

# **Korea's Information and Communication Technology Boom, and Cultural Transition After the Crisis**

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This study analyzes Korea's recovery during 1999-2000, following the 1997 financial crisis. It focuses on the development of the ICT industry, particularly the cultural aspects of the ICT boom.

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## **Abstract**

In 1998 the Korean economy experienced its worst recession since the Korean War, but the economy has rebounded with remarkable speed since 1999. The new momentum surprisingly began during the worst period of the recession, spurred by the emergence of the information and communication technology (ICT) industry. Korea has become a leader in e-business and high-speed Internet access in a short time span.

This study analyzes the progress of Korea's recovery during 1999-2000 and investigates the momentum of the rapid development of the new ICT industry, particularly from the cultural point of view. Without doubt, economic factors are important in explaining Korea's remarkable ICT success. Competition stimulated lower prices, which then spurred increased demand. The stock market boom boosted venture firms and investments in new technology. Nevertheless, two questions remain: (1) If similar economic factors are introduced, will an ITC boom occur in other countries? and (2) Why did this miracle emerge in such dire economic conditions? To fully consider these puzzles, cultural matters that complement economic conditions must also be considered.

Cultural motivations led many Koreans to become fascinated with the Internet. The Internet played the role of a cultural bridge to more-smoothly ease tensions between a western manner and traditional eastern modesty. Further, the collapse of many chaebols made room for venture capital firms, which have led the Internet industries, to attract both funds and talented staff. Additionally, Korea's traditional culture reflected Taoist thinking that helped to overcome the national discouragement that followed the 1997 crisis and led Koreans to embrace the trend of change.

Korea's ICT revolution was one more "miracle." Through the ICT revolution, Korea succeeded in achieving rapid economic recovery as well as social transition. Koreans have moved toward a new cultural balance between traditional Confucian values such as modesty, loyalty and order, and western values such as freedom, openness and creativity.

## I. Introduction

In 1998 the Korean economy appeared to be hopeless in the aftermath of the financial crisis. When in October 1998 the Ministry of Finance and Economy (MOFE) predicted 2 percent growth for the next year, criticism of government's rosy prediction rained down. At the time, most private research institutions predicted negative economic growth for the next year. Even at the end of 1998, most predictions were for less than 1 percent growth in gross domestic product (GDP) at best. The International Monetary Fund (IMF) predicted a 1 percent contraction in its report, *World Economic Outlook*, and the World Bank predicted 1 percent growth in its *Global Economic Prospects*, each published in December 1998. Private predictions remained between -1.8 and 1.0 percent growth for 1999.

The composite index of leading indicators, which predicts economic conditions several months in advance, made negative economic growth seem inevitable; most variables in the composite index recorded dramatic declines compared with the previous year. For example, the producers' shipment index, which predicts durable consumption about 6 months in advance, fell from -20.3 to -26.5 percent. The floor area indicated in building construction permits foretold a decline in construction investment from -63.4 to -72.1 percent, and the industrial production index for intermediate construction fell from -30.2 to -32.7 percent between July and October 1998. Predictions based on econometric models, even those using the optimistic assumption of huge inventory adjustments, suggested a maximum of 1 percent growth.

One year later, however, the picture was very different. In fact, in 1999 the GDP growth rate registered a 10.9 percent increase, compared with negative 6.7 percent in 1998. The next year, 2000, saw 9.3 percent growth – two strong years in succession. It had been impossible to predict such strong growth and rapid recovery from the economic data in 1998. In view of the unpredictability of the recovery, some have labeled it another “miracle.” The key to Korea's miracle recovery was the emergence of a new industry based on information and communication technology (ICT), an area that had not been significant in national accounting previously.<sup>1</sup> The year 1998 and the first part of 1999 had been the worst in terms of unemployment and bankruptcy in the modern history of Korea's economy. Business activity had all but come to a halt, unemployment rates were high, a series of bankruptcies emerged in the wake of a credit crunch, and so on. The miracle recovery raised a number of questions including the biggest puzzle of all -- why the new ICT industry began to emerge, to put forth its blossoms, in this very dark economic period.

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<sup>1</sup> The restructuring of corporate and financial sectors also contributed to the recovery. The restructuring process was underway in 1998 and 1999, coming with mass unemployment. It is reasonable to believe that the economic reform began to affect Korea's sustainable growth from 2000.

The aim of this study is to analyze the progress of Korea's recovery during 1999 and 2000 and investigates the momentum of the rapid development of the new ICT industry. Not only the economic factors that spurred the recovery, but also the philosophical and cultural factors that influenced Korea's recovery from its worst economic conditions in modern times are considered. Non-economic factors are important to a complete analysis of the recovery progress because the "miracle" cannot be explained by economic factors alone. Section II examines the progress of recovery by tracing the economic situation from 1998 to 2000, and Section III describes the rapid development of information and communication technology and the boom of venture firms. Section IV reviews the momentum of the emerging new industry from the traditional economic viewpoint, and Section V introduces additional cultural factors to explain Korea's rapid recovery through the development of the ICT industry. Conclusions are presented in Section VI.

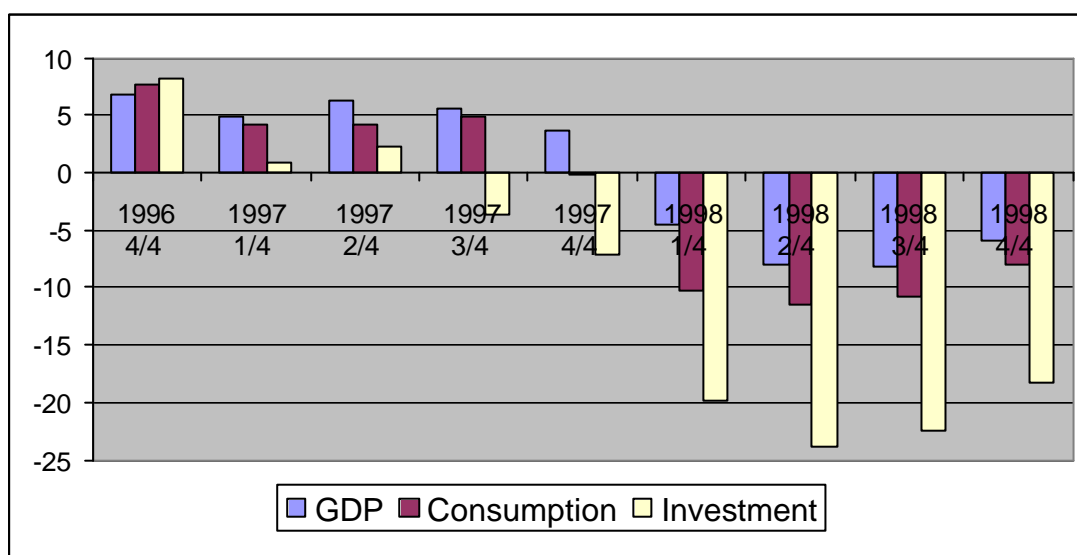
## II. Rapid Recovery After Severe Recession

Korea's recovery from the 1997 financial crisis can be labeled a "second miracle." In late 1997 and throughout 1998, Korea's economy appeared to be devastated. Business activity and the financial markets plunged while unemployment, bankruptcies, and interest rates soared. Even more troubling, the foundations of the economic structure were rocked as banks failed and the once-mighty chaebols faltered. By 1999, though, Korea's GDP growth was 10.9 percent – positive 10.9 percent.

### Severe Economic Recession in 1998

In 1998 Korea experienced the worst economic conditions since the Korean War in the 1950s. The

Figure 1 Quarterly GDP Growth Rates, Consumption, and Investment



Source: Bank of Korea (2002)

unprecedented economic slump was attributed to the aftermath of the financial crisis that had occurred at the end of 1997. Although foreign exchange rates and financial markets began to bounce back in the first quarter of 1998, an unparalleled credit crunch and severe slump in the real sector brought about a plunge in economic activity, leading to mass bankruptcies and unemployment. The growth rate of GDP turned negative for the first time since 1980, plummeting to a contraction of 6.7 percent in 1998 from 5.0 percent growth in the previous year.

The recession was largely caused by a sharp fall in investment and consumption following the financial turmoil and retrenchment policies instituted after the late 1997 crisis. Investment, one of the locomotives of Korea's rapid growth along with exports, declined dramatically in 1998, by about 20 percent compared with the previous year, due to a production slump attributed to overcapacity and the credit crunch. Consumption also dropped about 10 percent, affected by wage cuts and massive

unemployment. As a result, the third quarter of 1998 saw a contraction of 8.1 percent, the lowest growth rate since the Korean government began compiling statistics of economic growth in 1953.

Many thought that the export sector was the best hope to revive Korea's economy. Export industries seemed to have an advantage due to the depreciation of the Korean won and might offset the slump in domestic markets. However, the business environment abroad was not strong either. First, because of similar financial crises the Asian markets including Japan, export markets dropped sharply. Not only did demand fall, but competitive price cuts devastated export industries' profitability. Second, the sharp depreciation of Japanese yen affected its neighbors' economies. The Japanese yen fell against the U.S. dollar to 143.79 yen per dollar, a depreciation of 12.9 percent from the beginning of the year. Due to the plunging Japanese currency, key Korean export items such as semiconductors, steel and cars, which competed with Japanese products in overseas markets, fell into extreme turmoil. Third, as the Asian financial crisis spread to Russia in June 1998 and threatened other emerging markets in Latin America, even leading economies were affected and the world economy seemed headed for a global downslide.

By the end of 1998, Korea's exports had decreased by 2.8 percent while imports plummeted by 35.5 percent compared with a year earlier. Due to the drop in imports -- not only capital goods but also consumer goods and raw materials -- the current account balance recorded a huge surplus of \$40.4 billion in 1998 compared with a \$8.1 billion deficit in 1997. This large current account surplus contributed to stabilizing foreign exchange rates and lessened the problem of Korea's diminished foreign exchange reserves. For the overall economy, though, depressed private consumption and corporate investment wiped out any positive effects from the improving current account balance. Trade surplus through the contraction of business activities was not desirable.

### **Credit Crunch, Bankruptcies, and Unemployment**

A severe credit crunch in Korea's financial markets further worsened domestic business activities, adding to the difficulties caused by the rapid fall of domestic demand and exports. Although high interest rates, tight monetary policy, and financial restructuring contributed to stability in inflation and won/dollar exchange rates, the financial crunch triggered a chain of bankruptcies and mass unemployment.

Beginning in December 1997, Korea's monetary and fiscal policies turned to tight stances as the IMF put priority on stabilizing exchange rates and controlling inflation induced by the depreciation of the won. In the December 3, 1997 letter of intent between the IMF and Korea, the IMF requested tight control, saying "...monetary policy will be tightened immediately..." In a second, December 24 letter the IMF indicated that "... interest rates have been raised substantially, reaching about 30

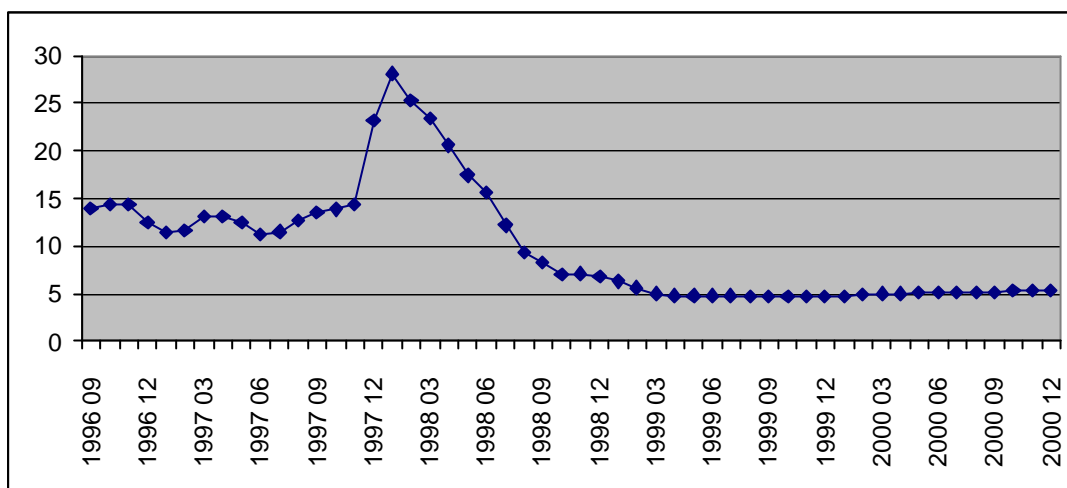
Table 1 Macroeconomic Conditions Following Letters of Intent with the IMF

	<b>GDP Growth</b>	<b>Inflation</b>	<b>Monetary Policy</b>	<b>Fiscal Policy</b>
Dec. 3, 1997		Below 5%	Tight monetary policy, interest rates allowed to rise	Small surplus (1% of GDP)
Dec. 24, 1997			Interest rates 30% or above (Call rate)	
Feb.7, 1998	1%, although zero or negative growth remains a possibility	Slightly below double digits	Call rates cautiously allowed to ease	Small surplus of 1% of GDP
May 2, 1998	-1%	Below double digits	Call rates continue to be lowered.	Deficit of 1.2% of GDP
July 24, 1998	-4%	9%	Call rates continue to be lowered.	Deficit of 4% of GDP
Nov. 13, 1998				Deficit of 5%
March 10, 1999	2%	Around 3%	Reduce interest rates to support recovery.	Deficit of 5% of GDP.
Nov. 24, 1999	8-9 % in 1999	Less than 1% in 1999	Lower interest rates	Deficit of 3% in 2000
July 12, 2000	8-8.5% in 2000	Below 2.5% in 2000	Flexible interest rates, adjust to inflation pressures	Deficit of 3.5% of GDP in 2000

percent on December 24. Further increases will be implemented, if necessary.” To achieve these policy goals, the Bank of Korea (BOK) absorbed 2.8 trillion won from the market by selling bonds at alarming interest rates that reached 35 percent on December 23, 1997. Under these conditions, market interest rates skyrocketed above 30 percent. Overnight call rates soared throughout December 1997, peaked in January 1998, and then began to decline. It was in summer 1998 that interest rates returned to pre-crisis levels.

Korea’s financial restructuring plan, which required banks to meet the 8 percent capital adequacy ratio established by the Bank for International Settlements (BIS), further worsened the liquidity shortage facing domestic companies. According to the letters of intent with the IMF, commercial banks that did not meet the BIS standard by March 31, 1998 had until May 15, 1998 to submit plans for capital restoration, and supervisory authorities were required to examine them. Banks that failed to meet these conditions became subject to further IMF-led requirements in the restructuring program that included closures, mergers, or acquisitions.

Figure 2 Overnight Call Rates (%)



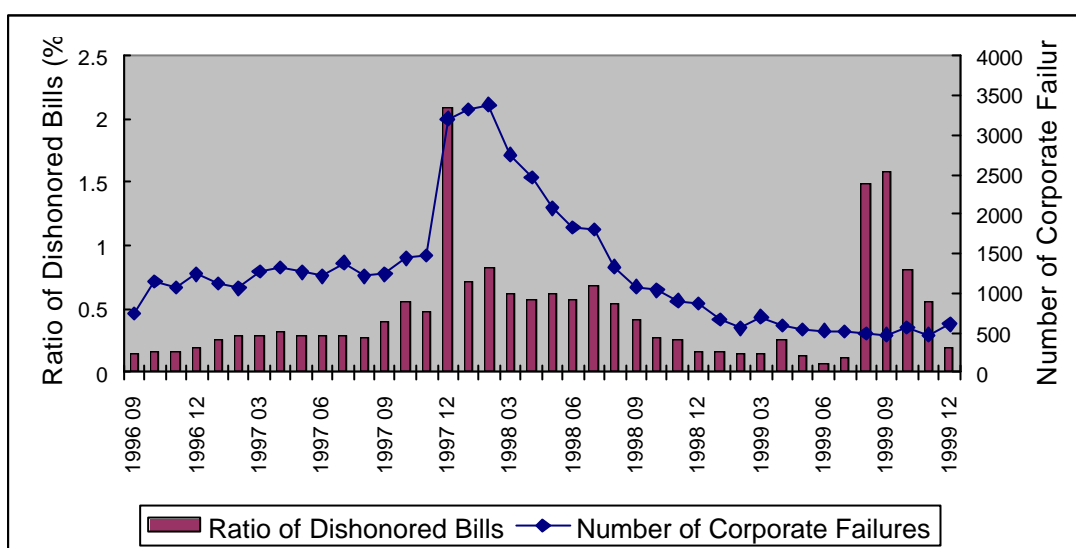
Source: Bank of Korea (2002)

Under strong pressure to meet the BIS capital standard and unable to raise capital in current market conditions, banks stopped providing loans and even withdrew some existing loans in order to reduce their total assets and so improve their capital / asset ratios. Banks' ability to meet the BIS standard was a decisive criterion of survival and reducing total loans was often the best way improve their capital ratios and also improve asset quality. In accordance with the IMF timetable, 12 banks submitted rehabilitation plans that were approved, and five -- Daedong Bank, Dongnam Bank, Dongwha Bank, Kyungki Bank and Chungchong Bank -- were declared nonviable and closed on June 29, 1998.

Domestic corporations and households were each badly effected by the credit crunch. For most firms, bank loans were a main source of corporate finance. High interest rates and reduced bank lending brought about mass unemployment and a dramatic increase of firm failures. The strain on firms was reflected in the ratio of dishonored corporate trade bills. Immediately following the crisis, the proportion of dishonored bills jumped to 2.09 percent in December 1997, the highest since the BOK began compiling the statistics in 1968, from 0.48 percent the previous month (Figure 3).<sup>2</sup> Corporate trade bills, generally issued by large companies to small- and medium-sized enterprises (SMEs), had been an important means of payment. Customarily, many larger firms used promissory notes in commercial transactions, settling accounts by issuing promissory notes that guaranteed payment in cash in 3 to

<sup>2</sup> In August 1999, it soared again due to the insolvency of Daewoo Group, one of the top three chaebols.

Figure 3 Ratio of Dishonored Corporate Trade Bills and Number of Corporate Failures



Source: Bank of Korea (2002)

6 months. Before the crisis such promissory notes comprised 80 percent of payments to SMEs. These bills were circulated like checks or could be sold for immediate cash to merchant banks at discounted prices. This payment mechanism increased the interlinkages among companies; one company's bankruptcy could initiate a chain reaction throughout the corporate note system.

The number of corporate failures jumped to 3,197 in December 1998 from 1,469 in November (Figure 3). At that rate, more than 100 companies went belly-up every day. The number of insolvent corporations continued to climb to 3,377 in February 1999 and then began to drop back to under the level of a thousand per month by October 1999. The credit crunch brought about the failure not only of marginal companies but sound ones as well.

Another crucial issue was unemployment. Due to the series of bankruptcies and restructuring efforts, Korea's unemployment rate soared -- from 2.0 percent in 1996 to 6.8 percent in 1998. This growth in unemployment came as a shock because Koreans had been familiar with low unemployment, around 2 percent, since 1988. In particular, regular employees who depended on their wages were hurt. These so-called "salary men" prided themselves on the key role they had played in the nation's rapid development as they had worked at the companies throughout the economy, from chaebols to SMEs. These steady

Table 2 Number of Regular Employees (Thousands of persons)

1996	1997	1998	1999
7,401	7,151	6,457	6,050

Source: National Statistics Office (2002)

employees constituted the majority of the middle class and contributed to social stability. The number of regular employees dramatically shrank from 7.4 million persons in 1996 to 6.1 million in 1999 -- 20 percent of wage employees lost their jobs during the crisis period (Table 2).

The number of jobless people rose dramatically to 1.5 million in a short time period. Moreover, most of the unemployed did not have unemployment compensation or insurance, and the economic problems faced by these workers led to social difficulties such as homeless people and the collapse of families. The Korea Herald (August 5, 1998) reported an example: "Far worse is the situation of Kim..., who lost his home and domestic life when his furniture store in eastern Seoul went bankrupt after a severe sales slump. After Kim defaulted on bills and failed to pay interest on outstanding loans, creditors sold his apartment at auction. Suddenly homeless, Kim was forced to send his wife and two children to a small town near Taegu where his in-laws live."

### **Collapse of Daewoo and Its Legend of Growth**

The insolvency of the Daewoo Group and financial collapse of its founder Kim Woo-Choong in 1999 marked the end of Korea's myth of rapid growth. The success story of Kim Woo-Choong and the Daewoo Group was a symbol of Korea's rapid growth. After spending a few years as an employee at a trading company, in 1967 Kim Woo-Choong (at age 31) opened his own small textile trading company with 5 employees by borrowing \$10,000. Within five years, Daewoo was the leading textile exporter due to his hard work. Kim expanded his business from textiles into heavy industries -- autos, ships, security, construction and electronics -- the country's strategic industries for exports. Over three decades he built the Daewoo Group into one of Korea's top three chaebols, a conglomerate with \$76 billion in annual sales.

Koreans believed that Kim owed his success mainly to his diligence and passion for his job. His dedication to his work was legendary and a symbol of the modern Confucian work ethic. He, like many workaholics, slept only four or five hours per day and worked from 5 a.m. to 9 p.m. without holidays. It is said that he took only two days off in three decades -- for his daughter's wedding and his son's funeral. He even washed up and had breakfast in his car to save time. Whenever his business was in a slump, he overcame the difficulty with dedication to the job. When his shipbuilding company ran into trouble he spent a year and a half working and sleeping at the shipyards with the workers.

Kim was a smart businessman and a leader in raising the flag of global business. He published a best-selling biography, "It's a Big World and There's Lots to Be Done," in 1989. In his book he advises young Koreans to go abroad with the spirit to accept challenges and do their best to turn impossibilities into possibilities. The Daewoo Group was transformed from a local firm to a global corporation with 396 subsidiaries and 134 affiliates abroad. Kim moved aggressively to build auto and electronics plants in emerging markets including Indonesia, Uzbekistan, and Poland. His diligence, work ethic, and progressive spirit inspired many young people in a small emerging country.

Despite market concerns and rumors about Daewoo's high level of debt, Daewoo did not stop its expansion efforts. For example, in June 1999 Daewoo Motors announced plans to buy the troubled Samsung Motors only a week after announcing a debt refinancing plan. To cope with the group's growing liquidity problems, Kim Woo-Choong announced in July that he would pledge his private assets and over 10 trillion won of Daewoo assets as collateral for fresh loans and rollovers of maturing loans. However, the efforts to restructure Daewoo's debt were too late, and the creditors refused to inject more funds. In August the creditor banks announced a plan to resolve the insolvent units of the Daewoo Group. Twelve affiliates, including trade and motor companies, were placed under a workout program that included a temporary freeze on debts, debt rescheduling, and the injection of new operating funds. After the announcement, Kim resigned his post as chairman of the group, left Seoul, and allegedly moved to Europe.

Daewoo's financial troubles provided another shock to the financial markets that were just recovering from the crisis. Investment and trust companies that owned more than one-third of Daewoo's debt were threatened by runs on their deposits. The government prepared and put in place a number of measures to stabilize the financial markets, including the establishment of the Bond Market Stabilization Fund and the introduction of a system of partial redemptions of Daewoo bonds that differentiated payouts based on the holding period and remaining maturity.<sup>3</sup>

The failure of Daewoo was the end of an era. Koreans expressed skepticism about the future of the country's main engines of growth and concern that it would take a long time to find new momentum to replace the traditional growth engines. The chaebols had led Korea's rapid growth based on leading industries such as automobiles, shipbuilding, and electronics. Korean cultural traditions of diligence and passion for work had supported the growth and promoted productivity. In addition, many people began to have mixed feelings about globalization because of the example of Daewoo; Daewoo had risen to prominence on a strategy of globalization but, ironically, it failed due to it.

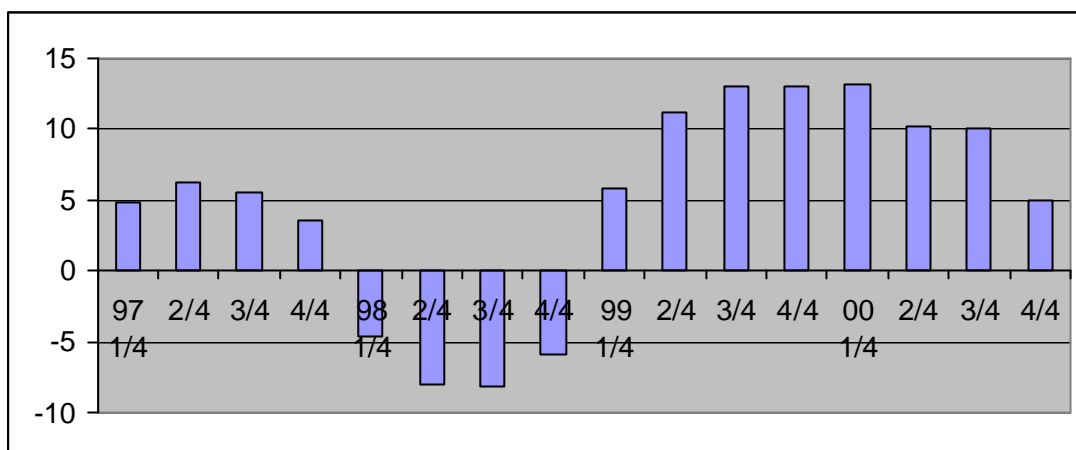
### **Rapid Recovery**

Korea's economy hit bottom in the third quarter of 1998 and then began to rebound. Quarterly data for 1999 illustrate a dramatic recovery. According to quarterly data compared with the same period of the previous year, GDP growth turned to a positive rate of 5.8 percent for the first quarter of 1999, after registering negative growth for four consecutive quarters in 1998. Growth remained strong, registering 11.2 percent in the second quarter and 13.0 percent in both the third and fourth quarters of 1999, the highest growth rates since the second quarter of 1988.

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<sup>3</sup> To prevent financial turmoil from massive redemptions of the Daewoo Group's bonds, investors were permitted to receive 50 percent of their exposure if they redeemed their certificates within 90 days of August 13. The rates increased to 80 percent after 90 days (November 11) and to 95 percent after 180 days (February 10, 2000).

Figure 4 Quarterly GDP Growth Rates (%)



Source: Bank of Korea (2002)

It is generally said that strong economic growth can mainly be attributed to favorable internal and external environments and appropriate macroeconomic policy. In 1998, Japan, Korea, and the U.S. each enjoyed favorable economic conditions -- the U.S. economy continued its strong growth, the Southeast Asian economies staged a turnaround, and the Japanese yen maintained a stable trend throughout most of the latter half of the year. The U.S. economy led the growth of the world economy with 3 percent annual growth. In the U.S., the bullish stock market was led by technology stocks and fueled by increases in consumer spending and the expansion of equipment investment based on information technology. The Japanese economy escaped from its long trend of negative growth, and the emerging Asian market economies started to show signs of strong recovery.

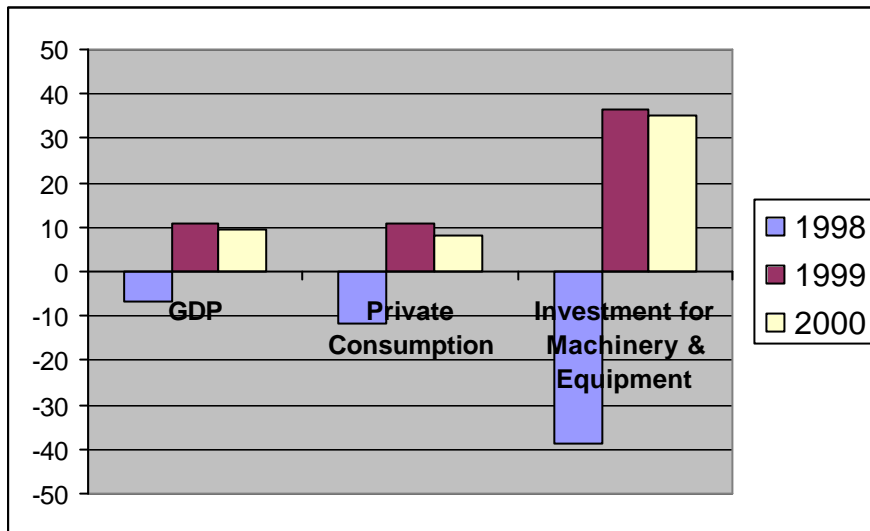
In Korea, the signs of recovery were all around. Thanks to improvement in the external environment, exports increased to 8.6 percent in 1999 from a contraction of 2.8 percent in 1998. The net impact of exports on GDP growth was not as large as might be expected, though, because imports jumped even more rapidly, from a contraction of 35.5 percent in 1998 to positive 28.4 percent in 1999. Changes in economic policy also contributed to Korea's recovery.

The government renegotiated with the IMF in order to expand fiscal spending and ease monetary policy to stimulate domestic business activities and job creation in the second half of 1998. Interest rates fell steadily and boosted business activity and the stock market. In May 1998 the Bank of Korea shifted its monetary policy stance to a more desirable target.

The marvelous recovery can be explained by increases in private consumption and investment for machinery and equipment (Figure 5). The growth rate of private consumption turned from negative 11.7 percent in 1998 to positive 11.0 and 7.9 percent in 1999 and 2000 respectively. The recovery of investment spending was particularly dramatic, with investment for machinery and equipment turning from a contraction of 38.8 percent in 1998 to increases of 36.3 percent and 35.3 percent in 1999 and

2000 respectively. Clearly, the strong upward trend in business activity was a major factor in the explosive investment boom. It is curious, though, that such an unpredictable recovery occurred during a period when unemployment was high and the Daewoo Group's collapse still cast a shadow over business sentiment.

Figure 5 Growth Rates of GDP, Consumption, and Investment in 1998-2000 (%)

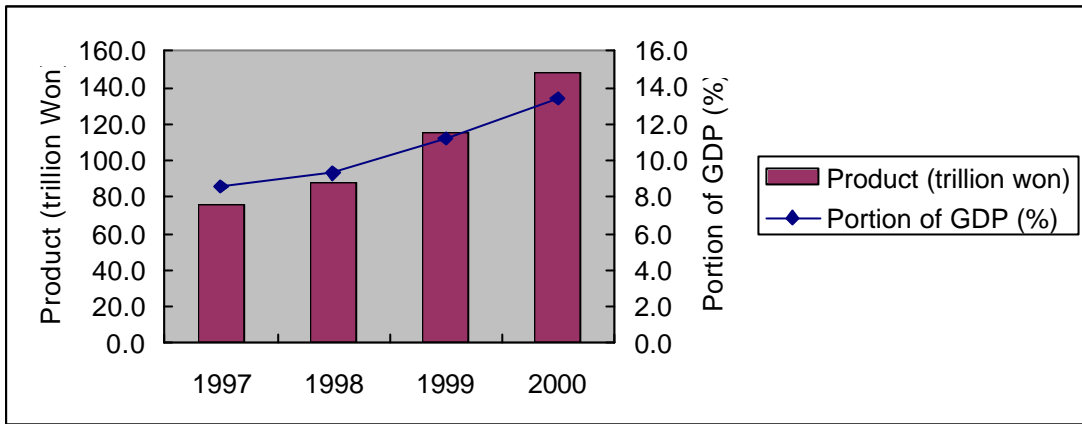


Source: Bank of Korea (2002)

The ICT industry provided the impetus for the miraculous recovery. The ICT industry had continued its rapid growth without interruption, even during the severe recession. It led the economy with high levels of investment after the crisis. The value-added from ICT production in 2000 accounted for 13.4 percent of GDP, jumping from 8.6 percent in 1997. Total ICT production rose from 81.1 trillion won in 1998 to 115.0 trillion won in 1999 and 148.2 trillion won in 2000 -- up 30.5 percent in 1999 and 28.9 percent in 2000 compared with the previous year. The ICT boom was spurred by the development of a number of new technologies including mobile phones, thin film transistor-liquidity crystal displays (TFT-LCD), Internet-related industries, broadband, digital-TV, and wireless Internet. The emergence of this wide variety of new technologies played a crucial role in boosting economic activity along with the traditional IT industry such as personal computer (PC) semi-conductors.

The Korean economy saw a remarkable recovery in domestic demand and stock prices. By 2000, it was generally accepted that the Korean economy had recovered from the 1997 financial crisis. In the domestic market, structural adjustments continue to be pursued in every sector of the economy in order to strengthen the foundations for long- term growth. Korea's goal is to create new growth momentum by unleashing market forces and shifting to a knowledge-based economy while working to lessen income disparities within the society.

Figure 6 Growth of the ICT Industry



Source: Ministry of Information and Communication (2002)

### **III. Information and Communication Technology Boom**

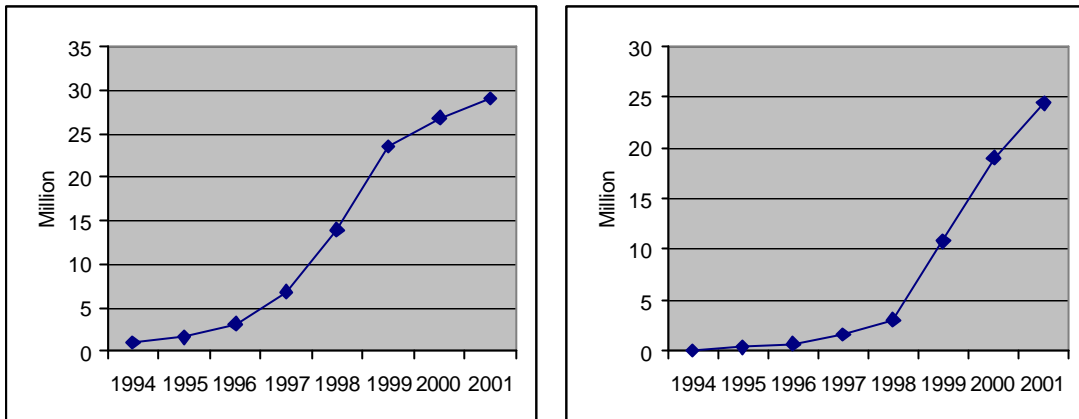
Although the ICT revolution gradually became a general trend in the U.S. and Europe, in Korea the change occurred in the short time span of 2 or 3 years and was dramatic. In addition, it was impressive that the ICT boom, which contributed to transforming Korea into a knowledge-based nation, occurred during the process of economic recovery.

#### **Explosive Spread of Mobile Phones, the Internet, and Broadband**

In Korea, mobile phones and Internet usage spread explosively despite the severe economic slump that followed the 1997 crisis. Within two years, the number of mobile phone subscribers rose more than three-fold, from 6.8 million in 1997 to 23.4 million in 1999 (Figure 7). Following its initial introduction in 1986, commercial mobile phone service grew slowly until 1996, when the number of subscribers stood at 3.2 million. The explosive growth began in October 1997 when Personal Communication Services (PCS) based on the new code division multiple access (CDMA) technology was launched. The introduction of three PCS carriers fueled strong competition with the two cellular-based providers.<sup>4</sup> Despite poor economic conditions due to the financial crisis, the number of subscribers increased tremendously due to aggressive marketing promotions and generous handset subsidies by the carriers. At the end of March 2002, the number of mobile phone subscribers exceeded 30.3 million, out of a total population of 47 million. This level of saturation means that in effect, if students, infants, and those over 80 years old are excluded, almost everyone in Korea has a mobile phone.

The number of Internet users grew even more dramatically than mobile phone users, increasing 5.1 fold within 2 years -- from 1.6 million in 1998 to 10.8 million in 2000 (Figure 7). Since commercial Internet services were first introduced in Korea in 1994, the number of Internet users increased gradually until 1997 when it stood at 1.6 million. The number of Internet subscribers reached 27.8 million by the end of May 2002, and the degree of personal computer diffusion reached 77.6 percent of households at the end of January 2002.

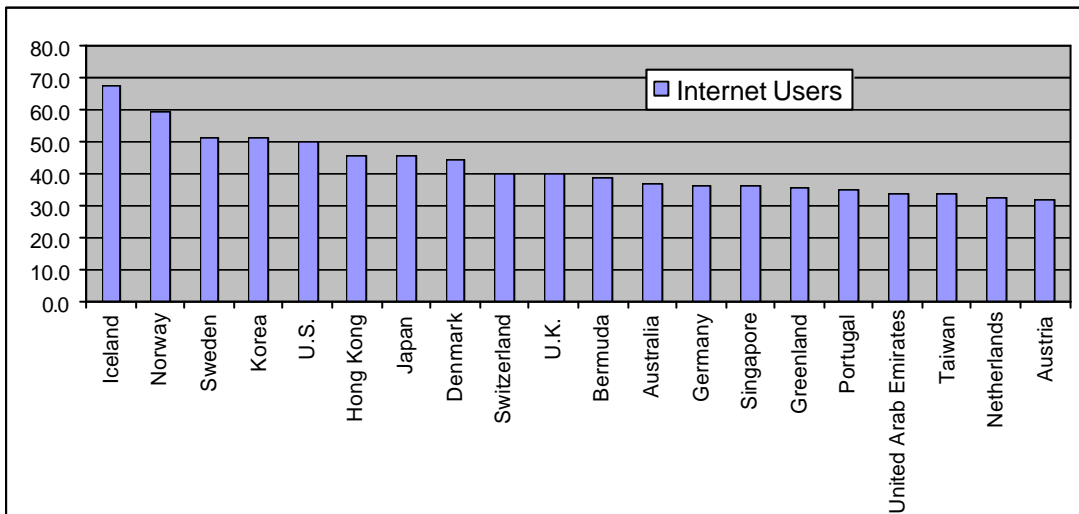
Figure 7 Number of Mobile Phones, Number of Internet Users (Millions)



Source: Ministry of Information and Communication (2002)

Due to the skyrocketing growth of the number of Internet users, Korea ranked fourth out of 196 countries in Internet users per 100 inhabitants, with a rate of 51.1 percent in 2001-- surpassing the U.S.,

Figure 8 Top 20 Countries in Internet Users (2001)  
(percent of population, 196 countries surveyed)



Source: International Telecommunications Union (2002)

the U.K., Germany, and Japan and standing behind only Iceland, Norway and Sweden (International Telecommunication Union, 2002) (Figure 8).

The penetration of broadband, high speed Internet networks in Korea is similarly amazing. According to the Organization for Economic Cooperation and Development (OECD 2001), Korea has become the number one country in penetration of broadband service. As of June 2001, Korea's high speed Internet subscribers accounted for 13.9 percent of the total population, compared with 3.2 percent in the U.S., 0.9

<sup>4</sup> Three PCS carriers – KT Freetel, LG Telecom and Hansol M.com – joined the two cellular-based

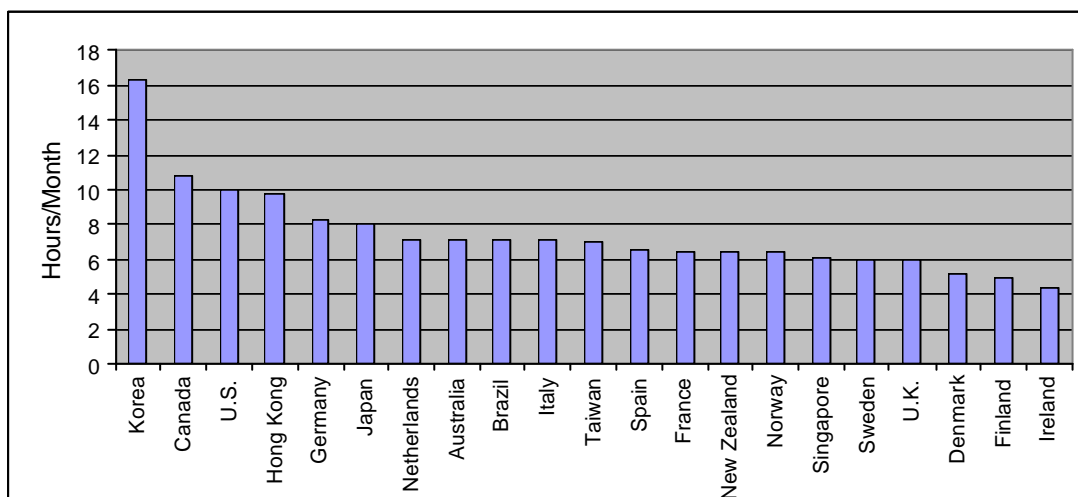
percent in Japan, and 0.8 percent in the European Union. By the end of the April 2002, broadband subscribers totaled 8.5 million, indicating that more than 55 percent of all households could access high speed Internet service through a broadband network. This is a remarkable jump, considering that there were only 0.27 million broadband subscribers at the end of 1999. The establishment of this broadband network, that transfers data 50 to 100 times faster than regular telephone modems, has important implications because it provides a basic infrastructure for developing e-commerce and the efficient exchange of a wide range of data and information, including movies and music.

### **Growth of e-Businesses and Establishment of a Knowledge-based Nation**

Korea also succeeded in achieving remarkable progress in the quality of its use of the Internet as well as in the quantitative figures; the Internet has already become part of Korean life. Koreans spend two to three times more time online than citizens of other countries in terms of average monthly pages viewed and Internet usage time per person. According to Nielsen's NetRaings (March 2001), Koreans ranked first in actual Internet usage, surfing an average of 6 hours and 17 minutes per month and logging an average of 2,164 views per month or 92 pages per online Web session (Figure 9).

Due to spread of broadband networks, the Internet is producing various businesses such as on-line banking, on-line trading, e-commerce, and on-line games. Korea offers a wide variety of Internet-based businesses and has become one of the leading ebusiness countries in the world. According to the Korean Online Banking Study conducted by AC Nielsen, a well-known world marketing company, the

Figure 9 International Comparison of Internet Usage (2001)



Source: Nielsen (2001)

number of Korea's Internet banking users reached 5.3 million at the end of 2001, indicating that 65 percent of regular Internet users are using Internet Banking. This is up by more than 2 million from the previous year, and Korea was ranked as a leading country for Internet banking in the region.

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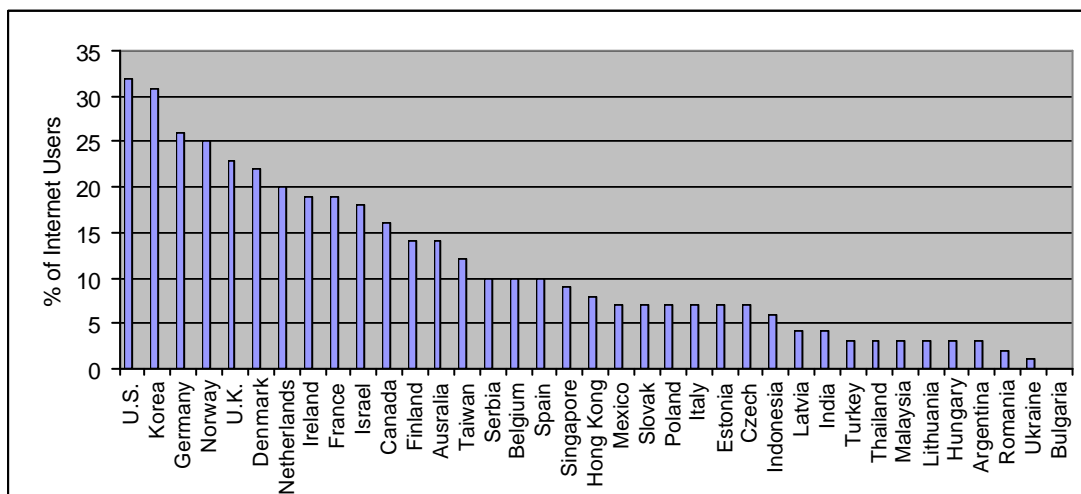
providers—SK Telecom and Shinseigi Telecom—in the mobile service market.

Internet banking took off sharply after being introduced in July 1999. As of March 2002 all local banks and post offices provide Internet and mobile telephone-accessible banking systems, providing diverse services such as account inquires, money transfers, and loan applications. According to the March 2002 Survey on Usage of Domestic Internet Banking prepared by the BOK (2002), 12.4 million customers are registered for Internet services and 0.5 million companies are using such services. By year-end 2001, banks conducted 10.5 percent of total financial services via the Internet, 12.4 percent by tele-banking services, 35.6 percent by cash dispensers (CDs) or automated teller machine (ATMs), and 41.5 percent by traditional window tellers.

On-line stock trading has emerged as a major trading system. The Korea Securities Dealers Association (KSDA 2002) reported that 65.9 percent of total share trading was conducted online in December 2001 - - 60.2 percent for the Korea Stock Exchange (KSE) and 77.7 percent for the Korea Securities Dealers Automated Quotation (KOSDAQ) market. Online stock transactions soared in a short period, reaching 55.9 percent of total stock trading in 2000 from 25 percent in 1999. Online trading services are being extended to the futures and options markets.

E-Commerce such as Internet shopping also is growing steadily in Korea. According to the Global eCommerce Report by Taylor Nelson Sofres Interactive (2002), a major market information company's research subsidiary, Korea is just behind the U.S in the ratio of online shoppers (the percent of Internet users who have bought goods or services online during the past month). In 2002 Korea ranked second out of 37 countries with 31 percent compared to the U.S.'s 32 percent (Figure 10).

Figure 10 Online Shopping Ratios

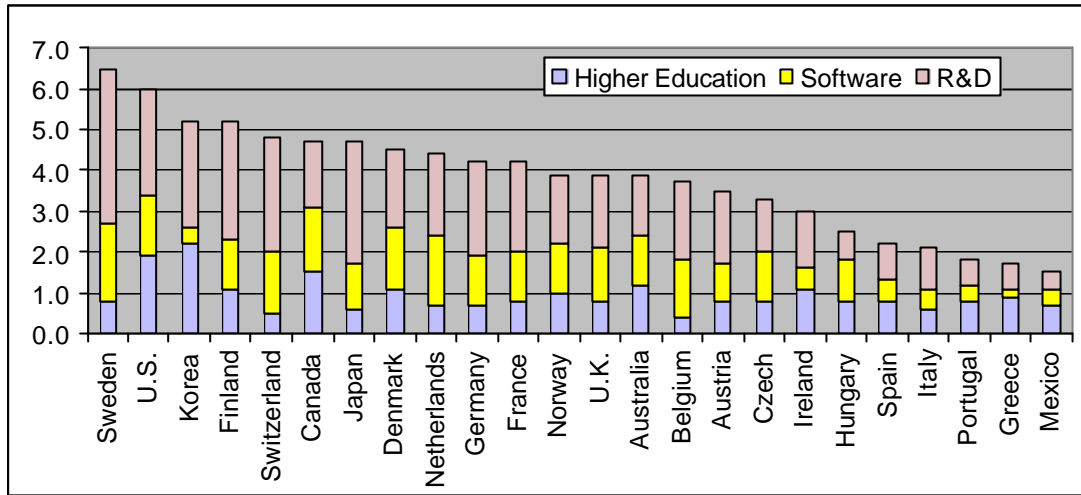


Source: Taylor Nelson Sofres Interactive (2002)

With the ITC boom at the end of the 20<sup>th</sup> century, Korean society seemingly transformed itself into an Internet-based, networked society in a short period. The OECD (2001b) ranked Korea with Sweden, the

U.S., and Finland as the four leading knowledge-based economies. For 1998 Korea stood in third place, investing 5.2 percent of GDP in “knowledge”<sup>5</sup> (Figure 11).

The Figure 11 Investment in Knowledge versus GDP (1998) (percent)

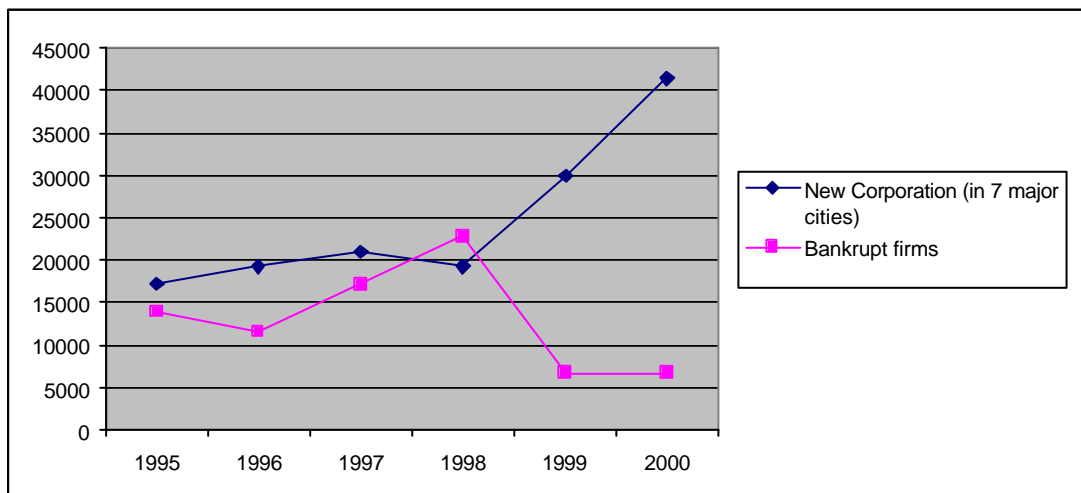


Source: OCED (2001)

### Venture Boom and Development of the KOSDAQ Market

Korea’s venture boom fueled the development of the ICT revolution that triggered Korea’s rapid recovery. During 1997 and 1998, business activity shrank alarmingly and the number of bankruptcies

Figure 12 Numbers of Start-up and Bankrupt Firms



Source: Bank of Korea (2002)

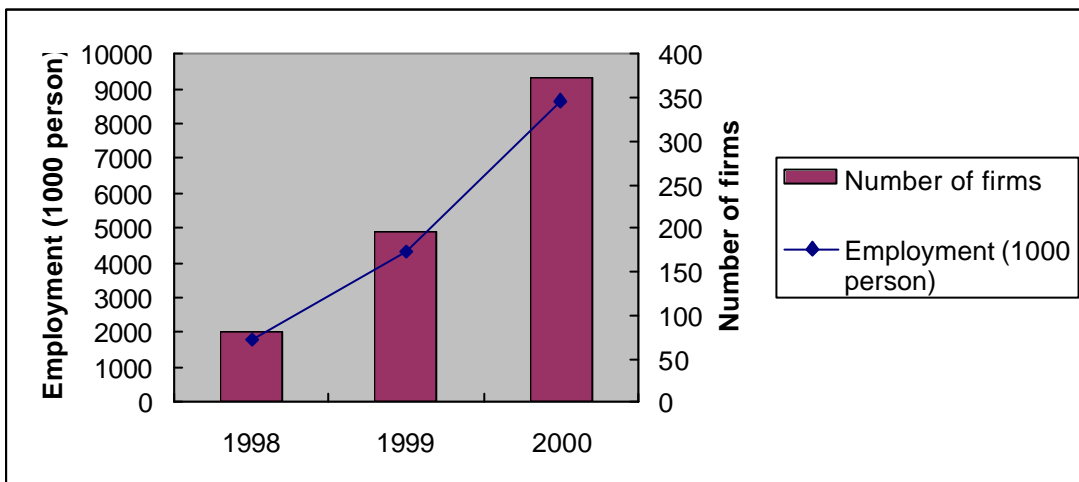
soared. Many firms, including large conglomerates, collapsed due to heavy debts and the economic slump. Their subcontractors and parts providers, generally SMEs, also suffered severe financial

<sup>5</sup> The OECD calculated the sum of expenditures on R&D, total higher education from both public and private sources and software compared to GDP.

difficulties. Moreover, difficulties at financial institutions brought about a severe credit crunch, and the market pressed the entire economy to restructure. As a result, the number of bankruptcies increased sharply, nearly doubling in two years, from 11,600 in 1996 to 22,800 in 1998 (Figure 12).

The unanticipated venture boom, however, reversed the situation quickly. Venture firms attracted investors into the stock market and workers to Internet start-up companies, and then shook up the nation's stodgy business culture. Starting in 1999, the number of start-up corporations increased sharply, from 19,277 in 1998 to 41,460 in 2000. At the same time, the number of bankruptcies sharply decreased from 22,828 in 1998 to 6,693 in 2000 (Figure 12).

Figure 13 Number of Venture Enterprises and Employees



Source: Bank of Korea (2002)

The high-tech venture enterprises made a great contribution to the rapid economic recovery. They played a crucial role in absorbing unemployed workers by increasing their employment from 71,000 persons to 268,000 persons as the number of venture firms increased from 2,042 in 1998 to 8,798 in 2000 (Figure 13). At the end of 2000, venture enterprises accounted for 224 of 604 listed companies in the KOSDAQ market.

The venture boom also largely spurred the rapid development of KOSDAQ market. KOSDAQ, which is modeled after the U.S. NASDAQ market, was established in June 1996. During the second half of 1999, the KOSDAQ market emerged as a “dream market” for the government’s efforts to foster venture businesses and a worldwide telecommunications and Internet stock boom. The growing influence of the venture enterprises is clearly visible in stock market statistics, with the market capitalization of the leading venture firms growing close to that of the top chaebols. Total stock market capitalization jumped from 5.6 trillion won in June 1998 to 45.6 trillion won at the end of 1999. In particular, the KOSDAQ market recorded explosive growth with the market index soaring more than 340 percent from the previous year on the back of the global telecommunications and Internet-related stock boom.

In addition to the boom in venture firms, in 1999 SMEs raised a total of 1.12 trillion won by issuing stocks. This figure represents an increase of 342 percent compared with 253.6 billion won in 1998. Growth was especially strong in the KOSDAQ market where SMEs issued stock worth 713.4 billion won, an increase of 89 times compared with 8.0 billion won in 1998. Due to the bullish KOSDAQ market, many SMEs and venture firms were able to raise capital. Generally SMEs used the capital infusions for financial restructuring, while the venture firms used the funds to establish themselves and grow.

The stock market boom was supported by the introduction of two new institutional structures -- mutual funds and the KOSDAQ market. Mutual funds were first introduced at the end of 1998 and spurred the development of Korea's fledgling indirect investment industry. That industry has continued to prosper, and some fund managers for stock-type beneficiary certificates and mutual funds have drawn public attention as their annual salaries break through the 100 million won mark. Indirect investment instruments absorbed a substantial amount of market money and served as a catalyst for the stock market boom.

The ICT revolution clearly has had a substantial effect on Korea – its economy and culture. ICT technology “rescued” Korea from the economic difficulties following the 1997 crisis, but the full extent of its impact has yet to be determined – in Korea and beyond. The ICT revolution and the integration of this most recent wave of technological innovation have proceeded throughout the nations of the world, each at its own pace. The overall effect, however, has been profound and the channels and methods of change bear further consideration.

## **IV. The Causes of Rapid Development of ICT**

Economic analysis suggests a number of causes of the ITC and venture booms. On the supply side, the acceleration of competition due to market mechanisms stimulated lower prices that in turn spurred further increases of demand. On the demand side, consumer needs and demand inspired increased production and investment that in turn led to economies of scale that lowered prices further. Additionally, the stock market boom and development of venture capital boosted investment in new technology, while the government encouraged the private sector by establishing institutional frameworks such as the KOSDAQ market and designing a master plan.

### **Supply Side: Competition and Low Prices**

The rapid diffusion of mobile phones was triggered by the emergence of new competitors that introduced price competition. There had been considerable demand for mobile phones since the mid-1990s; however, demand was constrained because people hesitated to buy the expensive handsets. Competition led to the sharp reduction of the price of mobile phone handsets and contributed to the mass popularization of wireless telecommunication. The rapid growth was fueled by heated competition among five operators -- two cellular providers and three PCS providers -- that began in October 1997. Before then, the nation's largest cellular carrier, SK Telecom, had dominated the market and enjoyed an almost monopolistic position. In October 1997, the trio of PCS providers entered the mobile phone service market in response to market deregulation. They dropped the price of handsets in order to attack the cellular giant and try to establish a lead among rival PCS carriers by providing subsidies to subscribers that lowered handset purchase costs. With the generous subsidies, customers could purchase new mobile phones for as little as 40,000 won (\$32). During a one-year span, the PCS trio attracted a combined total of over 4.6 million subscribers.

The spread of Internet broadband networks was also triggered by competition between companies having different technologies. Korea Telecom (KT) and Thrunet first started high speed Internet service via cable television networks in July 1998. They soon faced a challenge from a new entrant, Hanaro, armed with a new technology -- asymmetric digital subscriber line (ADSL). Hanaro, the second largest local telephone line provider, developed a new technique that carried telephone and high speed Internet signals at the same time over existing copper local telephone lines. The high level of competition between the different infrastructure providers triggered better service at a cheaper price, thanks to technological progress.

The fact that most Koreans live in densely populated areas also contributed to the rapid growth of high speed Internet services. The concentrated living pattern allowed subscribers to connect easily to a backbone network of fiber optic cable. It is a socio-geographical advantage that more than 90 percent of households live within 4 kilometers of a local exchange, and most offices and half of all households

(about 7.5 out of 15 million) are in apartment complexes (ITU 2001). Low installation costs along with price competition contributed to low connection fees of around 35,000 won (about \$28) per month.

### **Demand Side: Consumers' Needs**

Internet usage spread throughout the population in different ways, depending on the generation. Because Korea manufactured many PCs, computers had come into relatively wide use in Korean society. However, for a long time the majority of Koreans did not see the necessity of the Internet. The factors that led Koreans to be captivated by the Internet were computer games and online trading. Young students rapidly became fascinated with the Internet through computer games such as "StarCraft" and middle-aged people were drawn in by online stock trading.

There was a boom in playing Internet games among young students (teens and pre-teens) in 1999. The "StarCraft" craze is the best known. StarCraft, a network-based computer game, was introduced to Korea in April 1998 and spread quickly among youngsters. Due to their enthusiasm for the game, one million units were sold by October 1999. Its most appealing feature is "battle net," an Internet-based network over which players can play against each other, instead of only on their own computers.

While the young were playing StarCraft over the Internet, somewhat older people were rapidly becoming fascinated with online stock trading over the Internet. Although online stock trading was first introduced in Korea in mid-1997, most customers did not pay much attention. Online stock trading started to win substantial popularity in 1999, however, as several companies offered reduced commission fees for online trades. This was the period when the stock market was recovering rapidly. As the demand for online stock trading boomed, domestic securities firms competed with each other by cutting their commission charges. The price-cutting race started in August 1998 and as competition began to intensify the cuts continued; most local brokerage firms ended up slashing their commission charges for online trading by up to 50 percent. From 3 percent of trades at the end of 1998, online trading jumped to 35 percent by the fourth quarter of 1999 and more than half of all stock trading in 2000. By the end 2001 online stock trading accounted for 65.9 percent of all stock transactions, the highest proportion in the world.

As the demand for Internet services surged, the variety, number, and size of businesses providing Internet facilities grew rapidly. For example, many students who did not have high quality PCs could inexpensively enjoy playing games at Internet cafes equipped with multimedia computers and high-speed Internet lines. The so-called "PC Bang" was closely related to the StarCraft craze. Before StarCraft there were only 500 Internet cafes in Korea; the game boom spawned Internet cafés nationwide. According to Ministry of Information and Communication's (MIC) data, there were 2,500 Internet cafes in 1998, 15,000 in 1999, and 17,000 in 2000. Youngsters, in particular students, could enjoy the Internet for less than \$1 per hour. StarCraft and Internet cafes spurred each other's success and quickly introduced young Koreans to the Internet.

Consumer demand played a crucial role in the explosive diffusion of broadband services as well. The attraction of Internet Phone (IP) telephony that allows the transmission of data, voice and video over a single network infrastructure is an example of the importance of the demand side (ITU 2001, OECD 2001) in increased Internet usage. For example, Serom Technology's Dialpad service, which provides free phone calls via PCs and the Internet, was first introduced in January 2000 and won extensive popularity, signing up 4.3 million subscribers in its first year. Consumers rushed to sign up for this and other services that offered discounted calls, including international calls, over the Internet and then finally local telephone networks. Consumers were willing to subscribe to high speed Internet services in order to improve the quality of free phone services, rather than pay the relatively expensive charges for traditional international calls. In addition, once the household had established high speed Internet service, the young generation was able to play more sophisticated games with high-quality graphics, and middle-aged consumers were able to use Internet banking and stock trading services more effectively.

### **Stock Market Boom**

The explosive growth of the Internet produced a venture boom in the stock market. The feverish venture boom brought investors into the stock market and those investment funds provided financing for fledgling ICT firms that were nurtured in a short period. The strength of the venture boom is clearly visible in stock-market statistics. Total stock market capitalization jumped from 5.6 trillion won in June 1998 to 45.6 trillion won at the end of 1999.

The KOSDAQ market in particular recorded explosive growth, with the market index soaring more than 340 percent in one year due largely to the boom in global telecommunications and Internet related stocks. Conditions overseas, including the boom in the U.S.'s NASDAQ market, also helped to boost Korea's domestic stock market. During the second half of 1999, the tremendous growth of the KOSDAQ market provided the financial resources to allow venture businesses to establish themselves.

The KOSDAQ market produced a long list of self-made-billionaire stories. Many entrepreneurs with engineering degrees from college and armed with nothing but creative talents struck it rich overnight, while many top talents quit private and state-run research labs to start their own venture firms. The venture boom is leading to changes in workplace traditions such as strict seniority rules, lifetime employment, and company loyalty. In the process, some big companies are remaking themselves in the model of the upstarts.

### **Role of Government**

The Korean government contributed to the development of these new and somewhat risky new technologies. For example, one of the reasons for the rapid diffusion of mobile phones was the CDMA technology that enabled almost anyone to afford a powerful, relatively inexpensive handset. The technology was developed by the Electronics and Telecommunication Research Institute (ETRI), one of

the research arms of the MIC. The ETRI led the project to develop CDMA technology in cooperation with private companies. Korea concentrated research manpower and capital while sharing the burdens of the initial investment and the risk of failure. Korea was the first market in the world to adopt the CDMA format as the standard for its national wireless telecommunications infrastructure.

Public funds also contributed to the construction of infrastructure and advancement of technology in the early stages of development, despite arguments regarding the relative efficiency of public funding. The development of core technology in the ICT sector requires large initial investments. The MIC has a “Fund for Promotion of Information” that is financed from contributions of telephone companies. The monies are funneled to ETRI, universities and so on to promote R&D and trainings. The fund has been used to develop the time division exchange (TDX) switch system and CDMA technology and has invested in infrastructure projects like high-speed networks.

The government developed the blueprint for Korea’s ICT development. The MIC unveiled the project, named “Cyber Korea 21,” in March 1999. The plan called for spending 28 trillion won by 2002 to upgrade IT infrastructure, provide training programs, and establish legal frameworks to vitalize e commerce and the IT industry. The MIC encouraged private investments by promising to build a backbone network for high-speed communications with 0.7 trillion won from public funds.

Korea’s government also revised laws related to the ICT sector, such as intellectual copyright laws, to promote e-commerce and acted to create new institutions to boost investment. The introduction of mutual funds in 1998 permitted an indirect investment industry to develop and thrive. Indirect investment instruments absorbed a substantial amount of investment funds and served as a catalyst for the stock market boom, particularly the KOSDAQ market that was first established in 1996.

The role of Korea’s government in supporting private business activities is greater than in other countries. Internet PCs, the so-called “National PC” in Korea that was introduced in October 1999, is one example. Despite the Internet boom in 1999, the penetration rate of PCs at home remained low, mainly due to the high price of Internet-ready computers. Prices had not fallen because the market was dominated by four major PC manufacturers. The MIC unveiled an Internet PC project to provide affordable computers and so encourage people to buy computers for home. A goal of the project was to close the digital divide between the affluent and low-income earners. The government worked with PC suppliers who agreed to sell uniform multimedia PCs at under one million won (about \$850 at the time) and established an installment payment plan through the Post Office. This project stimulated competition in the PC market and contributed to the lowering of prices. As a result of the reduced prices, many people bought Pentium III class Internet PCs. The MIC estimated that about two million Internet PCs were sold in one year. This government initiative made multimedia personal computers affordable for many more citizens and had a significant impact on the spread of the Internet in Korea.

Without doubt, market forces driven by competition and consumers' needs and funded by the stock market boom led to the rapid growth of ICT in Korea. The government played an important role as well, by providing both legal structures and subsidies to encourage technological development and increase consumer demand.

## **V. The Internet and Cultural Transition**

Without doubt various economic factors are crucial in explaining Korea's remarkable success in embracing the Internet in such a short period of time. Nevertheless, two questions remain to be answered: (1) why did similar developments not occur in other countries although similar economic factors were introduced? and (2) why did these developments occur during such bad economic conditions? To explore these puzzles, cultural matters must be considered as well as economic factors.

### **Internet Boom and Desire for Self-Expression**

The Internet promotes active exchanges of information and provides a variety of channels for the free expression of ideas. These factors have contributed to the growth of the Internet worldwide and to Korea's Internet boom in particular. Traditionally, most Koreans have a modest demeanor and are shy in presenting themselves in public. Compared to many other cultures, Koreans may appear to have poor oral communication abilities, such as presentation and public speaking. Traditional Korean culture teaches that it is impolite to debate or criticize, in particular against more senior ranking persons and the elderly. Korean audiences generally remain silent and do not raise questions or express opposing opinions; both presenters and audiences for the most part feel uncomfortable discussing and debating issues. Koreans believe that a direct response can hurt the other party's feelings, and so sometimes use ambiguous expressions instead of clear "yes" and "no" answers. The traditional Korean demeanor is an obstacle to developing a culture of discussion that is a fundamental factor of democracy and also can be a hindrance in the modern business world.

For most Koreans, "saving face" is a top priority. In Korea, "saving face" means preserving one's dignity, self-respect, or good reputation and entails careful attention to the expectations of others, including adherence to the social order. Modesty is a key component of "saving face." These cultural aspects of Korean culture have stifled free discussions and debates, and due to such behaviors, Koreans are easily misunderstood and/or underestimated in western societies where a more assertive "show and tell" demeanor is positively encouraged and is the norm. The need for foreign interests to understand the local business culture, including East Asia's "saving face" culture when they conduct business in Korea, China, Japan, and Hong Kong is well recognized. (Executiveplanet, 2002)

Koreans' modest demeanor is closely related to East Asia's traditional culture. East Asian societies have developed to include a hierarchical social order based on Confucian values. The hierarchy puts priority on etiquette in keeping social order. Young people are expected to respect elderly people and obey them, just as lower-ranking persons are expected to show respect and obey more highly ranked persons. Under such a hierarchical structure, young and low-ranked persons are not free to express their opinions. This emphasis on courtesy and deferential behavior, particularly regarding younger and older persons, sometimes imposes a barrier to free expression and the differences between traditional and contemporary, western values likely contributed to Korea's Internet boom.

Although the cultures are quite different in many ways, both Confucian culture and western culture teach that people should clearly distinguish between right and wrong. In fact, it is a duty of Confucian scholars, as leaders of public opinion, to criticize and correct rulers and other leaders if they make mistakes. At the same time, though, Confucianism teaches that it is necessary to respect the other person when offering criticism by doing so within the boundaries of etiquette. People must rely on formality to show consideration for others' feelings, using polite words and indirect manners as much as possible when they must criticize or debate. Within this cultural context, Koreans intentionally minimize debate and blame. When debate is unavoidable, it is conducted in the East Asian style of moderation and extreme courtesy, far different from many western debates where fierce discussions frequently occur.

Confucianism also teaches that silence or simple speaking is desirable rather than complex and fluent speech. In *Analects*, Confucius said, "Cleverness and a pretentious manner of speech are seldom compatible with benevolence (*ren*)." To the contrary, he said, "Resolutions, persistence, simplicity and clumsy speaking are close to benevolence" (chapter 13, verse 27). His teachings encourage people to take action and avoid lip service, and Koreans have traditionally been careful and spare in their speech as much as possible.

The Internet, though, introduced dramatic changes to Korea's social culture. The Internet provides new forms of communication, such as e-mail and Internet chatting, that have altered people's lifestyles and are leading a shift from deference to self-assertion when expressing opinions, particularly among the young. The younger generation of Koreans has tended to gravitate toward the more open and liberal western-style culture, and the Internet supplies a means to overcome the barriers of Confucian social norms. Traditional etiquette requires the use of honorific titles and expressions and polite language to elders, seniors, and teachers. Communications must avoid any expression that harms the other party's feelings. In cyberspace, participants are much more free in communicating and giving their opinions. In cyberspace, persons use id names instead of real names and with that degree of anonymity they can more easily overcome shyness and the inhibitions of the face-saving culture. Over the Internet, Koreans bravely give their opinions and do not hesitate to debate issues. The phenomenon of rude manners, unthinkable in face to face communications, has appeared on the Internet. In the past, when the government held a public hearing, only a few people would offer their opinions. Recently, though, as soon as the government announces a new plan, comments rush in via e-mail.

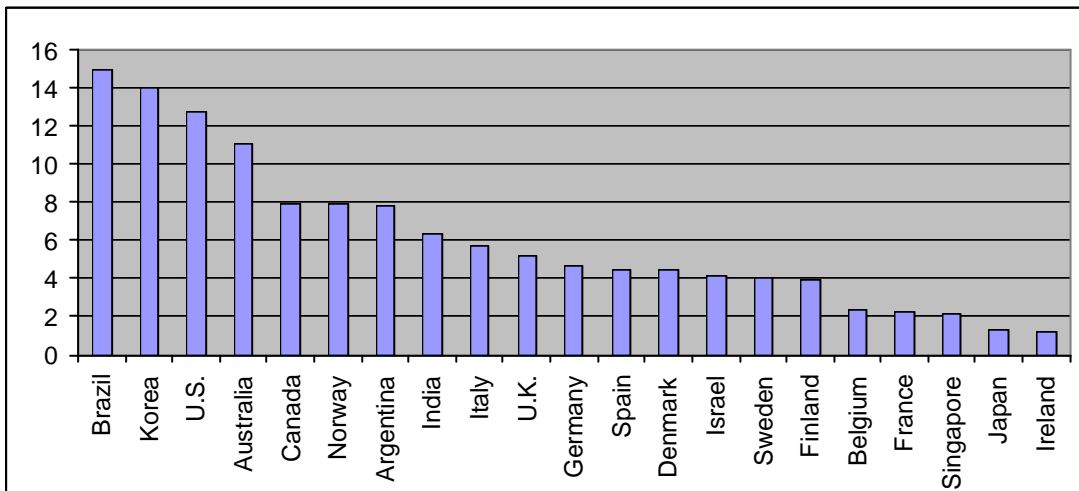
The strong desire by many Koreans to loosen the hierarchical social structure led them to adopt the Internet wholeheartedly and make it part of daily life. The Internet helped to ease tensions between old customs and new desires by allowing a coexistence of the two sets of values.

### Venture Boom: Empowerment as the Chaebols Faltered

Venture businesses throughout the world are special entities. They differ from traditional businesses in many ways and yet defy easy description. Venture businesses grow from a spirit of overcoming challenges and require independent business minds that are willing to take risks. Venture businesses require independent entrepreneurs and investors with relatively high tolerances for risk who are willing to chase a chance of high profit even with the danger of loss. The growth of entrepreneurs who want to manage their own businesses instead of accepting the safety of jobs in large companies will encourage the development of new venture businesses. In Korea, traditionally conservative and dominated by chaebols, changes in the business environment led to just such a venture boom.

Entrepreneurship obviously was active in Korea in 1999 and 2000. The Global Entrepreneurship Monitor (GEM) initiated by Babson College and London Business School calculates Total Entrepreneurial Activity (TEA) to compare entrepreneurship in various countries. TEA is based on surveys, interviews, and national data and assumes that entrepreneurship is strongly associated with business activity and economic growth. According to TEA prevalence rates, Korea ranked second highest of 21 countries in 2000, higher than the U.S. and E.U. countries (GEM 2002). This high ranking is mainly attributed to the extremely high level of new businesses (Figure 14).

Figure 14 Total Entrepreneurial Activity (TEA) Prevalence Rates (2000)

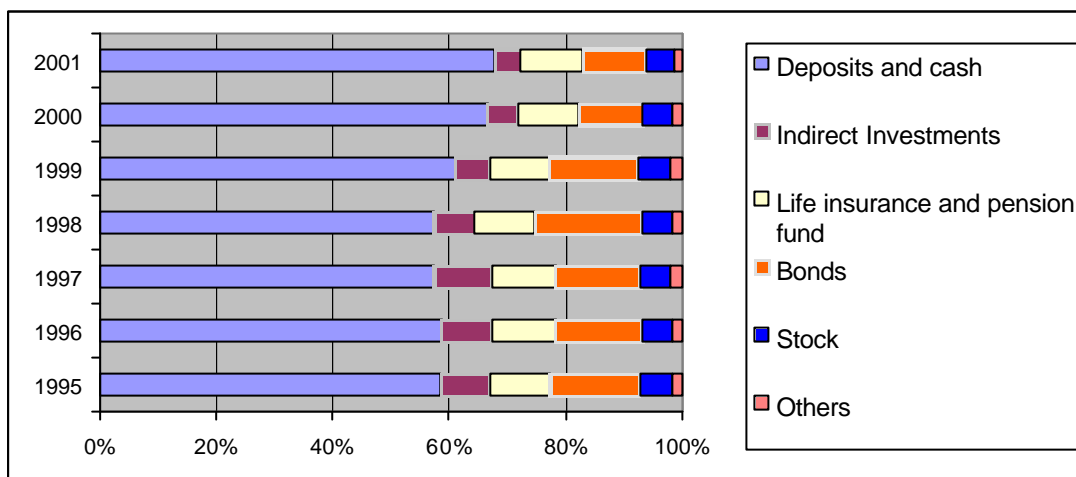


Source: Global Entrepreneurship Monitor (2000)

While entrepreneurship was flourishing, however, no obvious evidence of a change in attitudes toward risk-taking could be found. It has generally been said that Koreans dislike risk. Personal asset management patterns are often used to compare risk aversion across countries, and Korean households habitually prefer to hold safe assets such as cash and bank deposits rather than riskier assets such as stocks, due to attitudes toward risk. Koreans' attitudes are close to those found in Japan and China and far from the U.S where households are willing to take on more risk. According to BOK data, in the late 1990s Korean households increased the portion of safe assets such as deposits, life insurance, and

pension funds that they held. The proportion of total financial assets held as deposits and cash rose from 58.8 percent in 1996 to 67.9 percent in 2001. The proportion held as stocks, a risky asset, decreased. This pattern is easily understood in light of Korea's recent economic history. Korean investors, who experienced severe economic fluctuations during the crisis, became more cautious in choosing their investments. This pattern is similar to that in Japan where investors have not decreased holdings of bank deposits even though the interest rate is close to zero.

Figure 15 Trend of Financial Personal Asset Management Patterns in Korea



Source: Bank of Korea (2002)

What was it that made Koreans, who seemingly still remained relatively risk averse, leave stable jobs and open their own new business? The decrease in indirect investment provides a hint. Korean households reduced their portion of indirect investment from 8.7 percent of total financial asset in 1996 to 4.4 percent in 2001.

Indirect investment consists of funds invested at trust and investment companies, cover bills, repurchasable bonds, large companies' commercial paper, and similar instruments. Investment and trust companies attracted investors by providing higher yields than bank deposits by distributing returns according to investment results. Before the crisis, households did not understand their exposure and responsibility to assess risk because they believed that the chaebols were safe and government would protect investors in any event.

The roles of the government and chaebols changed with the crisis, however. Koreans had believed that the government should and would protect its citizens from not only national security risks but also economic risks. The Korean government had implicitly insured individuals' deposits and done its best to guarantee employment. Whenever financial institutions or large companies stood on the edge of bankruptcy, the government intervened to protect small investors and low-ranking employees, although managers and major shareholders were asked to take responsibility for poor management decisions. People believed that the government would not allow the collapse of a large company or chaebol that

would lead to a chain of bankruptcies of subcontractors and parts suppliers and subsequent massive unemployment. They also thought that the government would not allow a large bank to fail, because such a failure would cause huge damage to the large number of depositors with small accounts and the many SMEs that relied on the banks for funding. The government had assisted in takeovers of ailing companies under the condition of continued employment; it had assisted in bank rescues with agreements that outstanding loans would be maintained and deposits protected. The perception of “too big to fail” had prevailed in Korean society for many years.

During the crisis the government sent a clear message that any policy of “too big to fail” would exist no more and started to set limits on the protection it provided. Prior to June 1996 Korea did not have an explicit deposit insurance system to protect bank deposits; however, people had believed that the government would fully protect depositors to maintain social credibility. As part of the financial sector reforms, the government withdrew any implicit guarantee and introduced a new deposit insurance system that set specific limits and left responsibility for funds in excess of the insurance limit with individual depositors. The Deposit Protection Act of 1997 provided deposit protection up to 50 million won (about \$38,500). The collapse of Daewoo, the country’s one of top three chaebols, was a decisive event, and people’s perceptions of “too big to fail” and the role of the government were forced to change. People realized that individuals were required to take responsibility for risk-taking behavior, and the government no longer provided umbrella protection.

The chaebols also realized that the government would no longer protect them and began to implement restructuring plans. Workplace traditions such as strict seniority rules, lifetime employment, and company loyalty were considerably weakened. Chaebols carried out massive layoffs in the name of restructuring after layoffs were formally introduced in 1998. It was a shock to employees who had believed that employment at large companies was secure until retirement as long as the employee remained devoted to the employer. People began to look for ways to protect themselves and their means of living. Many middle aged persons and newly graduated students chose to run their own businesses, independent from the large companies. The venture boom and these massive changes in corporate culture happened at the same time.

Korea’s venture boom can be attributed in good part to the collapse of lifetime employment in chaebols - - rather than a cultural change in risk aversion. The removal of government protections and the restructuring of large companies produced opportunities for business activities to grow and flourish in a new environment. At the same time, employees who were disappointed by the chaebols’ layoffs and the new business culture were emboldened to open independent business. In effect, the weaknesses of the chaebols empowered independent businesses and contributed to improving business participation and entrepreneurship in Korea.

### **Role of Taoism in Overcoming National Malaise**

From the end of 1999 to 2000 there was a boom in the study of Taoism in Korea. This was very unusual because classical Chinese books are rarely read today, and in particular, *Dao De Jing* (or *Tao Te Ching*), the primary Taoist textbook written by Lao Zi (or Lao Tzu), is notoriously difficult understand. In November 1999 Korea Education Broadcasting System (EBS) television began to broadcast a long series of 56 lectures on *Dao De Jing* presented by Kim Yong-Ok, a former professor of philosophy. Surprisingly the program gained great popularity. EBS, a public broadcasting company that specializes in educational and cultural programs, normally attracts less than 1 percent of viewers, and the general consensus is that lectures on classical Chinese philosophy can be boring. Nonetheless, the series achieved high ratings of up to 7.2 percent and due to the show's popularity Kim's book also became a bestseller.

Why did Taoism attract people's minds at that time? Some said that the lecturer's profound learning, presented with flamboyant speech and humorous gestures, was charming. Others said that the classical Chinese philosophy that emphasizes spiritual happiness rather than material richness gave consolation to people who had suffered during the economic crisis. In the last lecture the speaker unveiled that his purpose in leading the study was to encourage people to "throw away old-fashion values and create a new paradigm." His intention was to search for a new way of thinking, through Taoism, for the post-IMF period; he titled that lecture "Lao Zi and the 21<sup>st</sup> Century."

Taoism is one of two main philosophies in East Asia, along with Confucianism. Confucianism has dominated in China, Korea, Japan, and Vietnam for a long time, while Taoism has played a complementary role. Confucianism seeks to harmonize relationships among humans, emphasizing the maintenance of social order. It is conservative because it respects existing social norms. Taoism's main focus is the relationship between humans and the natural world, emphasizing the need to follow the rules of nature, the rules of the cosmos. It is liberal because it denies all existing social norms. East Asian society has maintained a philosophical balance between Confucianism and Taoism, between conservatism and liberalism. In this philosophical balance, Confucianism corresponds to Yang and Taoism to Ying. The two philosophies coexist in East Asians minds. An old Chinese saying is, "In the office a Confucianist, in retirement a Taoist."

The word "Tao" (or Dao) means "way" and refers to a way of thought or life. Tao was the central concept of East Asian philosophies and their way of life, like god or belief of Western societies. It means the way approaching truth. Its literal meaning is "road" or "path," emphasizing importance of process, such as minds of seeking after truth, attitudes of devoting oneself, or behaviors of following

ethics and laws of nature. It also has a nuance of direction or target which includes “doctrine” and “moral principle.”<sup>6</sup>

Taoist study begins by denying all existing ideas and concepts. The *Dao De Jing*'s first sentence is: “The Tao that can be called as Tao is not constant the Tao” (chapter 1).<sup>7</sup> It means that even trying to explain the Tao distorts its true nature. According to Taoism, all existing concepts and systems created by human beings are incomplete because human beings are incapable of understanding the true nature of the universe, because of people's limitations. It also means that all things are changeable, because there exists no absolute and immutable thing. By denying the permanence of the existing order, Taoism provides an ideological justification for reform and accepting new ways.

By explaining the “naturalness” of reform and new circumstances, Taoism eased the transition. It also offered hope to persons who have suffered -- from unemployment, bankruptcy, and even falling from the mainstream. The notion of “Wu Wei” advises men to just follow the natural flow of nature. It also points out that emptiness has its use, saying, “The Tao is empty and yet useful” (chapter 4). It teaches that emptiness, which may appear to be useless, has its function.<sup>8</sup> For example, only an empty bowl can be filled and a wheel can turn only because of its empty hole for the axle. Similarly, beautiful straight trees are appreciated but are cut to make furniture and other items. Crooked, ugly-looking trees often survive longer because they are not cut, and eventually these trees become highly appreciated as big trees serving as shady resting places.

Taoist philosophy can assist spiritually enervated persons to regain their vitality. Taoism teaches to accept misfortune as a reality and not to be discontented, because reality -- including any misfortunes -- is part of nature. *Dao De Jing* says, “Heaven and Earth are heartless” (chapter 5). Although humans respect nature, natural disasters such as floods, droughts, wild fires and so on cannot be avoided. Taoism teaches that man should do his best whatever the circumstances rather than complain and be discouraged by misfortunes, including the misfortunes caused by the financial crisis. This approach helped many Koreans to overcome their frustration and disappointment that the Korean “dream” was broken.

Recovery from the sense of national malaise and despondency was an important issue in Korea and prompted a number of efforts to restore the nation's self-confidence. In August 1998 President Kim

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<sup>6</sup> To emphasize that trainees can reach the level of Tao through these activities, many activities put Tao (or Do) at the last position of their names. For examples, martial arts such as Judo and Taekwondo, the art of ceremonial tea-making, Dado, the art of calligraphy, Seodo, and so on.

<sup>7</sup> Due to the difficulty of the passage, scholars have translated it differently: “To guide what can be guided is not constant guiding.” (Chad Hansen); “Even the finest teaching is not the Tao itself.” (Stan Rosenthal); “The Way that can be experienced is not true.” (Peter A. Merel); “The Tao that can be followed is not the eternal Tao” (Charles Muller); “The Tao that can be trodden is not the enduring and unchanging Tao.” (James Legge).

<sup>8</sup> A more accessible concept might be that of a reserve or potential. In economics, the preferred capacity utilization rate is not 100% and ideal unemployment rate is not 0%. Athletes vary their training and do not always push to their limits.

Dae-Jung established the “Rebuilding Korea Campaign” and encouraged efforts to restructure as a knowledge-based nation in order to establish new momentum. In March 1999 the government unveiled “Cyber Korea 21,” its blueprint to catapult Korea into the forefront of Internet and communications technology. Mass media also organized campaigns to support the effort. For example, Maeil Business Newspaper launched the “Vision Korea” campaign emphasizing a knowledge-based economy. There was a consensus to rush to run ahead in building an information society, although it delayed recovery in industrialization.

The government also produced a series of public service announcements to encourage people who suffered from the economic crisis. TV stations repeatedly broadcast these advertisements that were intended to encourage and stimulate the population. One of the public service announcements featured Pak Se-Ri, a twenty-year old woman golfer who had won consecutive championships at the McDonald’s Ladies Professional Golfers Association (LPGA) competition in May 1998 and the U.S. Women’s Open in July 1998. The announcement showed an impressive picture of a young Korean golfer at the final round of the U.S. Open while patriotic music – the anthem of Korea’s democratic movement in the late 1980s – played in the background. Pak Se-Ri was behind by 4 points early in the final round of the U.S. Women’s Open, but she was not discouraged and caught up with the leaders. At the 18th hole her ball fell into a water trap, and the audience assumed she would give up and take the penalty point. Instead, she took off her shoes and socks, walked into the pond, calmly recovered the shot, and went on to win the tournament. The news that a Korean woman had succeeded in such prestigious competitions provided consolation at a time when it seemed to many Koreans that the country was effectively “occupied” by the IMF. Pak Se-Ri’s fighting spirit touched many discouraged Koreans.

The sudden interest in Taoism likely was closely related to Korea’s need to adjust to its new reality and changed public attitudes. Taoism provided the underlying principles to move peoples’ minds and change public attitudes so the country could push ahead with reforms and adapt to the new environment following the crisis.

## VI. Conclusion

In 1998 and early 1999 the Korean economy experienced the worst recession since the Korean War in the early 1950s. Economic activity suddenly nearly halted due to the retrenchment policies following the financial crisis of 1997 and subsequent IMF bailout, financial turmoil, and slumps in domestic and external sector demands in the wake of the Asian crises. In particular, a credit crunch caused by extremely high interest rates -- in excess of 30 percent -- and banks' sharp reduction in lending in order to meet international capital adequacy standards brought about a drastic increase in bankruptcies and unemployment. Hundreds of firms failed every day, and the number of jobless persons rose dramatically to 1.5 million, briefly exceeding 8.5 percent. Korea's industrial base seemed to be on the way to devastation.

The recession was a blow to the chaebols that had led the legend of Korea's economic "miracle" in the past decades. After the 1997 crisis, 16 chaebols among the top-30 failed to maintain their conglomerates (MOFE 2002). The 1999 dissolution of the Daewoo Group, Korea's second largest chaebol, was a symbol of the end of the era of chaebol-led growth. These changes led to confusion about the country's traditional economic momentum -- chaebol-led initiative, manufacturing oriented, and Asian style management based on thrift, diligence and loyalty to the company. It seemed that Korea was mired in a psychological panic due to lost economic momentum.

When the economic growth rate plummeted to a contraction of 6.7 percent in 1998, the Korean economy seemed hopeless. But -- almost unbelievably -- the economy started to rebound with remarkable speed and registered 10.9 percent growth in 1999. The new momentum surprisingly began during the worst period of the recession, spurred by the emergence of a new technology and related industries -- the new information and communication technology industry. ICT saved the Korean economy. It grew explosively and changed not only Korea's industrial structure but also the peoples' way of life.

The dramatic development of ICT occurred in Korea in a short time span of 2 or 3 years. The number of mobile phone subscribers and Internet users skyrocketed during the period, despite the severe economic recession. Korea is now among the world leaders in Internet usage and the penetration rate of high speed Internet networks. Korea has become one of the most e-commercialized countries, evaluated by ratios of online shopping, online trading, and online banking. In particular, the fact that more than 55 percent of all Korean households can access a high speed Internet network as of April 2002 indicates that Korea is one of the leading knowledge-based nations and a leader in e-business.

It is generally said that market power brought about the ICT boom in Korea. Competition in mobile phone and high speed Internet services stimulated lower prices, which then spurred increased demand. Increased consumer demand for computer games and online trading led to increased supply of Internet and PC telephone services and investments in broadband technology. These investments then led to

increased economies of scale and lower prices. The stock market boom and development of venture capital boosted investments in new technology. The government also played a role in the ICT boom by encouraging private sector investments by establishing the KOSDAQ market and initiating the master plan of “Cyber 21 Korea.”

Without doubt, economic factors are extremely important in explaining Korea’s remarkable ICT success in such a short timeframe. Two complex and intriguing questions remain to be considered, though: (1) If similar economic factors are introduced, will an ITC boom happen in other countries? and (2) Why did this miracle emerge in such dire economic conditions? To complement the economic factors contributing to these puzzles, cultural matters must also be considered.

First, a desire to change their way of life led many Koreans to be easily fascinated with the Internet. When the financial crisis occurred, people began to recognize that many of Korea’s cultural customs and institutions were far from the international trends. There was a social demand to assimilate western customs and practices as well as to introduce advanced institutions. While the institutional gap was partially reduced by the IMF reform package, social demands were met through other channels. Substantial increases in the study of English and the trend of children studying abroad are among the examples of Koreans’ desire to absorb the global, western-dominated culture. Additionally, while the Western personal manner is relatively unreserved and “up front,” traditional East Asian manners emphasize modesty and reservedness based on Confucian values. East Asian societies are based on a hierarchical order, such as old and senior persons first, and stress “saving face.” People who have lived in a custom of modesty and reservedness, in particular the young, tend to feel uncomfortable with self-assertion. Many Koreans found that the Internet provided a means to satisfy their desire to express themselves easily; in cyberspace they are able to exchange their opinions aggressively while maintaining a degree of anonymity and so maintaining modesty. Such cultural motivations led Koreans to be fascinated with the Internet, and the Internet played a role of cultural bridge to connect smoothly between a western manner and traditional modesty.

Second, the collapse of many chaebols and weakness of those that remained made room for venture capital firms, which have led the Internet industries, to grow and develop. The venture boom rapidly changed Korea’s chaebol-dominated economic landscape. Previously, the Korean economy was nearly exclusively dominated by chaebols, leaving little room for small enterprises armed with new technology and fresh ideas. Venture firms populated by creative minds and characterized by resilient and fast decision-making organizations had no role under the traditional chaebol system that had almost monopolized financial and human resources for many years. Ironically the collapse of chaebols provided room for venture firms as younger, bright employees quit the chaebols to create their own firms. The growth of the KOSDAQ helped to distribute financial resources to the new venture firms. The venture revolution altered Korea’s economic structure and corporate culture, undermining strict seniority

rules, lifetime employment, and company loyalty, and moving the corporate culture closer to the western pattern.

Third, Korea's traditional culture that reflected Taoists thinking helped to overcome the national discouragement that followed the 1997 crisis and led Koreans to embrace the trend of change. One top issues in 1998 and 1999 was to conquer the psychological panic of the crisis. Taoism, emphasizing the need to adapt to the law of nature, teaches that eternal absolutes do not exist and all things have their flows and ebbs. It teaches not to be disappointed by a crisis because nature, that sometimes brings natural disasters, is not always charitable. In addition, it encourages distressed people to revive by emphasizing the important role of emptiness and temporary uselessness; reserves are important because they contribute to the ability to rebound.

Korea's ICT revolution was one more miracle. Through the ICT revolution, Korea succeeded in achieving rapid economic recovery as well as social transition. Due to the ICT boom, Korean society -- that historically had been described with images of "morning calm" and the "hermit kingdom" -- was totally reborn as an Internet-based open society in a short period. Even if Korea had neglected new global trends in the recent past, through the painful and costly process of the crisis, Koreans realized the need to evolve and better integrate into the global economic culture and eventually found a new path to balance through the Internet. The Korean economy found a new equilibrium between flexible and speedy venture firms and stable, large-scale chaebols by escaping from the chaebol-dominated old paradigm. At the same time, Koreans have moved toward cultural balance between traditional Confucian values such as modesty, loyalty and order, and western value like freedom, openness and creativity.

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