

## **EVOLUTION OF THE KOSDAQ STOCK MARKET: EVALUATION AND POLICY ISSUES**

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### **INTRODUCTION**

Since the economic crisis of 1997, the Korean economy has been experiencing fundamental structural changes. Though the on-going changes touched essentially all areas of the economy, the most visible changes are the innovations in financial markets. Chronologically, the first change was the opening of domestic financial markets to foreign investors. This led to a surge of foreign investment in Korean financial markets, particularly the stock market. As a result, foreign holdings hovered close to forty percent of market capitalization of the Korea Stock Exchange in early 2002. The next change was the appearance of a government bond market in the genuine sense of the word 'market'. Before the crisis, all government-related bonds were digested through forced allocation mechanisms with issuing prices above market levels. Consequently, there was minimal secondary market activity, a *de facto* absence of a market for government bonds. Reforms implemented since the 1997 crisis subsequently yielded a large-scale and active government bond market. The third and final change was the creation of new securities markets, which include the KOSDAQ stock market and derivatives markets such as options and futures markets.

While noting all of these changes under way in Korean financial markets, this paper focuses on the development of the KOSDAQ stock market. The KOSDAQ stock market exhibited dazzling growth during the post-crisis years. Primary and secondary market activity increased dramatically, raising the market's status from practical non-existence to one comparable with the Korea Stock Exchange on some measures. This paper describes the KOSDAQ market and suggests how such dramatic growth was possible. It also discusses the likely future policy issues facing KOSDAQ.

It is widely accepted that a well-developed stock market for venture companies encourages early-stage private equity investment in venture businesses by allowing efficient exiting of private capital investment through IPOs.<sup>1</sup> As an IPO market for venture companies, the KOSDAQ market is closely related to the venture capital cycle in Korea. In this sense, the present chapter may be read as a description the formation of Korea's venture capital cycle, albeit one limited in scope because it does not discuss venture capital fund-raising or investing.

The remainder of the chapter begins by explaining the history and the basic institutional structure of the KOSDAQ stock market. This is followed by a description of the market's recent growth, an analysis of the factors responsible for that growth, and a discussion of future policy issues.

## **OVERVIEW OF THE KOSDAQ STOCK MARKET**

'KOSDAQ' stands for Korea Association of Securities Dealers Automated Quotation. The similarity of the name to 'Nasdaq,' which is an acronym for National Securities Association of Securities Dealers Automated Quotation, gives the impression that the KOSDAQ stock market is similar to the Nasdaq market. This impression is both true and false. Comparison with the Nasdaq stock market serves to highlight the institutional characteristics of the KOSDAQ market.

As a new equity market the KOSDAQ market shares a common economic purpose with the Nasdaq. The KOSDAQ market is self-regulated by the Korean Stock Dealers Association (KASD), while being owned by number of stock market related institutions (Table 1 and Figure 1). Regardless of its outer institutional structure, however, in reality it is closely governed and controlled by the government. Therefore, although the KOSDAQ market resembles the Nasdaq, in the sense that both markets are self-regulated by the Stock Dealers Association and both exist outside of the traditional exchange, the KOSDAQ differs from the Nasdaq in that the government plays a much greater role.

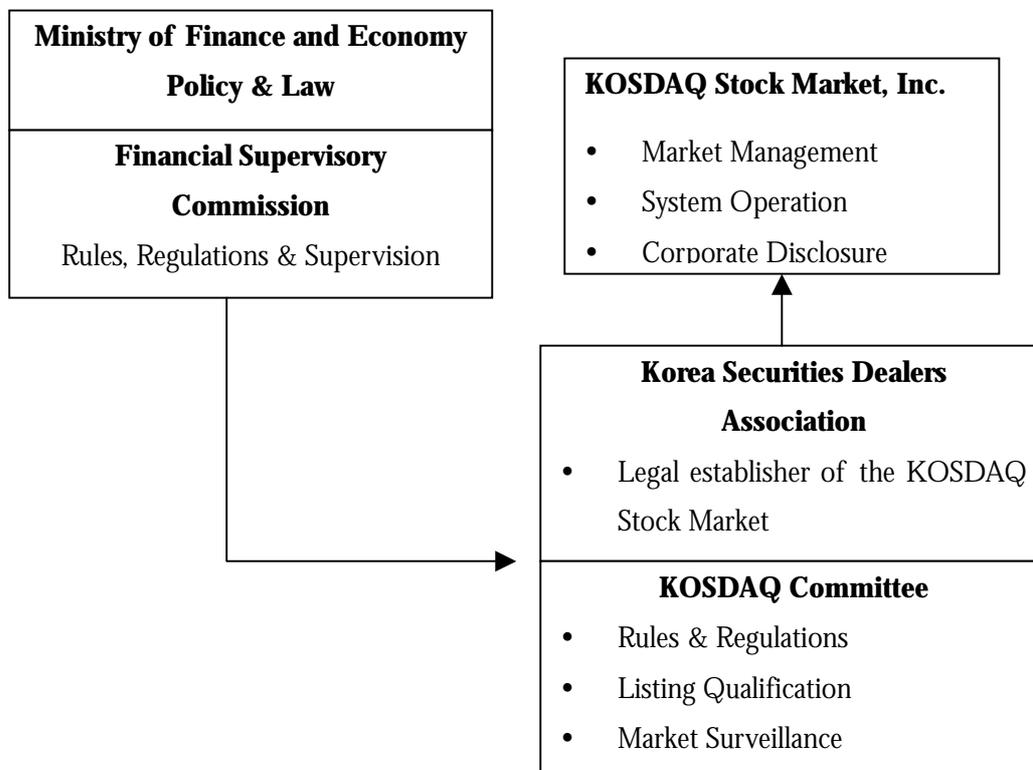
1. For example, Gompers and Lerner (1999) posit that the venture capital cycle consists of the three stages of venture capital fundraising, venture capital investing, and exiting venture capital investments, and they appreciate the importance of the final stage.

**TABLE 1**  
**Ownership Structure of the KOSDAQ Stock Market, Inc.**  
 (Percent)

	<b>Small Business Corp.</b>	<b>Korea Securities Finance Corp.</b>	<b>Korea Association of Securities Dealers</b>	<b>Korea Securities Depository</b>	<b>Korea Stock Co.</b>	<b>Securities Companies</b>	<b>Total</b>
Ownership share	23.77	16.64	10.37	9.51	7.13	32.58	100.0

*Note:* Securities companies include Daewoo Security Co., LG Security Co. and twenty-eight others.

**FIGURE 1**  
**Regulatory Structure of the KOSDAQ Market**



Besides, the KOSDAQ differs from the Nasdaq in internal market structure. The Nasdaq is a quote-driven market and, as its full name indicates, it is structured around securities dealers.<sup>2</sup> But, strictly speaking, ‘KOSDAQ’ is a misnomer since dealers have no role in the KOSDAQ market. KOSDAQ is an auction, or an order-driven market where trading is fully automated via the KOSDAQ

2. As part of reforms in 1997, dealers in the Nasdaq market are required to integrate customer limit orders into their proprietary quotes, giving precedence to customer limit orders. As a result, the Nasdaq market has taken on a characteristic of an order-driven market though it still remains fundamentally a dealer market. For the

Electronic Trading (KETRA) System. More specifically, regular trading, which takes place from 9 a.m. to 3 p.m. Monday through Friday, is through continuous auction (multi-price auction) with the principles of price and time. In contrast to regular trading, the opening and closing trades of the day are settled by a call, or single-price, auction. Customer orders placed one hour before the beginning of regular trading (8 to 9 a.m.) and ten minutes before closing (2:50 to 3 p.m.) are considered simultaneous orders and are settled by a single price which matches both parties' limit orders. There is no market maker or designated liquidity provider in the KOSDAQ market. Limit orders by public traders are the only source of market liquidity.

### **The OTC Market: Forerunner of KOSDAQ**

The Korea Stock Exchange (KSE) was established as the country's first regulated stock market in 1953 after the Korean War. Until 1987 Korea had one regulated stock market, the KSE, and one unregulated market, the Over-the-Counter or OTC market. While the KSE grew steadily since the take-off of the economy in the 1970s, activity in the unregulated OTC market remained negligible.

In an attempt to invigorate market activity the Korean government introduced an 'organized OTC market' in 1987. The government established certain registration criteria and designated the KASD as the operator. KASD collected and made public trading information on registered stocks. The government's effort to stimulate activity in the OTC market continued in 1991, as it established an OTC intermediary office in KASD and introduced an automated trading information collection system (Table 2).

**TABLE 2**  
**KOSDAQ Historical Highlights**

1987	April	OTC (Over-the-Counter) market systematized under sponsorship of the Korea Association of Securities Dealers (KASD)
1991	October	OTC Securities Trading Intermediary floor began operations
1996	May	KOSDAQ Securities Co. Established
1997	January	KOSDAQ Stock Market opened
	April	KOSDAQ Price Index announced (Base date: 1 July 1996; Base index: 100)
	April	KOSDAQ Stock Market legislation passed
1998	October	KOSDAQ Committee established
1999	June	KOSDAQ Securities Co. renamed KOSDAQ Stock Market, Inc.

The number of listed companies increased steadily after the organized OTC market was established in 1987. In particular, from 1992 to 1994 new listing surged, and the total number of

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reforms and their impacts, see Weston (2000).

listed companies reached 310 at the end of 1994 (Table 3). The pace of new listing slowed from 1995, however, and the total number of listed companies stagnated as de-listing suddenly increased, mostly because companies transferred to the KSE.

**TABLE 3**  
**Listing and De-listing on the KOSDAQ Market, by Type of Business, 1987-2001**  
 (Number and Percent)

	New listings			De-listings			Total Listed Companies				
	Ordinary Business		Total	Ordinary Business		Total	Ordinary Business		% of KOSDAQ	KOSDAQ Total	
	Business	Venture		Business	Venture		Number	Number		Number	% of KSE listed companies
1987	18	3	21	2	-	2	16	3	16	19	5
1988	8	4	12	4	-	4	20	7	26	27	5
1989	19	5	24	4	-	4	35	12	26	47	8
1990	12	10	22	3	-	3	44	22	33	66	10
1991	16	5	21	5	5	10	55	22	29	77	11
1992	42	13	55	2	4	6	95	31	25	126	18
1993	79	10	89	5	1	6	169	40	19	209	30
1994	106	12	118	15	2	17	260	50	16	310	44
1995	-	-	48	-	-	18	293	47	14	340	47
1996	-	-	31	-	-	39	279	52	16	331	44
1997	-	-	83	-	-	55	273	86	24	359	46
1998	4	4	8	-	-	36	217	114	34	331	44
1999	42	58	100	37	-1	36	222	173	44	395	54
2000	62	116	178	-12	45	33	296	244	45	540	77
2001	41	137	178	8	1	9	356	357	50	713	103

*Note:* Excludes mutual funds.

*Source:* KOSDAQ Stock Market, Inc.

In 1996, the government restructured the organized OTC market and re-launched it as the KOSDAQ market in January of 1997. The most notable change was in the trading system; the OTC trading system was abandoned and an auction trading system introduced. This brought an end to the organised OTC market as a trading system.

KOSDAQ Stock Market, Inc. was established as manager of the auction market, although the initial name of the company was different (Table 2). Policymakers seem to have chosen the name KOSDAQ in order to emphasize the intended economic function of the new market. The policy goal of reforming the organized OTC market was to grow a 'venture business oriented stock market' and the Nasdaq stock market was often mentioned as the benchmark for the new market. Reflecting the policy intention, policymakers imported the name.

## **GROWTH AND DEVELOPMENT OF THE KOSDAQ MARKET**

### **Primary Market**

#### **Listing Trends**

Initially, total listings on the new KOSDAQ market did not increase much over the total under the organized OTC market. De-listings continued and new listings were not always sufficient to offset them. Since 1999, however, new listing activity grew at an unprecedented rate and the total number of listed companies increased significantly. Altogether, 456 companies were newly listed in the three years from 1999 to 2001, more than doubling the total number of listed companies. By the end of 2001, the number of companies listed on the KOSDAQ market slightly exceeded that on the KSE (Table 3).

What distinguishes the growth in new listings after 1998 from that in the early 1990s is the type of companies. In the earlier period, most newly listed companies were ordinary businesses. Among 118 newly listed companies in 1994, 106 were classified as ordinary businesses, while only 12 were ventures (Table 3). In contrast, venture businesses have been driving the recent surge in listing, significantly outpacing listing by ordinary businesses. Moreover, the predominance of ventures in new listing activity seems to be increasing. In 1999, there were 58 venture listings against 42 listings by ordinary businesses. But in 2000 venture business claimed 116 new listings versus 62 for ordinary businesses, and in 2001 ventures outnumbered ordinary businesses in new listings, 137 to 14. Due to the rapid increase in listing by venture businesses, their share of all listed companies reached 50 percent at the end of 2001, up from 16 percent in 1996 and 34 percent in 1998.

#### **Capital Raising**

Data on capital raising during the organized OTC market era are hard to come by, but activity was known to be minimal compared to the KSE. The stagnant state continued in the early years of the KOSDAQ market, which was dwarfed by the KSE. Capital raised on the KOSDAQ amounted to a mere 3 percent of the fundraising on the KSE in 1996 and to only 7 percent of funds raised on the KSE in 1997 (Table 4).

**TABLE 4**  
**Capital Raising in the KOSDAQ Market, 1996-2001**

	<b>Rights Issues</b>		<b>Pubic Offerings</b>		<b>Total Capital Raised</b>	
	<b>Billion won</b>	<b>Number</b>	<b>Billion won</b>	<b>Number</b>	<b>Billion won</b>	<b>KOSDAQ % of KSE</b>
1996	123.7	80	27.1	26	150.8	3
1997	86.8	50	129.4	69	216.1	7
1998	1,873.2	40	6.3	3	1,879.5	14
1999	3,084.4	136	2,125.4	110	5,209.8	15
2000	5,627.9	202	2,568.6	182	8,196.6	142
2001	1,584.5	149	1,142.0	144	2,726.5	52

*Source:* KOSDAQ Stock Market, Inc.

Capital raising in the KOSDAQ market began gaining strength in 1998. The absolute amount of capital raised in that year was almost nine times the amount in the previous year and the ratio of capital raised on KOSDAQ to capital raised on the KSE doubled to 14 percent. The ratio remained the same for 1999, but because of the extraordinary boom in primary market activity on the KSE in that year, a stable ratio implies that the absolute amount of capital raised in the KOSDAQ was, in fact, triple the amount raised in 1998.

In 2000, capital raising in the KOSDAQ market recorded unprecedented growth, considerably outpacing the KSE, and the total amount of capital raised in the KOSDAQ market exceeded that of the KSE for the first time. This expansion slowed a bit in 2001 and as the Korean economy fell into recession in late 2000, overall stock market activity was sluggish in 2001. This slowdown had a greater negative impact on the KOSDAQ market than on the KSE. In 2001, capital raising in the KOSDAQ market shrank relative to the KSE as well as in absolute terms. Even so, the KOSDAQ still raised just over half (52 percent) as much capital as the KSE raised.

Individual Korean investors, not institutional investors and not foreign investors, were largely responsible for the emergence of the KOSDAQ market. In 2000, individuals held 58 percent of the outstanding KOSDAQ stocks, followed by institutional investors who held 37 percent (Table 5). The percentage of shares held by individuals is much higher for the KOSDAQ than for the KSE. On the other hand, foreigners hold less than 5 percent of the stocks listed in the KOSDAQ market compared to almost 15 percent of the stocks listed on the KSE.

**TABLE 5**  
**Composition of Ownership of Outstanding Shares on the KSE and KOSDAQ**  
**by Type of Investor, 1999 and 2000**

	Percent			
	1999		2000	
	KSE	KOSDAQ	KSE	KOSDAQ
Institutions	48.65	40.27	48.45	37.14
Foreigners	12.37	4.18	13.80	4.79
Individuals	38.98	55.55	37.74	58.06

*Source:* KOSDAQ Stock Market, Inc.

## Secondary Market

### Market Activity and Turnover Rate

Secondary market activity in KOSDAQ-listed stocks reflects the trends in the primary market. The secondary market was dormant through 1998, when activity on the KOSDAQ market was only 6 percent that of the KSE, based on the turnover rate in each market (Table 6). After this year, however, a dramatic boom occurred just as it did in the primary market. Turnover in the KOSDAQ market skyrocketed from 17.62 percent of outstanding stocks in 1998 to 212.09 percent in 1999. Turnover on the KOSDAQ market climbed to 45 percent compared to activity on the KSE. The trading boom accelerated in 2000. In that year, as with capital raising in the primary market, trading activity on the KOSDAQ market surpassed that on the KSE. In 2001, trading in the KOSDAQ market maintained its dynamism although capital raising on the primary market weakened, so the turnover rate actually rose further to 1,121.85 percent from 724.24 percent the year before.

**TABLE 6**  
**Trading Volume and Turnover Rates on the KOSDAQ Market, 1997-2001**

	Ordinary Businesses		Venture Businesses		KOSDAQ Total		KOSDAQ
	Trading Volume (billion shares)	Turnover Rate (%)	Trading Volume (billion shares)	Turnover Rate (%)	Trading Volume (billion shares)	Turnover Rate (%)	Turnover Rate/ KSE Turnover Rate
1997	-	-	-	-	0.5	6.56	0.05
1998	0.9	9.57	1.1	59.55	2.1	17.62	0.06
1999	26.1	92.24	60.6	481.22	86.7	212.09	0.45
2000	227.0	497.49	283.5	1,140.63	510.5	724.24	1.87
2001	469.0	961.47	474.9	1,343.10	943.9	1,121.85	1.87

*Note:* Turnover rate = Trading volume/Total stock outstanding.

*Source:* KOSDAQ Stock Market, Inc.

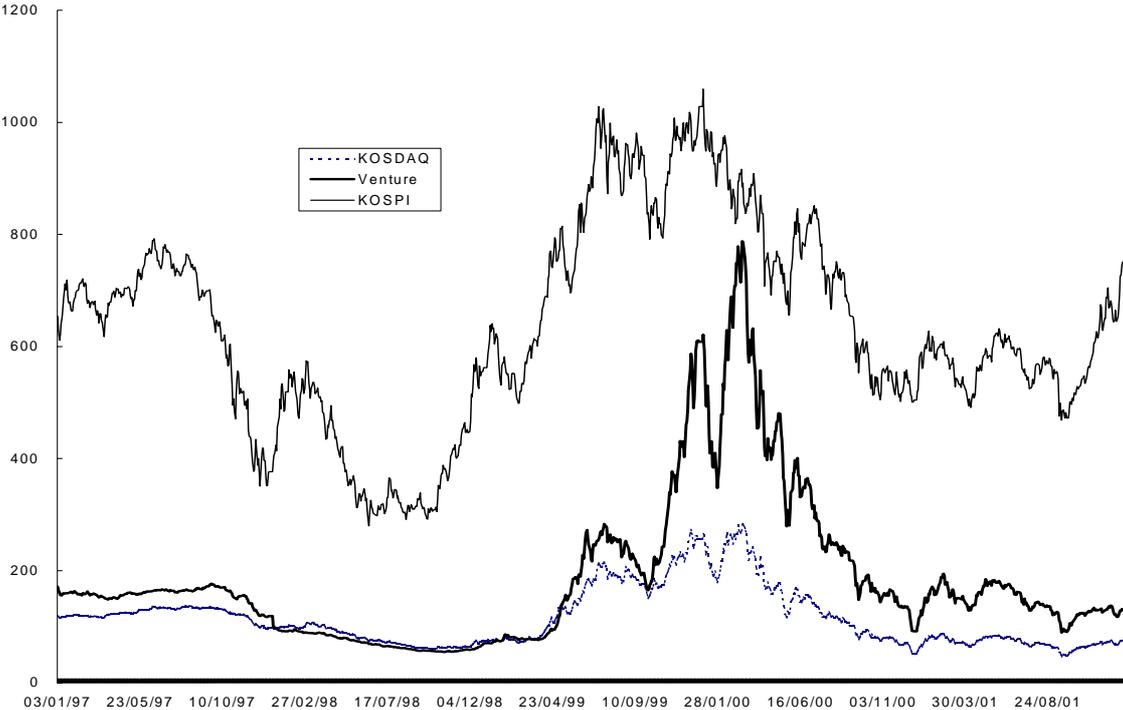
The liquidity and high turnover rates on the KOSDAQ market were driven by speculation in venture stocks. The recent explosion of trading in the KOSDAQ market has centered on venture

stocks, which turned over up to five times more often than the stocks of ordinary businesses during the past four years (Table 6).

**Price Behavior**

The roaring growth in liquidity of the KOSDAQ market was accompanied by sharp fluctuations in the KOSDAQ index. As market activity increased, the KOSDAQ composite index began a vertical rise in April 1999 that continued until February 2000 (Figure 2). Over those eleven months the index more than tripled from 79.79 to 266.37. Subsequently, however, downward adjustment occurred, and eventually the index ended the year 2001 back down at 72.21. Thus, two years from the beginning of the boom, the KOSDAQ index had fallen back to its pre-boom level.

**FIGURE 2**  
**Trends in KOSDAQ Index, Venture Index and KOSPI KSE Index**



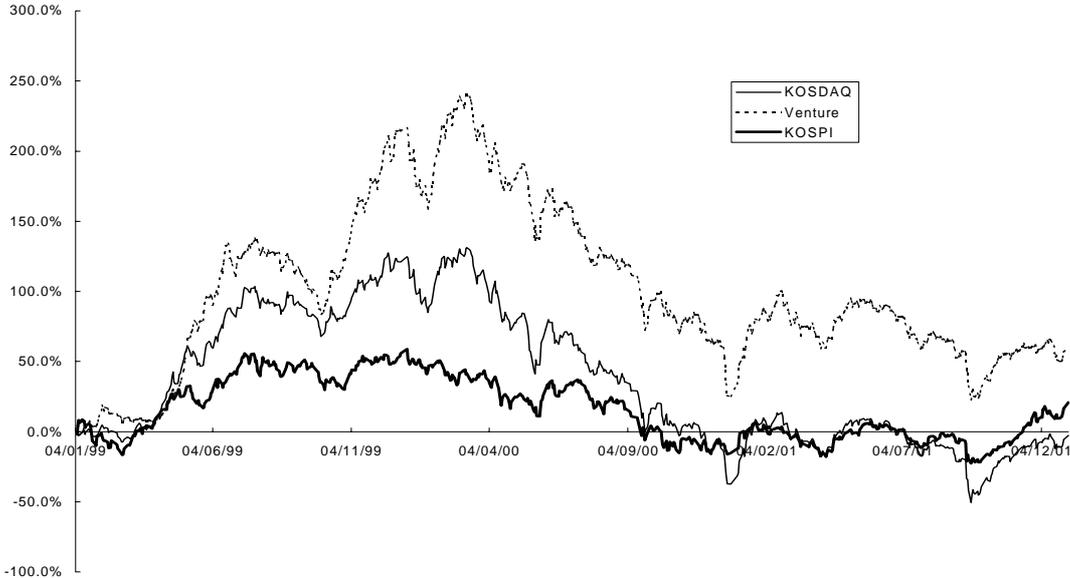
Source: KOSDAQ Stock Market, Inc.

The movement of the composite KOSDAQ index masks differences between venture and ordinary businesses, however. KOSDAQ's Venture Index (index of venture stocks) showed the pattern of boom and adjustment found in the Composite Index. Even though movement of the two indices was qualitatively similar, however, the Venture Index did not fall as much as the Composite

Index and the Venture Index remains significantly above its pre-boom level, unlike the KOSDAQ Composite Index (Figure 2).

The disparity between the Venture Index and other indices is easier to notice in cumulative daily stock returns. Two points about cumulative daily stock returns from the beginning of 1999 to the end of 2001 are noteworthy. First, cumulative returns of venture stocks outpaced returns of the KOSDAQ Composite Index and the KOSPI Index throughout this period (Figure 3). Second, for the last half of 2001, cumulative returns for the KOSDAQ and the KOSPI indices were virtually zero, while venture stocks still showed a positive cumulative return of about fifty percent.

**FIGURE 3**  
**Cumulative Daily Stock Returns 1999.1-2001.12**



Source: KOSDAQ Stock Market, Inc.

Individuals dominated trading in the KOSDAQ market. Their share of trading rose steeply from 54.96 percent in 1998 to 91.87 percent in 1999 and it reached 95.7 percent in 2001 (Table 7). The fact that trading by individuals rose simultaneously with the turnover rate suggests that individual traders have been the main actors in the market recently. Although individuals are also responsible for most of the trading activity on the KSE, the extent of individual participation differs between the KOSDAQ and the KSE (Table 7). Individuals accounted for roughly three-fourths of the trading value in the KSE, but this relatively large share pales in comparison to their 95 percent share of trading

value in the KOSDAQ market.

**TABLE 7**  
**Share of KOSDAQ Trading Value by Type of Investor, 1999-2001**  
 Percent

	1999		2000		2001	
	KSE	KOSDAQ	KSE	KOSDAQ	KSE	KOSDAQ
Institutions	16.47	4.51	16.75	3.52	14.36	2.18
Foreigners	5.29	1.23	9.39	1.04	10.69	1.17
Individuals	78.09	91.87	73.67	94.37	74.68	95.70

*Source:* KOSDAQ Stock Market, Inc.

## EVALUATION OF KOSDAQ MARKET DEVELOPMENT

### Successful Identity Positioning

The most significant consequence of the development of the KOSDAQ market since 1998 was for the identity of the market. Before 1998, not only was the KOSDAQ market negligible in size, but also it did not have a clearly identified economic function independent of the KSE. The KSE and the KOSDAQ market (and the organized OTC market up to 1996) listed the same types of companies, but the companies listed on KOSDAQ were generally inferior to those listed on the KSE. In other words, before 1998 the KOSDAQ market served as a second-class KSE. But the spurt in activity at the end of the 1990s transformed the KOSDAQ market into a genuine 'New Equity Market' that caters to venture businesses. For the past several years, new listings in the KOSDAQ were mainly venture businesses, and now the number of venture businesses exceeds the number of ordinary businesses. Market participants today perceive the KOSDAQ market as a venture-oriented equity market, and the market has established its own clear identity.

### Real Growth: More than a Bubble

Despite the impression given by price behavior, there are at least two indications that the explosive growth in the KOSDAQ during 1999 and early 2000 was not simply a bubble that was unsubstantiated by fundamentals. First, although the KOSDAQ Composite Index is still below its 2000 peak, the prices of venture stocks remain well above their levels of late 1998 and early 1999 (Figure 2). In other words, as far as venture businesses are concerned, the price increase appears to have been supported by improved fundamentals. Second, as new listings and capital raising continue,

capitalization of the KOSDAQ market in 2001, at 51 trillion won, was six times that in 1998 (Table 8). Also, in terms of market capitalization, in 2001, the size of the KOSDAQ market relative to the KSE (20.3 percent) was double what it was in 1997 (Table 8). Thus, venture business was a driving force of real growth in the KOSDAQ market.

**TABLE 8**  
**Market Capitalization of KSE and KOSDAQ, 1997-2001**

	Billion won				
	1997	1998	1999	2000	2001
KSE	70,988.9	137,798.5	349,504.0	188,041.5	255,850.1
KOSDAQ	7,068.5	7,892.2	106,280.5	29,015.8	51,818.1
KOSDAQ/KSE (%)	10.0	5.7	30.4	15.4	20.3

*Source:* KSE, *Stock* and KOSDAQ Stock Market, Inc.

**Constraints on Continued Market Development**

Two characteristics—heavy reliance on individuals and high turnover rates—indicate that the KOSDAQ market may not be mature enough to achieve efficiency and stable growth. Although there is no theoretical or empirical consensus on the optimal share for individuals among stock market participants, individual investors are generally presumed to be noisy or uninformed traders. A predominance of individual traders, then, and an absence of institutional structure to enhance information processing make a market vulnerable to unwarranted price volatility and illiquidity. When a fad captures such a market, mounting speculative trading increases price volatility but does not contribute to price discovery. When the market becomes sensitive to information asymmetry, liquidity will disappear and the market will shrink. The extraordinarily high turnover rates in the KOSDAQ market may be a sign of information asymmetry. If so, someday liquidity may dry up and the market may shrink. Thus, the current structure of the KOSDAQ market, relying heavily on individual traders, makes it fragile, and the market's recent unprecedented growth may be just another aspect of this fragility.

**Growth Factors: Changes in Industrial Structure, Risk Profile, and Government Policies**

One factor behind the growth of the KOSDAQ market in the late 1990s was likely the so-called IT

revolution. The majority of companies listed on the KOSDAQ are information-related businesses, with 35.6 percent of listed companies directly involved in IT business (Table 9).<sup>3</sup> Although interaction between the KOSDAQ market and the IT revolution must run in two directions, at least at the beginning, the causality likely ran from the IT industry to the KOSDAQ market. In line with the trend in other economies around the world, during the late 1990s the IT industry in Korea grew faster than other industries (Table 10). Since the growth of the IT sector began before the boom in the KOSDAQ market, it is probable that this spark in the real sector generated financial demand and provided a ‘fundamental’ basis for development of the KOSDAQ market.

**TABLE 9**  
**Composition of KOSDAQ-listed Companies by Industry**

	Venture Businesses		Ordinary Businesses		All Listed Companies	
	Number	%	Number	%	Number	%
Manufacturing	244	72.2	223	63.2	467	67.6
Video, audio, communication devices	91	26.9	38	10.8	129	18.7
Computers and office appliances	18	5.3	2	0.6	20	2.9
Medical, optical devices	17	5.0	3	0.8	20	2.9
Other electric machinery	18	5.3	13	3.7	31	4.5
Other machinery	45	13.3	21	5.9	66	9.6
Chemical products	18	5.3	23	6.5	41	5.9
Traditional manufacturing	37	10.9	123	34.8	160	23.1
Services	94	27.8	130	36.8	224	32.4
Information processing, computer management	67	19.8	18	5.1	85	12.3
Communication	2	0.6	10	2.8	12	1.7
R&D, expert science, and technology services	5	1.5	5	1.4	10	1.4
Financial services	0	0	21	5.9	21	3.0
Entertainment	3	0.9	10	2.8	13	1.9
Construction	0	0	15	4.2	15	2.2
Other Services	17	5.0	51	14.4	68	9.8
Total	338		353		691	

*Source:* KOSDAQ Stock Market, Inc.

3. These sectors are video, audio, and communication device manufacturing, computer and office appliance manufacturing, information processing, computer management services, and communication services.

**TABLE 10**  
**Growth Contribution of the IT Industry, 1998-2001**  
(Percent)

		Growth rate		Contribution of IT Industry to GDP Growth	
		Real GDP	IT industry		Non-IT Industries
1998		-6.7	20.7	-9.0	1.6
	Q1	-4.6	25.2	-7.0	1.8
	Q2	-8.0	15.5	-9.9	1.2
	Q3	-8.1	16.0	-10.2	1.3
	Q4	-5.9	26.6	-8.6	2.0
1999		10.9	36.0	8.1	3.6
	Q1	5.8	29.5	3.3	2.8
	Q2	11.2	37.0	8.4	3.6
	Q3	13.0	36.0	10.4	3.6
	Q4	13.0	40.3	9.9	4.1
2000		8.8	36.5	5.0	4.4
	Q1	12.6	41.9	8.8	4.9
	Q2	9.7	40.2	5.5	4.9
	Q3	9.2	42.9	4.6	5.2
	Q4	4.6	23.9	1.8	3.0
2001					
	Q1	3.7	17.7	1.3	2.6
	Q2	2.7	3.4	2.6	0.5
	Q3	1.8	0.9	2.3	-0.1

*Note.* Contribution = increase in real value-added in IT industry / increase in real GDP.

*Source.* Bank of Korea.

Another factor in KOSDAQ's development, we argue, is the change in the risk-profile of the economy following the unprecedented failures of the *chaebol*. For the past several decades, the competitive structure of the Korean economy has been characterized by the existence of large conglomerates or *chaebol*. For various socio-economic reasons, the *chaebol* were believed to be 'too big to fail'. Taking advantage of that perception, the *chaebol* claimed a disproportionately large amount of financial resources, as reflected in their higher debt-equity ratios before the 1997 crisis.<sup>4</sup> The economic crisis undermined this belief, or more accurately, initiated fundamental changes in the underlying economic structure that had supported the 'too big to fail' belief. These fundamental changes include liberalization, opening, and growth itself of the Korean economy. When medium-sized *chaebol* went bankrupt in 1997 and 1998 market participants began to question their old belief. And when Daewoo, the third largest *chaebol*, failed in mid 1999, the belief finally faded out all together.

From the point of view of investors, correction of the 'too big to fail' belief implies a noteworthy change in the risk-profile of the Korean economy: formerly safe investment opportunities became fallen angels. Given the changed risk-profile, investors needed to reshuffle their portfolios and

4. For a detailed discussion on the financial structure of *chaebol* see Joh (1999).

redirect some resources into different risk categories. Many of those resources seem to have flowed into government bonds as a way of finding safer assets. At the same time, investment opportunities that had once appeared too risky compared to *chaebol* became relatively less risky and were able to attract some of these resources. This argument is largely speculation because of the difficulty of measuring the impact of the failure of the *chaebol* on the perception of risk. But to the extent that the speculation is correct, the change in the risk-profile of the Korean economy that resulted from the failures of the *chaebol* was a factor spurring growth of the KOSDAQ market.

Such phenomena as the IT revolution and the change in the risk-profile of the economy are manifest as permanent shocks on the quantitative levels of market activity. In other words, they represent changes in market fundamentals. Thus, whatever impact these two factors had must be seen as a permanent shift in the long-run path of the market. Hence, neither the change in industrial structure nor the change in the risk-profile is sufficient to explain the sudden, sharp expansion of the KOSDAQ market in 1999 and 2000. For this, we need to find some factors that gave a temporary boost to the market. Government policies seem to be the likely candidate.

After the 1997 economic crisis, the Korean government adopted various policies aimed at fostering the KOSDAQ market in order to facilitate development of small and medium-sized high-tech companies. These policies were comprehensive as they covered all market agents and they were all similar in nature to providing tax favors. First, in 1999 the government encouraged companies to list in the KOSDAQ by exempting KOSDAQ-listed companies from taxes on income set aside as a loss provision, up to a maximum of 50 percent of their total annual income. Second, in 1999, as an incentive to underwriters, the government loosened the legal standards for due diligence and relaxed the penalties for failure to comply with the regulation. Third, it provided for favorable treatment of dividend and capital income for shareholders in venture capitals and investors in venture funds as incentives for investment in venture businesses.

Fourth, and most important, the government itself participated in the KOSDAQ market as an investor in venture businesses and as an intermediary evaluating the eligibility of firms to benefit from the relaxed listing requirements for venture businesses (Table 11). The government established public funds specializing in venture investment and also set up publicly funded loan programs for

venture businesses. In addition to these programs, which provided public funds to stimulate the market, the most interesting government intervention was the ‘venture certification program’. This program established a procedure for identifying venture-type businesses—companies that satisfy certain conditions or pass evaluation of a government-recognized institution. Otherwise, the only companies that are eligible for favorable treatment in the listing requirements are those selected by the market—that is, companies that have already attracted venture capital investors. Although the venture certification program was established in November 1997, it seems to have been actively utilized only since 1999. Its significance in the development of the KOSDAQ market is seen in the increased proportion of ‘certified ventures’ among ventures listed in the KOSDAQ after 1999. In 1999, certified ventures comprised 42.8 percent of all listed ventures, with venture capital-invested ventures comprising the remaining, larger, proportion. By 2000, though, certified ventures were in the majority with 63.0 percent of all listed ventures.

**TABLE 11**  
**KOSDAQ Market Listing Requirements for Ordinary and Venture Businesses**

	Ordinary Business		Venture Company
	Option 1	Option 2	
Trading Record	3 years	-	-
Paid-in Capital	500 million won	-	-
Shareholders' Equity	-	10 billion won	-
Total Asset	-	50 billion won	-
Debt-to-equity ratio	Less than 150% of the industry mean	Less than 100% of the industry mean	-
Earnings	Positive ordinary income	-	-
Capital Impairment	No capital impairment during the most recent business year	No capital impairment during the most recent business year	No capital impairment during the most recent business year
Auditor's Opinion	Qualified or Qualified with reservation	Qualified or Qualified with reservation	Qualified or Qualified with reservation
Share Distribution	More than 30% of shares, or more than 10% and no less than 1 million shares, should be placed to the public	More than 30% of shares, or more than 10% and no less than 1 million shares, should be placed to the public	More than 30% of shares, or more than 10% and no less than 1 million shares, should be placed to the public
	More than 500 minority shareholders	More than 500 minority shareholders	More than 500 minority shareholders

### FUTURE POLICY ISSUES FOR KOSDAQ

As a result of its development since 1998, the KOSDAQ market is now reckoned as a stock market by any measure. But given its short history, the market must still address a number of significant policy issues.

## **Reforming the Policy Paradigm**

The government of Korea has been an essential component in the growth of the KOSDAQ market. It is the effective owner and governor of the market. Furthermore, it fostered the market by providing tax subsidies to market participants and it directly participated in the market as investor and venture certifier. In short, the interface between the government and the market so far is characterized by strong intervention, which presumably resulted from the policy goal of market-creation or market-fostering.

Now that the KOSDAQ market has successfully established its identity, at least as far as its external aspects are concerned, the government needs to adopt a new policy goal and a new policy paradigm. An appropriate goal in the changed environment would be ‘investor protection’, which is a policy goal in advanced countries. In economic jargon, investor protection is expressed as ‘resolution of market failure due to information asymmetry’. The new policy paradigm based on such a policy goal would be maximization of the market mechanism/minimization of government presence.

## **Configuring Regulatory, Governance, and Ownership Structure**

In order to implement this new policy goal and paradigm, the government needs to determine how to configure the regulatory, governance, and ownership structure of the KOSDAQ. It may be easy to get a consensus on the necessity to replace the government ownership structure by a private one, but deciding who should and should not be among the private owners is more difficult. In particular, the role of the KASD could be controversial, given that the NASD, its U.S. counterpart, recently divested its holdings in Nasdaq Stock Market, Inc. The Korean government is likely to confront the same broad issue that advanced economies face: how to arrange the regulatory and governance structure of a privately owned exchange. Another unresolved issue is the relationship between KOSDAQ and the Korea Stock Exchange. In such European countries as Germany and France, new equity markets are under the umbrella of the traditional exchange, in contrast to the situation in the United States where, as is well known, the Nasdaq market competes with the NYSE. Whether to allow multiple exchanges and competition among them is a question Korea has yet to address.

## Improving the Role of Financial Institutions

While ‘investor protection’ or ‘resolution of market failure due to information asymmetry’ is an often mentioned policy goal in advanced countries, it should be remembered that the *raison d’être* of financial institutions is, in fact, to lessen problems of information asymmetry. Further, the Korean government drove the development of the KOSDAQ market because it desired faster growth when development of financial institutions lagged. Following this line of argument, transforming the former intervention paradigm into a market-based one seems to require establishing an appropriate role for financial institutions in the KOSDAQ market.

Experience in advanced economies suggests that two kinds of financial institutions may be essential players in a KOSDAQ-type stock market: venture capitals and investment banks. Venture capitals are said to reduce information asymmetry problems during the IPO process. Specifically, the economics literature reports that the ‘under-pricing’ problems of newly issued stocks are reduced when highly regarded venture capitals are involved.<sup>5</sup> The performance of IPO stocks and, in conjunction with this, the role of venture capitals gained attention in Korea as the KOSDAQ market stalled in late 2000. So far, the general view is that venture capitals have not yet built up sufficient reputation to enhance market efficiency, which is not surprising since most Korean venture capitals are less than five years old. Hence, establishing well functioning venture capitals remains a policy issue for Korea.

Besides venture capitals, the other type of financial institution with a role in stock markets is the investment bank. The importance of investment banks in the development of stock markets is well accepted.<sup>6</sup> In particular, investment banks are said to ‘make markets’. As underwriters in the primary market, investment banks determine offering prices and their reputation convinces the public of the fairness of these prices. Thus, transactions take place and the market is made due to the certifying role of investment banks. In addition, as dealers in the secondary market, investment banks provide liquidity or service of immediacy to the market and so sustain the stability and reliability of trading. An interesting feature of the KOSDAQ market, and in some sense what makes its growth mystifying, is the limited role that investment banks have.

5. It is dubbed the ‘certification hypothesis’. See Barry et. al. (1990) and Meggison and Weiss (1991).

6. For example, see Anand and Galetovic (2001).

Investment banks do not play a market-making role in either the primary or the secondary KOSDAQ market. They cannot act freely as market makers in the primary market because they do not have full responsibility for determining offering prices. Under the so-called demand prediction system large institutional investors also participate in the price determination procedure. Whenever there is a public offering of a stock, demand revelations from institutional investors automatically determine a range for the offering price. Underwriters then choose the final offering price within the predetermined range. Moreover, dealers play a limited role in the secondary market for KOSDAQ stocks and this role appears to have decreased over time. Dealers lost a significant role in 1996 when KOSDAQ market replaced the organized OTC market and the auction replaced the quote system. Even so, at the time the KOSDAQ market was launched, the underwriter of each newly listed stock was still required to post quoted prices for the stock and accept buy/sell offers at the quoted prices up to certain amounts, but this regulation was subsequently removed, further reducing the role of dealers.

Therefore, the regulatory and institutional aspects of the KOSDAQ market work directly through the investing public without relying on the participation of investment banks. Due to this characteristic, individuals are accustomed to participating in the market with little expectations from investment banks. Whether this situation is sustainable in the long term is questionable, and so it demands a policy resolution.

### **CONCLUDING REMARKS**

Since the Asian crisis of 1997, the unbalanced structure of financial markets in Asian countries, which tilted steeply toward the banking system, may have delayed development of the financial system and exacerbated the credit crunch after the crisis. In theory, bank loans and direct financing through capital markets are likely to be complementary, offering different mechanisms for risk-sharing. Bank loans retain comparative advantage in resolving information asymmetry, while direct financing has advantages in lower intermediary costs, signaling, and propensity for system risk. So, the typical argument goes, in order to introduce diverse risk-sharing schemes and to improve pricing functions of financial markets, Asian countries need to develop capital markets.

Irrespective of the general validity of that argument, in the case of Korea, capital markets have

already been an important financing channel for non-financial corporations. Although it is not widely known, the corporate bond market in Korea maintained strong growth since the late 1970s. When the economic crisis erupted in 1997, bonds accounted for sixteen percent of corporate external financing. Equity also explained about fifteen percent of outstanding corporate financing in 1997. Overall, direct financing including equity, bonds, and short-term bills comprised about forty percent of corporate financing, compared to only thirty-six percent of financing from bank loans.<sup>7</sup>

The trend in the 1980s and the 1990s that capital markets were increasingly important venues for corporate financing has further strengthened in the post-crisis years. In particular, equity financing surged, raising the portion of direct financing in external financing of non-financial firms to forty-three percent in 2000, while the portion of loans diminished by four percent since 1997. The growth of the KOSDAQ market, among other factors, produced this change.

Therefore, taking a historical point of view, the capital market in Korea was a financial engine of economic growth from the 1980s until the economic crisis of 1997. Furthermore, with the development of the KOSDAQ stock market and the changing structure of the economy, the Korean capital market is set to play an even larger role in the future, as evidenced by recent trends.

7. For a brief overview on the Korean capital market and financing pattern of firms, see Shin and Park (2001)

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