incomplete

Rapid Expansion of Higher Education in South Korea: Universal Higher Education in a Hurry*

(revised)

Sunwoong Kim
Professor of Economics
University of Wisconsin – Milwaukee
kim@uwm.edu
414-229-6924
414-229-3860 (fax)

August 2007

* This research was supported by the 2005-2006 Fulbright New Century Scholars Program. The author thanks four anonymous reviewers for their comments and suggestions. Any remaining errors are mine.

Abstract

South Korea has experienced a spectacular expansion of higher education during the last several decades. In 1950, the number of students enrolled in higher education institutions was only 11,358. In 2005, the number is more than 3.5 million, and the current enrollment rate for higher education exceeds 80%. The massification followed the rapid swell of secondary education, which followed the rapid expansion of primary education. The wave of education expansion was driven by students' demand to which the government had to respond quickly, rather than by the government initiatives for greater access to education. The rapid expansion of formal education preceded Korea's successful economic development, which in turn fueled the demand for more education. The perennial catching-up of the fiscal responsibility by the government to meet the over-commitment in primary and secondary education forced the government to rely heavily on private funding in higher education. The emergence of strong union of primary and secondary school teachers also influenced the public resource allocation toward their sector. The result is that the level of input for higher education is too low to provide quality education to the student notwithstanding its high participation rate. The glut of university graduates reduced their labor market advantages. Also, high cost and low quality of higher education encourage many Korean students to study abroad, particularly in the U.S.

Massification of Higher Education in South Korea: Causes and Consequences

1. Introduction

A long-time scholar of the transition of modern higher education, Trow (2005) identifies three forms of higher education system through its expansion process: elite, mass, and universal. In the elite system, small number of elites is educated in a relatively homogeneous and isolated environment, and the main goal of the high education system is to cultivate the minds and characters of future leaders. In the mass system, the focus is on the transmission of knowledge and skills, and the educational opportunities are expanded beyond a small group of elites. In the universal system, higher education is regarded as an obligation for the upper and middle class, and its mission changes to "adapt whole population to rapid social and technological change." A key operational definition to classify the system is the participation rate, and his suggestion was 15% and 50% to distinguish the three.

South Korea (Korea hereafter) moved to the universal higher education system in a record time. In 1950, the number of students enrolled in 55 higher education institutions was only 11,358 (less than 1% participation rate). In 2005, fifty-five years later, the enrollment increased to more than 3.5 million, the participation rates for higher education exceed 80%. In 2006, 48.4% of population aged between 18 and 21 are enrolled four-year universities. In addition, 19.7% of population aged 18 and 19 are enrolled in two-year junior colleges. Based on the Trow's definition, Korea reached the mass higher education system in the early 1980s, and universal system at the turn of the century.

The expansion of higher education has been happening all over the world. In particular, since the World War II, the higher education in the U.S. and other advanced western European countries started to expand greatly. The growth is also eminent in the former communist countries since the fall of the Soviet Union. Even in many developing countries in Asia, Africa, and Latin America experiences the ballooning higher education sector recently.

However, even in the age of global expansion of higher education, Korea's speed toward universal education is quite spectacular. Schofer and Meyer (2006) document the global expansion of higher education. In 1960, the number of tertiary students per 10,000 capita in Korea was 37.2, which is about the same level with the average of 19 Latin American, and 18 Asian, and 13 Middle Ester/North African countries. In the year of 2000, the ratio increased to 390, which is almost the twice the number of those countries and became even higher than the average of 15 industrialized countries whose ratio averages about 340.

In addition to the remarkable speed of achieving universal higher education, Korea's expansion of higher education is mostly financed by private funding, notably by tuition fees charged to students. According to OECD (2006), Korea spent 2.6% of its GDP in higher education in 2003. Relatively speaking U.S. is the only country that spent higher proportion of its GDP in higher education than Korea in the world by spending 2.9%. Out of Korea's 2.6%, 2.0% was financed by private sector. It ranks the first in the world in terms of the share of private spending in higher education vis-à-vis GDP.

In the international comparison of quantitative statistics, Korea is in an envious position. In addition to the universal participation to higher education, the gender inequality has been drastically reduced over time. For example, in 2006, the enrollment rate of female students in four-year universities is 42.8%, which is very close to its male counterpart, 45.5%. However, dissatisfaction among education consumers has not been subdued. Education policies are one of

the most contentious and visible social discourses in the society. In 2006, the Korean National Assembly was completely paralyzed when the major opposing party walked out of the Assembly as a protest against the newly passed legislation on the private school governance system. Recently, the President himself defended the government's university admission policies in public, while many national associations representing education stakeholders express their strong opposition. Also, many presidents and faculty organizations in national universities express vigorous opposition to the proposed legislation that includes the plan to create independent governing boards for the national universities. The economically successful middle income country has been struggling with education policies for several decades.

Korea's experience of rapid expansion of higher education provides an interesting case study. Why and how did Korea achieve universal higher education in such a short time? Does it achieve the social objectives that liberals have been advocating? What does Korea's experience in reaching universal higher education teaches about the transition of higher education that are happening in other parts of the world? This essay is an attempt to summarize what happened in Korea from a historical and rational choice perspective. That is to say, it tries to identify government policy initiatives and other stakeholder's responses driven by self-interest (i.e., education consumer and providers) from a historical perspective.

This essay analyzes the causes and consequences of massification. The large-scale expansion of the higher education system inevitably brings about challenges not only to higher learning institutions, but also to the social, economic, and political environment in which they are operating (Adams and Gottlieb 1993). The development and transformation of higher education system, therefore, should be viewed from a systemic and comprehensive perspective. The main mode of analysis of this essay is based on a political economy perspective. That is to say, it tries to explain the policy choices by the government and individual market responses based on their individual incentives and interest group politics. Also, it tries to explain the undesirable side-effects of the Korea's rapid expansion of higher education sector.

It is organized as follows. In the following section, we provide an overview of the current system of higher education system in Korea. In Section III, major characteristics of the Korean higher education system are highlighted. In Section IV, we provide historical background of the changes in Korean education system before the rapid expansion and massification of its higher education sector. In Section V, we discuss the political economy of the massification. Section VI discusses the Korean experience from the perspective of various theories of the expansion of higher education. Conclusions will be provided in the last Section.

II. Overview of the Current Higher Education System in Korea

The basic structure of Korea's formal education system is 6-3-3-4. This school system, which was established soon after its independence from Japan after the World War II, has not been changed very much until now. Primary education covers between grade one and six. Kindergarten has not been a part of the official school system until now, although making it as part of the pubic school system has been under the discussion for some years. In the secondary education sector, there are two levels of schools: middle schools covering between grade seven and nine, and high schools covering between grade ten and twelve. After the twelve years of formal educations students advance to higher education, and a typical undergraduate degree (B.A. or B.S) takes four years.

The curriculum for primary schools and middle schools are uniform across the nation, which is strictly controlled by the government. Student allocation in primary schools is done by the location of the student's residence. In middle schools, limited school choices within the school district are allowed. Upon graduating from middle school, students have a choice to go to liberal arts high schools that prepare students for higher education or to technical high schools that offer technical and occupational training courses in agriculture, commerce, industry, and so on. The popularity in technical high schools has been steadily declining, and the majority of their graduates also advance to higher education institution rather than seeking employment immediately after their graduation. Although there are substantial number of private middle and high schools, the difference between them is rather minimal, thanks to the nationwide equalization policies implemented in the 1970s and 1980s. The specifics of the policy will be discussed later.

Currently, elementary schools and middle schools are free and compulsory. Students in high schools are required to pay tuitions. The annual tuition of high school for the academic year of 2006-07 is about US $2,200.[1] The level of tuition is uniform across schools, independent of the location and whether it is public or private, although schools in poor areas such as remote islands and countryside have lower tuitions as much as one half of the regular tuition. While private high schools are required to charge the same tuition, the government covers any deficit in their operating cost. Besides the tuition, students pay for their textbooks, uniforms, extra curricular activities, and so on. Even with such substantial expenditure to attend high schools, high school attendance is virtually universal. Traditionally, households bear substantial cost of schooling in Korea. Although primary education has been compulsory since 1950, parents are required to pay substantial amount. However, over the last fifty years the government has been taking up a greater and greater share of the formal education expenditure. Middle school tuition was completely eliminated in 2004.

Besides the formal schooling, Korean households spend substantial amount of money in private tutoring performed in and out of school system. It is estimated that the total amount of household expenditure for private tutoring is about three quarters of government's expenditure on primary and secondary education. While the out-of-school education activities include music, arts, and sports as well, the overwhelming reason for such education is academic preparation for college entrance examination (Kim and Lee 200a).

After twelve years of formal schooling, students advance to higher education institutions. If the student advances normally, the first year student in a higher education institution is normally nineteen years old. The higher education sector in Korea consists of several types of institutions: junior colleges, universities, Teachers Universities, the National Air and Correspondence University, industrial universities, technical colleges, cyber (internet) colleges and universities, and other miscellaneous institutions (see Table 1).

Table 1 about here.

The largest and the most important part of the higher education system is the universities. They are comprehensive institutions that have multiple majors ranging from accounting to zoology and multiple degrees ranging from four-year undergraduate degrees (such as B.A. or B.S.) to Ph.D.'s. Since most undergraduate degrees in the universities require four years, they are typically called four-year universities (universities hereafter). The second largest component of

[1] The Korean school year starts at the beginning of March and ends at the end of February of the next year.

Korean higher education system is junior colleges and technical colleges (junior colleges hereafter). Such institutions typically grant Associate Bachelor degrees requiring two to three years of full-time study depending on the subject. They serve mostly two types of students. The first group of students is the students who plan to enter the labor market sooner, and want to obtain vocational skills. Another group of students are the ones who wanted to advance to four-year universities, but failed to do because of their lack of academic achievements. Some of them try to gain the entrance (or transfer) to four-year universities when opportunities arise.

Although the four-year universities and two-year junior colleges take are the most important type of institutions, there are other types of higher education institutions. There are eleven Teachers Universities that train primary school teachers, which are owned and operated by the central government. Currently, they are four-year institutions. However, most of these institutions started as a normal school at high school level until 1962. In the 1950s when the elementary school system experienced a remarkable expansion. The enrollment in primary schools was less than 2 million in 1945, but it increased to almost 6 million at the end of 1960s. As the government wanted to produce teachers very quickly in order to meet the burgeoning demand for primary school education, it established several normal schools throughout the country. They were heavily subsidized by the government in order to attract able young people who otherwise would not been able to go to high schools into the teaching profession (McGinn et al. 1980). Over time, the qualification for teachers has improved, and these institutions turned into two-year colleges in early 1960s and four-year universities in 1980s. However, the heavy subsidy to these institutions by the government continued until now. The three types of institutions educate mostly conventional students, that is, full-time students immediately after high schools.

Another recent growth in Korean higher education system is due to the development of open universities for un-conventional students. The government established the Air and Correspondence University within the Seoul National University in 1972 in order to absorb the burgeoning demand for higher education in the 1970s. In 1982, it became an independent national university. Initially it started with radio correspondence school curriculum. TV has been used for the medium of instruction since 1990. With the development of information and communication technology, more programs are offered through internet. Currently, it offers graduate as well as undergraduate degrees. In addition to this national university, there are seventeen private cyber universities offering associate bachelor degrees and bachelor degrees. All these were established since 1995 when the government eased the entry requirement of higher education institutions.

Basically, most of higher education institutions conduct competitive admission process. Typically the process involves a nationwide scholarly achievement test given during the grade 12, high school transcripts, essays, and personal interviews. The process and the weight given to each part have been heavily regulated by the government. The rules for the college admission have been one of the most contentious policy issues in Korean educational policy.

In 2005, there are 419 higher education institutions, out of which 359 are privately owned. in Korea (see Table 1). There are 173 four-year universities, out of which 147 are privately owned. Additionally, eleven private universities have branch campuses which are not counted separately in 147 private universities. These branch campuses are located outside of the Seoul metropolitan area, which were established by major private universities in Seoul during the rapid expansion of the system. Because of the government's policy to suppress the growth of the capital city region, private universities are not allowed to expand in the Seoul metropolitan area.

Consequently, the major universities in Seoul opted to open branch campuses, just outside of the region to absorb excess demand for their students. For public universities, there are 50 national universities that are administered by the central government and 10 public universities that are owned and operated by local governments. There are also 158 junior colleges, and the 144 of them are private. There are also 18 industrial universities. They are similar to polytechnic universities teaching professional skills in various engineering fields. Most of them started as two-year institutions, but have been converted to four-year institutions. They are run or regulated by the Ministry of Labor rather than the Ministry of Education.

Total enrollment in higher education in 2005 is more than 3.5 million. More than 1.8 million students are enrolled in universities, about 850,000 students in junior colleges, and another 340,000 students are in open universities. Considering the fact that the size of population of 20 years old in 2005 is slightly more than 600,000, Korean higher education system can be regarded as universal. More than 80 percent of higher school graduates advance to higher education, and 48.4% of age cohorts between 19 and 21 years old are in four-year universities, and additional 19.7% are in junior colleges. In terms of the gross enrollment figure reported to OECD, Korea (85%) is one of the highest in the world (Clancy and Goastellec 2006).

The neighboring high-income nations in East Asia, Japan and Taiwan, have also quite high enrollment rates in higher education.[2] The advancement rate to four-year universities in Japan is 44.2% in 2005 and to junior colleges is 7.3% (Japan Ministry of Education, Culture and Technology). The major difference between Japan and Korea is that (1) Korea has significantly larger junior college participation (19.7% compared to 7.3%) and that (2) Japanese junior college system is dominated by female students, while Koreans have similar sex ratios between university system and junior college system (see below). Taiwan has slightly lower participation rates than Korea even though Korea's GDP per capita is lower than that of Taiwan. In 2005, the gross participation rate in Taiwan is 82%, and close to 50% in four-year universities (Taiwan Ministry of Education).

Although most university undergraduate degrees require four years, some professional degrees require longer undergraduate schooling. For example, degrees for medical and dental professionals require six years of undergraduate education. MBAs (Masters of Business Administration) require two years of additional education after four years of undergraduate education. Currently, legal professions require four years of undergraduate education. However, the introduction of American-style of law schools (three years after an undergraduate degree) is being considered. However, such reform has been repeatedly blocked because of the interest group politics. Less sophisticated professional degrees which used to require less than for years in earlier decades, such as nurses, primary school teachers, have strengthen their education requirements so that more and more schools have four years of higher education. In general, as the higher education sector expands, professional degrees tend to require longer years of formal schooling.

III. Major Characteristics of Korean Higher Education System

1. Rapid expansion

One of the most striking features of Korean higher education system is the speed in which the rate of participation has increased. In 1952, there were only about 31,000 students

[2] In 2006, GDP per capita (in purchasing power parity) of Korea was $24,000, Taiwan, $29,000, and Japan, $32,600 (IMF)

enrolled in universities. The enrollment in those institutions has increased to 105,000 in 1965, to 209,000 in 1975, to 931,000 in 1985, to 1,188,000 in 1995, and to 1,887,000 in 2005. The enrolment in junior colleges in 1965 was only 23,000. It has increased to 63,000 in 1975, to 242,000 in 1985, 570,000 in 1995, and 853,000 in 2005 (see Table 2). In addition to the enrolments in these institutions, the enrollment in open universities has increased tremendously for the last two decades.

Table 2 about here.

However, the expansion has not happened smoothly. Up until 1960, the rate of increase in higher education enrollment was quite high, even though the level was relatively low (less than 3%). For instance, the number of students enrolled in four-year universities in 1950 was only 11,358. The number has increased to 101,014 in 1960 (9-fold increase in ten years)! Between 1960 and 1980, there was a steady expansion, even under the very suppressive government policy. The enrollment rate in four-year universities reached 7.2% in 1980, and additional 3.7% in junior colleges (see Table 3).

Table 3 about here.

The massification of higher education occurred since 1980. It followed the rapid expansion of secondary school enrollment that happened during the 1970s. The secondary school enrollment followed the early rapid expansion of primary school enrollment that happened during the 1950s and 1960s. Meanwhile, Korea's economy started to take off in early 1960s, recording the annual average growth rate of 6-10%. The successful economic growth and secondary school equalization policy greatly expanded secondary education. During the period of 1960 and 1997 (the year of Asian financial crisis), Korean economy recorded the growth rate of 6-10% per year except for a few years during the oil crises in the 1970s. Since 1998, the economy recovered to a slower but steady growth rate of 4-5% per year (see Figure 1).

Figure 1 about here.

In terms of student enrollments, the expansion of higher education happened both in public and private sector. In 1960, about 25% students enrolled in universities are in public universities. The ratio remained stable until 1995. Since then, the ratio has been declining gradually to 21% in 2005 reflecting the fact that private universities grew a little bit faster than public ones. Two-year colleges are much more dominated by private suppliers. About 20% of students enrolled in junior colleges were at public institutions in 1965. However, the ratio has dropped abruptly in early 1980s when many public junior colleges converted into four-year universities. The ratio of enrollments in private junior colleges is only 4% in 2005.

With respect to gender balance, the ratio of female student enrolled in 4-year universities has been increasing steadily. In 1965, 22.5% students enrolled in universities were female. In 2005, 36.3% of those students were female. The ratio of female students in junior colleges is similar to that of universities. Considering the fact that junior colleges is the second-tier institutions in Korea, the similar ratio of female students in both types of institution suggests that

there is no gender discrimination between the two sub-systems.[3] In 2006, female enrollment rate for universities is 42.8%, whereas the enrollment rate for both sexes combined was 44.2%. During the period until 1980, about 25% of students enrolled in junior colleges were in public colleges. Since the reform in the early 1980s, the ratio of students enrolled in junior colleges declined.

Looking at the number of institutions over time, the number of universities in 1952 was only 34, and it has increased to 70 in 1965, to 72 in 1975, to 100 in 1985, to 131 in 1995, and to 173 in 2005 (see Table 4). In 1965, 14 out of 70 universities were public. The number of public universities remained stable until 1980, and it has increased gradually to 26 since then. While the number of public universities has increased only from 14 to 26 during the last four decades, the number of private universities has increased more substantially from 56 to 147 during the same time. The number of junior colleges increased even more substantially from 48 in 1965 to 158 in 2005.

Table 4 about here.

While the number of private junior colleges has increased steadily during the last four decades, the change in the number of public junior colleges has not. Between 1965 and 1975, the number of public colleges increased rapidly from 12 to 36. In early 1980s, many of the public junior colleges changed to four-year universities. Consequently, the number of public colleges decreased from 36 in 1980 to 17 in 1985. Since then, the number of public junior colleges decreased slowly.

During the period of expansion, the average size of universities has increased substantially as well. The average number of students of a public university was 2,300 in 1965. In 2005, the average size increased to 15,000. Generally, private universities are smaller than public universities. Currently major universities have student sizes of 15-20,000. In 1965, the average size of private universities was only 1,400, but it also has increased to more than 10,000 in 2005.

Similarly, junior colleges have increased their sizes during the time period. In 1965, the average size of junior colleges was only less than 500. In 2005, the enrolment in public colleges has increased to more than 2,500. The growth of the size of the private colleges was even more spectacular. In 2005, the average enrolment in private colleges was more than 5,500. Unlike the university system in which public universities are generally larger than private counterpart, private two- colleges are generally larger than public one in the junior college system.

2. Low per student input

The rising participation in higher education has been accompanied with decreasing education input. While the number of academic staff has increased very much (see Table 5), their growth, the most important input in terms of both cost and effectiveness, has not caught up with the growth of students. Consequently, the student faculty ratio has been increasing over time. In 1952, the student faculty ratio in universities was 26. It has remained relatively stable until 1980, and it jumped to more than 40 in 1985. Since then, it has been gradually decreasing,

[3] The relative gender equality in Korea contrast sharply to the situation in Japan where the female participation in higher education is highly concentrated in junior colleges. In 2005, 51% of Japanese male high school graduates advanced to universities and only 1.8% to junior colleges, whereas 37% of female high school graduates advanced to universities and 13% to junior colleges.

but it is still 38 in 2005. The situation in junior colleges is even worse. In 1965, the student faculty ratio was 26, and it started to increase since 1980. In 2005, the ratio is more than 70 (see Table 6).

Tables 5 and 6 about here.

In general, public institutions have lower student faculty ratio. In 1965, the ratio for public universities was 13.7, whereas it was 28.1 for private universities. During the last four decades the ratio has increased in both public and private universities. It is 30.8 in public universities and 41.1 in private universities in 2005. Although the ratio is higher in private universities, the rate of increase is lower in private universities. In 1965, the ratio in public universities was less than a half of that in private universities. However, in 2005 it is about three quarters.

The rise in faculty student ratio in higher education is striking compared with the declining ratio in primary and secondary schools. In 1965, the ratio was 62 in elementary schools, 40 in middle schools, and 32 in high schools. In 2005, it has decreased to 29, 19, and 16, respectively. In fact, the student faculty ratio in universities is more than twice that in high schools. In junior colleges, the ratio is more than five times of the high schools!

Table 7 shows per student expenditure spent in higher education and secondary education. Relatively speaking, Korea's per student expenditure on secondary education is quite high. The figure does not include substantial expenditure on private tutoring. The amount of private tutoring is estimated about 60-70% of government expenditure. Therefore, if you include the private tutoring expenditure, Korea's spending per student in secondary school exceeds that of the U.S. in purchasing power parity. However, the per student expenditure on tertiary education in Korea is almost the same as that on secondary education, while the figure is about twice as much in Japan, U.K., and the U.S. Although the increase in educational input does not necessarily convert into the increase in education output, the absolute and relative low input of Korean higher education should be of serious concern.

Table 7 about here.

There are several reasons to explain the contrasting trends in faculty student ratio between higher education and primary and secondary schools. First, there has been a sharp decline of fertility rates since 1970.[4] Consequently, the of students in primary schools started to decrease since 1980, while the number of students enrolled in higher education started very rapidly since then (see Figure 1) Second, higher education system relies heavily on private funding while primary and secondary schools depends mostly on public funding. The emergence of strong teachers union (this will be described in more detail below) in the late 1980s prevented to reduce government expenditure in this sector.

Despite the growing faculty student ratio, the quality of the academic staff has increased over time. In 1970, only 1,440 out of 7,944 full-time academic staff (18.1%) in universities have Ph.D.'s. In 2006, the ratio of Ph.D. holders increased to 83.6% (see Table 8). There are several reasons for this improvement in the quality of faculty. First, the supply of foreign Ph.D.s returning to Korea has increased drastically in the 1980s. Second, the supply domestic Ph.D.'s has rose dramatically in Korea since 1990. Third, since 1995 the competition among universities forced them to hire better-qualified professors.

[4] The total fertility rate in 1970 was about 4.5, and it has decreased to about 1.5 in 1985.

Table 8 about here.

3. Heavy reliance on private funding

In terms of funding sources, heavy reliance on private funding is a key characteristic of the Korean higher education system. The Table 9 shows the spending on higher education by public and private sector as a percent of GDP. Korea spends 2.6% of GDP in higher education. In terms of the percentage, Korea ranks the second in OECD countries after the U.S., which spends 2.9% of GDP in higher education. Out of 2.6%, only 0.6% is spent by the government, and the remaining 2.0% (77% of the total spending on higher education) is borne by the private household. In terms of the share of the private funding, Korea ranks the first in OECD. U.S. ranks the distant second in terms of the share of private funding with 55%.

Table 9 about here.

Korea's funding of higher education relies much more directly on the tuition revenue by students. The Table 10 shows the source of funding in private universities in Korea and the U.S. In Korea, about 70% of total revenue by private universities is from students, compared to the 40% in the U.S. The U.S. private universities receive much more funding from the government (about 20%), compared to the Korean private universities (only 4%). This is primarily due to the fact that there is no government grant to students in Korea and that the government research support for universities are much smaller in Korea. Korean private universities receive substantial gifts and donations (20%) by the owners of the universities, industry, and private citizens. However, Korean universities' ability to generate operational revenue by their assets is much smaller compared to the U.S. private universities. Since the colonial period, U.S. colleges used residential campus, similar to Oxford and Cambridge in England. Therefore, the emotional attachment to Alma Mater in the U.S. is strong, and it has been used to generate a great deal of gifts and donations from alums. Also, U.S. institutions have much longer history so that they have been able to accumulate substantial endowment over time.

Table 10 about here.

The reliance on tuition revenue is even higher for junior colleges. Since these are the institutions that are more teaching-oriented and less established in terms of their reputation and alum base, the amount of gifts is much smaller than universities. Also, as the Korean government subsidy is mainly for research activities, these type of institutions are not likely to be able obtain any competitive research grants operated by the government. It is estimated that more than 90% of these institutions' operating expenses are from students. This heavy reliance on private funding sharply contrasts with substantial subsidy by federal, state, and local governments to community and technical colleges in the U.S. Therefore, it would be sate to say that Korean junior colleges require relatively higher user fees.

Such high reliance on private funding in junior colleges in Korea inevitably makes the institutions as a second class. Even though their tuition is lower than those of universities, the quality of instruction is much lower than the latter sub-system. It does not function as a technical school because of its lower financial base, nor as a low-cost feeder school for the university

system. In the U.S. heavy government subsidy along with cheap tuition make the community college system as a viable feeder system for low income households who often have full time jobs and are forced to stay near home. In Korea, the junior college system does not necessarily cater low income households living nearby. Mostly, mostly they are full-time students whose academic credential is not strong enough to advance to universities.

4. Hierarchical structure of institutional pecking order

Another important characteristic of Korean higher education system is its hierarchical nature. The university system is clearly superior to the junior college system. Within the subsystem, the well-established rankings among institutions have been known well among students, parents, professors, and the general public. The basic reason for such a hierarchical nature of the system is the competitive entrance examination that has been used throughout the history of Korean higher education sector. While the nature of the entrance examinations have changed overtime, all Korean higher education institutions are allowed to select students and students are allowed to choose institutions to attend since the beginning of the country until now.

There are several market and institutional forces that sustain this hierarchical structure. First, universities have general reputations among public. Such reputations are the combined results of the institution's history, locations, and the quality of faculty, academic programs, facilities, alums, and so on. Since the reputation is pretty well known to the applicants, they strive to get an admission by the best institution given their academic abilities and personal preference. Korea is geographically a small country (only 400 miles long and less than 200 miles wide), and the transportation network within the country is very well developed. So the market for higher education is more or less national. Such competition among students results in the hierarchy of students' academic ability and the reputation of the institution. Second, highly ranked university attracts not only best students, but better faculty members. Given the same level of salary, faculty members would like to teach better students. The attraction of better students would be much higher for graduate program in which students become assistants and co-workers. At the same time, higher ranking institutions can attract more gifts and donations from corporations that would like to link up with best institutions and alums that are more likely to be successful. Also, high ranking institutions can secure more government funding, because better quality faculty members in high ranking institutions are more likely to be successful in attracting competitive research grants. Also, high ranking institutions have better network of alums that can contribute more gifts. Also, governmental support for flagship national institutions distributes more funding to high ranking public universities. Such gifts and donations allow high ranking institutions subsidize education more than the less reputable counterpart. Therefore, high ranking institutions may be able to charge lower cost to students and pay higher salaries to their faculty members as well as better facilities (Rothschild and White 1995). Such advantages are self-serving and more likely to be sustained for a long time period. See Kim and Lee (2006) for more detail regarding the hierarchical nature of Korean higher education system.

5. Heavy government regulation

Another major characteristic of Korean higher education system is high level of government regulation exerted to the universities and colleges, even though the funding support by the government is relatively smaller compared to other countries. Some have argued that the success of Korean economic development can be attributed to the efficient market intervention

by the government (e.g., Amsden 1989). However, neo-liberalism, deregulation and privatization have been on the agenda of many governments in OECD. Although Korea had some limited success in deregulation, Korea's economy is considered to be highly regulated (WCC 2006).

It is very common that educational sector is much more regulated than the other sectors of the economy in general. In most countries, substantial portion of education is directly supplied by the government. Even in the countries where private market is considered to be the major resource allocation (e.g. U.S. or U.K.), public sector directly or indirectly provide funding for education, certify teachers, and regulate various aspects of the operation of the sector.

In general, the level of government regulation was the highest between 1960 and 1980, under Park Chung-Hee's administration. Park's government regulated not only the key aspects of the quality of higher institutions such as minimum quality standards for physical facility and academic staff, but also the quantity of supply by limiting the number of students in the higher education system. Although such heavy-handed regulation diminished over time, Korean government still maintains a high level of regulation. For example, recently, the Roh administration asserted that it will maintain so-called *sambul* (three impossibilities) policies regarding the admission of students to the higher education institution. The policies prohibit three potential admission policies that higher education institutions may want to adopt: first, consideration of the quality differentials among high schools from which the students are graduating; second, individual entrance examination by the institution; and finally, favorable consideration for the children of benefactors to the institution.

It is interesting to observe that the high level of government regulation has been maintained in various political environments through Korea's modern history. Military dictatorship between 1960 and 1987 exerted strong government power in all forms of economic regulations and social control. In such dictatorial form of government, strict government regulations may be easily understood. The first government since 1987, though it was elected by a fair election, has a strong tie to the previous military government, as the President himself was a former general, and was hand-picked by the previous military dictator. During this time period, the legacy of strong regulations has been maintained, while political freedom was expanding. The next administration, a moderately conservative government, wanted to liberalize the economy including the education sector, the extent of deregulation was not great, and the length of the education reform was cut short by the emergence of moderately liberal government. Now more liberal government in place, the bureaucracy maintains its strong grip through in part by the politics of populism and in part by the self-preserving behavior of bureaucrats. The majority of students and parents do not wish to rescind the secondary school equalization policies. Also, the level of capture by bureaucrats in Korean education is quite substantial. In fact, it is not uncommon that high level bureaucrats in the government become presidents of public universities or board members of private universities after he finished his government career.

IV. Historical Development of Korean Education System before the Massification of Higher Education in 1980

Modern institutions of higher learning in Korea can be traced back to the late nineteenth century when the West influenced the early development of the education system in Korea. Several Christian missionaries started to establish modern learning institutions. An American Methodist missionary, Rev. Henry Appenzeller started teaching English in Korea in 1885. His effort was

recognized by the King Kojong in 1886, and he bestowed the name Paichai School, which still exists as a university and a high school. Another American Missionary established a girl's school in 1886, and the King gave the name Ewha School, which is the precedent of the current Ewha Womans University. In 1885, an American missionary Horace Allen, who worked as a doctor for the King, established a medical school, which was incorporated to the Severance Medical School in 1893. The Medical School currently is a part of Yonsei Univesity. In 1897, an American Missionary Baird established Soongsil School in Pyongyang. It was closed to protest the Emperor worship forced by the Japanese wartime military government, and reopened in Seoul after the Korean War. It later became Soongsil University. While most of the schools in this period were founded by Christian missionaries, other progressive Koreans established private learning institutions as well. For example, Bosung School established in 1905 by an aristocrat Yong-Ik Lee has developed into Korea University later. Also, Buddhist monks established a higher learning institution called Myeong-jin School in 1906, and it later became Dongguk University. A teaching institution for girls called Myeong-shin Women's School established by the Court in 1906 later became Sookmyung Women's University.

The burgeoning system of modern education in the late Yi Dynasty was substantially disturbed by the encroachment and annexation by the Imperial Japan. When Korea was colonized by the Japanese, the Japanese government strongly suppressed education in Korea. No universities were allowed and the length of primary and secondary schools were shorter than those in Japan. The demand for higher education can only be satisfied by studying abroad. Many went to Japan and China for higher education. Some even went to the U.S. as well. [5] While many of them are from privileged group who are typically pro-Japan, many others were active in the Korean independence movement. The discriminatory education policy changed substantially after the 1919 Korean independence movement. The Japanese tried to assimilate Koreans into Japanese. In 1924, the Japanese government established Kyungsung Imperial University[6] in Seoul in order to accommodate higher education demand in Korea (including the Japanese who were living in Korea) and to preempt the movement to establish a private university following the model of Japanese higher learning institutions converted to universities in 1910s and 1920s. However, the class size was very small (typically fewer than 200), and only about one thirds are Korean (Han 1996). While there was only one "university," there were several private and public higher learning institutions teaching engineering, law, business, and education.

One positive aspects of Japanese colonial rule (1910-1945) was the virtual elimination of social classes that existed during the Chosun Dynasty. While many of the early sympathizers to the colonial government were from the Yangban (aristocracy) class, the new political system eliminated the socio-economic influence of the class per se. Also, the secondary schools and universities established by the colonial government had meritocratic examinations to select the students. The students who successfully graduated from these schools had a great career advantage of being employed as professionals and managers in the colonial political economy. At the same time, the Japanese imperial government left a highly authoritarian school system. Since 1939, as Japan immersed into the War effort, students are required to wear black uniforms that look more like military cadets', and each school day started with an inspection parade in the military style with a public speech by the principal and physical exercise. Students' school

[5] In some years, there were several thousands of Korean students in Japan, and hundreds of them in higher education institutions. However, less than 100 Korean students were in the U.S. (Jang 2002).
[6] Kyungsung was an old name for Seoul.

behavior was strictly disciplined, and principals and teachers have significant authority over students including corporal punishments. During the Japanese colonial rule, primary education has experienced a substantial growth. However, the educational opportunities for higher level of educations for Koreans were heavily restricted. In 1945, when Korea was liberated from Japanese colonial rule, only 65% primary school-aged children and less than 5% the properly-aged children were enrolled in secondary schools. Less than 0.5% was enrolled in higher education. In 1945, there were 19 higher learning institutions (only one were called "university"), which have less than 7,819 students in total (KMOE 1998).

As the establishment of the unified Korea government in the peninsula became impossible, two nation states, South Korea (Republic of Korea) and North Korea (Democratic People's Republic of Korea), were established in 1948 separately. The new South Korean government lacks any infrastructure or resources of running a successful school system. In particular, soon after the liberation, the Japanese teachers, who consisted of 40% of primary school teachers and 70% of secondary school teachers, returned to Japan. However, immediately after the liberation, the enrollment in various levels of schools increased very rapidly. This suggests the education demand has been severely suppressed during the colonial period. Between 1945 and 1950, enrollment in primary schools almost doubled. Although the absolute sizes of increase were small, the middle school enrollment increased four times during the period, and high school enrollment increased five times (McGinn et al. 1980). Meanwhile, the number of higher education increased to 42 in South Korea at the time of the birth of the nation, enrolling about 24,000 students. They include four comprehensive universities (Seoul National, Yonsei, Korea, and Ewha) (KMOE 1998).

The Rhee Syngman Administration of South Korea announced the ambitious universal and free primary school education in June 1st, 1950. However, the Korean War that broke out in June 25th of the same year greatly disrupted the growth of the education system. Many schools have to be closed or moved in order to avoid the military conflict and devastation. Many students could not attend the schools regularly because of the War. Moreover, many school buildings were destroyed, because they were commonly used by military forces during the war, and became popular targets for attack.

During the Rhee administration, higher education in Korea has expanded tremendously. The enrollment in higher education increased to more than 100,000 in 1960. The expansion of higher education was in both public and private higher education. During the Korea War, several universities conducted classes (sometimes jointly) in provincial cities (such as Pusan and Kwangju). The experience the possibility of universities in those cities, and until 1954, at least one national university was established in each province of Korea. At the same time, the stipulation in the land reform of 1949-50 created strong incentives for large land owners to convert their land holding to schools, as the government exempted the forced taking of the land for schools. Also, the laissez fair attitude of the government toward higher education invited many educational entrepreneurs into "education business."

In the aftermath of the War, the demand for primary school resumed to increase very rapidly. The government tried to cope with the rising demand with very little public resources. Domestic resources that can be mobilized from the damaged economy were not very much. In 1954, the budget for the Ministry of Education was 4.2% of the government's budget. The proportion has increased to 15.2% in 1960. Although there were substantial foreign aid to the government, particularly from the U.S., not much of the resources are diverted to education

sector. The biggest exception was the construction of new school building supported by the American aid (McGinn et al. 1980).

Faced with the growing demand in primary school education with insufficient public resources, the government decided to accommodate the rapidly rising education demand by distributing the public resources thinly while asking the private sector to bear substantial portion of the education cost. The education input per pupil was very low. For example, the student faculty ratios in the late 1950s were above 60. There were not enough classrooms, and two sometimes three classes share the same room. School facilities are of bad quality even lacked basic heating (not to mention cooling) equipments. There was a severe shortage of school teachers. The government established several normal schools to train teachers for primary schools. In order to attract more students, the tuition fee for the normal schools were almost free, and the job after the graduation was guaranteed. However, the level of salary has been kept low compared to the workers in the private sector. As a compensatory measure, teachers were promised to have better job security, tenure-based salary, and higher pension after retirement. Also, they were asked to collect *wolsagum* (monthly gratitude due for teachers) from students to compensate their official salaries. As the collection of quasi-tuition by teachers became detrimental to their educational mission, *yukseonghoe* (parent organization to support the school) was organized for each school. Although the organization have some responsibility of parents-teacher communication, its main objective was to raise extra fund to run the school as the level of public resources allocated to the school was way too small. The organization pays as much as 80% of the local school's operating expenditure. Although the universal primary education was the official policy, students are supposed to pay fees to the organization. If the student were not able to pay, sometimes the student is not allowed to attend the school. Textbooks and other teaching material have to be bought by the students themselves (McGinn et al. 1980).

Clearly the quantity expansion was the priority for the government. In fact, the government had the automatic promotion policy for all primary- and secondary-school grades. However, there is also a very important sorting mechanism among students. All middle schools and high schools have competitive entrance examinations administered by individual institution. Any student who passed the entrance examination for a specific school can attend that school. Since secondary schools have different levels of quality in terms of teachers and school facilities and different reputation and alum basis, the entrance examination plays a very important sorting mechanism among student in terms of academic merit.

The national sorting of secondary school students based on academic merit created a substantial competition among primary school students. Many parents spend substantial sum of their private resources (in addition to the payment to schools, such as *yukseonghoe* fee and teaching material) to private tutoring in order to prepare their children for the entrance examinations to middle schools. However, for the middle school students the amount of private tutoring decreases, as there was already a nation-wide sorting done in the middle school. Teachers can prepare their lessons according to the relatively homogeneous student bodies, and students benefited from their peer-group effect in terms of expectation of their future academic success in the next round of competitive entrance examinations. While the automatic promotion policy masks the differentials among students within a school, the competitive entrance examinations highlighted the inter-school differences.

When General Park Chung-Hee took over the power by a bloodless coup d'etat in 1961, his primary policy objective was to promote rapid economic growth through export promotion. In order to achieve the goal, the government started a series of five-year economic development

plans with strong government initiatives. The plans entailed subsidized capital accumulation for industrialists particularly in export businesses while suppressing the wage in order to make the domestic product more competitive in the world market. The economic planning exercise has been proven to be very effective, and Korean economy started to grow very rapidly under Park's leadership (Amsden 1989).

In the early 1960s, more than 95% of primary school grade students are enrolled in schools. While substantial portion of the educational expense has been paid by households, the goal of universal primary education has been achieved. During the 1960s, there has been a continuous effort to deliver "true" universal primary school education by continuously increasing public expenditure. The de facto tuition charge through *yukseonghoe* in primary school continuously decreased. The government initiated free textbook program for poor regions and continued the coverage through the nation. In 1971, 4.62 million students were benefited by the free text program. The budget of MOE in 1971 took 19.0% of the total government's budget and increasingly larger share of it was devoted to primary school education (KMOE 1998).

The rapid expansion of the primary school enrollment created a direct impact on the demand for secondary schools. As the public resources are increasingly devoted to meet the government's commitment for universal primary education, the role of the private providers in the secondary schools became more prominent. During the 1960s, there has been an expansion of private secondary school providers. The number of private middle schools in 1965 was 513, and it increased to 698 in 1970. In 1969, the proportion of students enrolled in private middle school was 50.2% compared to 33.5% in 1952. In the same year, 53.7% of high school students were enrolled in private schools compared to 20.3% in 1952.

The proliferation of private secondary schools resulted in widespread fraud. Although the government did not allow for-profit schools, many proprietors of those schools took advantage of the rising demand of education. The tuition revenue was sometimes diverted to personal uses for the owners rather than being used for students' education. Founders used the school as a mechanism of tax evasion and wealth accumulation by buying up real estate. The prominent role of private schools in secondary education sharply contrasts to almost non-existent private ones at the elementary school level.

Another serious social problem was the heated competition to enter more prestigious secondary schools. Many well-to-do families spend substantial sum in private tutoring so that their children had advantages in the entrance examination. Public secondary schools charge tuitions, but they are much lower than private schools. At the same time, the quality of instruction, facilities and prestige of more established public schools are higher than that of private schools.

The complete school choice among secondary schools created well-established nationwide rankings among middle and high school. Consequently fierce competition for better secondary schools emerged. With such fierce competition, education policy makers recognized serious problems such as rising private tutoring costs and too much heavy pressure for young children. The Park administration's answer to these problems was the equalization policy. Under the equalization policy, all schools, public or private, were forced to give up their rights to select new students and were required to take all students assigned by the Ministry of Education through district-wide lotteries. It also made curriculum, tuitions and teacher salaries of private schools equal to those of the public schools. Meanwhile the government guaranteed any deficit in operating cost (but not in capital cost) of all private schools. Accordingly, private schools became almost public in terms of the accessibility to the students, content of learning, and

quality of teachers. The only meaningful difference between private and public school remained in the governance structure. Owners of private schools were allowed to maintain certain rights over the school governance, such as appointment of teachers and board of directors, non-educational-for-profit activities, or capital improvement of school facilities. But even those were under the supervision of the government.

The equalization policy has been gradually implemented since 1969, first in middle schools, then later in high schools. In 1969, the middle school equalization policy was first implemented in Seoul. It has expanded to major cities in the following year. In 1971, all middle schools throughout the nation were under this policy. In contrast to the sweeping and complete implementation of the equalization policy for middle schools, high school equalization policy has gone through a more gradual implementation (and sometimes reversal of the policy), and substantial modifications over time, with substantial opposition. Also, it has never been completely implemented throughout the nation. In 2006, about 60% of schools, 70% of teachers, and 70% of students are in the districts where the policy was in place. Although there have been some modifications from time to time, the basic structure of the policy has remained intact until now. For the last thirty years, the equalization policy has been one of the most controversial issues in Korean education policy. See Kim and Lee (200b) for more information on the secondary school equalization policies.

The higher education section was not on the priority of the Park administration's policy agenda. In fact, Park actively suppressed the supply of higher education for several reasons. First, toward the end of Rhee administration there had been a rapid increase in the number of private higher education institutions.[7] Although they are de jure non-profit institutions, they are de facto for-profit institutions. Many owners abuse the lax regulations for their advantages by controlling the governance, finance, and even faculty appointments. The Park administration wanted to reduce such fraudulent behavior, and the basic mechanism it chose to control their behavior was stiff regulation through micro management. Second, the education planners were worried about unemployment of highly educated if the expansion of higher education is allowed to grow. Third, the government simply does not have any resources to provide public higher education as the expansion of the secondary education was such a pressing matter. The pent-up demand has been fulfilled through two major waves of policy changes. The first expansion of higher education happened in 1980 during Chun Doo-Hwan administration, and the second one in 1995 during Kim Young-Sam administration.

V. Political Economy of Massification

The expansion of higher education in Korea happened in three stages. First, during the Rhee administration (1948-1960), the government has concentrated its public resources to finance the burgeoning primary education sector. Due to the economic hardship of underdevelopment, the War, and corruption, the government left the higher education sector alone. Under this regime, many education entrepreneurs became the major supply of higher education. The second wave of the expansion happened during the Chun administration, a military dictatorship. Its approach to solve the excess demand of higher education was to increase the student quota. The third wave happened during the Kim Young-sam administration, a moderately conservative government that emphasized deregulation, free entry, and competition. Below, I discuss the two major policy initiatives in more detail.

[7] Most of these institutions also provide secondary school education.

Despite the rapid growth in secondary school enrollments, Park's government maintained very suppressive policy toward the expansion of higher education. It restricted the number of students that can be admitted to each higher education institution to the level of academic department. In the late 1970s, it was very apparent that there was a great deal of excess demand. In 1978, the total admission quota for universities was 76,000, while the number of graduates who took the college entrance exam was 320,000, and more than one third of them are repeaters. While the Park administration gradually increased the quota (see Figure 2), the increased number of slots were simply not enough to accommodate the exploding number of high school graduates who seek to enter university or college.

Figure 2 about here.

A major expansion of higher education in Korea started with the Chun's education reform in 1980. Chun obtained the power through a military coup in 1979 during the power vacuum created by the Park's assassination. Therefore, his government lacks the political legitimacy. Since there was substantial political dissatisfaction by the general public, Chun administration needs to vent social frustration of the time. The rising difficulties of entering universities and growing financial burden of private tutoring were among the top of the public's social concerns. In particular, the continuation of military government since 1960 has been most sternly opposed by urban middle classes who value higher education the most. One of the key elements of Chun's education reform was to release the pressure of pent-up demand for higher education.

The Chun administration allowed universities to admit up to 130% of the previously set admission quota in 1981, and the following year, to admit 150%. However, the universities are not allowed to graduate them all, and limit their number of graduates with the previous admission quota. This policy was aimed to reduce the competition in college entrance examinations and to encourage college students to study harder during their university career, because students were known to not to spend time in studying but in political participation such as anti-government demonstration once they enter universities. Also, the government allowed the conversion of many public junior colleges to universities.

The increase of student quota in existing universities and upgrading two year colleges was accepted quite positively by all stakeholders. Students saw the increase as an opportunity to be able to be admitted to their dream universities. Private universities saw it as a chance to increase their tuition revenue and financial stability, because much of their revenue was from tuition payment by the student. Public junior colleges saw it as an opportunity to improve their institutional reputation and to attract better students and more public and private financial resources. Public universities worried about the possibility of increasing their teaching load, but they felt that the extra revenue would offset the negatives consequences.

However, the graduation was extremely unpopular by students and college administrators alike. Therefore, it was extremely difficult to implement the policy, because of the traditional practice of "almost automatic graduation" at the college level. The faculty has not been used to give grades to fail substantial portion of the students. Students were anxious about failing, and were politically mobilized in order to prevent the forced discharge from the university that they spent so much time and money to get in. The graduation quota was soon discarded, and the government was forced to switch back to the admission quota in 1988. In effect, Chun's policy on higher education has greatly expanded the enrollment in the early 1980s. The number of university students increased from about 330,000 in 1979 to 970,000 in 1986. However,

enrollment in junior colleges has not changed very much during the same period, as many junior colleges converted to universities during the period.

Meanwhile, a major change in Korea's political environment happened in 1987. The military dictatorship that has ruled the nation for the past thirty years gave it away to a fully democratic government. Fair and direct elections were put into places, and the there was a gradual movement to democratic integration by the concession of Roh Tae-Woo, a retired general, hand-picked by Chun. Although the increase in student quota that has been implemented during the 1980s, the demand for higher education has increased more rapidly than the quota. Because of the quota in the university system, the excess demand for higher education has been absorbed by the expansion of private junior colleges that took the role of the second-tier higher education system.

Another major policy change that contributed to the expansion of higher education greatly happened in 1995 during the Kim Young-Sam administration, a moderately conservative regime. Kim was the first civilian president that got hold of the power since 1961. The government adopted competition and deregulation as a major policy objective throughout the national economy. In higher education, government regulations were substantially relaxed. Enrollment quota was eliminated except the universities located in Seoul metropolitan area in order to suppress the growth of the region that already contained almost one half of the population. This policy shift enabled many private universities located outside of Seoul metropolitan area to increase their enrollment, as the increased enrollment directly translated into more revenue. The deregulation created a wave of new universities including the branch campuses of the universities in Seoul.

Also, many small private universities are established in regions outside of Seoul area. Consequently, the enrollment in both segments of the Korean higher education system, universities and junior colleges, increased steadily during the time period. In the beginning of 2000s, the participation of higher education in Korea reached above 80% for the traditional college going age groups, and it would be unlikely that this number is likely to increase any further.

One of the most important institutional developments during this democratization period was the formation and the legal recognition of teachers unions. In the aftermath of civil unrest in 1960 that led to the fall of the dictatorial government of Rhee, the primary and secondary school teachers form a union. The union was quite successful, and within a year, about 40,000 members (50% of teachers) joined the union. However, Park's military government dismantled the union in 1961, and made it illegal to form a teachers union. The assassination of Park and subsequent democratization movement rekindled the organization of teachers. During the 1980s, civic movements against the dictatorial government happened extensively in many spectra of the society. In addition to the traditional anti-dictatorial force of the politicians that are out of power and intellectuals including university students, workers, religious leaders, and school teachers joined the movement. In 1986, primary and secondary school teachers announced so called, the Declaration of Educational Democratization. The Declaration promotes more participatory democratic governance in private secondary schools in which corruption and abuse of power by the owners were common. It advocates less intervention by the government bureaucracy, but asks for more government financial support. Also, it argues that the objectives of education should be determined by the teachers and parents rather than the government and owners of schools.

Despite of overt suppression by the government, thousands of teachers gathered to

establish the National Teachers Union in May 28, 1989. In response to this apparent illegal activity, the government fired 1,527 schoolteachers, and many of the leaders were arrested. The continuous union movement during the 1990s resulted in the rehiring of 1,294 teachers that were fired in 1989 during Kim Young-Sam government. In 1999, the moderately liberal Kim Dae-Joong government legalized the teachers union. Since then, the Union is regarded as a legal representative of its members in negotiating collective bargaining. In return of the legalization, the Union has not been allowed to participate in political movements or to initiate strikes. However, in many instances the Union did participate in political movements and coordinate strikes by using sick leaves of the members. The Union is a major component of the Korean Confederation of Trade Unions, that has been know for its militant tactics. The strong teachers unions in Korea have been able to force the government to increase the public expenditure in primary and secondary education leaving the higher education sector to the private sector funding, because the political power of academic staff was not comparable to the unions both in terms of the numbers and organizational skills.

VI. Theories of Higher Education Expansion and the Korean Experience

As the expansion of higher education occurred throughout the world, many theories in social sciences tried to explain it. First category of theories postulates that social economic development produces the expansion of higher education. In micro level, human capital theory argues that the investment in human (through more education) would happen if such investment produces return that is high enough for the individual or household. As the industrialization and

It has achieved universal higher education

Achieved its universal higher education through mostly private funding.

However, the universal HE did not solve the problem of the other half.

Economic development creates labor demand, -> higher return to education -> more education

Supply of graduate increases -> return will decrease -> limit to the expansion

State may provide resources -> private return is greater than social return

Political environment is such that expansion necessarily creates dilution of quality

Neo-Marxist would restrain education – by exclusion – limit the expansion

Competition for jobs -> prisoner's dilemma (over education)

Credentialism in the open system – because of the imperfect information of the employer regarding the quality and nature of the education. (diploma mill)

State's involvement in higher education

If the state pays substantial portion of education, state must limit the enrollment in order to save public resources

global – international context

brain drain creates higher returns to higher education. The possibility of going abroad and get higher return

brain gain many increase economic development of home country and create

Functional theorist -> to supply specialized and trained human resources for economic development – loyal to common culture – the formation of elite

The increasing rate of participation in higher education has created a great deal of challenges to the elitism in higher education that has been prevailing since the Japanese colonial period. Typically, elitism in higher education puts excellence as the most important objective in the higher education system. A large amount of resources are devoted to a small number of beneficiaries, and consequently the quality of education for each student in the system is generally high. In the case of elitist *public* higher education system such as in Italy, Greece or Argentina, the students in higher education are heavily subsidized by the government (e.g., Rozada 2002). In that system, as the participation rate in higher education increases, the fiscal burden of the government is bound to increase. Therefore, the elitist public higher education system is only sustainable if there exists an acceptable process of restricting the enrollment in higher education. On the other hand, the policy objective of the promotion of accessibility puts the highest priority on equal access to higher education by all social classes. As the financial resources are the largest impediment to most high school graduates who seek higher education, the increased accessibility requires more public subsidy in order to reduce the out-of-pocket cost by students. However, as the cost of quality higher education is high, no country in the world has successfully provided quality higher education to everybody who wants to go to college. Given the fiscal constraint, the most common compromise is to sacrifice the quality of education and individual attention to the students. In short, there is a three-way trade off among the common objective of the higher education system: participation (or access), quality, and fiscal resource. The system can only accommodate two at the same time.

Elitism can be maintained within the system in which funding for higher education relies heavily on private sector. One of the major characteristics of the private-dominant system is that it would be much more diverse than the public-dominant system in terms of quality and cost, because private providers will try to meet the diverse education demand in the market. Consequently, in the private-dominant system, high-cost-high-quality institutions can survive along with low-cost-low-quality institutions. For example, in the U.S., diverse spectrum of institutions with varying degree of quality and cost exists, particularly in private sector. What makes the U.S. system unique is the fact that the private elite institution relies heavily on

institutional endowment which has been accumulated over a long time by alumni and philanthropic donations and government-funded research grants so that elite private institutions are able to provide high quality education with low costs to their students (Winston 1999).

Korea inherited an elite-oriented public higher education system from Japan. During the Meiji Restoration period when Japan's utmost goal of the higher education system is to catch up with the West, the elitist system successfully recruited the brightest and trained them into able professionals that are required to run a modern industrial economy. This model served Korea well during the period of rapid industrialization, when the number of university students was carefully controlled by the government. However, such a system cannot be maintained by the change in political environment as well as the expansion of higher education.

Unlike some countries in which public universities are free or virtually free, Korean public universities charged substantial amount of tuition although it has been set lower than comparable private universities.[8] Relatively high tuitions charged by public universities gave private universities to be relatively competitive, since the latter have more flexibility in attracting better faculty members and designing more marketable academic programs despite their higher tuition fees. Also, the long history of some private universities established before the national universities create top-rung private universities in the hierarchy.

Secondary school equalization policies that eliminated competitive student selection process during Park administration was motivated by efficiency consideration. That is to say, the government perceived that the resources devoted to seek the admission to elite high schools were socially wasteful. Such drastic change of policy was possible, because the society was under a quite dictatorial political regime. However, the democratization since 1987, the equalization policy was under constant criticism, and the complete equalization policies for high schools stopped allowing some schools administer competitive student selection.

The debate over equalization policy and other education policy in general has become much more politicized in the democratic political environment. Moreover, the emergence of strong teachers unions made the policy-making process much more complicated. Since 1998, Left-leaning governments of Kim Dae-Joong and subsequent Roh Moo-Hyun government made the ideology of equality more prominent. In fact, the teacher union was a strong political support for the ruling party during their election campaigns. Under these governments, the support for equalization policies was articulated for more of an equity concern.

Despite the secondary school equalization policies, student selection mechanism for colleges and universities has been remained to be selective. In other words, students have a complete freedom in school choice, and virtually all schools have complete freedom in student choice. Consequently, the hierarchical structure of higher education system has remained the same.

There are several reasons why competitive school/student choice remained the rule in higher education, even with the sweeping change in the secondary school system. First, the social pressure to create excellence and train elites at the university level has not disappeared. Recently, the push for global competitiveness of higher education has been put on the top priority of national agenda. In fact, the government started to put substantial resources for research excellence through a series of programs such as Brain Korea 21 (BK21). The selection

[8] Traditionally, public university tuitions have been 50-70% of comparable private universities. In the academic year 2006, the annual tuition for national universities averages about $3,500, while that of private universities about $7,000. The national flag ship university, Seoul National University charges about $5,000 per year, and the top private universities charge about $8,000.

of best students at the university level is regarded as the first step toward world-class researchers in science and engineering. Second, there were substantial opposition to secondary school equalization by some socioeconomic classes, and the government had to reverse its trend to more equalized system during the early 1990s. The sentiment to reverse the equalization policy at the secondary education has been debated for more than two decades. In this environment, equalization of higher education is not likely to be realized. Third, the government's inability to deliver significant amount of public resources to higher education prevented them to intervene directly for their student choice. For private universities, most funding is not from government. Even public universities, government funding is rather limited. Without substantial government funding increase, major policy change will not be possible. Fourth, the legacy of elitism inherited from Japanese colonialism, and the prominent reputation earned by top public and private universities has created substantial alum basis in the leadership position. Given the dominance of the alums from so-called SKY (Seoul National University, Korea University, and Yonsei University) in virtually all segments of society, it would be difficult to eliminate the elitism in higher education.

Nonetheless, during the early period of Roh administration, dismantling Seoul National University (SNU), the flagship public university of the nation, was proposed by the Labor Party. Such proposals were opposed by the most political, economic, and academic elites. Over time, SNU has produced the majority of the elites.[9] When the proposal to dismantle SNU was circulated, the alums were mobilized to successfully block it. Also the equalization of higher education (or at least public universities) was proposed. It involves the forced circulation of professors between the national universities. However, the proposal did not get much support. Obviously, SNU (students as well as faculty) would not support such proposal, as the proposal will dilute the prestige of the university. Another radical proposal to eliminate the elitism was to consolidate all public universities. Faculty members are appointed not to the specific university permanently, but to be rotated to different universities by the government similar to primary and secondary school teachers. The proposal was defeated because of the need to promote elitism in the higher education system.

There are public universities supported by other branches of government, not by the Ministry of Education. These universities tend to be more elitist-oriented. For example, Korea Advanced Institute of Science and Technology (KAIST) is supported by the Ministry of Science and Technology. KAIST is a very elitist oriented institution. The President was recruited from the group of world-renowned scientists and engineers including the past president, a Nobel laureate in physic. The KAIST students pay virtually no tuition, and the entrance is quite competitive.

Although those radical solutions to challenge elitism did not move forward much, the battle line between elitism and mass education has been drawn in the university admission policy. The government continuously try to reduce the ill effect of "too much" competition to enter better university by regulating the college entrance examination methods. Although, each university is supposed to gain substantial freedom to choose the student selection mechanism, it has to adhere the government's guidelines. The guideline stipulates more weight be given to high school records rather than own testing by individual institution. Only nation-wide achievement test scores can be used, and even the test scores are only reported in nine groups

[9] For example, according to Dona-A Ilbo, a major daily news paper, March 28, 2007, 171 of the CEOs of the 500 top Korean corporations is from SNU. The proportion of Ministers, judges, professor, members of National Assembly would be undoubtedly higher.

rather than more accurate scores (e.g., percentiles). Also, the university is not allowed to take into account any academic differential among high schools when they evaluate the high school records. The current so-called *sambul* policies are not likely to change under the current administration.

Since mid-1980s, the glut of university graduates resulted in a tight labor market for highly educated workers. The labor market premium for higher education decreased. The wage differential between university graduates and high school graduates holding other worker characteristics (such as gender, experience, and so on) in 1985 was 96.2%. The wage differential steadily declined to 45.5% in 1997, even though the downward trend has changed since 1997.[10] At the same time, employment rate for the highly educated decreased, because the Korean economy has not been able to create professional jobs that university graduates are looking for.[11] After the 1997-98 financial crisis, the Korean economy has recovered fully, and it GDP has been growing 4-5% per year ever since. However, the growth has not been accompanied with corresponding employment growth as in many other developed countries. The number of so-called 'decent jobs' decreased from 710,000 in 2002 to 670,000 in 2007. The competition for those decent jobs increased as the number of university graduates increase. Consequently, many spend substantial amount of time and effort to secure those job during and after their university career by making them more competitive in the labor market.

High cost along with decreasing returns to higher education encourages many students, particularly from upper middle class, go abroad for advanced degrees. According to the data by the U.S. Institute of International Education, there were 564,766 students enrolled in higher education institutions in the U.S. in the academic year of 2005-06. Korean ranks the third among the countries with most students in the U.S. following India with 76,503 students and China with 62,582 students. There were 58,847 Korean students in the same year representing than 10.5% of all foreign students (IIE 2006). Among them, 46% are registered in undergraduate programs and 41% are registered in graduate programs. Compared in the academic year of 1979-80 when 4,890 Korean students (1.7% of all foreign students in the U.S.) registered in the U.S. institutions of higher education, the current number shows a dramatic increase in the number of Korean students come to U.S. universities during the last twenty five years. In addition, currently there are about 10,000 Korean students enrolled in intensive English programs in the U.S. Korea sends the largest number of students to the U.S. for the language training in the world, followed by Japan.

VII. Conclusions

Existing literature in education identified four major reasons for society's demand for higher education. First, attending a college is an investment activity in human capital. In particular, the skills obtained in university are rewarded in labor market through higher wage, more prestige, better job security, and so on. In this view, going to university is an investment activity for which current opportunity cost of attending school would be weighted against the future gain (Schultz 1961). Therefore, the human capital theory predicts that if the return to higher education were higher, the demand would increase. Second, signaling theory (or credentialism) argues that the demand for higher education is driven as a consequence of obtaining a signal or

[10] In 2001, the university wage premium was estimated 52.2%.

[11] It is reported that during the period between 2000 and 2006, 2 million jobs have been created. However, employment for young workers (15-29 years old) decreased by 530,000 (Pyo and Nam 2007).

credential in which the worker tries to convey unobservable favorable information (e.g., higher ability or motivation) about herself/himself. In an extreme version of this model, demand for higher education can arise even if the university education does not improve the student's human capital at all as long as the cost of acquiring signal is cheaper for higher ability students, as high ability students will want to distinguish themselves from the rest of them (Spence 1973). Third, demand for higher education can arise as a consumption motive. Students may enjoy taking courses in universities. Also, they may enjoy future consumptions activities associated with higher education. In this case, the future monetary return in education would not be an important factor (Lazear 1977). Finally, the demand for higher education increases as the number of high school graduates increases. The number of high school graduates depends on not only demographic factors but also the percentage of children who attend high schools. The latter variable depends crucially on the education policy on secondary schools. Second,

All four aspects identified above contributed the growth of higher education in Korea. Due to its elitist-orientation of higher education, the labor market premium for university graduates has been quite high in Korea. Therefore, therefore there has been excess demand for higher education. Such excess demand has been kept in check with the government's suppression of university enrollment quota until 1980. At the same time, successful economic development created more demand for advanced skills. However, the suppression of higher education generate is bound to create even greater university-premium compared the case with no such restriction. Such pent-up demand created enough social pressure so that the succeeding government had to accommodate in one way or another, although the exact nature of the accommodation may differ depending on the political characteristics of the regime.

The current supply of high school graduates is quite high in Korea. In 2005, more than 95% of the 16-18 year old children are enrolled in high school even if households are required to pay substantial amount of the schooling cost. The almost universal high school education is the result of several past administrations' policy choice: universal primary education policy by Rhee Syngman administration between 1946 and 1960 and the secondary school equalization policy by Park Chung-Hee government that started in 1969. The sequential waves of universal education (starting from primary school, then moving to secondary school, then now to higher education) is driven by the market forces rather than the government initiatives. The government's policies, in general, have been more reactive than proactive. The increasing demand for education in fact forced the government to develop the policy to accommodate the growth. For example, there was a strong surge of primary school enrollment even without any government's plan for universal primary education.

The fact that primary school expansion started more than a decade before the economic take-off in Korea suggests that the increase in the demand for education may arise without supporting income growth. In the case of Korea, the subsequent administration was able to device policies that made the human capital developed useful in the earlier government. Should Park administration were not able to take advantage of the expanded human resources in the 1960s, the implementation of the effective universal primary education would have not been possible. The education input becomes so low, and the quality of education was too low, and the subsequent wave of higher education demand for the next level would have not been realized.

The rapid expansion of university graduates reduced their wage premium quite substantially. In this regard, the effect of elitism diminished by the expansion of higher education. However, the recent evidence suggests that the reversal of the wage premium of the university graduates, presumably due to the transformation to the knowledge-based economy in

Korea. Moreover, the graduates from top five universities earn about 20% more than those who graduate the university below top thirty. In this regard, the labor market premium for *top* universities is still maintained. Meanwhile, the public policy conflict between the elitism and equality has been continuing. Although the current government has been pushing for equality as the top priority, its action was ambivalent. There has been substantial government support for research funds, and these funds are typically allocated to top universities. The continuing practice of heavy regulation in student admission policy as a major instrument to promote equality has been controversial, as the policy making process becomes more participatory and politically charged.

References

Adams, Donald and Ester Gottlieb (1993), *Education and Social Changes in Korea*, Garland Publishing Company: New York, NY.

Amsden, Alice (1989), *Asia's Next Giant: South Korea and Late Industrialization*, Oxford University Press: New York, NY.

Ahn, Chang-Mo (1998), Ilajeha Kyungseong Kodeung Kongyeob Hakgyowa Keonchuk Kyoyuk [A Study on Kyungsung Institute of Engineering and Architectural Education], *Daehan Keonchuk Hakhoe Nonmumjib Kyehoekgye [Journal of Architectural Institute of Korea: Planning]*, vol. 14, no. 6, pp. 35-46.

Clancy, Patrick and Gaële Goastellec (2007), "Exploring Access and Equity in Higher Education: Policy and Performance in a Comparative Perspective," *Higher Education Quarterly*, vol. 61, no. 2, pp. 136-154.

Freeman, Richard B. (1976), *The Overeducated American*, New York, NY: Academic Press.

Han, Yong-Jin (1996), Iljae Sikminji Godeungkyoyuk Cheongchaekgwa Kyungseong Jaekuk Daehakei Wisang [Higher Education Policy of Japanese Colonial Government and Status of Kyungseong University], *Kyoyuk Munjae Yeonku [The Journal of Research in Education]*, vol. 8, pp. 154-172.

Institute of International Education (various years), *Open Doors: Report on International Educational Exchange*, IIE: New York, NY.

Kim, Sunwoong and Ju-Ho Lee (2006), "Changing Facets of Korean Higher Education: Market Competition and the Role of the State," *Higher Education*, vol. 52, pp. 557-587.

Kim, Sunwoong and Ju-Ho Lee (2002a), "Private Tutoring and Demand for Education in South Korea," KDI School Working Paper.

Kim, Sunwoong and Ju-Ho Lee (2002b), "Secondary School Equalization Policies in South Korea," KDI School Working Paper.

Korea Ministry of Education and Human Resources (KMOE), *Kyoyuk Yeongam [Education Statistics Yearbook]*, various years, Seoul, Korea.

Korea Ministry of Education (1998), *Kyoyuk 50 Nyeonsa: 1948-1997 [The History of 50 Years of Education]*, 1998.

Lazear, Edward, "Education: Consumption or Production?" *Journal of Political Economy* 85(3): 569-598, 1977.

Lee, Kyung-Hee and Tae-Il Kim (2007), Daehak Kyoyukei Seongbyeol Imgeum Hyokwa: Daehak Sooneiwa Cheonkongei Yeonghyaneol Choongsimeoro [Sex-Specific Wage

Effects of Higher Education: Special Reference to University Rankings and Majors], *Jae 9 Hoei Hankook Nodong Panel Haksool Daehoi Nonmoonjib [Proceedings of the 9th Conference on Korean Labor Panel Study]*, Korea Labor Institute: Seoul, Korea.

McGinn, Noel F., Donald R. Snodgrass, Yung Bong Kim, Shin-Bok Kim, and Quee-Young Kim (1980), *Education and Development in Korea*, Harvard University Press: Cambridge, MA.

Mitsuta, Akimasa (1999), "Universal Problems and National Realities: Japan in Comparative Perspective," in *Higher Education in the 21st Century: Global Challenge and National Response*, edited by Philip G. Altbach and Patti M. Peterson, Annapolis Junction, MD: Institute of International Education Books, pp. 59-66.

Pyo, Han-Hyung and Chong Hyun-Nam (2007), "Hakryeok Inflaega Cheongnyun Silyeobeul Buchuginda [Education Inflation Encourages Youth Unemployment]," *Hyundai Research Institute, Hankook Gyeongjejoopyung [Korea Economics Weekly Commentary]* 07-08, March 2.

Rothschild, Michael and Lawrence White, "The Analytics of Pricing in Higher Education and Other Services in Which Customers are Inputs," *Journal of Political Economy* 103: 573-86, 1995.

Rozada, M. G. and A. Menendez, "Public University in Argentina: Subsidizing the Rich?" *Economics of Education Review* 21(4): 341-351, August 2002.

Schofer, Evan and John W. Meyer (2005), "The World-Wide Expansion of Higher Education in the Twentieth Century." *American Sociological Review*, vol. 70, pp. 898-920.

Schultz, T. W., "Investment in Human Capital," *American Economic Review* 51: 1-17, 1961.

Spence, Michael, "Job Market Signaling," *Quarterly Journal of Economics* 87: 355-374, 1973

Trow, Martin A. (2005), "Reflections on the Transition from Elite to Mass to Universal Access: Forms and Phases of Higher Education in Modern Societies since WW II," in *International Handbook of Higher Education, Part One: Global Themes and Contemporary Challenges*, edited by James J. F. Forest and Philip G. Altbach, Berlin, Germany: Springer, pp. 243-280.

Windolf, Paul (1992), "Cycle of Expansion in Higher Education, 1870-1985: An International Comparison," *Higher Education* 23, pp. 3-20.

Winston, Gordon, "Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education," *Journal of Economic Perspectives* Vol. 13 No. 1, 1999.

World Competitiveness Center (2006), *IMD World Competitiveness Yearbook*, IMD: Lausanne, Switzerland.

Table 1 Key Indicators of Higher Education in South Korea, 2005

	Institutions		Enrollment	Departments	Faculty members
Total	419	(11)	3,548,728	26,953	66,862
National	50	-	871,354	5,124	15,384
Public	10	-	48,132	398	911
Private	359	(11)	2,629,242	21,431	50,567
Junior College	158	-	853,089	6,118	12,027
National	6	-	13,405	87	292
Public	8	-	22,748	148	359
Private	144	-	816,936	5,883	11,376
Teachers University	11	-	25,141	12	798
National	11	-	25,141	12	798
University	173	(11)	1,859,639	10,189	49,200
National	24	-	379,254	1,916	12,471
Public	2	-	21,414	108	537
Private	147	(11)	1,458,971	8,165	36,192
Air & Correspondence University	1	-	282,023	21	131
National	1	-	282,023	21	131
Industrial University	18	-	188,753	1,367	2,658
National	8	-	90,324	589	1,411
Private	10	-	98,429	778	1,247
Technical Collage	1	-	189	4	-
Undergraduate Course(Private)	1	-	102	2	-
Junior Course(Private)	-	-	87	2	
Miscellaneous School	5	-	1,148	24	33
Undergraduate Course(Private)	4	-	1,094	17	28
Junior Course(Private)	1	-	54	7	5
Cyber College & University	17	-	56,460	180	342
Undergraduate Course(Private)	2	-	3,304	14	21
Junior Course(Private)	15	-	53,156	166	321
College in Company	1	-	61	3	-
Undergraduate Course(Private)	1	-	31	1	-
Junior Course(Private)	-	-	30	2	-
Graduate School	<1,051>	{34}	282,225	9,035	1,673
National	<164>	-	81,207	2,499	281
Public	<14>	-	3,970	142	15
Private	<873>	{34}	197,048	6,394	1,377

Note : 1) The figures in ( ) shows the number of branch campuses, and are not included in the total schools.

2) Graduate School ;

- The number of all the graduate schools show the sum of all the "graduate schools" and "graduate school colleges{34 colleges}"
- The total number of schools includes 34 graduate school colleges, which have only graduate programs.

However, the number of all the graduate schools is not included in the total number of schools.

- The number of departments at graduate schools shows only the number of master's degree programs.
- The number of students in master's degree programs and that of Ph.D. degree programs are included in that of

freshmen and sophomore respectively.

3) Technical College has junior college course and undergraduate course.
4) "College in the Company" has changed from junior college course to undergraduate course beginning at 2005.
5) The number of departments is specified, considering the size of each College and University Enrollment Quota.
6) The number of faculty members are the sum of all the president(dean) and full-time professors(Teaching assistants are not included in the total number).

Source: KMOE, *Education Statistics Yearbook*, 2006.

Table 2 Enrollment in Universities and Junior Colleges in Korea, 1952-2005

Year	Universities			Junior Colleges		
	Total	Public Institution	Female Student	Total	Public Institution	Female Student
1952	31,342					
1955	78,649					
1960	92,930	31,718				
1965	105,643	25,964	23,761	23,159	4,699	6,800
1970	146,414	36,038	32,641	33,483	14,383	8,316
1975	208,986	56,830	55,439	62,866	18,998	17,761
1980	402,979	114,686	90,634	165,051	26,881	42,724
1985	931,884	243,378	250,088	242,117	22,956	87,123
1990	1,040,166	254,748	296,129	323,825	26,959	119,345
1995	1,187,735	295,941	378,418	569,820	21,413	214,310
2000	1,665,398	372,078	596,389	913,273	37,331	339,233
2005	1,859,639	400,668	684,238	853,089	36,153	316,326
2006	1,888,436			817,994		

Source: KMOE, *Education Statistics Yearbook*, various years.

Table 3 Enrollment Rates by Types of Higher Education Institution in Korea, 1970-2005

Year	Junior Colleges		Teachers Univ.		Universities		Industrial Univ.	
	Total	Female	Total	Female	Public	Female	Total	Female
1970	1.0	0.6	0.5	0.6	3.9	2.2		
1975	1.7	1.1	0.3	0.3	4.4	2.9		
1980	3.7	2.1	0.2	0.4	7.2	3.9		
1985	5.6	4.4	0.3	0.6	16.5	11.0		
1990	6.8	6.0	0.3	0.4	15.4	12.4		
1995	13.2	11.7	0.5	0.8	22.0	18.6		
2000	19.4	17.2	0.4	0.7	29.8	27.6	2.5	1.5
2005	20.0	18.2	0.6	0.9	41.7	40.2	3.3	2.3
2006	19.7	18.3	0.7	1.0	44.2	42.8	3.5	2.2

Source: KMOE, *Education Statistics Yearbook*, various years.

Table 3 The Number of Universities and Junior Colleges in Korea, 1952-2005

Year	Universities			Junior Colleges		
	Total	Public	Private	Total	Public	Private
1952	34					
1955	44					
1960	52					
1965	70	14	56	48	12	36

1970	71	15	56	65	26	39
1975	72	15	57	101	36	65
1980	85	20	65	128	36	92
1985	100	22	78	120	17	103
1990	107	24	83	117	16	101
1995	131	26	105	145	18	137
2000	161	26	135	158	16	142
2005	173	26	147	158	14	144

Source: KMOE, *Education Statistics Yearbook*, various years.

Table 4 The Number of Academic Staff
in Universities and Junior Colleges in Korea, 1952-2005

Year	University			Junior College		
	Total	Public U.	Female	Total	Public C.	Female
1952	1,220					
1955	2,420					
1960	3,439					
1965	4,732	1,895	604	431		64
1970	6,591	2,422	621	212		67
1975	8,575	3,097	867	135		50
1980	14,458	4,578	2,266	5,488	1,259	916
1985	20,128	6,635	2,428	5,369	845	1,050
1990	25,337	8,289	2,984	6,139	835	1,322
1995	33,938	10,183	4,195	8,426	516	1,898
2000	41,943	11,359	5,758	11,707	678	2,764
2005	49,200	13,008	7,973	12,027	651	3,214

Source: KMOE, *Education Statistics Yearbook*, various years.

Table 5 Student Faculty Ratios in Different Level of Schools in Korea, 1952-2005

Year	Elementary School	Middle School	Liberal Arts High School	Vocational High School	University	Junior College
1952	67	42			26	
1955	63	43			32	
1960	58	40			27	
1965	62	39	32	32	22	26
1970	57	42	32	32	22	21
1975	52	43	32	32	24	23
1980	48	45	34	34	28	30
1985	38	40	32	32	46	45
1990	35	25	25	25	41	53
1995	28	25	22	22	35	68
2000	29	20	21	21	40	78
2005	25	19	16	16	38	71

Source: KMOE, *Education Statistics Yearbook*, various years.

Table 6 Per Student Expenditure in Tertiary and Secondary Education in Selected Countries,

	Per student expenditure (in US$, ppp*)		A/GDP per capita in %
	Tertiary edu.(A)	Secondary edu.	
Japan	11,716	6,952	43
U.K.	11,822	6,505	41
U.S.	20,545	9,098	57
Korea	6,047	5,882	33
OECD mean	10,655	7,002	43

* ppp: purchasing power parity
Source: Internal Government Document

Table 7 Doctoral Degree Holders in Universities

Year	Full Time Teaching Staff (A)	Doctorate Holders (B)	(B/A) in %
1970	7,944	1,440	18.1
1975	10,242	2,807	27.4
1980	14,696	4,835	32.9
1985	26,459	9,090	34.3
1990	33,340	16,055	48.5
1995	45,087	26,771	59.3
2000	41,943	34,666	82.7
2005	49,200	41,397	84.1
2006	51,859	43,362	83.6

Source: KMOE, *Education Statistics Yearbook*, various years.

Table 8 Spending on Tertiary Education as % of GDP in OECD Countries, 2003

	Public	Private	Total
Australia	0.8	0.8	1.5
Austria	1.1	0.1	1.1
Belgium	1.2	0.1	1.3
Canada	1.3	1.0	2.4
Czech Republic	0.9	0.2	1.1
Denmark	1.7	0.1	1.8
Finland	1.7	0.1	1.8
France	1.1	0.2	1.4
Germany	1.0	0.1	1.1
Greece	1.2	negligible	1.3
Hungary	1.0	0.3	1.3
Iceland	1.1	0.1	1.2
Ireland	1.0	0.1	1.2
Italy	0.7	0.2	0.9
Japan	0.5	0.8	1.3
Korea	0.6	2.0	2.6
Mexico	0.9	0.4	1.3
Netherlands	1.1	0.3	1.3
New Zealand	0.9	0.6	1.5
Norway	1.5	0.1	1.5
Poland	1.0	0.5	1.5
Portugal	1.0	0.1	1.1
Slovak Republic	0.8	0.1	0.9
Spain	0.9	0.3	1.2
Sweden	1.6	0.2	1.8
Switzerland	1.6	n.a.	n.a.
Turkey	1.1	0.1	1.1
United Kingdom	0.8	0.3	1.1
United States	1.2	1.6	2.9
OECD average	1.1	0.4	1.4

n.a.: not available
Numbers do not always add due to rounding
Source: OECD, *Education at a Glance*, 2006

Table 9 Source of Funding of Private Universities in Korea and the U.S.

	Korea (2003)	U.S. (2000)
Student	69.0	39.7
Gifts	20.3	10.5
Government	4.0	19.6
Educational revenue	2.7	3.8
Non-educational revenue	4.0	26.3
Total	100	100

Table 10 Korean Students in the U.S. Higher Education Institutions

Year	Foreign Students in US Higher Education Institution (A)	Korean Students in US Higher Education Institution (B)	B/A	Korean Students in Intensive English Program in the U.S.
1975-76	179,334	3,260	1.8%	-
1980-81	311,880	6,150	2.0%	-
1985-86	343,780	18,660	5.4%	-
1990-91	407,530	23,360	5.7%	2,179
1995-96	453,787	36,231	8.0%	3,493
2000-01	582,996	49,046	8.4%	5,830
2005-06	564,776	59,002	10.4%	8,907

Source, IIE *Open Door*, various years.

Figure 1 Trends of School Enrollment in South Korea and Per Capita Income, 1945-2005

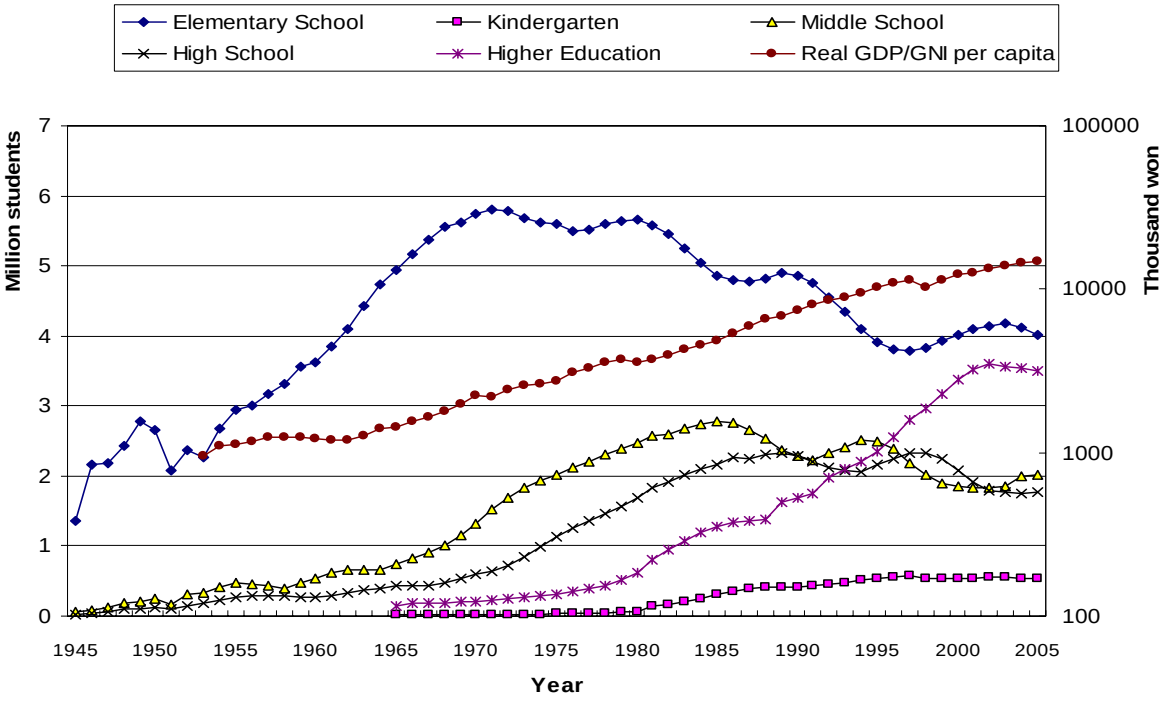
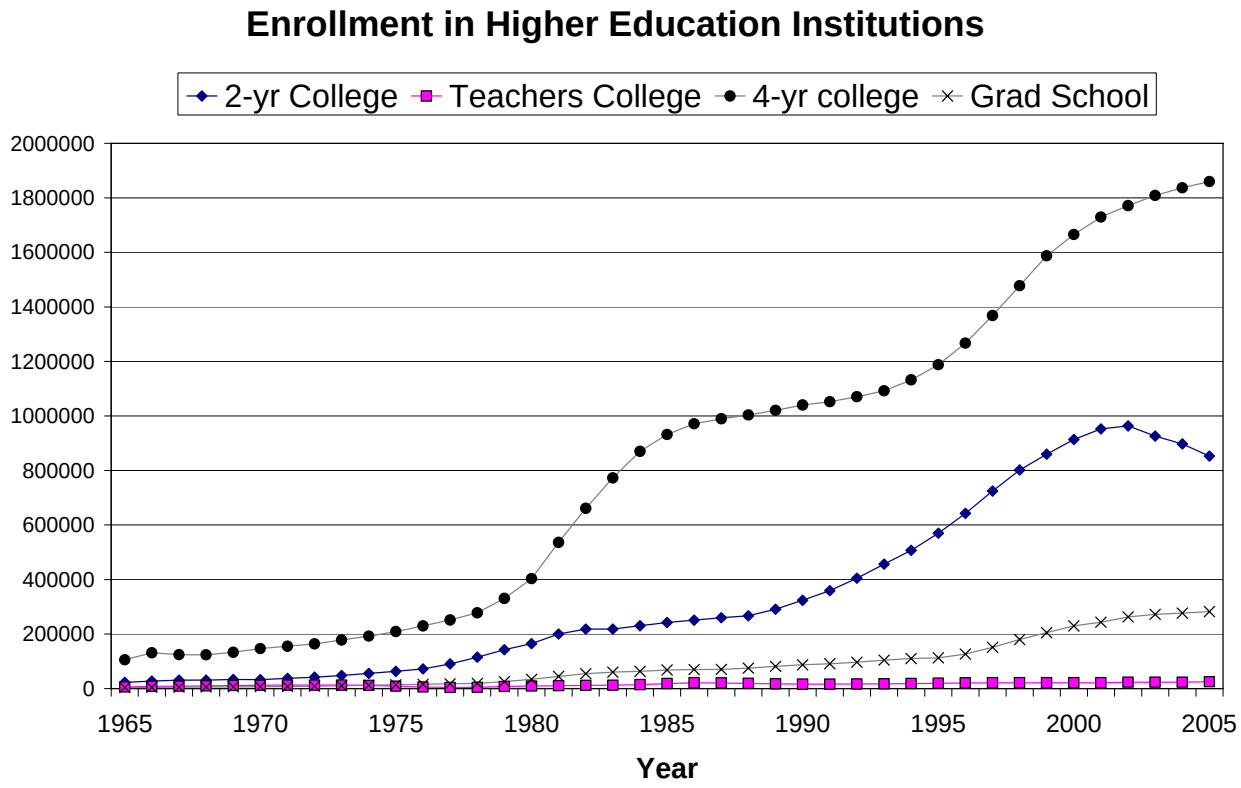


Figure 2


Enrollment in Higher Education Institutions
2-yr College
Teachers College
4-yr college
Grad School
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
1965
1970
1975
1980
1985
1990
1995
2000
2005
Year