The demolition of the Japanese Government-General of Korea building in front of Gyeongbokgung Palace in August 1995 was a symbolic event for the restoration of Joseon Dynasty palaces. Some argued that the Japanese Government-General building should not be destroyed, but the government was resolute in doing so. Thereafter, other major buildings of Gyeongbokgung Palace were restored one by one. The restoration of Gwanghwamun Gate as the main palace gate to its original shape with the same materials in August 2010 was the highlight of the government's restoration project.

The Sejong-daero Street, the Central Road of Seoul

With the restoration of Gwanghwamun Gate, the Yukjodaero received a new spotlight. Sejong-daero had been called Sejongno since 1946 because King Sejong, the fourth monarch of Joseon, had lived nearby at a young age. The street symbolized the central road of the nation during the Joseon period. In the twentieth century, it has played its role as one of the main streets in terms of politics. Originally 50 meters in width, the street expanded in width to 100 meters in the 1970s, making itself the widest road in Seoul. In 2010, it had a new name of Sejong-daero symbolizing its central role in the nation's history and culture.

Currently, Sejong-daero is one of the most attractive cultural destinations for Seoul citizens. Along with the towering Mt. Bugaksan standing aloft at its back, Gyeongbokgung Palace remains the major symbol of Seoul. Changdeokgung Palace and Changgyeonggung Palace, located in the east of Gyeongbokgung Palace, play the role of outdoor museums boasting of unique beauty of curves being harmonized with the natural surroundings. Especially the dense forest and a pond at the back garden of Changdeokgung Palace and the wave of buildings in between attract the attention of the visitors. Though it had comparatively fewer relics, Gyeonghuigung Palace displays the force of architecture with the gigantic rocky mountain as the background. Deoksugung Palace, in downtown Seoul, shows a harmony of Western-style architecture and traditional Korean palace buildings. Young office workers nearby enter the palace and enjoy their leisure time on a bench under the tree. This, too, is part of the ongoing legacy of the palaces of Seoul.



Donggwoldo, a painting that depicts a bird's-eye view of Changdeokgung Palace and Changgyeonggung Palace in their entirety

Life in the Joseon Royal Palace

Written by **Shin Myung-ho** (Pukyong University)

The Sleeping and Rising of Kings

According to *Sejong sillok* (the chronicles of King Sejong), King Sejong used to wake up around three o'clock every morning for a dawn assembly with government officials. According to the literature, King Sejong was scrupulous in observing this routine, called "the four times of the king": the morning assembly upon arising; the audience with visiting officials later in the morning; a Confucian lecture in the afternoon to review the royal court's rules and regulations; and private life at night, a time to train the body and the mind.

The same daily routine was in place for all the kings of the Joseon Dynasty. The four times of the king were also deeply interwoven with the organization of the space in the royal palace. During the first three portions of his day—that is, dawn, late morning, and afternoon—a king stayed either in the *jeongjeon* (royal audience hall) or the *pyeonjeon* (king's office). At night, he stayed either in his bedroom or in the *jungjeon* (the central hall, which was also the queen's hall) or in one of the royal concubines' rooms in the back of the palace.

Officially, the king went to sleep after the city bells rang out twenty-eight times to signal the beginning of the nighttime curfew. This signal, called *ingyeong,* began at ten o'clock every night at the Borugak Pavilion, the site where the court's water clock stood. From there it continued to Jongnu, the bell tower; Namdaemun Gate, the southernmost entrance to the capital city; and then Dongdaemun Gate, the city's eastern entrance. When *ingyeong* sounded, the four gates to the city closed. The action of signaling the night curfew by ringing the bells was called *injeong*, and it symbolized the twenty-eight constellations that were believed to be the protectors of the sky. *Injeong* had a symbolic meaning: a wish for peace during the night. After *injeong*, patrolmen patrolled the town, making warning sounds with wooden clappers.

Paru was a sound that signaled the lifting of the night curfew. For *paru*, bells were rung thirty-three times, ending at four o'clock in the morning. Like *ingyeong*, *paru* also began at Borugak Pavilion and continued to Namdaemun Gate and Dongdaemun Gate. Originally, *injeong* involved ringing a bell and *paru* involved beating drums. It was thought that the sounds must be different as night and day had different characters, with night being yin (negative energy) and day being yang (positive energy). Joseon-era Koreans believed that iron bells were yin, which symbolized night and sleep, while drums made of wood and leather were yang, which symbolized day and activities. So it was believed that *injeong* should be a bell sound for comfortable sleep in the night and *paru* should be a drum sound to wake people up in the morning with enough energy.

As the king had to wake up at *paru*, a water clock in Borugak Pavilion was installed near the king's bedroom or the rooms of the queen and concubines, to tell the time. In Gyeongbokgung Palace (the royal palace of the Joseon Dynasty), a water clock tower was located on the west side of Gangnyeongjeon Hall, the king's living quarters. During the reign of King Sejong, Jagyeongnu, an automatic water clock was invented and installed in Borugak Pavilion in the south side of Gyeonghoeru Pavilion. Special soldiers called *jeonnugun* (soldiers who announce the time) were stationed at every corner of the palaces and they would call out the time according to the water clock towers.

Since the chambers where the kings slept had *ondol* heating systems—which meant the heat came up through the floors—kings slept not on beds but on thin mattresses placed on the floor, with pillows and blankets as well. There were staff and facilities nearby to provide whatever he needed. *Jimil-sanggung* (palace matrons assigned to the king's bedroom) stayed just outside on standby overnight. *Daejeon-chabi* (palace custodians) who were in charge of kings' meals, the water he needed for washing, and the clothes he needed to put on at dawn, always stayed near the king's bedroom.

When the king woke up after *paru*, *jimil-sanggung* made bed, cooks at *suragan* (royal kitchen) prepared foods, and palace maids brought water for king's washing. Hwan-gwan (palace eunuch) also woke up to wait for king's orders.

Early morning was a time for the kings to get ready to display the dignity of the highest-ranking man in the country. During the night, the king slept like any other human being, but in the process of his early morning routine—having breakfast, getting dressed, and putting on a hat with assistance from servants—the king restored his dignity and authority again.

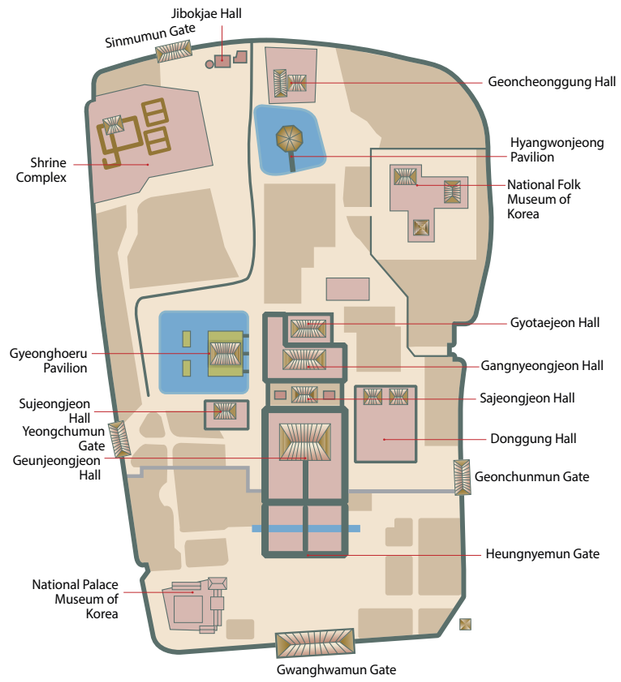
The bedroom for kings of the Joseon Dynasty was called *jimil*. *Jimil* referred to a space that was the most important and restricted in the entire palace, from which not one word spoken in it could leak outside. In such a space, the king stayed not with his queen but with maids of the court. The court maids who were assigned to work at *jimil* were called *jimil-gungnyeo* (court maids working at *jimil*).

Jeong Do-jeon was a high-ranking official who designed the structure of the Joseon Dynasty. Jeong established the spirit of the national foundation, as well as the policy line and national system. When Jeong Do-jeon named each building in Gyeongbokgung Palace by direction of King Taejo (Yi Seong-gye), he gave the name of Gangnyeongjeon Hall to the building in which the king's bedroom was located. Jeong thought *gangnyeong* (康寧, health and peace) was one of the Five Blessings (longevity, wealth, health, love of virtue, and peaceful death). Jeong said that when a king reached the state of *hwanggeuk* (royal perfection) by developing his mind and cultivating virtue, he would be endowed with the blessing of health and peace of body and mind, which could ultimately lead to the health and peace of the whole country and the universe. The reason why the king's living quarters in Gyeongbokgung Palace were named Gangnyeongjeon Hall had its roots in the concept of *hwanggeuk*.

Hwanggeuk is the same concept as *taegeuk* (also known as taiji, the great ultimate) used in the Eastern philosophy. In the Oriental philosophy, *taegeuk* refers to the basis that existed before the birth of all things in the universe. *Taegeuk* and *hwanggeuk* existed before the things in the universe could be classified as either yin or yang and right or left. As such, *hwanggeuk* was thought to be the state of the golden mean—the state that existed before the birth of human instincts such as the desire by the natural instincts.

Hwanggeuk is the state of moderation, so there exists no left or right or up and down in it. The state before the birth of different conflicts and divisions as well as before the proliferation of human

Map of Gyeongbokgung Palace



Gangnyeongjeon Hall served as the king's living quarters. Here, the king carried out his daily routine and also conducted state affairs.

Portrait of King Yeongjo in *ikseongwan* and *gollyongpo*

Inside Geunjeongjeon Hall in Gyeongbokgung Palace

desires was *hwanggeuk* and *taegeuk*. Jeong Do-jeon named the king's bedroom Gangnyeongjeon Hall to remind the king that he had to subdue his natural instincts for food, sex, and power by practicing *hwanggeuk* during the night. Jeong was showing the king that he could enjoy the Five Blessings only in that way. That message of course also implied a warning that the king would be punished by heaven if his life in the night were overwhelmed by the natural instincts for food, sex, and power.

Jeong Do-jeon also applied the concept of *hwanggeuk* to the location and space layout of Gangnyeongjeon Hall within Gyeongbokgung Palace: it was located at the center of the palace. Sajeongjeon Hall (the king's office) and Geunjeongjeon Hall (royal audience hall) were located in front of Gangnyeongjeon Hall. Huwon Garden (the backyard) was behind Gangnyeongjeon Hall, and Yeonsaengjeon Hall (the king's secondary quarters, annexed to Gangnyeongjeon Hall) and Gyeongseongjeon Hall (the king's secondary quarters) were located on the left and right sides of the Gangnyeongjeon Hall, respectively. Gyotaejeon Hall (the queen's living quarters) was built during the reign of King Sejong, which further consolidated Gangnyeongjeon Hall's central position in Gyeongbokgung Palace. As such, the king's living quarters were located at the very center of Gyeongbokgung Palace to signify the fact that the king's bedroom was *hwanggeuk* on earth. Just as *hwanggeuk* is the origin of the universe before its division into the positive and the negative and the left and right, the king's bedroom had to be undivided. That is why the king's bedroom could not be shared with any other person. He had to stay alone in his bedroom at the center of the royal palace and practice *hwanggeuk* there. Indeed, kings of the Joseon Dynasty did not share the bedroom with their queens.

Not only the location of the king's living quarters in the royal palace, but also the layout symbolized *hwanggeuk*. The king's sleeping chambers consisted of *ondol* rooms on the left and right sides and a *daecheong* (a wood-floored main hall) in the middle. The *ondol* rooms on the left and right were the actual bedrooms. Each bedroom looked like a sharp sign (#), a symbol deeply related to the concept of *hwanggeuk*. In the center of the sharp sign, there is a room surrounded by eight spaces. The central room symbolized *hwanggeuk*, while the surrounding eight spaces symbolized *palgwae* (eight trigrams). Of course, the room in which the king slept was the room at the center.

The structure of *jimil*, the king's bedroom in the Joseon Dynasty's royal palace, and the accompanying philosophy, were applied not only for Gangnyeongjeon Hall in Gyeongbokgung Palace but also to *jimil* in other palaces of the Joseon Dynasty, such as Daejojeon Hall in Changdeokgung Palace and Hamnyeongjeon Hall in Deoksugung Palace. As such, Joseon kings practiced *hwanggeuk* alone in their *jimil*, so that they could realize it in public and thus rule the country in a virtuous manner.

King's Routines during the Day

The first thing the king did upon waking up was to hold a morning assembly with high-ranking officials. The morning assemblies of the Joseon Dynasty consisted of *sangcham* (informal morning audience), *jocham* (formal morning audience), and *joha* (congratulatory ceremony on happy occasions). For each part of the morning assembly, specific formalities existed. Jeong Do-jeon explained that such diverse forms of morning assembly were necessary to consolidate the strict hierarchy between the ruler and the ruled. Indeed, the morning assembly formalities for *sangcham, jocham,* and *joha* were carried out for the purpose of establishing a firm order between the sovereign and subject. The space where *sangcham* was held in the royal palace was the king's office and the courtyard of the king's office. During *sangcham*, the king was seated in the office and officials were seated in the courtyard of the king's office. Therefore, the king had to move to the office from his bedroom immediately upon waking up, to hold *sangcham*. That is why the king's office was located in front of the king's sleeping chambers in the royal palace. In Gyeongbokgung Palace, Sajeongjeon Hall, which was located in front of Gangnyeongjeon Hall, was the king's office.

After *paru*, the king woke up and left his bedroom to participate in *sangcham* at dawn. The bedroom door was the first boundary the king had to cross, transforming himself from a natural human being into a majestic being. When the king went through the door of his bedroom, he adjusted his attire. His clothes and his hat were decorated with colors and patterns that symbolized the king's authority. Palace matrons and eunuchs were waiting for the king outside his room, and they escorted the king wherever he went. The purpose of all those symbols and attendants was to emphasize the king's prestige.

Kings wore the *ikseongwan* (the royal winged cap) and *gollyongpo* (the royal robe) for *sangcham*. A black *ikseongwan* was a cap that looked like a *samo* (a black gauze cap worn by government officials) with two horns on top of it. The two horns symbolized the wings of cicadas. Cicadas were picked as the model for a king's life because they lived only on the morning dew and in this way symbolized frugality and integrity. .

A *gollyongpo* was a red overcoat with patterns of golden dragons embroidered on both shoulders, the chest, and the back. The dragons on a king's coat had five talons, and the dragons on that of a crown prince had four talons.

The second boundary for a king was outside the main entrance of the bedroom: the *pyeonjeon* (the king's office). From the moment when the king exited his bedroom to go to his office, he was covered by a red and blue *san* (umbrella) and *seon* (fan). A *san* was a silk or fabric screen that protected kings from rain or sunlight. Round ones were called *daesan*, and square ones were called *bangsan*. A *seon* was a fan, invented by the first king of the Chinese Zhou Dynasty and woven from the feathers of pheasants. The *seon* was used to block out the sun, the dust, and the wind. *Seon* with dragon patterns were called *yongseon* (dragon fan), *seon* with phoenix patterns were called *bongseon* (phoenix fan), and *seon* with Jujak (Vermilion Bird) patterns were called *jakseon* (Vermilion Bird fan).

The *pyeonjeon* (the king's office) was also decorated with a variety of ornaments that symbolized the king's authority, and these had to be in place before the king arrived. The most visible decorations were the *eojwa,* the royal seat, and the *hyangan,* an incense burner. When the king sat on the *eojwa* in his *pyeonjeon*, officials who were lining up in the courtyard made two deep bows. Guards of honor holding colorful banners surrounded the courtyard to signal the king's prestige.

An entourage and guards also escorted the king. The bigger the entourage the king brought with him, the stronger was his inviolable power in the eyes of the people. For example, in the process of the king moving to the main gate of *jeongjeon*, the royal audience hall, to hold *jocham*, more and more symbols and a bigger entourage were added to the routine. *Sangcham* and *jocham* were

A re-creation of the *sura*, the meals prepared for Joseon kings

different in many aspects. *Sangcham* was an informal morning audience attended by only some officials, while *jocham* was a formal morning audience attended by all officials. *Jocham* took place on the fifth, eleventh, twenty-first, and twenty-fifth days of every month, unlike *sangcham*, which took place every day. More and fancier symbols and decorations were used for *jocham* than for *sangcham*. As such, jocham had a larger scale and was held less frequently, so it was held at the main gate of *jeongjeon* (the royal audience hall), not in *pyeonjeon* (the king's office). Those formalities of *sangcham* and *jocham* raised the king's prestige and consolidated a firm order between the sovereign and subject.

After the morning audience, the king came back to his living quarters to have breakfast. The king had breakfast in the *ondol* room. The Korean people have lived in *ondol* rooms for a long time and they dined on steamed rice and side dishes set on the table using a spoon and chopsticks, while seated on the *ondol* floor. Everyone sitting around the same table had his own bowl of rice and the types of side dishes differed for every meal. The quality of the table depended on the number of side dishes.

Sura, the king's royal meal, basically consisted of a bowl of steamed rice and side dishes, and kings also used a spoon and chopsticks. For *sura*, however, the best indigenous ingredients collected from nationwide to be offered to the king or government agencies were cooked by royal cooks in the best taste and form, to be served on the best dishware. The king's meals were different from those of ordinary people, as the king had to follow special procedures.

King's meals consisted of two types: *daejeon-eosang* (the royal banquet menu) and *sura* (daily meals). *Daejeon-eosang* was a table offered to the king in a variety of royal banquets. Kings of the Joseon Dynasty held royal banquets to welcome a royal envoy from China or to celebrate royal weddings or the sixtieth birthday of a dowager queen. For those occasions, all sorts of delicacies were spread on the table.

On the contrary, a king's ordinary meals consisted of breakfast (*josura*, morning *sura*), lunch (*jusura*, main *sura*), and dinner (*seoksura*, evening *sura*), as well as occasional snacks in between meals. Other than that, kings also had a bowl of light rice porridge (*juksura*, porridge *sura*) before breakfast. The types and number of side dishes differed according to the king's tastes and eating habits. However, any variations had to fall within the basic rules and formalities.

There were two types of cooked rice for a king's meal: white rice, cooked only with water, and red rice, cooked with water in which red beans were boiled. Kings could choose between white rice and red rice, according to their tastes. The best rice, which was produced in towns famous for the quality of rice produced there, was used for king's meals and cooked in Korean traditional cauldrons made of cast iron over a charcoal fire. Side dishes might include thin soups, stews, kimchi, sauces, steamed meats or vegetables, and casseroles.

Before the king began to eat, a court matron tried every dish on the king's table to test for poison. Then the king started to eat with a silver spoon and chopsticks, eating a spoon of *dongchimi* (watery radish kimchi) first. He would then take a spoonful of rice with a spoonful of soup. Then he would eat the rice with the other side dishes. After finishing a bowl of soup with some rice mixed in, the king replaced the spoon and chopsticks with new ones before continuing with his rice and side dishes. Then the king put the bowl of *sungnyung* (scorched-rice water) in the place of soup, to finish his meal after eating it with a spoon of rice put in it.

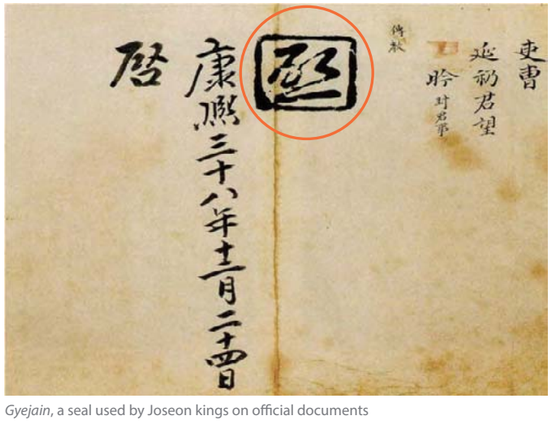
As such, every royal meal required many people's hard work. Rice and dishes on the king's table were made from ingredients produced through the toil and moil of farmers and fishermen, with substantial hard work from royal cooks. The reason why kings were provided with the highest-quality meals was so that he would rule well and the subjects live peacefully. When people starved because of severe drought or flood, the king reduced the number of side dishes in his meals and moved to a humble place of residence, to express that he shared the joys and sorrows of his people.

After breakfast, the king went back to his office to do *sisa*. *Sisa* literally meant "doing the work," a series of procedures necessary to handle government affairs. The king wore his *ikseongwan* and *gollyongpo* when he carried out *sisa*. When government officials were having an audience with the king, they talked while on their hands and knees with their faces down. If they wanted to see the king's face, they had to obtain permission. Royal audiences began with four deep bows by officials for the king, and the officials did not directly face the king but kneeled down in two lines, one on the left and one on the right, facing the center in front of the king. It looked as if one line of officials were bowing to the other. After bowing in this manner, the officials gave the king a formal greeting and then briefed him on national affairs.

The most important part of this briefing was a report from the *seungji* (royal secretary-transmitter) of Seungjeongwon (Royal Secretariat). *Seungji* was the king's secretary and he collected official documents, *sangsomun* (written memorials to the king), and petitions from nationwide to review them in advance. *Seungji* was responsible for deciding what the king had to know and reporting it, returning any documents that were thought to be inappropriate for reporting. They summarized and simplified long documents to assist the king's understanding and even added guidelines at the end of reports dealing with ordinary issues. Kings usually followed the advice of their *seungji* and the king's approval was given in only one or two letters on those documents: *yun* (允, approved); *euiyun* (依允, permitted); *jido* (知道, understood); and so on.

Seungji sometimes requested reexamination when he believed the king had given the wrong order to the central government agency or a local administrative body. That was possible because all the king's orders were given through Seungjeongwon, just as all reports to the king went through Seungjeongwon. Since *seungji*'s role was so important, only talented officials who passed the civil service examination with honors could be appointed as *seungji*.

It was not easy for the king to write his decision down on every official document with a writing brush, so he usually stamped documents with a black seal called a *gyejain* (啓字印). "*Gye*" (啓) meant that the king clearly understood what was reported. The king stamped *gyejain* right after he read official reports, and when the volume of reports that he had to review was too high, the king's eunuch stamped *gyejain* on those documents instead of the king. Those documents stamped with *gyejain* were understood as approved and were sent on to the government agency in charge on the king's behalf.



Gyejain, a seal used by Joseon kings on official documents

The king used different stamps for different types of affairs. For example, he used a stamp called a *simyeongjibo* for *gyoji* (office warrants); a stamp called a *gwageojibo* on test papers for the civil service examination; and a stamp called a *gyujangjibo* on personal writings such as books or poems. In addition, they used a stamp called a *daebo* on diplomatic documents sent to China and another stamp called *ideokbo* on diplomatic documents sent to Japan.

Other than the review and approval of official documents, discussions on national affairs with government officials and *yangban* (aristocrats) were also important. High officials of Uijeongbu (state council), *dangsanggwan* (palace-ascendable officials) from Yukjo (the Six Ministries), officials from Samsa (the three censors' offices), as well as other government departments that faced critical issues asked for a meeting with the king on demand. The king met those officials and had discussions with them, listening to the officials' reports on national issues and public opinion before making the final decision. On the other hand, there were many occasions where the king requested a meeting with officials to consult with them on urgent issues. As such, the king went to his office every day, to get briefed by *seungji*, to review and approve public documents by stamping their seals, and to handle national affairs on time by discussing and making decisions on those affairs with government officials.

Right after *sisa*, kings engaged in *yundae*. *Yundae* meant "taking turns to have one-on-one meetings with the king." In a *yundae* procedure, each administrative department took turns sending officials one by one, in a predetermined order, to meet with the king. The officials sent to the king for *yundae* waited until the end of the *sisa* and then met the king to report on the work of their respective departments. The number of officials for a day's *yundae* was restricted to five or less. Among *mungwan* (civil officers), officials with ranks higher than sixth grade and among *mugwan* (military officers), officials with ranks higher than fourth grade, were selected as the ones to be sent for *yundae*. The king met with these officials to listen to public opinion before making final decisions. Kings also summoned state councilors, ministers, or officials from the three censors' offices on urgent occasions that called for immediate consultations with officials in charge.

Those government officials also had to bend down and speak with the king on their hands and knees, with their faces down. If they wanted to see the king's face, they had to obtain permission. If they raise their heads and looked at the king without permission, they would be severely punished for showing such disre-

spect. Meetings with the king began with a procedure in which officials gave four deep bows to the king. After making four deep bows, the officials offered a formal greeting to the king and then reported the issues. When the king finished *yundae*, it was midday. Therefore, the king ate lunch right after *yundae*. Conventionally, a *gyeongyeon* (royal lecture) followed lunch.

The *gyeongyeon* was study of Confucian books or books on Chinese or Korean history. The syllable *gyeong* (經) in *gyeongyeon* (經筵) referred to scriptures, and *yeon* (筵) referred to studying. "Scriptures" meant "teachings of ancestors"; so, *gyeongyeon* referred to a class where the teachings of the ancestors were studied. In principle, there were four times of *gyeongyeon* in a day: *jogang* in the morning, *jugang* in the day, *seokgang* in the evening, and *yadae* in the night. As *jogang, jugang*, and *seokgang* were carried out at designated times every day, they were called *beobgang* (mandatory lectures). A *gyeongyeon* was normally held in the king's office, as it was for *sangcham* (the informal morning audience). It was recommended for kings to participate in all four *gyeongyeon* a day, but that was difficult for a busy king, who usually had *gyeongyeon* just once a day or once every few days. Some kings even had *gyeongyeon* reluctantly once every few years. Therefore, the job performance and sincerity of kings of the Joseon Dynasty used to be evaluated by how frequently they participated in *gyeongyeon*.

Gyeongyeon basically consisted of reading and debate on Confucian classics and Chinese and Korean histories. The teaching method was similar to that of *seodang* (private school for elementary education). Government officials who participated in *gyeongyeon* were the king's instructors, but they also had to bend down and approach him on their hands and knees, as they were still courtiers at the same time.

When *gyeongyeon* began, the king had to read what he had learned from the previous class, and then learned new chapters. For each class, the king learned three to four lines from the books. *Gyeongyeon* instructors read the lines out loud first, and then the king repeated them. Then the instructor explained the sound and meaning of the lines, and all the people in the class took turns stating their opinions on the subject of the day's class.

When the teaching for a day's *gyeongyeon* finished, the king or instructors debated national affairs. If a problem was discovered in the course of the debate, a solution would be suggested during the discussion. Through such debates, kings could enhance their knowledge of Confucianism and politics. As such, *gyeongyeon* was an academic debate in theory, but it was like a political debate in reality.

The king had many things to do even after *jugang* (class in the day). He had to receive officials who were leaving the central government after being appointed as local officials and other officials who were coming to the central government after promotion. *Gwanchalsa* (governors of eight provinces) and *suryeong* (local magistrates) of important regions were granted special audiences with the king, as kings had to meet those officials directly to give instructions and to discuss issues in their respective regions. After meeting a few officials in such a way, it was already evening.

One important task of Joseon Dynasty kings was checking the lists of military forces and officers in charge of guarding the palace during the night as well as the officials on night duty, and to designate a password for the night. That measure was necessary for the safety of the kings and the kingdom.

That was not the end of the daily routine for the king. The king had to attend *seokgang*, evening Confucian study class, before sunset. After *seokgang*, the king had dinner and took a rest for a while, then went back to his night work. Then the king had to go and say goodnight to his seniors in the royal family, including the dowager queen and great dowager queen.

The King's Private Life and Health

By the time of the foundation of the Joseon Dynasty, monogamy was highlighted by *sinjin sadaebu* (ruling Neo-Confucian elite), so kings could have only one queen and the other wives were relegated to the status of concubines. The queen was an official wife acquired through a royal wedding, but concubines were not. The queen and concubines were treated differently in every aspect including their place of residence, title, status, and children.

For example, the queen went through six procedures as part of a royal wedding ceremony: *uihon* (proposal for match), *napchae* (betrothal), *nappye* (sending of wedding gifts), *chinnyeong* (bridegroom personally inducting the bride into his home), *buhyeongugo* (traditional ceremony to pay respect to the groom's family by the newly wedded couple right after their wedding), and *myohyeon* (presentation of a bride at the ancestral shrine). The queen also received *gyomyeong* (warrant of appointment as the queen), *geumbo* (queen's seal), and even *gomyeong* (warrant of appointment of high officials given by the Chinese emperor). After going through those procedures, the queens were called *jungjeon* or *junggung*—both terms meant "the one who lives in the central building in the palace." Indeed, Gyotaejeon Hall in Gyeongbokgung Palace and Daejojeon Hall in Changdeokgung Palace, where queens lived, were the central halls in the respective palaces.

Concubines, in contrast, lived in out-of-the-way halls behind the central hall. The word hugung (後宮) itself referred to "those who lived in the back (hu, 後) halls (gung, 宮)". They had to live silently in some unnoticed places, out of sight, as they were not official wives. Concubines received office warrants called *gyoji*.

The system of having concubines was organized during the reign of King Sejong and it was specified in *Gyeongguk-daejeon* (National Code). In an article about women in the royal court in the National Code, the king's concubines were categorized into different ranks: *bin, gwiin, soeui, sukeui, soyong, sukyong, sowon,* and *sukwon* in the named order. However, practically, concubines were categorized into two big groups, not by the official ranks, but by how they became concubines; those who had been court maids or professional entertainers and became concubines after being personally selected by the king for a sexual intercourse, and the other ones who had been daughters of *sadaebu* (scholar-bureaucrat) and became concubines after being selected through official procedures. Even though they were all concubines, the selection process for the two groups differed significantly, as did their backgrounds, which led to differences in how they were treated and what roles they played in the royal court.

Children dressed in *hanbok*, or traditional Korean dress, play *tuho*, or pitch-pot, a popular traditional sport among royals and the upper class.

A reenactment of *gyeokgu*, a sport akin to polo in which players on horseback score points by driving a small ball into the goal of the opposing team

The concubines who usually caused political or social scandals were those the kings had personally selected. Most of these concubines had been slaves, professional entertainers, or court maids. If the king's affection and interest was concentrated on such a concubine from a humble background, that could be a threat to the other concubines selected through official procedures as well as to the standing of the queen. It was not just about a small conflict between a concubine and the queen, but a serious risk that could shake the social hierarchy or the whole country, which had big political and social repercussions. There were good examples of such cases: Jang Nok-su during the reign of King Yeonsangun, Kim Gae-si during the time of King Gwanghaegun, Heebin Jang and Sukbin Choi of King Sukjong, and so on.

In contrast, there were fewer cases where concubines selected through official procedures brought about such political or social controversies. Such concubines were usually selected when the queen failed to have a son, and most were daughters of high-ranking officials. Therefore, it was not common for such a concubine to captivate the king's heart and her role was just to give birth. The political and social impact of such concubines' behaviors was insignificant.

Not only concubines but their children were discriminated against. For example, the sons and daughters of the queen were called *daegun* (prince) and *gongju* (princess), respectively, but sons and daughters of concubines were called *gun* (prince) and *ongju* (princess). Not only their titles differed, but also how they were treated.

For example, the husband of a *gongju* (princess) was ranked as a *wi* of rank 1B, but the husband of an *ongju* was ranked as a *wi* of rank 2B. A *wi* of rank 1B who was married to a princess received eighty-eight large packs of grain, twenty rolls of cloth, and ten bills as salary. In addition, he received one hundred and five parcels of land as salary land. On the contrary, a *wi* of rank of 2B who was married to an *ongju* received seventy-six packs of grain, nineteen rolls of cloth, eight bills, and only eighty-five parcels of land.

Similar rules applied to kings' sons. Sons of the queen were invested with the title of *daegun* (prince), and there was no age limit. On the other hand, the sons of concubines became *gun* and they were invested with the title at the age of seven. There was difference in the size of houses between *daegun* and *gun*, as well as between *gongju* and *ongju,* after their marriage. Princes and princesses lived in homes measuring thirty units, but for *gun* and *ongju* the size was only twenty-five units.

The most important responsibility for the queens of the Joseon Dynasty was to have sons to carry on the king's family line. If the queen failed to give birth to a son, concubines had to. That was the justification for kings to have concubines, because the monarchy of Joseon was a hereditary monarchy.

As such, kings of the Joseon Dynasty were the social norm, but they also had some private time of rest and play, since they were human beings, too. By the early era of the Joseon Dynasty, the king had active recreational activities. King Taejo and King Taejong enjoyed falconry at every opportunity. However, they had to reduce the frequency of their falconry because of criticism that it was not good to see the king following falcons too frequently. Instead, kings began to engage in *gyeokgu* (low-saddle maneuvering, a kind of polo game), *tuho* (a game where people try to throw sticks into a canister), and archery. *Gyeokgu* was the most popular game for kings in early period of the Joseon Dynasty. In a *gyeokgu* game, players hit a ball with sticks that looked like golf clubs.

However, after the Joseon Dynasty was established and *Seong-*

nihak (the study of neo-Confucianism) spread, *gyeokgu* began to be perceived negatively, because Neo-Confucian scholars had negative views of playing and martial arts. Kings played *gyeokgu* less and less, instead, they were recommended to play *tuho*.

Tuho was a game of throwing arrows into a jar. There were two types of the jars: round jars and square jars. *Tuho* was a very Confucian game which was even written in *Yegi* (Book of Rites). Therefore, *tuho* became a game of the upper class during the Joseon era, widely played not only by the royal family but also by aristocrats.

According to *Yegi*, *tuho* was a kind of ritual in which the host and guests competed at parties.

When the preparation for a *tuho* game was completed, the host invited guests to play *tuho* together, saying, "I have some useless bent arrows and an ugly jar, so please let me entertain my guests by using them." Then guests declined the invitation, saying, "You have already treated me so well with good drinks and food, and you're saying that you'll entertain me even further, so I'd like to refuse." Then the host made an offer once again, saying, "These are useless bent arrows and the jar is also an ugly, useless one. So please let me ask you once again to join me for *tuho*." Guests declined once again, stating, "I've been well-treated already and you're offering me another entertainment, so please let me decline."

Finally, the host made the third invitation and only then, guests accepted the invitation for *tuho* game. As such, there were a lot of formalities people had to go through before beginning *tuho* game, which shows that *tuho* was a very Confucian kind of a game. The fact that *tuho* was recommended to kings instead of *gyeokgu* after the foundation of Joseon Dynasty demonstrates how kings of the dynasty were absorbed into the Confucian culture.

Since kings of the Joseon Dynasty had busy schedules every day, it was not easy for them to have free time alone. They had to wait until late night to do meditation alone or read a book of their own choice. Reading books or petitions alone deep in the night was called *eullam* (乙覽). This meant reading (*lam*, 覽) at the time of *eul* (乙, around 10 p.m.). Indeed, kings could have their private time only after 10 in the night. However, even that time could not be spent only for the king himself, because a lot of women were waiting for him. Therefore, kings were able to go to sleep by eleven or twelve o'clock in the night.

As such, kings of the Joseon Dynasty had numerous tasks to do, and those tasks of the king were called *mangi* (萬機, tens of thousands of important frames for politics). Therefore, if the king got sick or neglected his work, the volume of official documents waiting for the king's review and approval snowballed. Each piece of the big pileup of those official documents might have felt like boring work, but without approval of each and every document, the government could not operate. For his country and people, the king could not be idle even for a while. He was not supposed to get sick either. To be a good king, full of love for the people, he had to work hard and stay in good physical health.

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Yeon, Palanquin of King

However, kings of the Joseon Dynasty faced a big disadvantage when it comes to health. A king's work was mentally strenuous, but kings had little time for exercise. They had to remain seated during audiences for officials and when reviewing official documents. They also moved on *gama* (sedan chairs). They had little opportunity to walk or move on their own. Plus, most of their work was to read official documents, petitions, and public appeals, which put a burden on their eyes.

The majority of the kings of the Joseon Dynasty who took in excess calories but lacked exercise suffered from diseases such as obesity, diabetes, and high blood pressure. Such diseases were related to inadequate blood circulation. These problems, combined with long hours of reading, led in turn to eye diseases and boils. Considering kings could not avoid such diseases because of the nature of their work, these could be seen as kings' occupational diseases.

To help kings stay healthy and manage national affairs in a good condition, there were measures for kings' health taken at the national level during the Joseon Dynasty: a royal medical department in the court and a temporary medical department for serious cases. The royal medical department focused on daily preventative health, while the temporary medical department was there to restore the king's health in emergency cases. The royal medical department was like a hospital exclusively for the king, which had staff including the *jejo* (director), the *eoui* (male royal physician), and *uinyeo* (female royal physician). *Eoui* at the royal medical department had different specialties such as drug prescription, acupuncture, and moxibustion. Kings were examined by physicians once every five days, as well as at any other time when their health was not good. Medical examinations by physicians were carried out by feeling the pulse of the king for diagnosis, according to the traditions of Korean medicine.

The method of feeling the pulse for diagnosis was different according to the king's posture; the way of feeling the pulse differed according to whether the king was sitting or lying down. As the king was usually sitting when he worked, the king was diagnosed by physicians while sitting for an examination.

For examinations of the king, a team of three or four physicians came together, in order to make more precise diagnosis by putting together the results of feeling the pulse of the king by multiple people. Before examination, physicians waited for the king, bending on their hands and knees outside the pillars of the building where the king was. Then, when the king sat down on a chair for examination, the first physician went to the left-hand side of the king, made a deep bow, and then felt the pulse on the king's left wrist. Then, he went to the right-hand side of the king, made a deep bow, and then felt the pulse on the king's right wrist. For diagnosis, physicians felt the pulse on three spots on the wrist, which were called *sambumaek*. According to the result of diagnosis, whether the king would be treated by decoction of medicinal herbs, acupuncture, or moxibustion was determined. If there was no specific symptom, just some restorative herbal medicine was prescribed, but if there were symptoms, acupuncture and moxibustion treatment was prescribed along with herbal medicine.

Prescribed herbal medicine was prepared at the royal medical department. The exact weight of each type of prescribed herb was measured and then decocted in a pot, being supervised by one director and one physician. When the medicine was all decocted, the director of the royal medical department tasted it first to test for any problem. If there was no problem with the medicine, the boiling pot was covered with a lid and then locked. The locked boiling pot and the key were carried to the king on a tray. At that time, a brazier was brought together, so that the medicine could be warmed again right away when if it is cooled in the process of being brought to the king.

After the pot was unlocked, a sip of the medicine was poured into a lid of a silver bowl and tasted by the royal medical director, in order to test for any poison in it. If there was no problem, the medicine was poured in a silver bowl and offered to the king.

When the king had to get acupuncture treatment, acupuncturists first gathered to discuss the location of the blood apertures on which they would fix needles. The acupuncturists asked the king whether it was okay to fix needles on the locations they decided and when the king approved it, they went to the king to actually put needles into the king's skin. Before actually beginning the acupuncture treatment, the chief royal physician reported to the king that the needles would be fixed where, then the needle doctor put needles on the king. The same procedure applied to moxibustion treatment as well.

That was how the king's health was regularly taken care of, but when the king got seriously ill, the temporary medical department was set up in order to give the king necessary treatment at any time, while staying on standby around the clock. Of course, the royal physicians were assigned to the special temporary medical department. The setup of the temporary medical department itself was a sign that the king was seriously ill, so it indicated an emergency for the entire nation. Therefore, when the temporary special medical department was set up, not only government officials but also ordinary people were on alert. Kwon Sang-il, an official of the Ministry of Rites, wrote about the circumstances when the temporary medical department was set up just before the death of King Sukjong as follows:

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Checking the pulse on three spots of the wrist collectively called *sambumaek*

"A physician came at *myosi* (five to seven in the morning) and said, "The king's condition was especially bad overnight and he is still bad." By *sasi* (nine to eleven in the morning), the king told a physician, "I tried to eat some rice with water, but couldn't." Min Jin-hoo was the magistrate of Gaeseong city; he came to the temporary royal medical department against his will and died last night. His younger brother Min Jin-won was dismissed from the position of the director of the royal medical department and was replaced with Jo Tae-gu. At *misi* (one to three in the afternoon), the temporary medical department physicians examined the king and multiple severe symptoms continued. The king's abdomen swelled up even bigger than yesterday and the king excreted two cups of watery feces. At *sinsi* (three to five in the afternoon), the king excreted a little bit of watery feces. Man-cheuk and uncle Mong-yeo came to me to talk. According to rumors, moxibustion was carried out on the king's abdomen, but the moxa cautery was removed when only half-burned, because the king did not have enough energy to stand the treatment. So, the moxibustion was carried out just for a test and removed soon to prevent permeation of the heat. At *yusi* (five in the afternoon until seven in the evening), a physician went to the king again for examination. The pulse was loud but had no energy. The king said that his symptoms were the same with the ones examined at noon, but the abdomen swelled even bigger. At that time, the king excreted a little bit of watery feces. At *sulsi* (seven to nine in the evening), the king asked, "I had a phlegmy voice from yesterday and it's more severe today. Why is that?" The physician answered, "The reason why your abdomen has swollen and you can't eat is because your anal passage is agitated and uncontrolled. I'd like you to drink *poria cocos* tea." Then, the king excreted half a cup of watery feces and drank the *poria cocos* tea. At *ingyeong* (around ten at night), the king micturated four cups of urine colored deep yellow. Around eleven o'clock at night, the king told the physician, "I had half a cup of ginseng decoction." (Kwon Sang-il, *Cheongdae ilgi* [Diary of Kwon Sang-il]. May 13, 1720)

President's Letter

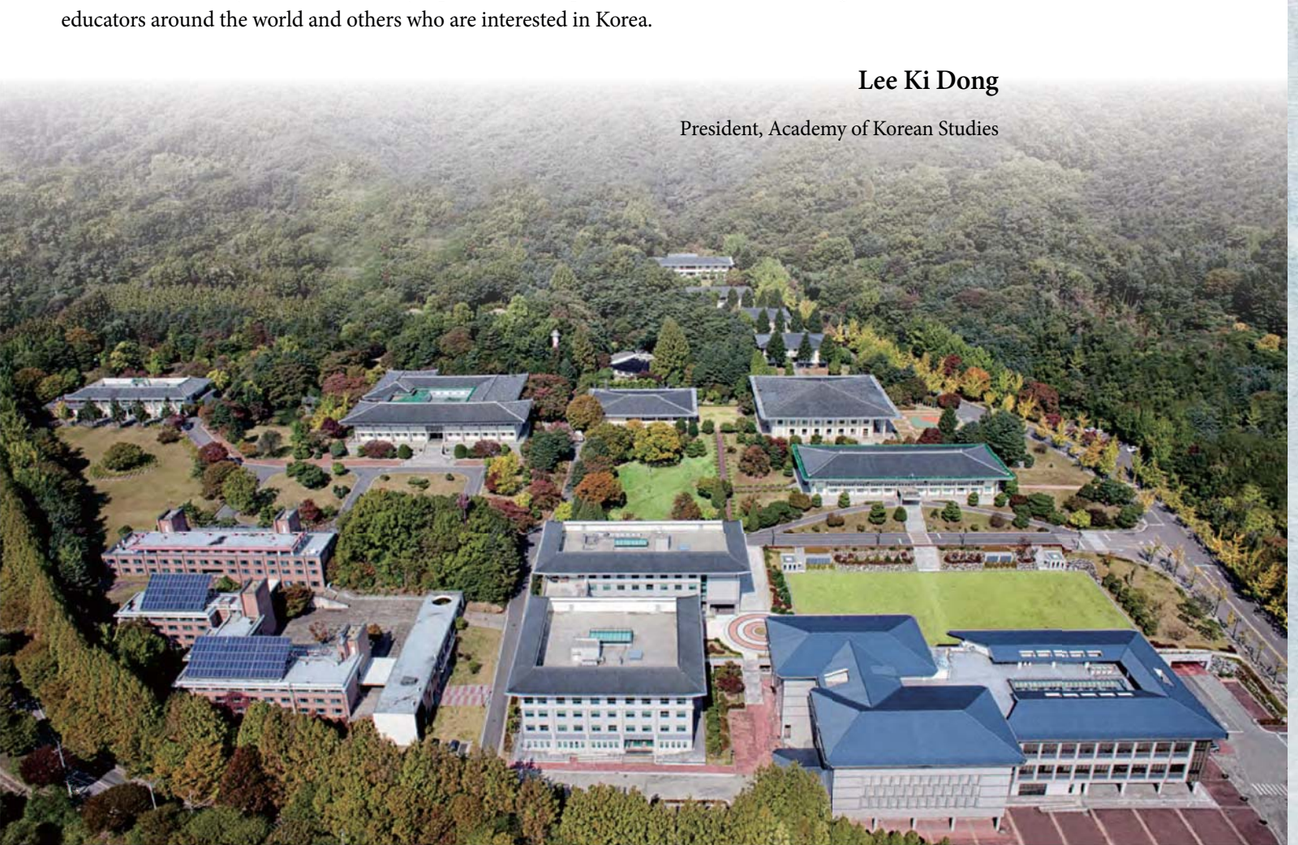
Since its founding in 1978, the Academy of Korean Studies has carried out in-depth research and education on Korea's cultural legacy. In so doing, we have helped to guide Korea in the right direction and nurtured a thriving Korean cultural scene. Over the past four decades, the Academy has turned out numerous distinguished scholars and produced remarkable scholarship in the field of Korean studies. We have also served as a clearinghouse for Korean studies resources by collecting important resources, converting them into digital formats for easier use, and promoting Korean culture in and out of the country.

Korean culture has recently been in the global spotlight. A number of Korea's unique cultural properties have been inscribed on UNESCO's World Heritage List, and the Korean Wave is extolled throughout the world. People around the world are paying keen attention to Korea, a country where rich traditional culture and modern popular culture prosper together and where traditional spiritual values and cutting-edge science and technology coexist in harmony. In view of this trend, the Academy's Understanding Korea Project has developed quality content to help foreigners, including foreign educators, to better understand Korea and Korean culture.

Infokorea is a magazine that developed out of the Understanding Korea Project. Its aim is to disseminate general statistical information and feature articles that illustrate Korea's beautiful and unique culture as well as other subjects of interest to foreign readers. This issue of *Infokorea* presents the most up-to-date statistics, as well as the history behind Korea's royal palaces. We hope this information will be of great assistance to educators around the world and others who are interested in Korea.

Lee Ki Dong

President, Academy of Korean Studies



Building a Global Cooperative Network

The staff members of the Academy's Understanding Korea Project are working to build a cooperative network by visiting textbook publishers and public agencies in charge of education around the world, as well as by attending major symposiums and exhibitions. In 2015 we dispatched personnel to visit Finland's education ministry, as well as Finnish educational content creators Edita Publishing, Otava Publishing Company, and Samona Pro. Also in 2015, Understanding Korea had a booth at the National Council for the Social Studies' annual conference in New Orleans, as part of its efforts to build its network, improve teachers' understanding of Korea, and elevate Korea's national image. In 2016 our representatives visited India's National Council of Educational Research and Training and the education ministry of the Indian province Tamil Nadu to strengthen academic exchanges between the two countries.

Cheonggye-hakdang, a new Korean-style lecture hall

The Academy's Cheonggye-hakdang was completed in August 2016. Cheonggye-hakdang is a symbol of the Academy of Korean Studies and its role as an academic institution carrying out in-depth research on the essence of Korean culture. The building was designed and built by the country's top experts in Korean traditional homes, or *hanok*. Symbolic of the Academy's mission, Cheonggye-hakdang takes the form of a Joseon-era private Confucian academy or *seowon*, and consists of a lecture hall, a gate pavilion, an eastern building, a western building, and a pond pavilion. Located between the Graduate School of Korean Studies and a natural landscape that includes a forest, stream, and pond, Cheonggye-hakdang exemplifies the beauty of Korean traditional construction, which emphasizes harmony with nature. Cheonggye-hakdang is used for academic and cultural events including lectures and seminars.

Support for Korean studies abroad (Korean studies grants)

The Academy's Center for International Affairs supports diverse activities to strengthen the foundations of Korean studies abroad and to elevate the quality of Korean studies and education about Korea. Areas of support include educational and cultural events, academic research, academic conferences, publication of academic papers, and data surveys on the current status of Korean studies. Approximately seventy programs and institutions receive support every year—our grants go to research institutions specializing in Korean studies and to scholars based at foreign universities who wish to undertake Korea-related research. In 2016, our grants supported diverse projects such as "Special Weeks for Korean Section" at the University of Jordan, the tenth Conference of the Nordic Association for Japanese and Korean Studies at the University of Copenhagen, and Korean studies workshops at the American Social Science Research Council centering on dissertations and junior faculty development. More details regarding the outcomes of these projects can be found at http://ksdb.aks.ac.kr.

Societas Koreana

Societas Koreana is a program that helps foreign opinion leaders staying in Korea, including diplomats, to better understand Korea. It involves lectures to broaden participants' understanding of Korea's history, society, and culture; field trips to historical sites; and opportunities to watch Korean traditional performances. The program has run on sixty-five occasions since 2010 and renowned experts in different fields have given lectures as part of this program. Those lectures are available for viewing on the YouTube channel "Societas Koreana."

Students wearing *hanbok* pose for a photograph while participating in cultural activities organized by the Academy of Korean Studies.

The Academy of Korean Studies created the Center for International Affairs (CEFIA) in March 2003. The Center's mission is to promote a better understanding of Korean history, society, and culture throughout the world.