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Chaebols and Their Effect on Economic Growth in South Korea*

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Chaebols, a South Korean form of business conglomerate, achieved high profits after the Asian currency crisis and dramatically reduced their debt-equity ratios. At the same time, chaebols continued to increase their assets at high growth rates. However, ownership shared by their heads tended to be gradually smaller, resulting in more serious separation of cash flow ownership from corporate control power. Concentration of economic power driven by chaebols continued to increase. Despite their business success and huge expansion, their labor demands and contributions to domestic economy sharply decreased after the currency crisis. The average number of employees for 5 major chaebols was about 460,000 during 2006 to 2010, which was less than 480,000 during 1991 to 1995. Value added and employment inducement coefficients of total exports in South Korea, mainly driven by large companies like chaebols, have consistently and substantially decreased since 1995. This study suggests four reasons why chaebols' successful growth does not have as strong an effect on the South Korean economy as before. First, the industry structure has been changed from labor-intensive to capital and technology intensive industries, resulting in less demand for labor. Second, increases in new technology and labor productivity substantially reduced labor inducement coefficients of exports across all industries. Third, because of globalization effect, large companies like chaebols have easy access to cheaper or competitive oversea intermediate goods. Strong dependence of their exports on imports, however, reduced the positive effects of exports on the economy. Last, substantial increases in overseas investments by chaebols after the Asian currency crisis resulted in less demand for domestic labor. The dwindling effect of the chaebols on the South Korean economy implies that the export-driven economy model did not appear to be successful in activating the domestic economy after the currency crisis. (JEL: L22, J23, F63)

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I. INTRODUCTION

South Korea (hereafter Korea) was one of the world's poorest countries in the early 1960s. GNP per capita in Korea was only $87 in 1962 when Ghana and Sudan had a similar income level and the Philippines had about three times the income. Although Korean economic growth has begun to slow down since the 1990s, Korea consistently achieved high growth beginning from the 1960s except for during a few economic crises. GDP per capita in Korea exceeded $20,000 in 2012, with purchasing power close to $30,000.

Korean economic development has been achieved by the government's aggressive economic policies and leadership under the capitalism economic system where private ownership is warranted. Financial and non-financial benefits were given to companies that strategically adapted themselves to economic development policies. Along with these benefits, some companies grew into chaebols that are a Korean form of business conglomerate, typically global multinationals owning numerous international enterprises. Korean economic development, referred to as compressed growth, may be possible mainly due to the surprising success of the chaebols. However, it would be doubtful for them to have grown into today's big business conglomerates without benefits and supports given by the Korean government. The Korean economy has maintained cooperative partnerships with chaebols whatever the government's intention might be. The economy has fallen and risen with chaebols. For example, the Asian currency crisis in 1997 overshadowed the Korean economy along with the crisis of the chaebols.

The weight of the chaebols in Korea's economy is dominantly high. While the ratio of their assets to GDP was 35.1% in 1992, it rose to 60.3% in 1998 with increases of 25.2% points for 6 years. The ratio of 5 major chaebols' assets to GDP was 32.8% in 2002, the lowest level after the currency crisis. Afterward, it consistently increased to 48.6% in 2010 with increases of 15.8% points for 8 years. The consistent increase of this ratio is noteworthy although

its level is not as high as during the period of the currency crisis. However, the number of chaebols' affiliates is currently much larger. For example, affiliated firms of 5 major chaebols were 366 in 2010, which increased by 43% from 1999.

The concentration of economic power driven by chaebols attracts public attention again after the Asian currency crisis. However, the reason for this recent attention is different. Although the business performance of chaebols looks great, their contributions to the Korean economy seem to be smaller than before. There are two opposing opinions about chaebols. According to the positive opinion, chaebols are a mainstay of Korean economic development and a hero of Korean exports. High-tech products made by chaebols dominate the global market and their brands are icons for the high status of Korea in the world. Their strong competitiveness in the world markets resulted in continuous export increases and economic growth despite the global economic recession beginning in 2007.

From the opposite point of view, by using their monopoly power, chaebols urge small and medium sized firms to make unfair transactions with them. The chaebol chairman or head makes his own arbitrary decisions by thoroughly controlling the board of directors. Further, chaebols covetously expand their business to small-scale business areas through their superior capital power. The concentration of economic power driven by chaebols is a symbol for the increased income disparity between the rich and the poor in Korea.

The negative argument about chaebols has become stronger, although more than 10 years has passed since the currency crisis. The government of President Lee Myung-bak made company-friendly economic policies such as corporate tax reduction, abolition of limits on investments of large companies, a number of deregulation actions, a currency policy for boosting exports and so on. Nevertheless, there is no clear sign that the domestic economy was activated. Moreover, although Korea's economy still grows, it is criticized as jobless growth. Income disparity tends to increase. Although chaebols appear to continuously make success stories for themselves, why have they not played the role of locomotive in the Korean economy anymore? A major criticism of chaebols at the time of the currency crisis was about their poor capital structure caused by reckless asset expansion, poor business

performance, disparity between the ownership share of the chairman and his control power, and concentration of economic power by chaebols. After the crisis, how much have they overcome these problems?

There are two purposes for this study. First, it examines the soundness of five major chaebols in terms of capital structure, profitability, and ownership structure after the crisis. Particularly, the main interest lies in how they financed rapid asset expansion. Second, the study investigates the effects of the chaebols' growth on the Korean economy and discusses why their growth has not contributed to activation of the domestic market in Korea anymore.

Choi (2009a) investigated whether reformation measures about chaebols improved their soundness between the pre-Asian currency crisis and post-crisis in terms of capital structure, profitability, ownership structure, cross-shareholding, transparency, and specialty by employing panel data for 30 major chaebols from 1986 to 2007. This study reviews the same issues since it likewise examines capital structure, profitability, and ownership structure. However, the study considers mutual relationships among these factors by using 5 chaebols' combined or consolidated financial statements, which can be differentiated from Choi's study. For example, this study analyzes change in chaebols' capital structure by focusing on how they financed asset expansion. Since debt was the major channel to finance asset expansion before the financial crisis, chaebols' debt-equity ratios were very high at that time. However, financing can be done by increases in debt, seasoned offerings or internal funds. Since these financing channels are closely related to capital and ownership structures and their profitability, this study analyzes their financing channels and their mutual relationships.

There is no study found about why chaebols have not contributed to activation of the domestic economy as much as before. Although they achieved great business performance in the world markets, this does not appear to have activated the domestic demand market. Such a phenomenon was not found in the process of Korean economic development before the currency crisis. This study examines the chaebols' effect on employment over time by using employment coefficients of 5 major chaebols. It also investigates changes in inducement coefficients of exports' value added, job creation and employment before and after the currency crisis by using the input-output table of the Bank of Korea. Since the input-output table

only provides inducement coefficients for final demand, it is not possible to calculate inducement coefficients caused by chaebols' sales. Chaebol exports, however, account for a substantial proportion of total exports in Korea. Instead of chaebol revenues, this study will examine the effect of exports on the domestic economy.

The structure of the study remainder is as follows. The related literature is reviewed in chapter II. Chapter III analyzes 5 major chaebols' capital structure, profitability and ownership structure. Chapter IV examines how increases in Korean exports and chaebol revenue influenced employment and domestic added value to understand the effect of chaebols' growth on the Korean economy before and after the Asian currency crisis. Chapter V presents study conclusions.

II. LITERATURE REVIEW

Academic research about chaebols in Korea mainly focuses on their history, empirical research about relations between their ownership structure and their value, analyzes about the gap between cash flow ownership and controlling power, and evaluations of reformation policies about chaebols. Lee (2010) chronologically explained in detail how individual companies could grow into chaebols. He identified characteristics of each chaebol as well as traced the historical backgrounds of their growth. Choi (2009b) selected 30 major chaebols based on firms' revenues in 1980 and reported how they had changed up to 2007. 10 chaebols were dismantled and 4 were dropped from the 30 major ones. Only 16 chaebols survived and have continued to grow for 27 years. Reckless expansion relying on debt may be a main factor in the failures of those 14 chaebols. Each chaebol, however, had its own reasons for failure. 7 new chaebols taking a place among the 30 major chaebols were companies that were separated from existing ones. This suggests that new chaebols can emerge on the strength of existing chaebols' vested rights.

Empirical results about the value of chaebols or their performance vary over time. Chang and Choi (1988) reported that the profitability of chaebols was superior to that of non-chaebol firms from the 1970s to the 1980s. However, other studies (Choi and Cowing 1999; Joh 2003; Ferris et al. 2003)

concluded that profitability and efficiency of chaebols were lower in the 1990s. Lee, Kim, and Lee (2010) provided varied empirical results depending on the time periods. They showed that chaebols did not lose their value compared to non-chaebols from 1984 to 1988 but they lost their market value due to overinvestment from 1990 to 1995. However, they were more highly valued again from 2001 to 2005. Choo et al. (2009) claimed that chaebols' good performance after the Asian currency crisis was due to a reduction of investment inefficiency and sharing their advanced technology with their own affiliates.

Chang et al. (2001) examined 30 major chaebols in regards to ownership. They reported that the average direct ownership of controlling shareholders was only 5.4% in 1999, which was about one third of the ownership in the early 1980s. Controlling shareholders whose direct ownership tended to decrease maintained their controlling power over affiliates through cross-shareholding. This phenomenon was confirmed by Kim (2003) who investigated shareholder's ownership distribution from 1997 to 2002. Ownership of controlling shareholders and their families tended to decrease but inside ownership including their affiliates has rarely changed over time. As such, the discrepancy between ownership and controlling power continued to increase. Kim (2007a) estimated the cross-shareholding of 30 major chaebols' affiliates from 1997 to 2005. He presented that cross-shareholding rapidly increased for 8 years. While only 7 chaebols out of 30 employed cross-shareholding in 1997, 17 chaebols did so at the end of 2005. If cross-shareholding was removed, KRW 303 billion of total net capital in 1997 and KRW 3,772 billion in 2006 would disappear.[1] Such cross-shareholding tends to increase to avoid regulation of mutual shareholding and to maintain controlling power of major shareholders at the same time.

Sung and Kim (2008) evaluated various reformation policies about chaebols and suggested alternative policies. After the currency crisis, strengthened regulation of chaebols was gradually alleviated. For example,

[1] Fictitious capital is created by cross-shareholding. Company A purchases KRW 10 billion of stocks from Company B which purchases the same amount of stock from Company C. If company C purchases KRW 10 billion of stocks from Company A, cross-shareholding is made without KRW 10 billion of actual investment.

exceptional clauses for limits on total investment became more generous in 2002 and its exemption requirements were alleviated in 2004. This points out that limits on total investment have not been valid anymore since 2007. They suggested a ban on cross-shareholding, strengthened limits on total investment, and restrictions on holding companies and their affiliates. Chang and Lee (2012) evaluated policies about large company groups for a reduction in concentration of economic power. They suggested that general concentration of economic power and diversification of businesses by large company groups tended to increase after the middle 2000s but the negative effects were not severe. As such, they reported that the policy for large company groups changed from limits on total investment to prevention of unfair internal trading and post-monitoring. They argued that such policy changes are appropriate. Ownership concentration by large groups has become more serious. They claimed that it is required to protect small shareholder's rights by improving corporate governance rules.

III. STATUS OF CHAEBOLS

A chaebol is a group of affiliated firms that is actually controlled by its chairman or head. Chaebols are usually ranked in order of their asset size. This study analyzes the current status of five major chaebols. Table 1 shows how the rankings have been changed over time based on the years when ranking changes are noteworthy. Public companies or recently privatized companies such as Korea Express Corporation and KT were ruled out.

Table 1. Ranking Changes of Chaebols from 1987 to 2011

Ranking	1987	1997	1999	2000	2004	2006-2011
1	Hyundai	Hyundai	Hyundai	Samsung	Samsung	Samsung
2	Daewoo	Samsung	Samsung	Hyundai	LG	Hyundai-Motor
3	LG	Daewoo	LG	LG	Hyundai-Motor	SK
4	Samsung	LG	SK	SK	SK	LG
5	Hanjin	SK	Hanjin	Hyundai-Auto	Hanjin	Lotte

Source: Information System for Large Corporation Group (http://www.ftc.go.kr/); Song and Lee's (2005) appendix CD.

Hyundai's ranking was unchanged as number one from 1987 to 1999 when Samsung and Daewoo were in rotation ranked in second or third place. After Hyundai Motor was separated from Hyundai in 2000, Samsung rose to the top.

It is interesting that Hyundai Motor was ranked as fifth in 2000 but in second place since 2005. LG whose business structure was changed to a holding company in 2003, was ranked as second from 2002 to 2004 but in third or fourth place after GS Holdings was split from LG Group. Hanjin was ranked as fifth from 1987 to 1989 but afterward dropped out from the top five. Instead, Lotte was in fifth place. SK was also listed as one of the five major chaebols. After 2006, the rankings of the five major chaebols did not change. If Hyundai Motor is regarded as part of the Hyundai group, there are only seven companies listed in the top five during these years.

1. Analysis of Financial Structure

This study analyzes the financial structure of chaebols after the currency crisis by using five major chaebols' combined or consolidated balance sheets. Consolidated balance sheets put all individual balance sheets together by treating all affiliated companies as one company. Combined balance sheets are basically same as the consolidated balance sheet but include more companies that are controlled by the head of the chaebol. In the case of combined or consolidated balance sheets, since all affiliated firms are regarded as one single company, inter-transactions among them are canceled out. Therefore, these balance sheets help in understanding actual business performance and capital structures of chaebols. Table 2-1 and Table 2-2 present financial analyses based on 5 selected years from 1999 to 2010. Hyundai Motor has been in second place since 2006, while Hyundai itself does not belong to even the 10 major chaebols. As such, Hyundai Motor is included as a major chaebol but Hyundai is excluded.

Samsung's assets increased by about three times from 1999 to 2010, while its debt increased by 2.4 times for the same period. Samsung did not usually rely on bond issues or loans to finance asset expansion.[2] The source of

[2] Bonds include domestic and foreign bonds, convertible bonds, bonds with warrants,

Table 2-1. Financial Analysis of Major Chaebols: 1999-2010

(Unit: KRW trillion)

Chaebols	Financial Variables	1999	2002	2005	2008	2010
Samsung	Total Debt	101.01	133.91	154.88	224.11	245.22
	Loan	26.8	23.45	16.87	24.72	25.18
	Bond	9.8	11.78	5.57	5.99	5.3
	Total Equity	22.77	40.40	59.38	84.86	121.63
	Capital Stock+ Capital Surplus	16.49	16.34	17.69	19.57	18.66
	Retained Earnings	5.12	24.90	45.68	70.37	109.68
	Total Assets	123.78	174.33	214.27	308.97	366.85
	Debt/Equity (%)	443.6	331.3	260.83	264.1	201.6
	Current Ratio (%)	148.2	156.7	175.0	155.5	176.8
Hyundai Motor	Total Debt	16.15	32.69	46.24	89.07	99.32
	Loan	4.25	11.08	15.72	34.35	29.99
	Bond	2.40	6.76	8.80	15.71	21.53
	Total Equity	9.24	13.44	19.64	29.90	45.25
	Capital Stock+ Capital Surplus	6.42	6.77	7.07	12.72	13.91
	Retained Earnings	1.00	3.68	8.81	17.25	31.96
	Total Assets	25.39	46.13	65.89	118.97	144.56
	Debt/Equity (%)	174.8	243.2	235.4	297.9	219.5
	Current Ratio (%)	79.8	72.6	83.0	86.5	100.2
LG+ GS	Total Debt	42.8	58.78	43.92	62.21	66.66
	Loan	20.61	24.92	14.4	22.47	19.15
	Bond	7.70	13.39	8.57	9.05	10.11
	Total Equity	12.05	17.20	25.31	36.93	43.88
	Capital Stock+ Capital Surplus	10.11	14.00	17.95	16.4	16.33
	Retained Earnings	1.96	4.25	8.14	18.03	27.41
	Total Assets	54.97	75.98	69.23	99.14	110.54
	Debt/Equity (%)	356.1	341.7	173.5	168.5	151.9
	Current Ratio (%)	82.9	90.7	101.1	108.5	118.2

Source: Data Analysis, Retrieval and Transfer System (DART), Financial Supervisory Service (www.dart.fss.or.kr)

funding can be found from the 5.3 times increase of total equity. Capital stock and capital surplus increased from KRW 16.49 trillion in 1999 to KRW 18.66

and so on, while loans consist of loans from banks and bonds with remaining maturity of less than one year.

trillion in 2010. Because of the small increase in capital stock and surplus, new equity issues were not a main source for financing asset expansion. Retained earnings, however, substantially increased from KRW 5.12 trillion in 1999 to KRW 109.68 trillion in 2010, which indicates a 21.4 times increase for 11 years. The high profitability of Samsung could generate substantial internal funds, which made it possible to rapidly increase its assets without heavily relying on debt.

The current ratio is defined as current assets divided by current liabilities, which indicates whether the company has enough assets to cash in for paying out debt with a maturity of 1 year or less. The current ratios of Samsung were over 150% except for 1999, which suggests it had enough short-term assets.

The assets of Hyundai Motor were KRW 25.39 trillion in 1999, which was 25% of Samsung's assets but rapidly increased by 5.7 times for 11 years. Hyundai Motor actively used retained earnings to expand its assets. Its retained earnings increased from KRW 1 trillion in 1999 to KRW 31.96 trillion in 2010. Its dependence on retained earnings for asset increases is similar to Samsung's. However, Hyundai Motor employed all possible financing channels for rapid asset increases. As the debt of Hyundai Motor increased by 6 times in 11 years, it also aggressively used debt for investment funds and issued substantial new equities as well. Capital stock and capital surplus was KRW 7.07 trillion in 2005 but increased to KRW 12.72 trillion in 2008. Since the current ratio was lower than 100% in all years except 2010, Hyundai Motor might suffer from a shortage of short-term funds. The shortage, however, was not caused by low profitability but by rapid asset expansion. In short, Hyundai Motor has used all financial channels such as debt, new equity issues and retained earnings for rapid asset expansion.

Although GS Holdings was founded by splitting the energy and distribution enterprises off from the LG Group in 2004, it is included in LG to maintain the consistency of time-series analysis. LG's assets increased by two fold from KRW 54.97 trillion in 1999 to KRW 110.54 trillion in 2010. Although its total assets tended to decrease between 2002 and 2005, such an asset decrease seemed to be temporary in the process of spinning LS Cable & System off from LG. Total equity of LG increased from KRW 12.05 trillion in 1999 to KRW 43.88 trillion in 2010. Particularly, increases in retained earnings were substantial. The debt-equity ratio decreased from 355% in 1999

Table 2-2. Financial Analysis of Major Chaebols: 1999-2010

(Unit: KRW trillion)

Chaebols	Financial Variables	1999	2002	2005	2008	2010
	Total Debt	24.36	34.51	25.95	44.14	49.91
	Loan	5.2	9.01	7.03	16.62	16.0
	Bond	10.84	6.7	6.4	11.29	12.25
	Total Equity	9.52	6.86	16.82	24,76	27.04
SK	Capital Stock+ Capital Surplus	8.60	6.77	6.06	23.22	23.50
	Retained Earnings	0.93	-3.73	2.82	3,32	6.24
	Total Assets	33.93	41.37	42.77	68.9	76.95
	Debt/Equity (%)	255.1	503.1	154.3	178.3	184.6
	Current Ratio (%)	83.1	66.2	133.9	107.7	116.2
	Total Debt	6.70	9.65	14.28	20.45	36.45
	Loan	2.56	3.74	4.22	6.13	10.65
	Bond	0.96	1.40	2.80	4.34	8.14
	Total Equity	7.71	9.65	12.01	19.70	31.4
Lotte	Capital Stock + Capital Surplus	5.96	6.15	6.2	9.7	10.41
	Retained Earnings	1.78	3.12	5.7	9.9	12.87
	Total Assets	14.41	18.93	26.29	40.15	67.85
	Debt/Equity (%)	86.9	104.0	118.9	103.8	116.1
	Current Ratio (%)	88.6	78.9	87.9	108.5	104.3
	Total Debt	18.81	20.46	13.86	21.19	24.45
	Loan	4.45	4.56	3.94	7.88	9.79
	Bond	2.40	3.58	2.66	4.06	4.05
	Total Equity	6.78	5.14	6.34	5.92	6.1
Hanjin	Capital Stock+ Capital Surplus	5.99	5.52	4.30	4.62	4.19
	Retained Earnings	0.83	-0.31	2.15	0.74	0.43
	Total Assets	25.58	25.60	20.21	27.11	30.54
	Debt/Equity (%)	277.4	398.1	218.6	357.9	400.8
	Current Ratio (%)	92.7	88.5	84.3	67.9	62.8

Source: Data Analysis, Retrieval and Transfer System (DART), Financial Supervisory Service (www.dart.fss.or.kr)

to 152% in 2010, while the current ratio improved by increasing from 83% in 1999 to 118% in 2010. As a result, LG were more likely to finance asset increases with equity than debt.

Table 2-2 shows financial variables for SK, Lotte and Hanjin. SK had the fourth largest assets among chaebols in 1999. SK has the ownership structure

of a holding company. Its assets increased by 2.3 times from 1999 to 2010. Capital stock and capital surplus increased by KRW 14.9 trillion for 11 years, which mainly resulted from issuing new equities. As a result, the debt-equity ratio decreased from 256% in 1999 to 185% in 2010. It is noteworthy that increases in SK's assets were mainly financed by new equity issues. Lotte was placed in the fifth ranking. Its asset expansion was funded by both internal funds and external funds such as loans, bond issues and equity issues. Its financial channels for asset expansion were similar to Hyundai Motor's. Hanjin's assets did not grow rapidly like other chaebols. Its assets were KRW 25.58 trillion in 1999 and KRW 30.54 trillion in 2010.

In summary, Samsung and LG tended to use internal funds to expand their assets. Hyundai Motor and Lotte relied on all financial channels for their investment funds, while they controlled their debt-equity ratios under a reasonable level. Unlike other chaebols, SK increased its assets mainly with new equity issues.

2. Profitability Analysis

Profitability of chaebols is examined based on revenues, operations income, and net income. Table 3 shows that Samsung achieved consistent and high profits for 11 years. As previously explained in the financial analysis, the high profitability of Samsung made it possible to rapidly increase its assets without relying on high leverage or substantial equity issues. Samsung recorded the lowest ROE in 2008 when the world began to be in a serious economic recession. However, its ROE in 2008 was still higher than any other chaebol. Its high profit margin rate, which was over 10% except for 2005 and 2008, indicates strong competitiveness of its products. Net income reached KRW 23.45 trillion in 2010.

Hyundai Motor, whose asset growth rate was the highest among chaebols, had smaller net income than the sum of the LG and GS net income until 2008. However, the net income of Hyundai Motor was KRW 10.13 trillion in 2010, which was the second largest. The profit margin rate of Hyundai Motor was not as high as for Samsung or other chaebols, which indicates that the automobile market was highly competitive. Although the ROE of Hyundai Motor was up-and-down over time, 20% of its ROE in 2010 indicates high

Table 3. Profitability of Major Chaebols: 1999-2010 (Unit: KRW trillion)

Chaebols	Profitability	1999	2002	2005	2008	2010
Samsung	Revenues	86.44	118.94	145.36	206.08	259.63
	Operation Income	8.95	13.40	11.35	12.10	29.14
	Net Income	2.92	9.66	9.12	9.42	23.45
	Margin (%)*	10.35	11.27	7.81	5.87	11.22
	ROE (%)**	12.82	23.90	15.36	11.10	19.28
Hyundai Motor	Revenues	24.45	48.12	58.83	93.12	131.25
	Operation Income	0.97	3.13	2.29	5.23	12.79
	Net Income	0.81	1.90	2.82	2.00	10.13
	Margin (%)	3.97	6.50	3.89	5.62	9.74
	ROE (%)	8.77	14.14	14.36	6.69	22.39
LG+GS	Revenues	51.73	79.11	91.08	139.4	154.07
	Operation Income	3.04	4.69	4.75	8.55	10.22
	Net Income	2.72	2.25	3.13	3.36	7.20
	Margin (%)	5.88	5.93	5.22	6.13	6.63
	ROE (%)	22.63	13.08	12.37	9.10	16.41
SK	Revenues	33.05	43.40	48,29	88.8	90.70
	Operation Income	2.05	3.88	4.86	4.45	5.2
	Net Income	0.27	-4.69	3.38	1.74	2.72
	Margin (%)	6.20	8.94	10.06	5.01	5.73
	ROE (%)	2.83	-68.37	20,10	7.03	10.06
Lotte	Revenues	9.03	16.22	24.49	33.15	47.35
	Operation Income	0.51	1.19	2.16	1.70	3.14
	Net Income	0.27	0.62	1.27	1.56	1.63
	Margin (%)	5.65	7.34	8.82	5.13	6.63
	ROE (%)	3.50	6.68	10.57	7.92	5.19
Hanjin	Revenues	24.45	16.22	15.25	21.62	22.89
	Operation Income	0.97	1.19	1.17	0.35	1.84
	Net Income	0.55	0.62	0.64	-1.67	0.62
	Margin (%)	3.97	7.34	7.67	1.62	8.04
	ROE (%)	5.95	6.68	10.09	-28.21	10.16

Source: Data Analysis, Retrieval and Transfer System (DART), Financial Supervisory Service (www.dart.fss.or.kr). * Margin rate (%) is defined as operating income divided by revenues; **ROE (%) is net income divided by total equity.

profitability. Its revenues increased by 5.4 times for 11 years.

LS and GS revenues also rapidly increased. Table 3 shows a stable growth rate for their revenues. Their profit margin rates were about 5~6%, which was lower than Samsung that had similar business. However, their ROEs were much higher than 10% in most years. The reason for the high ROEs lies in its high asset turnover. The asset turnover shows how many times assets turn over to generate annual revenues. The higher asset turnover a company has, the more efficiently its assets are used. Samsung's asset turnover was only 66.7% in 2010, while for LG and GS it was 140.6% in the same year. As such, LG and GS could generate the same revenue with smaller assets.

SK's revenues were KRW 90.7 trillion in 2010, which was about 1/3 of Samsung's. SK had KRW 3.33 trillion of operating income but it had 4.69 trillion of net income losses in 2002. These net losses occurred because of substantial special losses in 2002. These losses resulted from reflecting its accumulated losses that were generated in the past but were hidden probably because of window dressing. While the profit margin rates of SK did not seem to be worse than Hyundai Motor's or LG and GS's, its ROEs were poorer except for 2005. Lotte's operation income and net income continued to increase. Although its profit margin rates and ROEs were not high, they were in the range of 5~10%. Hanjin's revenue did not increase at all and its net income was much lower than any other chaebol. As a result, it recently dropped out from the five major chaebols.

3. Ownership Structure

Data about the chaebols' ownership structure and concentration of economic power were collected from the Corporate Group Portal of Fair Trade Commission. Since these data only consider domestic affiliated firms, they were not consistent with those of consolidated or combined financial statements. The Fair Trade Commission's data provide voting rights ownership share and inside ownership share. Voting rights ownership share is the proportion of stocks with voting rights controlled by the head of a chaebol, his family members, and all affiliated firms, while inside ownership share is the proportion of their stocks. Voting rights ownership share is usually higher than inside ownership share because the head, his related

persons or affiliated corporations normally have stocks with voting rights instead of non-voting rights stocks. Since voting rights ownership share was only available until 2008, this study analyzes ownership structure by using inside ownership share based on capital stock. One of the advantages for inside ownership share is that one can analyze ownership proportion based on actual investments made by the head, its relative persons or firms.

The head and his family's ownership tended to decline. Chang et al. (2001) reported that the head and his family's ownership for five major chaebols was on average 15.6% in 1987, 8.6% in 1997, and 4.6% in 1999. The ownership of affiliates was in the range of about 35% to high 40%. Inside ownership was stable over time from about 45% to low 50%. Such a proportion is enough to maintain corporate controlling power over the chaebol affiliates.

The chaebol ownership structure analysis had results similar to those of Chang et al.(2001). Table 4 shows how five major chaebols' ownership structures changed from 2002 to 2010. The head's ownership in Samsung was only 0.28% in 2005 and 0.53% in 2010. Family ownership also tended to decrease from 1.54% in 2002 to 0.68% in 2010. The sum of the head and his family's ownership was only 1.21% in 2010 but affiliated firms of Samsung had about 30% to high 40% of ownership. As a result, total inside ownership share did not show any significant change.[3]

Although Hyundai Motor aggressively increased its assets by using new equity issues as well as debt and retained earnings, its head and family's ownership tended to increase. Particularly, the family's ownership increased from 0.06% in 2002 to 1.67% in 2010. The ownership share of its affiliated firms as well as the inside ownership was similar to Samsung's. Although the sum of the head's and his family's ownership in LG tended to gradually decrease, the inside ownership was maintained at about 40%. The head and his family's ownership in SK was dramatically reduced. In 2002, the head's

[3] When we analyze a company's ownership, indirect ownership need be considered as well. For example, the head has direct ownership in the company. His ownership, however, also exists through other affiliates' ownership since the head also has ownership in the affiliates. If such indirect ownership is considered, the head's ownership can marginally increase. However, the marginal increase should not change any significant difference regarding the study results. Please refer to Kim (2007) for a detailed explanation about chaebols' ownership and inside ownership shares.

Table 4. Inside Ownership Share of Major Chaebols Based on Capital Stock (%)

Chaebols	Classification	2002	2005	2008	2010
Samsung	Head	0.45	0.28	0.29	0.53
	Head's Families	1.54	0.97	0.99	0.68
	Affiliates	37.91	49.79	40.38	41.98
	Treasury Stock	2.23	1.58	2.68	2.48
	Inside ownership	42.14	52.62	44.34	45.66
Hyundai Motor	Head	1.91	2.79	2.59	2.46
	Head's Families	0.06	0.57	1.40	1.67
	Affiliates	31.78	49.02	40.46	41.04
	Treasury Stock	2.35	1.11	1.21	1.13
	Inside ownership	36.11	53.49	45.66	46.30
LG	Head	0.61	1.15	1.23	1.27
	Head's Families	5.10	3.97	3.21	3.06
	Affiliates	36.07	35.14	31.08	31.50
	Treasury Stock	4.01	0.09	0.22	5.66
	Inside ownership	45.79	40.34	35.74	41.49
SK	Head	2.51	0.97	0.26	0.08
	Head's Families	0.70	0.82	1.40	0.91
	Affiliates	51.61	48.90	48.11	54.05
	Treasury Stock	2.18	0.63	1.87	1.21
	Inside ownership	57.0	51.32	51.64	56.25
Lotte	Head	0.69	0.24	0.13	0.05
	Head's Families	4.27	2.13	2.27	2.52
	Affiliates	27.73	49.96	53.17	54.41
	Treasury Stock	0	0	3.64	0.23
	Inside ownership	32.69	52.34	59.21	57.21
Five Major Chaebols	Head	1.53	1.09	0.90	0.88
	Head's Families	3.14	1.69	1.86	1.77
	Affiliates	37.39	46.56	42.64	44.59
	Treasury Stock	3.47	0.68	1.92	2.14
	Inside ownership	45.53	50.02	47.32	49.39

Source: Corporate Group Portal of Fair Trade Commission (http://groupopni.ftc.go.kr)

ownership was 2.51% in 2002 and only 0.08% in 2010. The total of the head's and his family's ownership was 0.99% but its affiliates' ownership was 54.05% in 2010. As such, the head of SK controlled all affiliates by heavily relying on ownership of the affiliated companies. The ownership of Lotte's head was

0.05%, which was the lowest among major chaebols. However, the inside ownership was 32.69% in 2002 and over 50% after 2005.

Average ownership of the major chaebols' head and family tended to gradually decrease. It decreased from 15.6% in 1987 to 2.65% in 2010. It is interesting that ownership of both the head and his family decreased although chaebols' profits and internal funds were high. This indicates that their asset expansion appeared to be even larger than the increases in internal funds. Ownership of affiliates seems to be a key factor that enabled a chaebol head to successfully control the affiliates although the head's ownership was very small. Such a governance structure may cause serious agency problems. Further, it has serious potential disadvantages such as a domino effect, which means that a certain company's bankruptcy can sequentially damage other affiliates.

IV. EFFECT OF CHAEBOLS' GROWTH ON KOREAN ECONOMY

There are several possible reasons why the business performance of chaebols was extremely poor during the currency crisis. Academic literature points out poor capital structures due to over-loans, and poor profitability due to overinvestment or excessive diversification of businesses. According to Chang et al. (2001), the average debt-equity ratio of 30 major chaebols was 303.3% in 1989 and 579.3% in 1997. It was much higher than the debt-equity ratio in other countries: U.S. (153.8%), Japan (186.4%), and Taiwan (85.7%). The average debt-equity ratio of the Korean manufacture industry was 396.3% in 1997. The profit margin rate of 30 major chaebols was on average only 2.3% from 1991 to 1997 (Choi (2009a)). However, the asset increases of chaebols after the currency crisis were different since they showed sound asset expansion in terms of profitability and capital structure.

There is growing criticism about chaebols that their high profits and growth rates do not spread over to the whole economy in Korea as much as before. The next section deals with labor employment issues and examines why the positive effect of chaebols' growth on the Korean economy is not as strong as before. This study also investigates inducement coefficients of added

value, job creation and employment related to exports since chaebol exports account for a substantial proportion of Korean exports.[4]

1. Labor Demand and Foreign Investment of Chaebols

Table 5 presents the changes in average employment numbers for five major chaebols. Average employment was 480,800 for 1991 to 1995 just before the currency crisis. It dramatically decreased to 371,000 for 2001 to 2005 and thereafter increased to 463,121 for 2006 to 2010, which is less than for 1991 to 1995. Table 5 suggests that the labor demand of the five major chaebols substantially fell down, which is surprising considering the rapid increases in their assets and revenue.

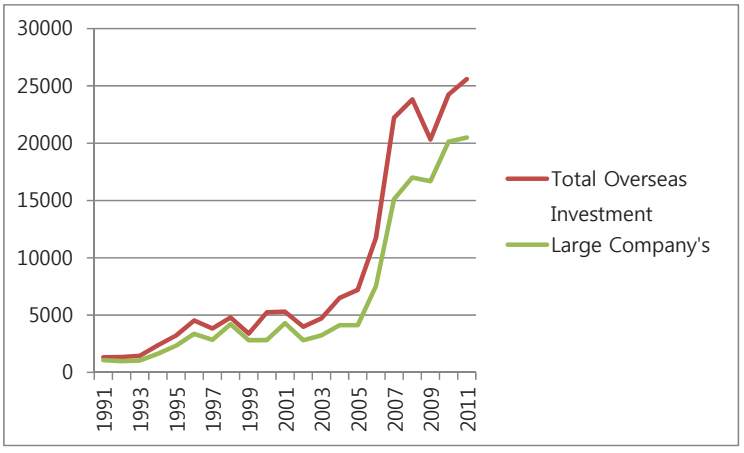
Table 5 also reports employment coefficient, which shows how many employees were hired per KRW 1 billion of revenues based on 2005 constant prices. The price level was adjusted by using a GDP deflator. Employment coefficients decreased from 3.59 persons for 1987 to 1990 to 1.21 persons for 2006 to 2010. Except for 2001 to 2005, the employment coefficient continued to decrease. Based on 2008, the average employment coefficient was 1.28, while the coefficient in the manufacturing, service, and construction

Table 5. Average Employment Number and Coefficient of Five Major Chaebols

Classification	1987-1990	1991-1995	1996-2000	2001-2005	2006-2010
Average Employment	449,250	480,800	466,200	371,178	463,121
Employment Coefficient	3.59	2.45	1.38	1.19	1.21

Source: Corporate Group Portal of Fair Trade Commission (http://groupopni.ftc.go.kr), Song and Lee's (2005) appendix CD.

[4] The inducement coefficient of added value shows how much added value is created in domestic economy when one final unit increases. For example, suppose that for exports the added value inducement coefficient is 0.65, which means $1 in exports contributes to $0.65 value added in the domestic economy while the import inducement coefficient driven by $1 in exports is $0.35. Job creation inducement coefficient shows how many jobs are created over all industries when KRW 1 billion of final demand is generated. Employment inducement coefficient shows how many people are employed over all industries when KRW 1 billion of final demand is generated. On the other hand, employment coefficient measures how many people are employed by a company when the company has KRW 1 billion of sales.



Data: The Export-Import Bank of Korea

Figure 1. Overseas Investment of Korean Companies (Unit: $ million)

industries were 9.2, 18.1, and 16.8, respectively. As such, the employment coefficient of chaebols was noticeably lower.

The main reason for employment reduction was the overseas investments of chaebols. Figure 1 reports overseas investment by the total companies in Korea and by large companies, the latter because of limited available data about chaebols' oversea investments. Overseas investment in Korea was negligibly small until the early 1990s but rapidly increased after 2004. Large companies' overseas investment was $4.1 billion in 2004 and $20.5 billion in 2011, a 5 times increase in overseas investment for 7 years. Likewise, chaebols' overseas investment is not exceptional. In the case of Samsung, which provides detailed information about overseas investment in its financial statements, its overseas investment increased from KRW 3.3 trillion in 2004 to KRW 15.7 trillion in 2011, about a 5 times increase. As a result, overseas investments of chaebols increased foreign employment but decreased the employment effect of chaebols' growth in Korea.

2. Value Added and Employment Effect of Exports

There is no data available for analyzing job creation or employment

Table 6. Inducement Coefficients of Added value, Job Creation or Employment led by Exports

Year	Value Added Inducement Coefficients	Job Creation Inducement Coefficients		Employment Inducement Coefficients	
		Export	Industry Average	Export	Industry Average
1975	0.642	138.60	175.67	94.89	82.62
1980	0.617	91.02	113.50	62.15	63.77
1985	0.628	61.88	76.33	45.35	45.94
1990	0.671	42.41	46.11	30.87	29.84
1995	0.674	23.43	27.86	16.79	18.35
2000	0.609	14.25	19.40	9.94	12.42
2005	0.589	10.78	15.76	7.97	11.08
2009	0.532	8.70	12.65	6.48	9.12

Source: Economic Statistic System, the Bank of Korea

inducement coefficient caused by increases in the revenues of chaebols. Instead, inducement coefficients of added valued, job creation and employment driven by both total exports and five major export items are examined to evaluate the effect of chaebols' growth on the domestic economy. The number of large companies accounts for only 1 % of exporting companies in Korea but they account for 67.7% of the total exports amount in 2009. Top 50 companies' exports and the top 10 companies' were 60.9%, and 37.3% of Korean total exports, respectively. Furthermore, large companies account for 86.5% of exports for the top five products (Korea Custom Service, 2010).

Table 6 presents how the inducement coefficient of added value, job creation, and employment led by exports changed from 1975 to 2009. Except for 1975, exports' added value inducement coefficient tended to increase until 1995. Increases in inducement coefficient indicate that the effect of exports on the domestic market became stronger. In other words, the dependence of Korean exports on imports became weaker. However, exports' added value inducement coefficient evidently decreased after the currency crisis. The inducement coefficient was 0.532 in 2009. Such a decrease means that the effect of exports on Korea's economy became weaker after the currency crisis.

The weak effect of exports may be explained by the globalization trend that activates international trade and integrates the world economy. To

survive or compete in the world markets, a company should find ways of reducing production costs or obtaining superior raw materials. Since the markets for raw materials and intermediate goods are globalized, companies tend to import more raw materials or intermediate goods for export, resulting in low inducement coefficients of added value.

Table 6 also presents inducement coefficients over time for job creation or employment. These coefficients show why the effect of exports on the domestic economy was noticeably weakened. Inducement coefficients of job creation and employment consistently decreased over time. For example, KRW 1 billion of exports created 138.6 jobs and hires of 178.7 persons over all industries in 1975. However, the same amount of exports generated 8.7 persons' jobs and hires of 6.48 persons in 2009.

The huge decrease in these coefficients may be explained by three factors. First, export industries with comparative advantages have changed from labor intensive to capital and technology intensive industries. The employment coefficient of exports was 94.89 persons in 1975, which was more than the 86.62 persons industry average. In the mid 1970s, major export products were labor intensive. Beginning with 1995, employment inducement coefficients of exports began to be smaller than the industry average. Second, improvement of labor productivity reduced the employment inducement coefficient. According to the labor productivity index, labor productivity annually increased by 6.5% in the mining and manufacturing industries. Such a productivity improvement reduced labor demand needed for KRW 1 billion's sales, decreasing the inducement coefficients. Third, the weak effect of exports on the domestic economy may account for reduction of the employment inducement coefficient. Because the added value inducement coefficient of exports fell down after 1995, exports' effects on the domestic economy became weaker. As a result, the same amount of export demanded less employment in the domestic market.

Since the top 5 export items match up with those of major chaebols, these items are more related to the effect of chaebols' growth on the domestic economy. Table 7 shows the top five export items and their inducement coefficients. Typical items are shipping, automobiles and semiconductors. Computer and image devices like TVs belonged to the top five items in 1995 but were excluded from the top five in 2009. Computer and image devices are

labor intensive products. As such, the top five items also indicate that labor intensive products tend to be excluded from major export products.

Automobiles are a typical product that has a high effect on employment as well. However, the inducement coefficients for the automobile rapidly decreased. For example, the inducement coefficient of job creation decreased from 17.28 persons in 1996 to 8.78 persons in 2009. Particularly, the inducement coefficient of added value was 0.749 in 1996 and decreased to 0.661 in 2009. Such decreases indicate that exports in the automobile industry rely more on imports. Consistent decreases in the inducement coefficient of added value appeared in most major export items. Semiconductors, shipping, and communications and broadcasting equipment like mobile phones show the same reduction of the coefficient. The high reliance of major export products on imports implies that the link between exports and the domestic market dwindles. The average inducement coefficient of employment for the top five export products continued to decrease from 1996 to 2009. The top five's employment inducement coefficient was on average 12.89 persons in 1996 but decreased to 6.09 persons in 2000, about a one-half decrease for only 4 years.[5]

Evident falls of employment coefficients for chaebols and inducement coefficients for exports confirm that the effect of their growth on the domestic economy continued to be weaker after the currency crisis. As previously mentioned, the weak effect appeared to be due to increases in overseas investment of Korean large companies, the structure change of Korean industries, higher dependence of exports on imports, and improvement of labor productivity. These changes are natural consequences of profit seeking process steps taken by companies. The structure change of the export industry toward capital and technology intensive industries also resulted from Korean economic development processes

The weak effect of chaebols' growth on the domestic economy provides important implications for Korean economic policy. Export-driven economic

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[5] Employment substantially decreased due to mass dismissals and restructuring of financially distressed firms across all industries immediately after the Asian currency crisis. In addition, a sharp decrease in the value of Korean currency at that time reduced inducement coefficients of added value and employment as well.

Table 7. Inducement Coefficients of Added Value, Job Creation, and Employment for Top Five Export Products

Year	Top Five Export Products	Export Amount ($ million)	Job Creation Inducement Coefficient	Employment Inducement Coefficient	Added Value Inducement Coefficient
1996	Electronic Parts (Semiconductor)	15,237	7.87	6.88	0.668
	Automobiles	10,468	17.28	14.66	0.749
	Shipping	7,208	18.34	15.91	0.668
	Home Electronics (Image Device)	5,550	21.37	18.42	0.619
	Computer	5,462	19.06	16.60	0.464
	Mean	8,785	14.93	12.89	0.656
2000	Semiconductor	26,006	4.83	4.07	0.497
	Computer	14,687	8.36	6.31	0.449
	Automobile	13,221	12.84	10.35	0.729
	Petroleum Products	9,055	1.04	0.80	0.424
	Shipping	8,420	13.01	10.97	0.683
	Mean	14,227	7.52	6.09	0.543
2005	Semiconductor	29,986	6.16	5.36	0.520
	Automobile	29,506	10.73	8.77	0.690
	Communication & Broadcasting Equipment	27,495	8.39	6.93	0.515
	Shipping	17,727	9.90	8.39	0.601
	Petroleum Products	15,366	0.74	0.57	0.401
	Mean	24,016	7.65	6.39	0.557
2009	Shipping	37,223	7.30	6.00	0.569
	Communication & Broadcasting Equipment	29,531	6.18	5.03	0.440
	Semiconductor	24,384	5.58	4.88	0.483
	Electronic Display Device	23,390	5.69	4.77	0.504
	Automobile	22,399	8.78	7.17	0.661
	Mean	27,385	6.72	5.57	0.530

Source: Top 5 Export Items from E-Nara Index in Statistics Korea (http:\\www.index.go.k) are adjusted for classification of inter-industry relation.

models will not be successful in activating the domestic economy anymore. Any currency policy or corporate tax incentives to encourage exports will not be effective in increasing the domestic market demand. On the contrary, it will not be desirable for the government to provide employment incentives to large companies like chaebols. Increases in their employment encouraged by the government may decrease their efficiency or competitiveness. It is noteworthy that employment of chaebols reached the maximum just before the currency crisis but some of them went to bankruptcy because of low profitability and over-loans.

V. CONCLUSIONS

Chaebols that demonstrate strong competitiveness in the world markets have been the main beneficiary from Korean economic development as well as the driving force of Korean economic success. Many criticisms about chaebols have been raised since the currency crisis. This study evaluates chaebols by analyzing their capital structure, profitability, and ownership structure and investigates reasons why their business success has not led to positive ripple effects on the whole domestic economy.

Chaebols that recorded poor profits before or during the Asian currency crisis achieved surprising business performance after the crisis. Average net income of five major chaebols increased by 7.3 times for 1999 to 2010. Their debt-equity ratio decreased from 342.4% in 1999 to 184.8% in 2010. They also had rapid asset expansion by using diverse financial channels. Samsung and LG mainly relied on internal funds for their investments, while Hyundai Motor and Lotte employed all financial channels such as debt increase, internal funds and new equity issues. SK expanded assets mainly by substantial equity issues.

Although chaebols achieved high profitability, sound capital structure, and successful asset expansion, their ownership structures were getting worse than before the currency crisis. The head and his family's ownership decreased from 15.6% in 1987 to 2.65% in 2010, although their inside ownership including their affiliates' was maintained above 45%. The head's controlling power could be stable since their affiliates' ownership made up for

reduction of their head and family's ownership. As a result, disparity between their cash flow ownership and controlling power became larger and larger, increasing agency costs. Since increase in ownership of their affiliate results in deepening inter-relations among the affiliates, they may face high risks of sequential bankruptcy.

This study shows that the positive effect of chaebols' growth on the domestic economy dwindles. The average number of employees of five major chaebols drastically reduced soon after the currency crisis and afterward gradually increased. Nevertheless, the average employment number for five major chaebols was about 460,000 for 2006 to 2010, smaller than for 1991 to 1995. The employment coefficient decreased from 3.59 persons for 1987 to 1990 to 1.21 persons for 2006 to 2010.

Exports were not exceptional. The inducement coefficient of added value for exports reached 0.674 in 1995 but thereafter continued to decrease to 0.532 in 2009. As such, the effect of exports on the domestic economy became lower than before the crisis. Exports are not expected to increase the domestic market demand as much as before. Inducement coefficients of job creation and employment evidently show the same trend as well. KRW 1 billion of export required 175.7 employees in 1975 but only 6.48 in 2009.

This study suggests four reasons why the effect of chaebols' or exports' growth on the domestic economy tends to decrease. First, labor demand has decreased because of increases in overseas investment. Second, industries with comparative advantage in Korea changed toward capital and technology intensive industries from labor intensive industries. As a result, labor demand has decreased. Third, improvement of labor productivity has reduced inducement coefficients of job creation and employment. Last, since the inducement coefficient of added value led by exports decreased, the effect of exports on the domestic market demand decreased as well. These four reasons are not temporary. Noticeable improvement of labor productivity mainly caused by new technology developments like IT, structural sophistication of Korean industries, and globalization of the economy are some consequences of profit seeking activities by individual companies. Therefore, the weak effect of chaebols' and exports' growth on the domestic economy is in the mainstream of a trend rather than a temporary phenomenon. The effect is expected to be persistently weaker in the future.

Export-driven economic models were successful for Korean economic development before the Asian currency crisis. These models, however, do not seem to provide any possible solution for recent issues such as income disparity and unemployment issues in Korea. As such, discussion is needed about how to activate the domestic market demand or what would be an alternative policy. Economic democratization raised from political communities needs to be academically discussed. There is also a need to precisely conceptualize economic democratization and its detailed policies should be addressed. Finally, any alternative model for the Korean economy should provide a solution about unemployment without losing the competitiveness of Korean companies.

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