Evolution of the business groups in Korea and China: Implications for Japan

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A talk based on 4 papers of Keun Lee

1) ***Journal of Japanese and International economies (2010),***

“Long-term evolution of the firm value and behavior of business groups: Korean Chaebols between weak premium, strong discount and strong premium .”

2) *Journal of Economic Behavior and Organization (*2010),

“Understanding the Behavior of Business Groups: A Dynamic Model and Empirical Evidence .”

(3) Choo, Keun Lee, Ryu and Yoon,
(*Econ. Dev't & Cultural Change, 2009/3*),"

Explaining Performance Change of Chaebols over the Two decades: Technological Capabilities vs. Investment Inefficiency"

(4) Seo, Keun Lee, & Wang, 2010, "Causes for the Performance Change of Business Groups: Market-level vs firm-level factors in China, *Industrial & Corporate Change*, 19 (6).

Business groups (BGs)

an important economic phenomenon and puzzle

1) Diversified conglomerates, "business groups," found extensively in emerging economies.
2) despite globalization and liberalization, and deregulation: not decreasing

**Objectives:

1) Explain the performance changes over the 1980, 90, and 2000s and testing the effectiveness of alternatives theories: 3 theories and 5 hypotheses
2) Suggest a new theoretical perspectives on the Business groups

In Asia

- China — Keister (1998), Peng (2000)
- Hong Kong — Au, Peng, and Wang (2000), Redding (1990)
- India — Ghemawat and Khanna (1998), Khanna and Palepu (2000)
- Southeast Asia — Yoshihara (1988)
- South Korea — Chang and Choi (1988), Hamilton and Biggart (1988), Hamilton and Feenstra (1995), Ungson, Steers, and Park (1997)
- Taiwan — Hamilton and Biggart (1988), Hamilton and Feenstra (1995)

More in Other Areas

- *Central and Eastern Europe*
  - Hungary — Stark (1996)
  - Russia — Freinkman (1995), Johnson (1997)

- ***Latin America***
  - Argentina — Guillen (2000)
  - Brazil — Evans (1979)
  - Chile — Khanna and Palepu (1999, 2000)
  - Central America — Strachan (1976)
  - Mexico — Camp (1989)

Basic profile and Definition of BGs in China

Def) A collection of legally independent entities that are partly or wholly owned by a parent firm and registered as affiliated firms of that parent firm.

- To be registered with the State Administration for Industry and Commerce (SAIC).

- (SAIC rule):

=> parent company of BGs should have a registered capital of over 50 million *yuan* plus at least 5 affiliated companies;

+ a total registered capital (including the core and other affiliated companies) of over 100 million *yuan*.

- The period 1997-2005
  - N0. of BGs registered: 20%↑(from 2,369 to 2,845)
  - No. of workers in BGs: 53.1%↑(18.5 mil. to 28.4 millions)
  - Sales, percentage of GDP: 136.8%↑(from 35.7% to 84.6%)

Table 1. Basic statistics of Chinese business groups

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Groups	2,369	2,472	2,757	2,655	2,710	2,627	2,692	2,764	2,845
Total assets(billion)	5,045.7	6,699.4	8,732.3	10,698.4	12,804.5	14,253.8	17,017.0	19,472.1	23,076.3
Total revenue(billion)	2,820.5	3,507.7	4,376.6	5,326.0	6,562.3	7,712.0	10,009.5	12,638.7	15,550.9
Percentage of GDP	35.7	41.6	48.8	53.7	59.8	64.1	73.7	79.1	84.6
Total employees (thousand)	18,500	20,900	23,420	22,820	25,240	25,180	25,850	26,712	28,359

- Top 30 in terms of sales in 2006; manufacturing are not dominant, with more in energy, utilities, and trading), most of them are state-owned.

Table 3. List of the largest business groups in the People's Republic of China

Name of Group	Revenue (Bil. *yuan*)	Employee (thousand)	Ownership	Major business lines
China Petrochemical Co.	1,097.50	649.7	State	Oil refining and Petrochemicals
China National Petroleum Co.	923.2	1,012.80	State	Oil (fuels, lubricants), Natural Gas, Petrochemical, Oil Exploration Services, Oil Exploration Equipments
State Grid Co. of China	855.3	794.5	State	Build and operate power grids and provides power supply
China Mobile Communications Co.	286.3	371	State	Telecommunications, Mobile Communications
China Southern Power Grid	223.5	173.2	State	Power generation
China Telecom	198.7	400.3	State	Fixed service telecommunications provider
Sinochem Group	184.5	17.8	State	Chemical fertilizer
Baosteel Group Co.	183.4	91.3	State	Steel, Finance, Coal Processing, Engineering
China Railway Engineering Co.	163.8	268	State	Railways
China FAW Group Co.	158.6	117.6	State	Automobiles
China Railway Construction Co.	150.7	218.3	State	Railways
Dongfeng Motor Co.	147.2	134.2	State	Automobiles
China State Construction Engineering Co.	144.8	404.1	State	Property and Real Estate Construction
Shanghai Automotive Industry Co.	144.1	82	State	Passenger cars, commercial vehicles and components
Legend Holdings	138.9	30.3	Private Limited TVEs	IT, equity investment and real estate development
China Minmetals Co.	135	36.3	State	Production and trading of metals and minerals; Finance, Real estate and Logistics
China National Offshore Oil Co.	132.4	48	State	Oil and gas
China Ocean Shipping(Group) Company	127.6	64	State	Freight forwarding, Shipbuilding, Shiprepairing, Terminal Operations
China Communications Construction Company	115.1	77	State	Construction and design of transportation infrastructure dredging and port machinery manufacturing
Haier Group	108	54	Private Limited TVEs	Electronics, White Goods, Financial Services
Aluminum Corporation of China	106.1	188.2	State	Aluminum products
China Resources (Holding) Company Limited	100.4	171.5	State	Retail, power, breweries, real estate, food, medicine, textiles, chemical products, gas, compressor
China Netcom Group	97	248.7	State	Fixed-line telephone services, telecommunications and data services
China Metallurgical Group Co.	90.7	113.3	State	Engineering, procurement and construction), natural resources exploitation, papermaking business, equipment fabrication
China Unicom Group	87.9	145.9	State	Mobile Communication Service, Unicom Horizon CDMA Service, Mobile Value-added Service
China Huaneng Group	84.2	66.7	State	Power generation, IT, transportation, renewable energy, environment protection
Shenhua Group Co. Limited	83.6	141.2	State	Coal production, transportation, Electricity generation
Ping An Insurance (Group)	81.7	48.8	Privately held	Insurance and financial services
China International Trust and Investment Company(CITIC Group)	81.3	77.6	State	Financial services: banking, securities business, insurance, trusts business, funds, futures
COFCO Group	75.4	82.5	State	Producer and supplier of processed agricultural products (including oilseed, wheat and rice)

Summary: 3,000 BGs in China

- **Explicit definition of BGs: to be registered at the State Administration for Industry and Commerce (SAIC).**

  -> 5 or more affiliates; over 100 million *yuan* capital total.

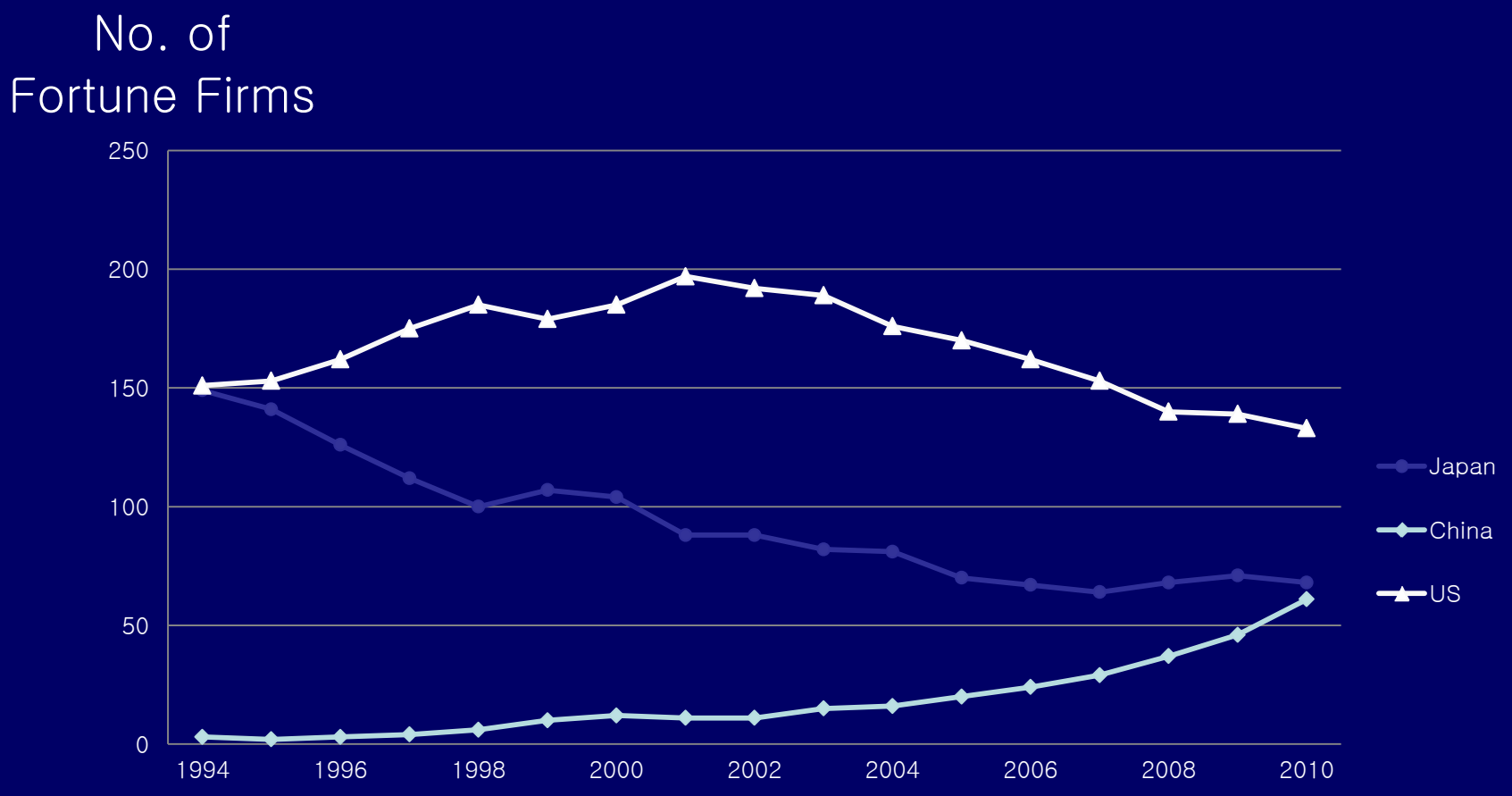
  - their sales share in GDP: 35.7% in 97' -> 84.6% in 05'

- **Simple vertical structure pyramids, owned by the state not by families, with its core company at the first tier owing majority shares over affiliates.**
- **Less diversified, with some having finance and R&D units.**
- **Performance: improving over time;**

  Less profitable than non-BGs; growing slowly or equally;
- **Governance: No personal owners under multi-tier structure leading to the asset stripping and agency costs.**

No of Fortune Global 500 Firms: US, Japan, China

(Lee et al 2013, J comparative Econ; big business & economic growth)



Fortune 500 in Korea and Taiwan

2 Foci of the Talk

1) Which Theoretical Views
On Business groups
2) How and Why they keep evolving

‘Theory 1:
Fulfilling the Institutional Voids :
Market Failure & Transaction Costs

- **Market Failure**: Leff (1978); Goto (1982)
- ‘institutional voids’ argument by Khanna and Palepu (1997; 2000).
- Since many of the institutions that support business activities are absent in many parts of the world, the business groups emerge to fill the institutional voids.

Theory 2: Finance(agency cost)-based View

BGs = CMS (controlling minority structure = separation of voting and income rights) offers incentive for excessive investment arising from the so called agency problem

-> We would like to study whether the Korean Chaebol firms have corrected themselves from investment inefficiency during and after the 1997 Asian crisis period whereas they were subject to serious investment inefficiency before the crisis

Theory 3 (Resource-based view)

Importance of technological capabilities such as patent applications might have increased over time as the economy have become more mature and open.

->We also would like to study whether the Chaebol firms have technological advantages, and whether such advantages explain the long term change in productive efficiency.

We proxy technological capabilities by patent applications by each firm.

Testing for 5 Hypothesis (JJIE 2010)

- Over-investment hypothesis
- Cross-subsidization hypothesis
- Profit stability hypothesis
- Co-insurance effect

(Debt capacity vs. Tax shields)

[Table 8] Summary of the overall results

	1984-88	1990-95	2001-2005
Excess value Firm-level gap with non-chaebol Group-level: median Tobin Q (firm-level regression chaebol dummy	 +* +* +*	 -* -* -	 +* +* +*
Profit stability hypothesis	Yes*/No*	Yes*	No*
Accounting profitability	Low return and low variance*	Low return and low variance*	High return and low variance*
Stock market return	High return and low variance	Low return and low variance *	High return and low variance
Over-investment hypothesis(group/firm-level)	Yes*/No	Yes/Yes*	**No/No**
Performance hypothesis	- *	No	+*
Cross-subsidization hypothesis (regression)	No	Yes	Yes
Debt-capacity advantage (regression result)	No	Yes*	No
Tax advantage (regression result)	**Yes***	**Yes***	**No**

3. Methodology: excess values and Tobin's Q

Replication of methods by Ferris et al. (*JBF* 2003) for 1990~1995

: Chaebol-affiliated firms: lower excess value, profit stability, over-investment, cross-subsidization, larger debt capacity and lower tax burden

⇒ **Diversification discount vs. Value loss**

We extend to three time periods : 1984~1988 / 1990~1995 / 2001~2005 (including post-crisis; 1998~2000)

◆ **Firm Excess value = ln [firm's actual value / firm's imputed value]**

imputed value =
industry median firm value -to-assets ratio (non-chaebol firms) times the firm's total assets

actual value = market value of equity plus book value of debt

◆ **Chaebol Excess value = ln [chaebol's actual value / chaebol's imputed value]**

Chaebol's actual value = Σ (member firm's actual value)

Chaebol's imputed value = Σ (member firm's imputed value)

4. Data Sources

- Korea Information Service (KIS) Value Plus
- Korea Securities Research Institute (KSRI) Stock Database
- Korea Stock Exchange (KSE) Industry Classifications

Identification of Chaebol Group

- Korea Fair Trade Commission (FTC) : Reports of the Top 30 Company
- Management Efficiency Research Institute

  : Korea's Fifty Major Financial Groups
- Maeil-Business Newspaper : The Annuals of the Korean Firms

Measuring the Excess Value vs. Trend of the Excess Value

[Table 2] Measuring excess value at the firm and group levels

Time Period	1984-1988				1990-1995				2001-2005			
	median	mean	s.d.	N	median	mean	s.d	N	median	mean	s.d	N
Firm												
Chaebol firms	0.015**, 5	0.022***, 5	0.148	255	-0.029***, 1	-0.024***, 1	0.130	682	0.097***, 1	0.122***, 1	0.353	463
Non-chaebol firms	0.000	-0.001	0.157	788	0.000	0.008**	0.189	2128	0.000	0.016***	0.402	3938
Chaebol												
Chaebol group	0.018***	-0.003	0.127	81	-0.027***	-0.028***	0.079	162	0.164***	0.182***	0.307	103

Statistical significance at the 1%, 5% and 10% levels are indicated by ***, **, and *, respectively.

Statistically significant differences at the 1%, 5% and 10% level between chaebol and non-chaebol firms are indicated by 1, 5, and 10, respectively.

[Table 3] Annual firm-level regressions of Tobin Q

Sample	Number of Observations	Intercept	Chaebol dummy	ln(total_asset)	Leverage	EBIT/Sales	Capex/sales	Beta
1984-1988	1022	1.128***	**0.057*** **	-0.044***	0.815***	0.356***	-0.001	0.035***
	(0.622)	(0.000)	**(0.002)**	(0.000)	(0.000)	(0.001)	(0.602)	(0.000)
1990-1995	2814	1.647***	**-0.020***	-0.059***	0.768***	0.144	-0.050***	-0.000
	(0.560)	(0.000)	**(0.051)**	(0.000)	(0.000)	(0.305)	(0.001)	(0.974)
2001-2005	2765	0.838***	**0.131*** **	-0.018**	0.712***	0.141	-0.002	0.019***
	(0.220)	(0.000)	**(0.000)**	(0.050)	(0.000)	(0.287)	(0.935)	(0.001)
1984	168	0.722***	0.014	-0.029***	0.855***	0.397***	-0.002**	0.006
	(0.862)	(0.000)	(0.308)	(0.000)	(0.000)	(0.001)	(0.024)	(0.258)
1985	177	0.748***	0.010	-0.025***	0.765***	0.222**	0.044	0.045***
	(0.768)	(0.000)	(0.476)	(0.000)	(0.000)	(0.041)	(0.198)	(0.000)
1986	189	0.936***	0.065**	-0.042***	0.900***	0.360***	0.004	0.079***
	(0.880)	(0.000)	(0.032)	(0.000)	(0.000)	(0.001)	(0.847)	(0.000)
1987	217	1.707***	0.062*	-0.070***	0.864***	0.211*	0.083	-0.047***
	(0.737)	(0.000)	(0.065)	(0.000)	(0.000)	(0.057)	(0.295)	(0.000)
1988	271	1.738***	0.120***	-0.069***	0.827***	0.292	-0.001	0.024*
	(0.658)	(0.000)	(0.007)	(0.000)	(0.000)	(0.255)	(0.986)	(0.081)

Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively.

[Table 3_continued] Annual firm-level regressions of Tobin Q

Sample	Number of Observations	Intercept	Chaebol dummy	ln(total_asset)	Leverage	EBIT/Sales	Capex/sales	Beta
1990	436	1.874***	0.042*	-0.076***	0.866***	0.183	-0.010	0.000
	(0.729)	(0.000)	(0.069)	(0.000)	(0.000)	(0.181)	(0.807)	(0.942)
1991	454	1.222***	0.030*	-0.044***	0.820***	0.101	-0.085***	0.001
	(0.750)	(0.000)	(0.080)	(0.000)	(0.000)	(0.446)	(0.000)	(0.274)
1992	461	1.721***	**0.010**	-0.060***	0.601***	0.171	-0.033***	0.000
	(0.448)	(0.000)	**(0.552)**	(0.000)	(0.000)	(0.213)	(0.005)	(0.395)
1993	472	1.811***	**-0.030**	-0.066***	0.802***	-0.262	-0.033	0.015
	(0.762)	(0.000)	**(0.194)**	(0.000)	(0.000)	(0.162)	(0.524)	(0.287)
1994	484	2.485***	**-0.052****	-0.094***	0.631***	0.896***	0.049	0.001**
	(0.380)	(0.000)	**(0.032)**	(0.000)	(0.000)	(0.000)	(0.448)	(0.013)
1995	507	1.692***	**-0.017**	-0.059***	0.632***	0.619***	-0.053*	-0.000
	(0.390)	(0.000)	**(0.513)**	(0.000)	(0.000)	(0.000)	(0.095)	(0.789)
2001	540	1.635***	**0.083****	-0.068***	0.817***	-0.002	-0.009	0.069
	(0.703)	(0.000)	**(0.014)**	(0.000)	(0.000)	(0.985)	(0.622)	(0.113)
2002	536	1.099***	**0.093*****	-0.038***	0.798***	-0.176	0.024	0.014
	(0.609)	(0.000)	**(0.005)**	(0.003)	(0.000)	(0.152)	(0.312)	(0.354)
2003	519	0.668**	**0.165*****	-0.017	0.592***	-0.090	0.001	0.255***
	(0.309)	(0.012)	**(0.001)**	(0.240)	(0.000)	(0.680)	(0.964)	(0.000)
2004	586	0.212	**0.072**	0.011	0.732***	0.781**	-0.076	0.008
	(0.228)	(0.338)	**(0.153)**	(0.347)	(0.000)	(0.011)	(0.386)	(0.176)
2005	584	1.798***	**0.271****	-0.046	0.255	0.543	0.082	0.013
	(0.017)	(0.006)	**(0.022)**	(0.128)	(0.197)	(0.128)	(0.502)	(0.136)

Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively.

Over-investment Hypothesis and performance Hypothesis

Σ(Capital Expenditure/sales of each of its member firms operating in industries whose median Tobin's q is in the lowest quartile)

→ Higher value of this -> greater investment in unprofitable industries

Table 4A] Chaebols and the over-investment Hypothesis: dependent variable is group-level Tobin Q

	1984-1988					1990-1995					2001-2005				
	Coefficient(p-value)					Coefficient(p-value)					Coefficient(p-value)				
Variable	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
intercept	0.985***	0.945***	0.913***	1.068***	0.903***	0.781***	0.758***	0.766***	0.775***	0.763***	1.061***	0.787***	0.795***	0.952***	0.823***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Over-investment	-0.393**	-0.349*	-0.362*	-0.375**	-0.379*	-0.055	-0.046	-0.046	-0.045	-0.043	0.011	-0.008	-0.013	-0.008	-0.024
	(0.044)	(0.076)	(0.070)	(0.049)	(0.053)	(0.112)	(0.181)	(0.173)	(0.198)	(0.213)	(0.914)	(0.935)	(0.900)	(0.943)	(0.815)
Leverage	0.158	0.140	0.181	0.155	0.190	0.367***	0.356***	0.342***	0.347***	0.353***	0.034	0.228	0.220	0.117	0.169
	(0.463)	(0.527)	(0.406)	(0.462)	(0.379)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.889)	(0.314)	(0.341)	(0.643)	(0.499)
Operating income/sales	-1.170*	-1.426**	-1.373**	-1.321**	-1.317**	-0.028	-0.089	-0.026	-0.090	-0.110	1.098*	1.008*	0.991*	1.165**	0.986*
	(0.056)	(0.021)	(0.028)	(0.026)	(0.031)	(0.900)	(0.687)	(0.906)	(0.696)	(0.621)	(0.068)	(0.066)	(0.077)	(0.039)	(0.089)
Capex/sales	0.453**	0.390*	0.417*	0.471**	0.427**	-0.043	-0.045	-0.046	-0.052*	-0.055*	0.703**	0.846**	0.851**	0.820**	0.869**
	(0.034)	(0.072)	(0.054)	(0.025)	(0.046)	(0.155)	(0.131)	(0.124)	(0.091)	(0.066)	(0.039)	(0.020)	(0.019)	(0.026)	(0.017)
Relatedness	-0.169	0.062	0.032	-0.224**		-0.101**	0.034*	0.048**	-0.015		-0.413***	0.125	0.097	-0.176*	
	(0.153)	(0.287)	(0.652)	(0.021)		(0.039)	(0.055)	(0.026)	(0.687)		(0.000)	(0.363)	(0.555)	(0.080)	
Number of obs.	81	81	81	81	81	162	162	162	162	162	103	103	103	103	103
Adjusted R2	0.120	0.110	0.098	0.159	0.108	0.122	0.119	0.127	0.099	0.104	0.230	0.088	0.080	0.097	0.084

For the relatedness, (1)~(4) are 1/number of 3-digit industries, median cross-correlation and mean cross-correlation, 1-HHI, respectively.
Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively

[Table 4B] The over-investment Hypothesis: dependent variable is individual firm Tobin q

Variable	Coefficient (p-value)					
	(a) current impacts			(b) impacts after 10 years		
	1984-1988	1990-1995	2001-2005	1991-1995 All firms	1991-1995 Chaebol firms	1991-1995 Non-chaebol firms
intercept	0.358***	0.629***	0.573***	0.645***	0.507***	0.625***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Over-investment	0.002	**-0.043*** **	0.023	-0.002	**0.264** **	-0.009
	(0.954)	**(0.004)**	(0.503)	(0.967)	**(0.049)**	(0.861)
Leverage	0.883***	0.689***	0.642***	0.207***	0.539***	0.196***
	(0.000)	(0.000)	(0.000)	(0.006)	(0.002)	(0.006)
Operating income/sales	0.271***	-0.145	0.200	0.539**	0.424	0.588***
	(0.009)	(0.111)	(0.136)	(0.010)	(0.426)	(0.009)
Capex/sales	-0.035	-0.021	-0.013	0.072	-0.203	0.079
	(0.492)	(0.510)	(0.832)	(0.441)	(0.192)	(0.387)
Number of obs.	563	1810	1465	1234	274	960
Adjusted R2	0.746	0.465	0.086	0.0169	0.0319	0.0158

Notes: Dependent variable is individual firm's Tobin q in current years in (a), and in 10 years later in (b). Individual firm Tobin Q is calculated by (market value + total debt)/total asset. Total asset and total debt are all book value. Over-investment variable is the residuals obtained from estimation of investment functions.

Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively.

Cross-subsidization Hypothesis

Cross-subsidization measure : Negative Cash-flow (i.e. EBIT < 0) ; The effect on chaebol groups' excess value by a negative cash flow variable

Table 4C] Chaebols and the cross-subsidization hypothesis: dependent variable is group-level Tobin Q

	1984-1988			1990-1995			2001-2005		
	Coefficient(p-value)			Coefficient(p-value)			Coefficient(p-value)		
	Chaebol groups		Non-chaebol	Chaebol groups		Non-chaebol	Chaebol groups		Non-chaebol
Variable	(3)	(5)	firms	(3)	(5)	firms	(3)	(5)	firms
intercept	0.803**	0.791***	0.342***	0.733***	0.729***	0.592***	0.818***	0.812***	0.535***
	(0.010)	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
negative cashflow dummy	0.021	0.021	0.071	-0.024	-0.027	-0.027	0.012	0.013	0.179***
	(0.690)	(0.687)	(0.202)	(0.175)	(0.134)	(0.526)	(0.866)	(0.843)	(0.000)
Leverage	0.312	0.313	0.836***	0.401***	0.413***	0.763***	0.172	0.182	0.909***
	(0.348)	(0.350)	(0.000)	(0.000)	(0.000)	(0.000)	(0.476)	(0.455)	(0.000)
Operating income/Sales	-1.129**	-1.062**	0.485***	-0.183	-0.275	-0.030	1.037*	1.002*	0.472**
	(0.038)	(0.014)	(0.000)	(0.454)	(0.259)	(0.896)	(0.096)	(0.094)	(0.049)
Capex/sales	0.253	0.263	0.002***	-0.066**	-0.073***	-0.089***	0.851**	0.879**	0.027
	(0.227)	(0.208)	(0.009)	(0.014)	(0.006)	(0.000)	(0.030)	(0.017)	(0.389)
Relatedness	-0.032			0.044**			-0.029		
	(0.705)			(0.039)			(0.772)		
Number of obs.	81	81	791	162	162	2134	103	103	3994
Adjusted R2	0.054	0.064	0.660	0.126	0.108	0.555	0.076	0.085	0.449

Notes: For the chaebol group-level analysis, the negative cash flow dummy=1 when one of the chaebol's member firms has negative operating income. For the non-chaebol firm analysis, the negative cash flow indicator = 1 when the firm has negative operating income.
For the relatedness, (3) is mean cross-correlation. Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively.

Profit stability Hypothesis

[Table 5] Chaebols and the profit stability Hypothesis

Time Period	1984-1988			1990-1995			2001-2005		
Characteristics	Chaebol firms	Non-chaebol firms	Difference	Chaebol firms	Non-chaebol firms	Difference	Chaebol firms	Non-chaebol firms	Difference
Panel A: Accounting measures of profitability									
Operating income/total assets	-0.012	0.000	-0.012***	-0.006	-0.003	-0.003	0.015	-0.020	**0.035*** **
	[-0.013]	[-0.000]	-0.013***	[-0.004]	[0.000]	-0.004***	[0.012]	[-0.000]	0.012***
	(0.043)	(0.054)	-0.011***	(0.036)	(0.080)	-0.044***	(0.077)	(0.455)	-0.378***
Net income/total assets	-0.003	-0.000	-0.003	-0.009	-0.006	-0.003	-0.004	-0.043	**0.039*** **
	[-0.004]	[0.000]	-0.004***	[-0.006]	[-0.000]	-0.006***	[0.009]	[0.000]	0.009***
	(0.032)	(0.055)	-0.023***	(0.028)	(0.152)	-0.124***	(0.232)	(0.676)	-0.444***
Number of observations	255	791		680	2135		466	3996	
Panel B: Monthly stock market measures of return									
AR(E)	-0.001	-0.004	0.003	-0.003	0.002	**-0.006*** **	0.005	-0.002	**0.007**
	[-0.014]	[-0.017]	0.003	[-0.012]	[-0.009]	-0.002**	[-0.012]	[-0.026]	0.013***
	(0.015)	(0.017)	**-0.002*** **	(0.009)	(0.013)	**-0.004*** **	(0.040)	(0.083)	**-0.043*** **
AR(V)	0.006	0.003	0.003	0.003	0.008	**-0.006*** **	0.020	0.012	**0.008***
	[-0.010]	[-0.014]	0.004**	[-0.004]	[-0.003]	-0.002	[0.003]	[-0.012]	0.015***
	(0.015)	(0.019)	**-0.004*** **	(0.011)	(0.018)	**-0.007*** **	(0.040)	(0.085)	**-0.045*** **
Number of observations	2981	8841		8119	25296		4990	27332	
Panel C: Long-run stock market performance: Chaebol firms versus all non-chaebol firms									
HPR	6.609	6.149	0.459	0.109	0.451	**-0.342*** **	6.608	3.511	**3.096*** **
	[6.423]	[5.130]	1.293*	[-0.089]	[0.152]	-0.241***	[4.774]	[1.875]	2.899***
	(9.560)	(15.748)	-6.188**	(0.567)	(1.218)	**-0.651*** **	(31.124)	(57.325)	**-26.200*** **
Wealth relative	1.064			0.764			1.686		
	[1.211]			[0.790]			[2.009]		
Number of observations	37	124		106	282		48	281	

Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively

Debt-Capacity vs. Tax Advantages through Co-insurance Effect

Imperfect Correlation between their cash flows

Able to co-insure each other's debt

The debt capacity of chaebol firms should increase *!*

Increasing the size of the interest tax shields

Able to low tax burdens and less tax paid

[Table 6] Chaebols and the Debt-capacity

Panel A: Financial leverage summary statistics

	1984-1988			1990-1995			2001-2005		
	Chaebol firms	Non-chaebol firms	Difference	Chaebol firms	Non-chaebol firms	Difference	Chaebol firms	Non-chaebol firms	Difference
Total debt-to assets	0.754	0.718	0.036***	0.757	0.672	0.086***	0.537	0.506	0.031**
	[0.775]	[0.698]	0.076***	[0.760]	[0.660]	0.100***	[0.537]	[0.451]	0.086***
	(0.119)	(0.331)	-0.212***	(0.131)	(0.371)	-0.240***	(0.263)	(0.827)	-0.564***
Industry-adjusted leverage	0.035	0.016	**0.019***	0.078	0.012	**0.067*****	0.060	0.054	**0.006**
	[0.051]	[0.000]	0.051***	[0.078]	[0.000]	0.078***	[0.042]	[0.000]	0.042***
	(0.109)	(0.327)	-0.218***	(0.130)	(0.363)	-0.233***	(0.271)	(0.821)	-0.550***
Number of observations	255	791		682	2135		469	3996	

Panel B: Regression result on industry-adjusted leverage

	1984-1988		1990-1995		2001-2005	
	(1)	(2)	(1)	(2)	(1)	(2)
Intercept	0.178	0.094***	-0.241**	0.123**	-0.062	0.093***
	(0.558)	(0.000)	(0.044)	(0.014)	(0.631)	(0.000)
Chaebol dummy	**0.011**	**0.004**	**0.027***	**0.060*****	**0.018**	**0.037***
	(0.505)	(0.813)	(0.065)	(0.000)	(0.544)	(0.066)
Log of total assets	-0.005		0.020***		0.009	
	(0.767)		(0.002)		(0.229)	
Operating income/sales	-0.831***	-0.826***	-1.506**	-1.480**	-0.974***	-0.962***
	(0.000)	(0.000)	(0.019)	(0.021)	(0.000)	(0.000)
Capex/sales	-0.000	-0.000	-0.089***	-0.079***	-0.129	-0.129
	(0.923)	(0.926)	(0.003)	(0.009)	(0.395)	(0.395)
Number of observations	1046	1046	2815	2815	4458	4458
(Adj. R2)	0.037	0.037	0.113	0.109	0.045	0.045

Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively.

[Table 7] Interest tax shields and taxes paid

[Panel A]

	1984-1988			1990-1995			2001-2005		
	Chaebol firms	Non-chaebol firms	Difference	Chaebol firms	Non-chaebol firms	Difference	Chaebol firms	Non-chaebol firms	Difference
Taxes/sales	0.011	0.020	-0.009***	0.007	0.014	-0.007***	0.016	0.013	0.003*
	[0.008]	[0.015]	-0.007***	[0.004]	[0.009]	-0.005***	[0.014]	[0.008]	0.006***
	(0.011)	(0.018)	-0.007***	(0.008)	(0.018)	-0.010***	(0.027)	(0.103)	-0.076***
Industry-adjusted taxes	-0.004	0.001	**-0.005*** **	-0.003	0.003	**-0.006*** **	0.001	0.001	**-0.000**
	[-0.002]	[0.000]	-0.002***	[-0.003]	[0.000]	-0.003***	[0.001]	[0.000]	0.001
	(0.010)	(0.012)	-0.002***	(0.009)	(0.016)	-0.007***	(0.024)	(0.102)	-0.078***
Number of observations	255	791		682	2135		468	3996	

[Panel B]

	1984-1988		1990-1995		2001-2005	
	(1)	(2)	(1)	(2)	(1)	(2)
Intercept	0.023***	0.002**	0.013***	0.005***	0.045	-0.002
	(0.000)	(0.011)	(0.001)	(0.000)	(0.394)	(0.712)
Chaebol dummy	**-0.003*** **	**-0.005*** **	**-0.005*** **	**-0.006*** **	**0.003**	**-0.003**
	(0.005)	(0.000)	(0.000)	(0.000)	(0.579)	(0.308)
Log of total assets	-0.001***		-0.001**		-0.003	
	(0.001)		(0.035)		(0.422)	
Operating income/sales	-0.011*	-0.010**	-0.025**	-0.026**	0.109	0.106
	(0.093)	(0.050)	(0.012)	(0.010)	(0.445)	(0.447)
Capex/sales	-0.000***	-0.000	0.001	0.000	-0.031*	-0.031*
	(0.000)	(0.251)	(0.728)	(0.819)	(0.086)	(0.086)
Number of observations	1046	1046	2815	2815	4458	4458
(Adj. R2)	0.04	0.03	0.041	0.04	0.035	0.034

Statistical significance at the 1%, 5%, and 10% levels are indicated by ***, **, and * respectively.

[Table 8] Summary of the overall results

	1984-88	1990-95	2001-2005
Excess value Firm-level gap with non-chaebol Group-level: median Tobin Q (firm-level regression chaebol dummy	 +* +* +*	 -* -* -	 +* +* +*
Profit stability hypothesis	Yes*/No*	Yes*	No*
Accounting profitability	Low return and low variance*	Low return and low variance*	High return and low variance*
Stock market return	High return and low variance	Low return and low variance *	High return and low variance
Over-investment hypothesis(group/firm-level)	Yes*/No	Yes/Yes*	**No/No**
Performance hypothesis	- *	No	+*
Cross-subsidization hypothesis (regression)	No	Yes	Yes
Debt-capacity advantage (regression result)	No	Yes*	No
Tax advantage (regression result)	**Yes***	**Yes***	**No**

Korean Business Groups have dramatically changed over the two decades

1984-88	1990-95	2001-2005
Some chaebol advantage	Strong chaebol advantage	No chaebol advantage
Weaker cost of over-investment	Stronger costs of over-investment	No costs of over-investment
Negative performance impact	No performance impact	Strong performance impact
Premium	Strong discount	Strong premium
Family-owned and diversifying	Family-owned and diversified	Family-owned and diversified

Summary and Concluding Remarks

During the post-crisis period, over-investment and diversification hypothesis has no much explanatory power while cross-subsidization has much weakened,

and, more importantly, that profitability improvement is the main causes for the value premium associated with group firms.

While *profit stability hypothesis* was true for the 1990s, it was not so after the restructuring *as* chaebols boast higher profitability with less variation.

Chaebols were significantly more levered than non-chaebol firms only during the 1990s, and chaebol firm's tax shield advantages has now disappeared in 2001-2005, whereas there were some in the pre-crisis period.

<u>Implications:</u>

Not true: Agency cost view: same governance but different/better performance

Not true: market failure view: market maturing but turning to premium

Nature of the firms in emerging economies

= very dynamic and ever-evolving nature

Explaining Performance Change of Chaebols Before and after the Crisis: Technological capabilities vs. Investment Inefficiency

To prove resource-based view
(EDCC 2009)

3 Alternative Chaebol definitions

1) Top 30 business groups in terms of asset size

2) Among the top 30 business groups, select only those satisfying
   (affiliates' share)/(owner's share)
   > 0.7 => termed, CMS 1

3) owner' share < 20% => CMS 2

=> Criteria: Productive efficiency estimated from frontier production function

Productive Inefficiency comparison (CMS 1)

	period	coefficient	non-chaebol (A)	chaebol (B)	difference (B-A)	inferior chaebol (C)	superior chaebol (D)	difference (C-A)	difference (D-A)
CMS1 chaebols	85-89		**2.575**	**2.861**	**0.286**	**3.457**	**2.351**	**0.882**	**-0.224**
		t-value	147.57		6.24			11.76	-8.05
		[p-value]	***		***			***	***
	90-97		**4.596**	**4.663**	**0.067**	**5.263**	**4.297**	**0.667**	**-0.299**
		t-value	256.57		1.65			7.76	-13.76
		[p-value]	***		*			***	***
	00-03		**2.989**	**2.246**	**-0.743**	**2.843**	**1.719**	**-0.146**	**-1.270**
		t-value	221.12		-18.09			-4.27	-35.26
		[p-value]	***		***			***	***

1. The t-values are obtained using White's formula.
2. Positive value of "difference" means that chaebols are less efficient than non-chaebol firms ; using CMS 1 crteria

2 Causes for the Changes: Chaebol vs. non-Chaebol

(1) over-investment:

use residual from the investment function in the determinants of productive inefficiency equation

-> bootstrapping estimation and Hausman-Taylor

(2) technological capabilities:

patent counts and diversification

Chaebol vs. non-Chaebol: over-investment, patents, etc

	period	non-chaebol (A)	chaebol (B)	difference (B-A)	t-statistics (p-value)
Residual from Investment Function	85-89	1.37	5.94	4.57	2.05** (0.040)
	90-97	2.01	5.38	3.37	2.42** (0.015)
	00-03	1.81	0.49	-1.32	-1.23 (0.218)
Patents	85-89	0.94	40.76	39.82	2.73*** (0.007)
	90-97	3.92	240.00	236.08	3.55*** (0.000)
	00-03	10.33	215.60	205.60	2.97*** (0.003)
Size	85-89	9.20	10.61	1.41	14.80*** (0.000)
	90-97	9.41	11.19	1.78	27.59*** (0.000)
	00-03	9.45	11.48	2.03	23.80*** (0.000)
Diversity	85-89	0.35 [0.55]	1.04 [1.27]	0.69 [0.72]	7.20*** (0.000)
	90-97	0.47 [0.73]	1.23 [1.37]	0.76 [0.64]	14.72*** (0.000)
	00-03	0.44 [0.65]	1.13 [1.29]	0.69 [0.64]	10.50*** (0.000)

<Table 7> Determinants of Firms' Inefficiency (Chaebol Firm definition=CMS1)

		85-89				90-97			
	Model	HT	RE	HT	RE	HT	HT	HT	HT
Constant.	coef	2.78	2.10	2.76	2.25	4.40	4.32	4.41	4.33
	t-value	22.93	7.29	21.74	8.19	21.35	13.75	22.85	14.02
		***	***	***	***	***	***	***	***
Chaebol	coef	0.14	0.04			0.01	-0.004		
	t-value	1.65	0.45			0.10	-0.06		
		*							
Inferior Chaebol	coef			0.42	0.33			0.43	0.42
	t-value			4.62	3.49			3.72	3.45
				***	***			***	***
Superior Chaebol	coef			-0.11	-0.18			-0.19	-0.20
	t-value			-1.22	-2.09			-3.66	-3.21
					**			***	***
Size	coef		0.08		0.06		0.01		0.01
	t-value		2.65		2.11		0.31		0.30
			***		**				
Firm Age	coef	-0.001	-0.002	-0.0003	-0.001	0.004	0.004	0.004	0.003
	t-value	-0.35	-1.07	-0.13	-0.74	1.71	1.63	1.54	1.55
						*			
Residual from Investment	coef	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002
	t-value	5.81	5.94	6.26	5.67	3.50	3.85	2.88	3.09
		***	***	***	***	***	***	***	***
patent	coef	-0.0001	-0.0001	-0.0001	-0.0002	0.0000	-0.0000	-0.0000	-0.0000
	t-value	-0.09	-0.21	-0.16	-0.35	0.02	-0.01	-0.07	-0.08
diversity	coef	0.02	-0.02	0.01	-0.02	-0.02	-0.02	-0.05	-0.06
	t-value	0.43	-0.50	0.17	-0.59	-0.40	-0.60	-1.26	-1.26

<Table 7> (Continued)

		00-03			
	Model	RE	RE	HT	RE
Constant.	coef.	3.09	6.45	3.08	6.25
	z-value	25.90	39.92	23.85	35.20
		***	***	***	***
Chaebol	coef.	-0.71	-0.09		
	z-value	-6.94	-1.66		
		***	*		
Inferior Chaebol	coef.			-0.41	0.07
	z-value			-3.84	1.12
				***	
Superior Chaebol	coef.			-0.97	-0.29
	z-value			-11.16	-4.75
				***	***
Size	coef.		-0.39		-0.37
	z-value		-22.37		-19.96
			***		***
Firm Age	coef.	-0.01	0.0003	-0.01	0.0001
	z-value	-4.62	0.20	-4.31	0.12
		***		***	
Residual from Investment	coef.	0.001	0.001	0.001	0.001
	z-value	2.43	3.66	2.33	3.47
		**	***	**	***
patent	coef.	-0.0003	-0.0001	-0.0002	-0.0001
	z-value	-0.74	-0.46	-0.66	-0.41
diversity	coef.	-0.10	-0.05	-0.07	-0.04
	z-value	-3.89	-2.25	-3.30	-1.69
		***	**	***	*

Determinants of Productive Efficiency 1

Over-investment tendency was stronger among the Chaebol firms during the first two periods, whereas it became weaker after the 1997 crisis.

->smaller investment inefficiency among the Chaebol firms explains the higher productive efficiency of the Chaebol firms after the crisis.

Determinants of Productive Efficiency 2

"Technological capabilities measured by Patent applications and/or technological diversification," were not significant for the pre-crisis period but became more significant after the 1997 economic crisis.

->Higher technological capabilities contribute to higher productive efficiency in the post-crisis period.

Summary and Conclusion

Korean Chaebols in the 1990s suffered from productive inefficiency arising from inefficient investment drives.

Failure of many Chaebols before and during the crisis period implies that only those Chaebols that have succeed in curtailing investment inefficiency and building new technological capabilities have survived the crisis.

-> proving the resource-based view

Law of eventual decline of BGs with market maturing? : right and wrong

* A need to restate the thesis of institutional or market imperfection in predicting performance;

-> While market maturing have affected the performance of BGs, some survived the environmental challenges while others not.

=> No general "law" of long term decline of business groups with market maturing.

⇒ But importance of continuing evolution of firms & firm-level response to environmental changes

eg.) Seo, Lee, Wang (2010: ICC) on Chinese BGs: firm-level vs. market-level factors;

firm-level variables (agency costs) more important & robust

Performance Change of Business Groups in China

(a) Cofficients of Group dummy from Yearly OLS

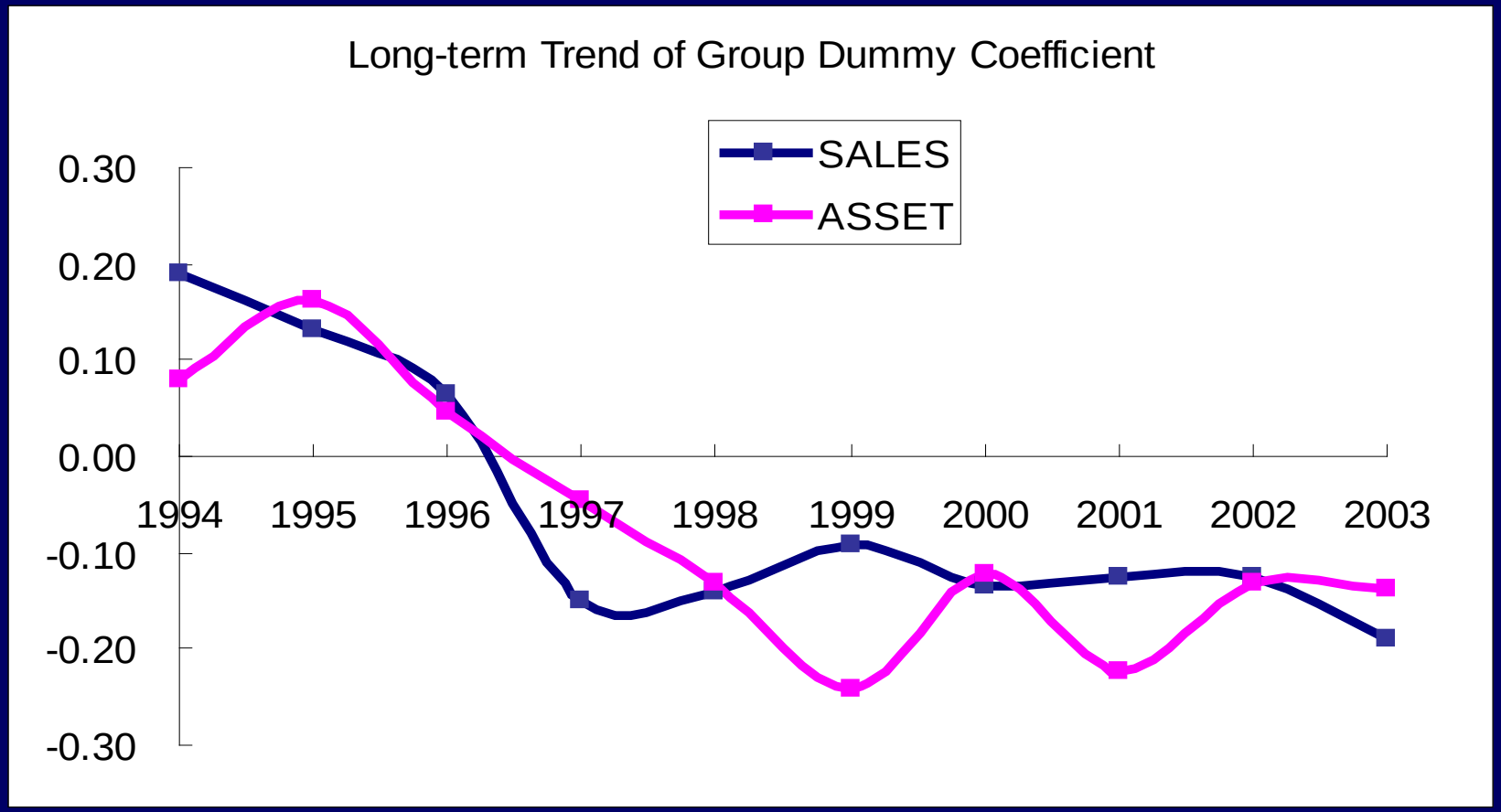


Table 14A: Determinants of Group Discount:
Overall with group firms defined as having 2 or more subsidiaries

	(A) EXCESS (SALES)			(B) EXCESS (ASSET)		
Regression	**OLS**	**FIXED**	**RANDOM**	**OLS**	**FIXED**	**RANDOM**
Group Dummy	-0.119 (-3.01) **	-0.082 (-1.79) *	-0.100 (-2.39) *	-0.070 (-2.82) **	-0.061 (-2.34) *	-0.073 (-2.88) **
INSTIT * Group Dum.	0.002 (0.12)	-0.008 (-0.56)	-0.005 (-0.37)	0.003 (0.42)	-0.012 (-1.61)	-0.006 (-0.76)
DIVER * TIME	**-0.029** (-2.96) **	**-0.027** (-3.14) **	**-0.034** (-4.02) **	**-0.026** (-4.45) **	**-0.014** (-2.94) **	**-0.025** (-5.07) **
LONGINV * TIME	-0.011 (-0.87)	-0.011 (-1.02)	-0.013 (-1.24)	**-0.013** (-1.71) *	-0.009 (-1.46)	**-0.011** (-1.78) *
INSTIT	0.028 (2.31) *	0.157 (7.09) **	0.069 (4.61) **	0.026 (3.36) **	0.179 (14.53) **	0.080 (8.76) **
DIVER	0.157 (2.56) *	0.222 (3.31) **	0.226 (3.79) **	0.075 (1.98) *	0.104 (2.85) **	0.152 (4.31) **
LONGINV	0.154 (1.48)	0.151 (1.63)	0.169 (1.87)	0.127 (2.08) *	0.070 (1.37)	0.096 (1.83) *
TIME	0.010 (1.46)	-0.051 (-4.33) **	-0.004 (-0.54)	0.029 (6.77) **	-0.023 (-3.62) **	0.018 (4.01) **

(note: Coefficients of other controls not shown here)

T.14-B: Overall Results with group firms defined as having 4 or more subsidiaries

	(A) EXCESS (SALES)			(B) EXCESS (ASSET)		
Regression	**OLS**	**FIXED**	**RANDOM**	**OLS**	**FIXED**	**RANDOM**
Group Dummy	-0.266 (-4.85) **	-0.121 (-2.14) *	-0.172 (-3.19) **	-0.138 (-5.79) **	-0.031 (-1.28)	-0.076 (-3.31) **
INSTIT * Group Dum.	0.011 (0.70)	-0.003 (-0.19)	0.007 (0.41)	0.012 (1.76) *	-0.021 (-3.01) **	-0.012 (-1.82) *
DIVER * TIME	**-0.089** (-6.14) **	**-0.070** (-5.78) **	**-0.079** (-6.72) **	**-0.025** (-3.93) **	**-0.020** (-3.98) **	**-0.022** (-4.32) **
LONGINV * TIME	**-0.069** (-3.77) **	**-0.040** (-2.80) **	**-0.043** (-3.02) **	**-0.013** (-1.67) *	**-0.015** (02.49) *	**-0.012** (-2.02) *
INSTIT	0.011 (0.85)	0.099 (3.41) **	0.064 (3.23) **	0.002 (0.28)	-0.012 (-1.01)	0.013 (1.53)
DIVER	0.499 (5.16) **	0.397 (4.23) **	0.442 (5.01) **	0.114 (2.72) **	0.190 (4.81) **	0.168 (4.44) **
LONGINV	0.764 (5.05) **	0.438 (3.75) **	0.465 (4.01) **	0.097 (1.58)	0.113 (2.30) *	0.090 (1.81) *
TIME	0.012 (1.16)	-0.018 (-1.07)	-0.006 (-0.55)	-0.012 (-2.60) **	0.242 (3.49) **	0.001 (0.23)

Coefficients of other controls not shown here

Summary on Chinese BGs

- **Literature on BGs:**

They emerge when there is market imperfections (high transaction costs);
So, they will disappear/decline with maturing of market institutions.

- **In China, there was similar decline of premium of BGs -> Why**
- **Weaker evidence: Market Institution Development;**
- **Stronger evidence:**

1) Increasing Market Competition/ Diversification Costs;
2) agency costs/Tunneling Problems

Imply: market failure hypothesis is not true:
(market institutions cannot change in such short time)
Consistent with the Korean chaebols: post-crisis turn-around with fully open market environment)
Conjecture: Chinese BGs also might turn around like Korean chaebols;
(advantage of resource sharing and so on)

Question?

What are the advantage of BGs,
which is not subject to market failure,

=>"Theorizing the Behavior of the Business Groups:
A Dynamic Model and Empirical Evidence
(JEBO 2010)

From Agency Costs to Resource-sharing advantages

Business groups have resource-sharing advantages.

The importance of this feature stems from the fact that this advantage need not disappear even with the development of free market institutions.

Chang and Hong (2000) who, using 1990s data, find that Chaebol firms tend to be associated with superior financial performance (profitability) due to group-level sharing of technology skills, advertising, and internal transactions.

Purpose of the Study

- To develop a formal model of business groups in light of Penrose's resource-based theory of the firm.
- To draw theoretical predictions about business groups behavior and performance relative to stand-alone firms.
- To provide empirical evidence using the Korean data.

Edith Penrose (1959),
A Resource-based View of the Firm Growth

Developed into:
capability based theory of the firm,
knowledge based theory of the firm,
and evolutionary theory of the firm

'The Legacy of Edith Penrose' (Pitelis 2002),
40th year anniversary of the Penrose book

Origins of our idea: from the Penrose (1959;95)

*Indivisibility:

“resources are only obtainable in discrete amounts (p. 67).”

“the least common principle”

-> “If a collection of indivisible resources is to be fully used, the minimum level of output at which the firm must produce must correspond to the least common multiple of the various maximum outputs obtainable from the smallest units in which each type of resources can be acquired.” (p. 68)

Basic Idea of the Model

There exists a “lumpy” input that cannot be traded in the market, such as Brand or R&D facility.

* Existence of such inputs gives business groups a distinctive advantage vis-à-vis stand-alone firms **since the affiliates can share the costs of acquiring such inputs and the usage of that resources.**

*** It is shown that such advantage exists regardless of market failures (cf. other papers).**
-> A stand-alone firm’s disadvantage stems not from its incapacity to get external financial arrangements but from its inability to acquire the wanted amount of the asset in the markets and/or utilize the resources to the optimal level (underutilization; cannot be leased on markets).

Lumpy input as a primary input

- Makes production capacity change only in discrete increments.

  ⇒ Dynamic process of such expansion is in line with the development path of a Penrose's resource-based firm.

- Differentiates business group firms and stand-alone firms.

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Prediction from the model on behavior of BGs

1) A BG charges a lower price than a stand-alone firm.
2) A BG produces a higher quantity than a stand-alone firm.
3) A BG invests more than a stand-alone firm.
4) A BG firm earns more profit than a stand-alone firm.
5) A BG has a higher profit margin on sales (ROS) than a stand- alone firm.
6) A BG has a lower profit-to-investment (ROE) ratio

<Table > A) random effect model(outliers excluded)

dependent variable		Operating income/ Assets	Operating income/ Sales	Assets Growth	Sales Growth	Capital/ Labor
cons.	coef.	5.10	4.02	8.62	6.57	49.67
	z-value	5.37	3.59	3.68	2.96	1.80
		***	***	***	***	*
BG.	coef.	0.12	0.92	3.75	5.30	97.61
	z-value	0.30	1.99	3.90	5.80	8.57
			**	***	***	***
age	coef.	-0.03	-0.02	-0.12	-0.13	0.25
	z-value	-2.15	-1.10	-3.62	-4.03	0.62
		**		***	***	
R-sq	within	0.0000	0.0000	0.0000	0.0000	0.0000
	between	0.2036	0.3251	0.1165	0.2131	0.3046
	overall	0.1107	0.1890	0.0240	0.0384	0.2546

Prediction from the model on behavior of BGs

1) Chaebol firms are more capital-intensive than non-Chaebol firms.
2) Chaebol firms grow faster than non-Chaebol firms in asset and sales.
3) Chaebols: higher ROS (return on sales) and similar ROA (return on asset)

$\Rightarrow$ All consistent with the model prediction

Now,
let us try to conclude

Understanding BGs with 3 Theories

1) Market Failure View-> Origins of BGs in EEs

2) Agency Costs (CMS; Governance) View
-> good at explaining (short run) performance
(in the 1990s)

3) Resource-based View
-> long term (fundamental) performance,
regardless of market failure
->corporate governance cannot explain
all aspect of performance

**** regardless of State-owned or family owned BGS**

Overall Remarks

1) Firms and BGs keep evolving; any judgment based on specific time period should be taken with caution

2) So, BGs still seem to be an useful forms of economic organization in terms of its competitiveness, such resource sharing, intangible asset, & entry devices, which are not to disappear with market maturing

3) In general, firm-level factors more important than environment-level factors (institutions)

4) remaining issue: full understanding of :
Korean firms = BGs + family firms (aggressive decision-making)
Chinese firms = BGs + state-owned enterprises (bureaucratic entreprenurs)

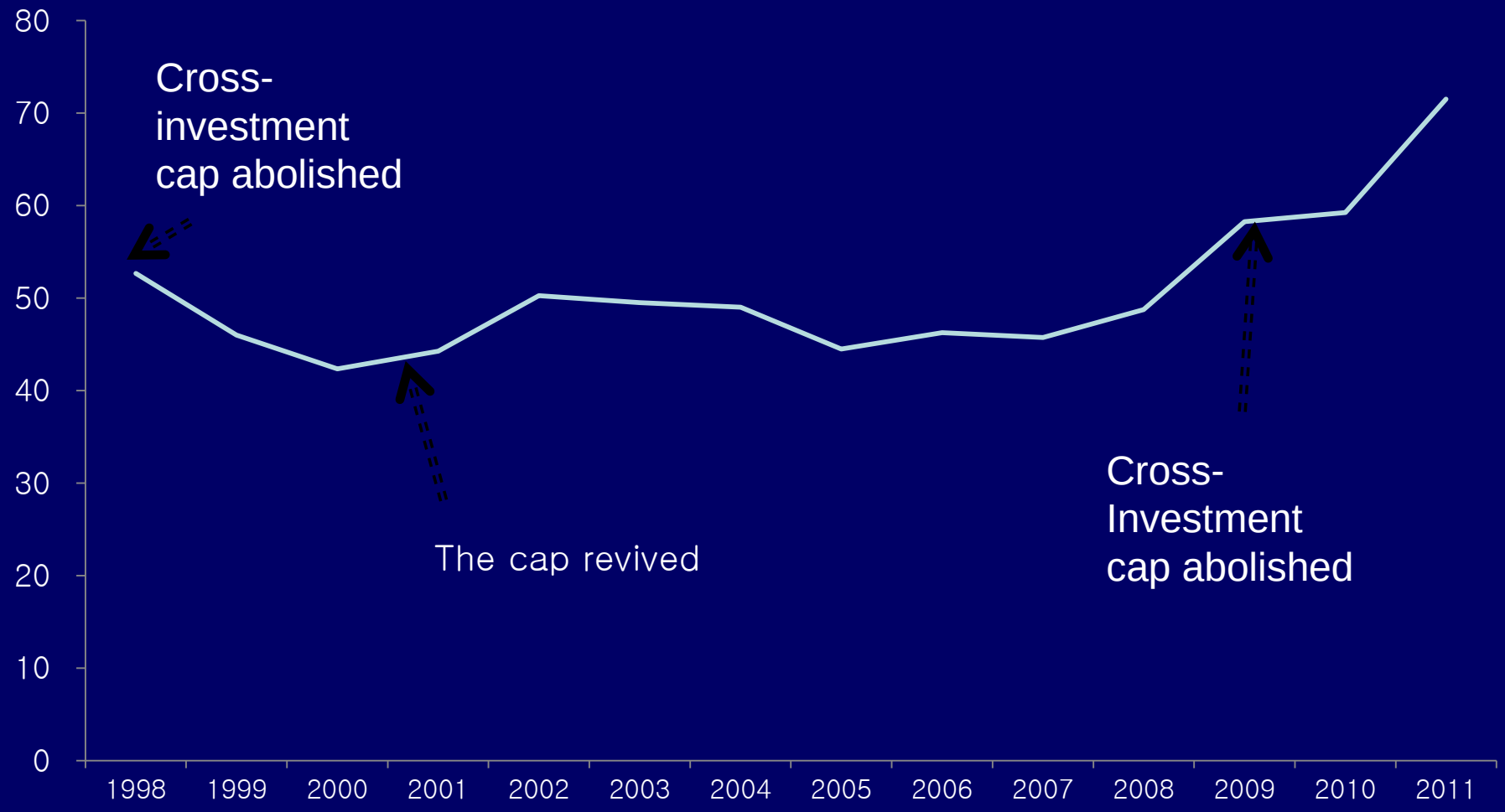
M. Aoki, 2012, Corporations in Evolving Diversity

	J-Firm	Hybrid 1	Hybrid 2	K-Firm
Ownership	high inter-firm	Low Inter-firm	High inter-firm	Family+inter-firm
	Low foreign	High Foreign	Low Foreign	High Foreign
Finance	bank	capital market	bank	Capital Market
Labor	Life time	Life /long term	shorter term	No long term
Incentive	Seniority	Seniority	Merit-based	Merit-based
Performance	Low	High	Medium	High
Management	Consensus	Consensus	In-between	Top-down

Korean BGs after 1997 crisis = Korean Head + A-firm Body
= Long term, quick decision-making and strong execution (with global and open looks)

Recent Evolution
of BGs in Korea
= neither much specialized nor less No.
of affiliates
but keep expanding
(at least until recently)

The average number of affiliated firms of 4 business groups: 1998-2011 (samsung, LG, SK, Hyundai motors)



No. of affiliates, Samsung group, 1993-2011

No. affiliates , SK group: 1993-2011

The average number of affiliated firms of 4 business groups

	Samsung	Hyundai Motor	LG	SK	Average
1998	61	_	52	45	52.7
1999	49	_	48	41	46.0
2000	45	_	43	39	42.3
2001	64	16	43	54	44.3
2002	63	25	51	62	50.3
2003	63	25	50	60	49.5
2004	63	28	46	59	49.0
2005	62	28	38	50	44.5
2006	59	40	30	56	46.3
2007	59	36	31	57	45.8
2008	59	36	36	64	48.8
2009	63	41	52	77	58.3
2010	67	42	53	75	59.3
2011	78	63	59	86	71.5

Source: Fair Trade Commission, Center for Free Enterprise
Note: Hyundai Motor Group has been separated from Hyundai Group since 2000.

Any lessons for Japan? Maybe:

1) BGs still effective organizational forms which keep evolving

2) BGs, a good device for entries into new businesses (internal capital market + resource sharing)

3) Evolution = Internal Inertia + External Shocks/intervention
(effective BGs need strong HQ)