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한국 재벌기업들의 수익성 결정요인에 대한 추세적 심층분석

Further Analyses on the Contemporary Changes of Profitability for the Firms Belonging to the Chaebol in the Republic of Korea

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요약

본 논문의 주제는 국제금융위기 전,후 시기를 포함하는 연구기간을 기준으로, 관련 유사 연구들이 현재기준 상대적으로 미약하다고 판단되는 국내 자본시장의 소위 재벌그룹 계열사(재벌기업)들의 시장가치와 장부가치 기준 수익성 지표들의 재무적 결정요인들에 대한 분석이다. 최근 국내 재벌기업들의 전반적인 수익성의 감소 추세와 그 중, 일부 기업들로의 비중 증가 성향을 고려하여, 동 수익성 결정요인에 대한 재무적 측면에서의 분석이 요구될 수 있다고 판단된다. 수익성 지표관련 3가지 가설검정 결과로 부터 다음과 같은 재무적 특징이 도출되었다: 첫째, 본 연구의 시계열과 횡단면적 자료 분석관련 패널자료모형 측정을 통한 수익성 결정요인 검정 결과, 장부가기준 수익성지표에 대한 통계상 유의적 변수들로서는 장부가와 시장가 기준의 부채비율들, 시가대비 장부가 비율, 순이익위험도, 자유현금흐름, 그리고 외국인지분율 등으로 판명되었고, 시장가 기준 수익성 결정요인으로는 부채비율(즉, 이자비용/영업이익) 만이 동 수익률에 유의적 영향력을 보였다. 또한, 공변량분석과 Tukey 다중비교분석을 이용한 산업별 수익성 차이 분석에 대한 2번째 가설검정 결과, 장부가 기준, 재벌기업과 비재벌기업 모두, 해당 표본산업들 중, 화학업종과 식품업종에서 상대적으로 높은 수익률을 나타난 반면, 시장가 기준으로는 재벌소속 기업들이 전자통신산업에서 최상의 수익성을 나타내었다. 마지막으로 조정된 '듀퐁시스템'을 이용한 재벌기업과 비재벌기업간의 수익성 해당 요인별 분석에서는 '영업이익매출액' 비율과 '총자산회전율' 요인들에서, 전자가 후자인 비재벌소속 기업들보다 상대적으로 상위수준임을 모수와 비모수 통계적 측정치를 통하여 유의적으로 판명되었다.

■ 중심어 : | 수익성지수 | 국내자본시장 | 패널자료분석 | 공변량분석 | 조정된 듀퐁시스템 |

Abstract

This study addresses an empirical issue which has been received little attention in the contemporary finance literature: To identify any financial determinants of the profitability indices for the firms belonging to the Korean chaebol. Three hypotheses of concern were postulated and tested for the sample firms covering the periods of the pre-and post-financial global crises. Regarding the results on the 1st hypothesis test of characterizing any financial profiles for the firms (belonging to the chaebols) by estimating a legitimate panel data model, the present study found the statistically significant relationships of the explanatory variables (BVLEV1, MVLEV1, MV/BV, RISK, FCFF and FOS) with the book-value based profitability ratio, while the market-valued profitability index was explained only by BVLEV2. Regarding the 2nd hypothesis test for the profitability of the sample firms at the industry level, the chaebol firms in the chemical and the food industries overall positioned themselves into the top ranks in order, which was tested by the ANCOVA and the Tukey multiple comparison procedure. Finally, on the 3rd hypothesis test for the 'adjusted' Dupont system, only two such as the 'operating margin' and the 'asset turnover' showed their significant effects between the chaebol firms and their counterparts in both the (parametric) independent samples t-test and the (nonparametric) Wilcoxon-Mann-Whitney statistics.

■ keyword : | Profitability Index | Korean Capital Markets | The Panel Data Model | ANCOVA | Adjusted Dupont System |

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I. Introduction

This research investigated one of the contemporary issues, which may address the on-going decreasing trend of profitability of the firms belonging to the chaebols, the Korean business conglomerates, at the national level, coupled with a increasing or even intensified concentrativeness by a few top ranked chaebols in size in terms of aggregated profit level, expecially in the period of the post-global financial crisis. This phenomenon may subsequently suggest that any probability to improve the level of current profitability of the firms classified into the chaebols, the so-called as 'chaebol-firms', seems to increase by identifying and examining any financial determinants of profitability for the firm at the industry and the corporate levels. The profitability level of 16 of the Korean chaebolss in 2012 was deteriorated to levels below those recorded during the global financial crisis in 2008 as reported in the Korea Joongang Daily as of Nov. 4, 2013. To recap, the 501 domestic firms listed in the KOSPI stock market decreased their average profit margin 4.7% and 4.51% (on yearly basis) in the first half of the fiscal year of 2011 and 2012, respectively, and only four out of the twenty Korean chaebols were estimated to improve their margin ratios such as Samsung Group earned up to 67.7% and Hyundai Motor Group increased by 22.2% over the past four years (from 2008 to 2011). Moreover, it may be of great concern or interest to find these explanatory attributes from the foreign and/or domestic institutional perspective due to the increasing and pervasive trends of aggregate corporate profits at the national level, attributed, in large part, to most multinational Korean chaebol-firms, given the dynamically changing corporate circumstances affected by the on-going and anticipated bilateral or trilateral FTAs(Free Trade Agreements), and TPPs(Trans-Pacific Partnerships).

The main motivations to perform this particular study were as follows: First, from a policy-maker and/or a corporate manager's standpoint, the level of profitability for the firms in the chaebols may, in general, be improved or recovered from their downward or sluggish trend by identifying its attributes or determinants as described earlier. Even if the chaebol firms may be reassessed in ambivalent ways in the history of the Korean capital markets, it may not be possible to undervalue their contributions to the development of the current national economy or wealth since the 1960s[1]. Second, across the pre- and post-periods of the global financial crisis. it seemed to be of interest or use to find any consistent and robust results on the financial characteristics of the profitability level for the Korean firms by comparing or taking into account those results obtained in major previous researches such as in [2] and [3]. For example, Kim & Berger[2] provided evidences such that there was a linkage between the size variable and the financial characteristic of the chaebol-firms. In other words, the larger is the size of a firm, the higher was the probability that a firm is belonging to the chaebol one. Moreover, there were inverse relationships between the higher profitability of a firm and lower growth rate, and the probability to be classified into the chaebol one, respectively, whereas the proposed financial proxies for business risk was not a significant determinant discriminating between a chaebol firm and its counterpart. In the study by Kim[3], the finding of a negative association between the leverage ratios and a firm's profitability may suggest that the sample firms headquartered in the Chungcheong province seemed to keep higher capital structures from their optimal points, while a positive relationship between size and profitability existed during the studied period. Thereby, any

statistical generality derived from the results may well be applied to improve or enhance the level of profitability more than the existing level. Finally, there may be few researches on the issue examining the possible determinants of profitability, especially for the firms in the emerging capital markets after the global financial crisis, which can be effectively utilized for the Korean chaebol firms by foreign institutions considering to make domestic investments in the type of FDI(foreign direct investment) or indirect portfolio diversification, given the prevalent and anticipated capital transfers through the vehicles of FTAs or TPPs.

This study was composed as follows: Following the introduction section, the second section chronologically reviews the previous and recent major literature related to the international and domestic financial attributes of the financial aspects of the firms, including profitability. The subsequent section discussed the data collection and the methodologies applied to this particular study, and any plausible analyses and untraversed implications were also presented, based upon the results obtained from each corresponding hypothesis test in the fourth section, which was finally followed by the concluding remarks.

II. Literature Review

In this section, the previous literature on determinants of the financial subjects including the profitability level was chronologically reviewed and summarized, which were directly or indirectly related to those of the firms belonging to the chaebol in Korea and had also frequently been referred to as major researches in the finance literature such as [1] and [2]. Kim & Ham[4] performed an empirical study to find any possible determinants on the six financial analysis indices such as profitability, growth, and liquidity for the firms headquartered in the 'Chungbuk' regional province in Korea. In their study, it was found that debt ratio and growth rate among the explanatory variables, showed their statistically significant and negative (for debt ratio) and positive (for growth rate) relationships on the profitability, respectively. On the growth rate measured in sales amount, the following three variables were found to be significant as possible characteristics: size, debt, and asset utilization ratio. The study in [2] investigates two prolonged controversial issues concerning Korean chaebols vs. non-chaebols. The Korean chaebol can be thought of, in a macro sense, as similar to the Japanese Keiretsu, although there are several differences listed in the study. One of the issues investigated is whether firms belonging to the Chaebol in Korea have different market-value based debt ratios than their counterparts not belonging to the chaebol. If this is so, there are several managerial implications. The results indicate that firms in the chaebol may have a higher mean leverage than their counterparts. The other issue addressed, utilized a logistic regression analysis to determine that firms belonging to the chaebol appeared to possess different levels of the following characteristics in comparison with firms not belonging to the chaebol: larger size measured by total sales, higher sales growth rate, lower profitability.

Park et al.[5] performed two sets of tests to analyze the differences between the chaebol firms and the non-chaebol ones and also between more levered and less levered chaebols. Regarding the first result, the significant relationship was found between the investment and their growth opportunity for the chaebols, while the reverse was true for the

non-chaebols. Second, they presented that more statistically significant relationships were found between the investments and the growth opportunities, as the chaebol firms were reducing their levels of leverage.

The study by Goddard et al.[6] indicated their tested results on the financial profiles affecting two performance indicators such as profitability and growth of the firms belonging to the eleven European nations, for the sample period from 1992 to 2000, utilizing a variance decomposition analysis(VDA). The proposed determinants entered into the models were the proxy variables measuring country, industry, corporate group, and firm effects. While the results implied that the effects arising from the firm and the corporate group proxies showed their largest contributions accounting for the variation of both the profit rate and growth rate, the magnitudes of all of the variables may be smaller in the latter one(i.e., the growth rate) than in the former one. Choi[7] also investigated any financial differences between the rising (or survived) and the failing chaebols during the 1997 financial crisis. This study found that there were no statistically significant differences in terms of inside ownership between the two chaebol-related groups, after controlling for the size effect. The failing group was also found that they were more diversified than their counterparts mainly due to the lower cost of borrowing, which thereby resulted in the decreasing net income. On the effect of capital structure on profitability utilizing the U.S. sample firms, Gill et al.[8] examined the financial aspect of profitability to obtain more robust results applicable to cross-border cases. They employed three types of proxies for the independent variables for leverage such as short-term, long-term, and total debt to find any effects on the dependent variable, ROE. The other variables such as size, sales growth, and industry, were also controlled in each applied regression model. While there were positive relationships between short-term and total debt ratios, and profitability in both the manufacturing and the service industries, the results on the long-term leverage ratio were not consistent between the two industries. However, no statistically significant relationships between profitability and the other three control variables were generally found in their study.

From foreign and/or domestic investors' perspectives, it may be interesting to find any financial attributes or profile of the firms headquartered in 'Chungcheong' province in South Korea concerning profitability, given that this subject so far drew less attention in the previous literature as tested in [3]. This study performed three hypothesis tests on the profitability indicator by utilizing the models such as the 'panel data' one and the 'logistic' regression one, applying a modified 'Dupont' system. With respect to the major findings, the results identified that the proxies measuring leverage across the book-value(BVLEV1) and the market-value (MVLEV1) bases, were statistically significant constituents determining profitability. Another explanatory variable, SIZE, with its positive and statistically significant relationship to the indicator, represented that the firms in the province were smaller than their counterparts in the other regional areas in Korea. DRELY applying a modified 'Dupont' system, found to be the only statistically significant discriminating factor between these comparison groups. As one of the primary contributions of this study, the outcomes may be used by the financial institutions operated across the regions including Seoul Metropolitan area, when implementing their lending practices to provide funds for potential borrowers such as the firms belonging to 'Chungcheong' province.

One of the recent studies, Kim[1] examined a long-standing issue with its perverse results in the Korean capital markets, such as any variant financial profiles over time, affecting capital structure for the firms belonging to the chaebols. It may be of interest to identify these components from the perspectives of international investors and domestic policy makers to implement their contingent strategies on the target leverage, since the U.S. financial turmoils in the late 2000s. Regarding the evidence from the three hypothesis tests on the firms in the chaebols, this research found that the control variables measuring profitability, business risk, and non-debt tax shields, showed their statistically significant relationships with the different types of a debt ratio. In line with the results obtained from the present research, one may expect that a firm in the Korean chaebol, may control or restructure its present level of capital structure to revert to its target optimal capital structure towards maximizing the shareholders' wealth.

III. Data Collection and Methodologies

1. Data Collection

The followings were major criteria to finalize the sample firms employed in the primary hypotheses tested in the research.

Table 1. Sampling Criteria for the Korean firms

1. All the data including profitability indices for each sample firm, were available for at least six years from 2006 to 2011, including the global financial turmoil occurred in 2008.
2. The sample firms were listed on the KOSPI market at the end of December 2011. They were also included in the databases of New KisValue (published by the NICE in Korea).
3. The largest 13 corporations ranked by asset size, were selected for each corresponding industry whose classifications or definitions were matched with those adopted in [19].
4. The criteria to classify a firm as belonging to the chaebol, followed the guideline by the Fair Trade Commission in the Republic of Korea, such that it was belonging to a 'large business group', subject to the limitation on cross-shareholding.
5. A firm in the chaebol was assigned as '1' (as a dummy variable) and '0' for a non-chaebol firm.
6. Financial and regulated industries were not included in the final sample.

1.1 Variable Employed

1.1.1 Dependent Variable(DV)

The various dependent variables(DVs) were employed in this study to find any consistent and robust results over the sample period to identify the statistically significant determinants comprising the level of profitability as follows:

First, one of the book-value based profitability ratios, BPFT1, which rationaled its financial implications, was employed as a DV in this study. In other words, the index(BPFT1) called as 'Basic Earning Power(BEP)' defined as EBIT(earnings before interest and taxes)/total assets in finance, implied the relationship with the cost of debt and both of which are also the same or interacted at the financial break-even point(FBEP) as described in Kim[18]. Second, for a complement to the BPFT1 measured in a book-value basis, another profitability index was applied as a market-value related DV(MPFT1) , which was defined by [total liabilities at book plus preferred equity at book and common equity at market] divided by [EBIT plus depreciation & amortization]. This specific ratio was employed as a contemporary market-valued ratio of enterprise value to the operating cash-flow of a firm defined as EBITDA(earnings before interes, taxes, and depreciation & amortization) as followed below. Subsequent to this ratio, an alternative market-valued ratio(MPFT2) to proxy for profitability was tested, which was defined by the ratio of market value of equity minus the book-valued one as presented in [10].

<The profitability indices tested in the study>

(1) BPFT1 = EBIT(earnings before interest and taxes) / Total Assets

(2) MPFT1 = [total Liabilities at book-value plus preferred equity at book-and common equity at market-value] / [EBIT plus depreciation & amortization]

(3) MPFT2 = [market value of equity minus book-valued one]

1.1.2 Independent Variable(IDV)

As an empirical procedure was implemented for this study in a legitimate and redundant way, selecting most representative proxies for proposed explanatory variables or IDVs, may be one of the most imperative parts to identify any determinants or elements explaining the profitability level of the chaebol firms in the Korean capital markets. To find any consistent and robust results from the hypothesis tests of the study, the following major criteria were considered to select the proxy variables as in the studies of [3] and [9]:

First, major variables(IDVs) which had higher commonalities in the previous literature, were mostly employed in this study to test for each corresponding hypothesis, since they were rationaled and expounded by traditional or contemporary finance theories to date.

Second, this study also utilized identical or similar independent variables to those in the previous studies such as [1] and [3] as proposed determinants of financial subject including profitability, thereby enhancing the possibility of reinforcing the consistency and robustness of the findings of the various studies examined across the different time periods and the sample firms.

Third, all the data comprising each variable, (IDV or DV), should be available from the New KisValue database as described in [Table 1].

Table 2. Definition of IDVs employed

Definition	Proxy Variable	Measurement
Leverage	BVLEV1	Book value of liabilities / Total assets
	BVLEV2	Interest expenses / EBIT
	MVLEV1	Book value of liabilities / (book value of liabilities plus book value of preferred equity plus market value of common equity)
Size	SIZE	Logarithm transformation of sales amount at fiscal year-end
Business risk	RISK	Standard deviation of net income during the sample period
Market- to book- value of equity	MVBV	Market value of equity / book value of equity
Growth	GROWTH	Annual average compound growth rate in sales during the sample period
Foreign ownership	FOS	Foreign ownership of each KOSPI listed sample firm
Free cash flow	FCFF	Earnings after corporate taxes – (net changes of the amount of assets during a fiscal year)
Industry	Ind	IND1 = 1 if industry = food. 0, otherwise; IND2 = 1 if industry = pharmaceutical1. 0, otherwise; IND3 = 1 if industry = chemical. 0, otherwise; IND4 = 1 if industry = semiconductor & communication. 0, otherwise; IND5 = 1 if industry = construction. 0, otherwise; (Base industry = the wholesale industry)
Fiscal year	fyear	f2007 = 1 if a fiscal year is '2007'. O, otherwise; f2008 = 1 if a fiscal year is '2008'. O, otherwise; f2009= 1 if a fiscal year is '2009'. O, otherwise; f2010 = 1 if a fiscal year is '2010'. O, otherwise; f2011 = 1 if a fiscal year is '2011'. O, otherwise; (Base fiscal year = the year of 2006)
Chaebol	CBOL	CBOL = 1 if a firm belongs to the chaebol, 0, otherwise.

(Note) Most of the explanatory variables applied to the previous related literature such as [1] and [3] were re-employed as the IDVs for this study as

described, in order to reinforce or validate the consistency and robustness of the outcomes obtained.

To recap, each IDV as a control variable may be rationalized as follows, to enter into each corresponding model for the present study. First, leverage ratio may show its linkage to the profitability indicator with a negatively expected sign of its coeffcient. The Korean chaebol firms, overall, seemed to be burdened by financial costs resulting from their higher debt ratios precipitated, in part, by subsidized financing from the government as tested in [2] and [19] In the empirical study by [20], a negative relationship between the two financial attributes was also presented for the Korean firms. Second, a firm's size measured by the logarithm of sales amount may have an negative impact on profitability as implied by the results in [2]. This phenomenon may be, as a consequence, attributed to any possible inefficiencies of management by the chaebol firms, arising, in part, from the vast integrations for new subsidiaries, which may have connotation with the myth of 'too big to fail' in the history of the Korean capital markets. Another proxy for measuring business risk may maintain a negative association with the DV, based upon the management rationale such that a product buyer or custmer tends to purchase an equivalent quality of products provided by a firm possessing a lower bankuptcy risk represented by a lower level of earnings volatility. Moreover, the expected signs of both coefficients proxied for MV/BV and GROWTH were likely to be positive in relation to profitability of the chaebol firms, taking into account that a firm with higher growth opportunity may generate larger net present value(NPV), thereby resulting in more profit or earnings as suggested in [18]. Finally, concerning the other explanatory variables such as FCFF and FOS, it is generally perceived in the domestic capital market that more free cash flow to the firm seems to be available for the chaebol firms due to their cash management on a more conservative basis which may pass any valuable investment opportunities generating new earnings as presented in [1]. Moreover, the direction of the coefficient of FOS(foreign ownership) tends to be positively associated with the profitability indicator due to exercising relatively superior management skills and being involved in a less degree of agency cost of debt as described in [20] The following table summarizes the expected sign or direction of each IDV relative to the profitability of the sample firms.

Table 2-1. Anticipated Direction of Each Coefficient for the IDVs Relative to Profitability

Proxy Variable	Expected Sign of Each Coefficient
LEVERAGE	(−)
SIZE	(−)
RISK	(−)
MV/BV	(+)
GROWTH	(+)
FCFF	(−)
FOS	(+)

2. Methodologies Applied

The methodologies utilized in this research was determined by each corresponding hypothesis test performed as follows:

<Hypothesis 1>

H_0: A firm belonging to the chaebol in the Republic of Korea may not maintain any statistically significant financial determinants of the profitability index by applying a panel data analysis.

To investigate any possible financial attributes affecting the profitability level, a panel data analysis was adopted to regress each selected DV on the explanatory or independent variables to derive the statistical outcomes of each model. The followings

were the primary criteria to select the 'best' appropriate model in this study, as described in [11]:

Table 3. Method for the Panel Data Analysis

Fixed Effect(Wald test)	Random Effect(BP test)	Hausman Test	Final Model Selected
H0 Accepted	H0 Accepted	(N.A.)	Pooled OLS
H0 Rejected	H0 Accepted	(N.A.)	Fixed effects model
H0 Accepted	H0 Rejected	(N.A.)	Random effects model
H0 Rejected	H0 Rejected	H0 Accepted	Random effects model, otherwise fixed effects model

<Hypothesis 2>

H_0: A firm classified into the chaebol may not maintain any statistically significant and different profitability levels, depending upon its corresponding industry classification.

Coupled with the test for examining any industry effects among the chaebol-firms, a firm not belonging to the chaebol, the 'non-chaebol firm', was tested to find for any existence of the different profitability level as a complement. As for the methodology to identify any industry influences, the analysis of covariance(ANCOVA) was applied as in [12] and [13]. In particular, the covariate as a proxy for a firm's size in the ANCOVA model was chosen as the sales amount at the fiscal year-end (instead of total assets), since utilizing the latter may result in serious biases on the results of the tes,t due to the misspecification of the relationship between the covariate (proxied by total assets) and the dependent variable defined as EBIT/total assets as presented in Aggarwal[14]. Moreover, the Tukey(T) method was employed to simultaneously make all pairwise comparisons among the sample industries as *a posteriori* test of the ANCOVA. Regarding the procedure, it was evaluated as a statistically significant difference between a pair of treatments, (i.e., industries) if the absolute mean difference between them was larger than the critical range which was calculated by multiplying the studentized range, Q statistic, by the square root of [mean square error/the number of cases per each equally sized treatment), as explained in [13].

<Hypothesis 3>

H_0: A firm in the chaebol may not possess any statistically significant discrepancies in the financial components composing the 'adjusted' Dupont system.

It is of interest to further analyze each component composing one of the traditional profitability measures, return on equity(ROE), which was frequently utilized and applied in the field of finance from the academic's and practitioner's points of view as in [3]. The following equation was used as an 'adjusted' Dupont system, in which each component was analyzed and statistically compared between the chaebol firm and the non-chaebol one during the sample period byapplying the independent samples t-test (as a parametric one) and the Wilcoxon-Mann-Whitney test (as a non-parametric one), as presented in [1]:

ROE = Sensitivity of Non-operating Charges x Operating Profit Margin
x Assets Turnover x Equity Multiplier
= [Net Income / EBIT] x [EBIT / Sales]
x [Sales / Total Assets]
x [Total Assets / Equity}

IV. Analyses and Interpretations

1. Analyses

1.1 Descriptive Statistics

In the following tables, the descriptive statistics were presented for the sample firms belonging to the chaebol over the studied period covering the pre- and post-global financial crises (from the year of 2006 to 2011).

Table 4. Descriptive Statistics for each IDV in the Model

IDV	N	Mean	Median	STD	Maximum	Minimum
BL	199	0.57	0.61	0.16	0.92	0.15
ML	199	0.53	0.53	0.23	0.97	0.10
SZ	199	1.32E13	5.97E12	2.54E13	1.65E14	4.17E11
G	199	0.12	0.12	0.08	0.34	.-0.04
M	199	1.38	1.20	0.98	7.16	0.16
R	199	3.05E11	8.59E10	7.05E11	3.84E12	1.01E9
FC	199	9.20E10	3.12E10	1.04E12	6.94E12	-3.95E12
FS	199	19.14	14.59	15.25	63.38	0

(Note) N=Number of firms classified into the chaebols, STD=Standard deviation BL=BVLEV1, ML=MVLEV1, SZ=SIZE, G=GROWTH, M=MVBV, R=RISK, FC=FCFF, FS=FOS

Table 5. Pearson's Correlation Coefficient Matrix between IDVs employed in the Model

IDV	BL	ML	SZ	G	M	R	FC	FS
BL	1.00	N.A.	-0.09	-0.01	-0.06	-0.21*	-0.09	-0.27*
ML	N.A.	1.00	-0.01	0.07	-0.63*	-0.24*	-0.02	-0.28*
SZ			1.00	0.10	-0.07	0.73*	0.22*	0.12
G				1.00	-0.09	0.03	0.04	-0.04
M					1.00	0.09	-0.03	0.10
R						1.00	0.14*	0.02
FC							1.00	-0.06
FS								1.00

(Note) *: denotes a statistically significant at 5% level, N.A.: Not Applicable

For reference, the above matrix for the correlation coefficients was constructed to combine the two separately tested IDVs (such as BVLEV1 as BL and MVLEV1 as ML) in one table, [Table 5], which were independently employed in each corresponding hypothesis test, as illustrated later.

1.2 The Results of the 1st Hypothesis Test

The followings were the outcomes resulting from panel data models on the first hypothesis, 'a firm classified into the chaebol in Korea may not possess any statistically significant financial determinants of profitability, whose results were presented in [Table 6] and [Table 7].

Table 6. The Results employing a Panel Data Model for the DV of BPFT1

(Model 6-1) For a book-value based profitable index(BPFT1) as a DV with including the IDV of BVLEV1

BPFT1it = 0.05 - (1.65E-16)SIZEit
(t-statistic) (2.42)* (-0.90)
- 0.05BVLEV1it + 0.04GROWTHit
(-2.52)* (0.96)
+ 0.02MVBVit + (2.11E-14)RISKit
(7.09)* (3.23)*
+ (8.63E-15)FCFFit + 0.0005FOSit + 0.02IND1it
(3.02)* (2.44)* (1.45)
+ 0.01IND3it - 0.04IND4it - 0.01IND5it
(1.41) (-3.72)* (-1.40)

- 0.009f2007 + 0.02f2008
(-0.97) (1.91)
+ 0.002f2009 + 0.005f2010 + 0.003f2011
(0.18) (0.53) (0.28)

F-value* = 9.46, R^2= 46.09%,
Adjusted R^2=41.22%

(Note: * indicates that the independent variable (IDV) is statistically significant at the 5% level.)

(Model 6-2) For a book-value based profitability index(BPFT1) as a DV with including the IDV of MVLEV1

BPFT1it = 0.06 - (8.94E-17)SIZEit
(t-statistic) (3.01)* (-0.48)
- 0.06MVLEV1it + 0.04GROWTHit
(-3.18)* (0.99)
+ 0.01MVBVit + (1.84E-14)RISKit
(3.78)* (2.80)*
+ (8.77E-15)FCFFit + 0.0005FOSit + 0.02IND1it
(3.11)* (2.13)* (1.52)
+ 0.01IND3it - 0.04IND4it - 0.01IND5it
(1.42) (-3.98)* (-1.37)

- 0.01f2007 + 0.02f2008
(-1.14) (2.02)*
+ 0.001f2009 + 0.004f2010 + 0.002f2011
(0.14) (0.47) (0.22)

F-value* = 9.87, R^2= 47.16%,
Adjusted R^2=42.39%

(Note: * indicates that the independent variable (IDV) is statistically significant at the 5% level.)

The best models selected by the panel data analysis on the DV of the book-value based profitability as BPFT1, were the 'pooled-OLS' regression ones for the both regressions with employing the BVLEV1 and MVLEV1, respectively, according to the selection criteria described. For example, either the fixed effects(FE) model or random effects(RE) model was not was not chosen as the most appropriate one, based upon the corresponding statistics such as Breusch-Pagan(BP) test and Hausman test. For reference, the dummy variable(IND2) proxied for the pharmaceutical industry among the total sample industries, was not entered into the above models, given that all the sample firms belonging to this particular industry were classified ito the non-chaebol ones, according to the guidelines by the Fair Trade Commission in the Republic of Korea, as described earlier.

Table 7. The Results employing a Panel Data Model for the DV of MPFT1

(Model 7-1) For a market-value based profitable index(MPFT1) as a DV with including the IDV of BVLEV2

MPFT1it = 14.61 − (1.24E−13)SIZEit
(t-statistic) (2.06)* (−1.14)
+ 4.11BVLEV2it + 8.56GROWTHit
(20.10)* (0.35)
+ 2.84MVBVit + (2.49E−12)RISKit
(1.49) (0.65)
− (1.88E−12)FCFFit − 0.0003FOSit − 7.34IND1it
(−1.11) (−0.002) (−1.06)
− 0.28IND3it + 4.18IND4it − 0.09IND5it
(−0.05) (0.67) (−0.01)

+ 0.38f2007 + 0.12f2008
(0.07) (0.02
+ 0.31f2009 − 0.95f2010 + 0.82f2011
(0.05) (−0.17) (0.14)

F-value* = 27.60, R^2= 71.38%,
Adjusted R^2=68.80%

(Note: * indicates that the independent variable (IDV) is statistically significant at the 5% level.)

(Model 7-2) For a market-value based profitability index(MPFT1) as a DV with including the IDV of MVLEV1

MPFT1it = 22.88 − (1.57E−13)SIZEit
(t-statistic) (1.02) (−0.77)
+ 3.57MVLEV1it − 21.07GROWTHit
(0.17) (−0.48)
− 0.13MVBVit + (3.49E−12)RISKit
(−0.03) (0.49)
− (2.94E−12)FCFFit − 0.32FOSit − 4.22IND1it
(−0.96) (−1.32) (−0.32)
+ 5.61IND3it + 7.50IND4it + 15.91IND5it
(0.57) (0.62) (1.46)

+ 0.39f2007 − 0.39f2008
(0.04) (−0.34)
− 0.41f2009 + 13.35f2010 − 2.31f2011
(−0.04) (1.30) (−0.22)

F-value = 0.72, R^2= 6.09%,
Adjusted R^2 = − 0.02%

The best models selected through the panel data analysis for the market-value based profitability ratio measured by the MPFT1, were also selected as the 'pooled-OLS' regression ones for the both equations including the BVLEV2 and MVLEV1 as the IDVs, respectively, as shown in [Table 7]. However, it was notable that BVLEV2 was substituted as an explanatory variable in (Model 7-1) instead of the BVLEV1 due to the statistically insignificant results of the corresponding model tested by the F-statistics (i.e., p-value was larger than the pre-specified level of significance as less than 5%) by employing the latter leverage ratio (BVLEV1). Meanwhile, the market-value based profitability ratio for a firm belonging to the chaebol was not statistically explained by the employed components including the market-value based leverage IDV (MVLEV1) as shown in (Model 7-2), which was calculated by the overall goodness of fit test, (i.e., p-value of the F-statistic was 0.7742). Accordingly, none of the individual IDVs was not statistically significant with its coefficient in the model, (Model 7-2).

Table 7-1. The Summary of the Results of the 1st hypothesis test with Statistically Significant IDVs

DV for profitability	IDV significant at the 5% level	The sign of coefficient
BPFT1 (with BVLEV1)	BVLEV1	(-)
	MVBV	+
	RISK	+
	FCFF	+
	FOS	+
	IND4	(-)
BPFT1 (with MVLEV1)	MVLEV1	(-)
	MVBV	+
	RISK	+
	FCFF	+
	FOS	+
	IND4	(-)
	F2008	+
MPFT1 (with BVLEV2)	BVLEV2	+
MPFT1 (with MVLEV1)	None of the coefficient was found to be significant as described above.	

1.3 The Results of the 2nd Hypothesis Test

It was of interest to look into the level of profitability across the sample industries in terms of their ranks measured by the ANCOVA and the subsequent Tukey(T) multiple comparison procedures, as previously described. The following tables depicted the output obtained from the tests to examine any industry differences for the firms belonging to the chaebol and the non-chaebol as their counterparts, respectively.

Table 8. P-value from the ANCOVA on the Profitability indices for the sample industries

DV for Profitability	Chaebol firms (p-value)	Non-chaebol firms (p-value)
BPFT1	〈0.0001	〈0.0001
MPFT1	0.4431	0.7548
MPFT2	0.0004	〈0.0001

(Note) BPFT1 = EBIT/Total Assets,

MPFT1 = [Total Liabilities at book-value plus Preferred Equity at book and Common Equity at market-value]/[EBIT plus Depreciation & Amortization], MPFT2 = [Market value of equity minus book-valued one]

As explained, the covariate entered into the ANCOVA was sales amount to avoid or reduce any mis-specification of the relationship between the covariate represented by total assets and the dependent variable, and the p-values in the above table investigating any industry differences among the sample, indicated the results derived from the Type Ⅲ sums of squares in the statistical package(SAS), since a unique contribution of each industry effect was to be analyzed, as also described in [13].

Table 9. Results on the Industry Multiple Comparisons by utilizing the Tukey(T) Pairwise test for the 'Chaebol' Firms

BPFT1 to test for industry profitability level					
Industry number	3	1	5	4	6
Grouping	A	A			
			B	B	B
MPFT2 to test for industry profitability level					
Industry number	4	5	1	6	3
Grouping	A	A	A		
		B	B	B	B

Table 10. Results on the Industry Multiple Comparisons by utilizing the Tukey(T) Pairwise test for the 'Non-chaebol' Firms

BPFT1 to test for industry profitability level						
Industry number	2	1	3	5	6	4
Grouping	A					
		B	B	B	B	
						C
MPFT2 to test for industry profitability level						
Industry number	2	6	4	1	3	5
Grouping	A					
		B	B	B	B	
						C

The denotations for the 'Industry number' in the above tables were the food industry as '1', the pharmaceutical industry as '2' the chemical as '3', the semiconductor & communication as '4', the construction as '5' and the wholesale as '6', respectively. (In the sample of the chaebol firms, the pharmaceutical industry as '2' was not applicable, as presented above.) The order of 'Industry number' was arranged by the descending rank order according to each corresponding industry DV mean (e.g. from the largest mean of the industry 3 and then the industry 1 to the least one of the industry 6 for BPFT1 to test for the level of profitability for the chaebol firms as in [Table 9]. 'Grouping' indicated that any industry numbers that did not show statistically significant differences among themselves (by the Tukey multiple comparison procedure), shared the same alphabet such as 'A' and 'B' in the above tables.

1.4 The Results of the 3rd Hypothesis Test

Concerning the 3rd hypothesis test performed in this study, an 'adjusted' Dupont formula revised from the traditional one was employed as illustrated. In other words, ROE(return on equity) was statistically compared between the firms in the chaebols and the non-chaebols and, in subsequent, each component comprising the 'adjusted' formular was analyzed between the two comparison groups. To enhance the robustness of the test results, both the independent samples t-test (as a parametric test) and the Wilcoxon-Mann-Whitney test (as a non-parametric one) were simultaneously implemented for each analysis for mutual complement. The following table presented the outcomes from the statistical tests on this hypothesis investigated.

Table 11. Results on the parametric(t-statistic) and nonparametric(z-statistic) for an 'adjusted' Dupont system between the firms in the chaebols and their counterparts

IDV	t-stat	p-value	z-stat	p-value
ROE	-1.69	0.091	4.77	<.001*
NIEBIT	-0.62	0.539	-2.23	0.820
EBSALE	-2.14	0.033*	1.98	0.048*
SAASSET	-4.25	<.001*	2.273	0.023*
AEQUITY	-0.51	0.607	2.67	0.008*

(Note 1) *: statistically significant at the 5% level
(Note 2) ROE: Return on Equity,
NIEBIT: Net Income/EBIT, EBSALE: EBIT/SALES,
SAASSET: Sales/Total Assets,
AEQUITY: Total Assets/Equity

2. Interpretations

As *a priori* test for this study, a stepwise multiple regression analysis was performed to discern the profitability indices between the firms belonging to the chaebols and the non-chaebols. Among the three indices such as BPFT1, MPFT1 and MPFT2, two ratios(BPFT1 and MPFT2) were shown to be statistically and significantly explained by the dummy variable represented by CBOL for a chaebol firm assigned as '1' after controlling for any time effects over the sample period from the year of 2006 to 2011. In other words, a firm in the chaebol overall maintained higher level of profitability than their counterparts measured by both BPFT1 (as EBIT/total assets) and MPFT2 (as a difference between the market- and book-value equity). This result was inconsistent with the findings from Cho[15] and Kim & Berger[2], which had showed a lower profitability of the chaebol firms, mainly arising from the lower net present value(NPV) realized after making excessive investments engaged in the capital-intensive industries during the 1980s. Therefore, the result may suggest that a firm grouped in the chaebol may contemporarily more diversify

their investments or portfolios at the industry level in their domestic and/or overseas operations toward increasing their profitability during the current studied period.

Regarding the implications analyzed from the results from the 1st hypothesis test, several major IDVs including the two differently measured leverage ratios (such as the BVLEV1 and MVLEV1), showed their statistically significant effects on the book-value based profitability ratio(BPFT1) as presented in [Table 6]. The following may be major financial or managerial implications on these results: First, the book-and the market-valued debt ratios had the significant and negative relationships with the profitability level of the chaebol firms, indicating that they may keep lower profitability resulting from maintaining higher capital structures. While Gill et al.[8] presented a positive relationship of the leverage ratio with profitability. mainly due to taking advantage of interest tax shield, the findings of this study were consistent with those obtained from the study by Kim[3], in which the relationship was examined between profitability and leverage ratio for the regional firms listed in the KOSDAQ stock market. Therefore, it was plausible that the robustness and consistency on these negative relationships seemed to be reinforced across the firms belonging to the chaebol firms listed in the KOSPI and the firms listed in the KOSDAQ market in the Korean capital markets. Chang[16] also found the negative relationship between the profit rates of the chaebol firms and debt ratios. Furthermore, in the context of the traditional finance theory, a 'net-income' based profitability ratio such as ROE and ROA(return on assets) seemed to be rationalized any negative relationship to the capital structure of a firm, primarily due to the increasing cost of debt. However, the BPFT1 as the DV tested in this study was based upon an 'EBIT' based index, (not a 'net income' based one), presenting its negative association with the capital structure of a firm. Based upon this phenomenon, it may be inferred that a firm belonging to the chaebol may need to prefer equity over debt financing, if the projected EBIT is less than a financial break-even point(FBEP) at which BPFT1 and the cost of debt were the same, as illustrated in [13]. Second, the MV/BV variable employed by Fama & French[17] was used to explain the level of a firm's financial distress or profitability, presenting that a firm with lower earnings (or profitability) tends to have high book-to market-value(BE/ME) (i.e., low MV/BV) and positive coefficient of HML(the difference between the return of a portfolio of high-and low-BE/ME and vice versa. In association of their findings, this study also found a statistically significant and positive relationship between the MVBV and the book-valued profitability measure for a chaebol firm as presented in [Table 6]. From a shareholder's perspective, one of the implications evidenced by this situation was the rationale in finance that a firm including the Korean chaebol one which tends to maintain high MV/BV (or Price to Book Ratio(PBR)), may possess more profitable investment project or higher reinvestment rate(ROE), than its peer group, since the PBR is the ratio of [ROE - a growth rate of a firm] / [Required rate of return -growth rate of a firm] as described in Kim[18]. Third, RISK factor as a proposed determinant for a chaebol firm showed its significant and positive effect on the DV of BPFT1 across the (Model 6-1) and (Model 6-2). The proxy for the business risk being estimated by the standard deviation of net income, (not by the one of EBIT in many previous researches) seemed to be more practically applicable measure to the Korean conglomerate of chaebol, since most chaebol firms

traditionally relied upon higher financial burden than their counterparts in external financing([2], [19]), which may result in larger degree of financial leverage(DFL) related to interest expenses, as described in Kim[1]. Based upon the results of business risk on the profitability of the chaebol firms in this study, it may be concluded that they achieved the rates of return from their operating activities commensurating with the business risk as rationaled in the context of the finance theory on the relationship between risk and return. Moreover, two other explanatory variables such as FCFF(free cash flow to the firm) and FOS(degree of foreign ownership), were both identified as statistically significant and positive influences on BLVEV1. On the former significant IDV as FCFF, it was of interest that the 'positive' relationship between the IDV and BVLEV1 may inform meaningful suggestion on the current level of profitability of the chaebol firms in Korea. In other words, if the variable redefined as [EBIT(1-corporate tax rate) + depreciation & amortization] - [capital expenditure + changes in net working capital] moves with the DV in a same direction (i.e., positive coefficient), the level of profitability of the chaebol firm may not be generated from the increasing capital expenditure(CAPEX) and/or increasing net working capital(NWC) related to the decrease of accounts payable(A/P) in comparison of those amounts in the previous fiscal year. Therefore, current profitability of the chaebol firms seemed to be changed, not in accordance with the CAPEX and relatively short-term operating activities, but by long-term capital investments generated by the increasing EBIT. Moreover, it may be possible that the level of cash disbursements from the Korean chaebol firms to their affiliates or suppliers may not increase in return for the level of A/P over the sample period of this study. Concering possible interpreation on the positive foreign ownership proportion(FOS) to BPFT1, it may, in large part, arise from a enhanced management efficiency by preventing against any unanticipated mismanagement such as moral hazard by exercising a controlling function of foreign ownership as presented in [20] and also by taking advantages of any superior information possessed by the foreign institutional investors operating in a wide spectrum of overseas markets in the context of the information asymmetries. For reference, the overall proportion of foreign ownership seemed to decrease in the post era of global financial crisis mainly due to the shrinkage of global financial markets as in [21]. On the other hand, the market-value based profitability index, MPFT1, was not explained by any of the explanatory variables including the book- and market-valued leverage ratios, both of which had been utilized for BPFT1 in [Table 6] as well. As described earlier, an alternative leverage ratio defined by [Interest Expenses/EBIT], (i.e., BVLEV2 substituted for BVLEV1), was re-employed in the above model and then, it was found that there was a statistically significant and positive association between the two variables such as BVLEV2 and MPFT1 in [Table 7]. This finding may suggest an interesting and intriguing implication that one of the most practically adopted leverage ratios (BVLEV2) for the Korean firms as in [9], showed only significant and positive effect on the market-value measured profitability index, MPFT. Therefore, it was plausible that one of the most statistically significant characteristics was at least the debt ratio(BVLEV2) for a firm belonging to the chaebol in Korea to determine the level of the market-valued profitability which was defined by the basis of total enterprise value at market.

Regarding the results on the 2nd hypothesis test in [Table 8], it was evidenced that industry influences were statistically significant on the DVs of BPFT1

and MPFT2 across the chaebol and the non-chaebol firms, which was tested by the ANCOVA. By using *a posteriori* test of the Tukey(T) multiple comparison, each level of profitability among the sample industries was arranged in a descending rank-order as presented in [Table 9] & [Table 10]. For example, the food and the chemical industries belonging to the sample 'Grouping' had overall higher levels of the book-value based profitability ratio for both the chaebol and the non-chaebol firms over the sample period, while the semiconductor & communication and the wholesale industries showed their lower profitability among the peer industries. Secondly, the rank of the market-valued profitability(MPFT2) for the semiconductor & communication industry was the highest, but the lowest for the chemical one at market value for the chaebol firms. These phenomena may be in association with the following expositions in modern finance: A firm in a mature stage such as one in the food industry, may maintain higher profitability with its relative stable earnings in comparison with its counterpart belonging to other industries in the pre-and post-periods of the global financial crisis. This exposition or rationale seems to be theoretically reminiscent of the higher leverage ratio of a firm in a mature industry suggested in [13]. Moreover, after the recessionary stage of the petrochemical industry due to the declining demand from Asian nations arisen mainly from the oil price hike since the year of 2000 in [19], the domestic large firms including those in the chaebols operated in the chemical industry, seemed to improve their profitability levels afterwards, as the passage of economic cycles moving toward their mature stages. Meanwhile, among the sample industries in which the chaebol firms were operating their business activities, the firms in the semiconductor & communication industry as the I/T related economic sector, seemed to be evaluated to possess higher growth opportunities which may be reflected in the market value of the corresponding firm in the same industry, while the market price of the chaebol firms in the domestic chemical industry may be relatively undervalued during the tested period, in spite of its highest level of the book-valued profitability (among the sample industries), as previously illustrated.

The 3rd hypothesis test to distinguish the components comprising the 'adjusted' Dupont system between the firms classified into the chaebols and their counterparts was implemented and described in [Table 11] for the results. The statistical test procedures were performed in both the parametric test (as the independent samples t-test) and the nonparametric one (as the Wilcoxon-Mann-Whitney test) for each determinant, respectively, for mutual complement to enhance the robustness of the results. Overall, the ROE proxy for a reinvestment rate, revealed their statistically significant discriminating power between the two comparison groups (i.e., the chaebol vs. the non-chaebol one) in these parametric and the nonparametric results. (For example, the means the ROE were 8.56% and 1.06% for the chaebol and the non-chaebol firms, respectively.) This evidence may suggest that, from a shareholder's standpoint, the profitability level was much higher for the former group than its counterpart in the Korean capital markets during the studied period. In particular, two components such as EBSALE (as operating profit margin) and SAASSET (as assets turnover) out of the total four factors in the 'adjusted' Dupont system, were analyzed to have significant disparities between the two groups. To be more specific, the mean values of the EBSALE and SAASSET for the chaebol firms were 5.84% and 1.31X, while those figures were 4.09% and 1.04X for

their counterparts, respectively. As a conclusion drawn from this analysis of the 'adjusted' system, it seemed to be evident that, in association with its statistically significant two determinants, the firms belonging to the chaebols continued to keep higher profitability (measured in ROE) than their counterparts over the investigated period, by taking advantages of their superior management skills and/or strategic policies, which had been commonly believed in the domestic capital markets.

V. Concluding Remarks

This paper addresses statistical identification of any possible characteristics or determinants comprising the level of profitability of the firms belonging to the chaeabol in the Republic of Korea, which was tested on the basis of the book-and the market-value ratios. It may not be underestimated the contemporary and anticipated persistent and pervasive degree of the economic contributions of the chaebol firms at the domestic industry and firm levels, given the dynamically changing economic or business circumstances associated with the on-going bilateral or trilateral FTAs(Free Trade Agreements) including the pact between Korea, China, and Japna as described in [22] and also TPPs(Trans-Pacific Partnerships).

The major motivations to implement this research were as follows: First, to date, it seemed to draw little attention on the issue of the profitability indices of the chaebol firms, especially in the studied periods comprehending the pre-and the post- global financial crises, which may, in turn, be usefully referred to by domestic as well as foreign institutions. Second, from a perspective of corporate policy maker, the level of profitability for the chaebol firm may be regressed or improved by identifying the possible characteristics of profitability, if there may be a foreseeable decreasing or recurring sluggish pace on the profitability measured in this study. Finally, it was another motivation of this research to find out any outcomes through the passage of time investigated and across different levels of the development of the capital markets (such as the advanced and emerging ones) toward enhancing consistency and robustness.

This study postulated three hypotheses to be tested on the proposed components of profitability for the chaebol firms. In the 1st hypothesis test to determine any statistically significant attributes, the book-and the market-valued leverage ratios showed their significant and negative effects on the book-valued profitability index of the firms, indicating that they may maintain lower profitability resulting from maintaining higher level of debt. Among all of the IDVs employed in the panel data model, MV/BV, RISK, FCFF and FOS, were also found to be significant on the level of profitability. In association with the results evidenced by the 2nd hypothesis test, they indicated that industry influences were statistically significant on the book-valued BPFT1 and the marker-valued MPFT2 across the chaebol and the non-chaebol firms, which was tested by the ANCOVA. Furthermore, *a posteriori* test of the Tukey(T) multiple procedure was subsequently performed to derive the outcomes such that a chaebol-firm operated in the mature stage industry with stable earnings stream such as the chemical and the food industries, on average, maintained the highest profitability at book-value, while those in the semiconductor & communication industry related to the I/T business sector, showed the highest market-valued mean-profitability among the sample industries. Finally, regarding the findings derived from the 3rd hypothesis test, it was found that the

estimated means of the EBSALE and SAASSET as part of the components comprising the 'adjusted' Dupont system for the chaebol firms were consistently higher than their counterparts(i.e., the non-chaebol firms), as the ROE itself also showed the same result between the two comparison groups, as presented earlier.

This study, as part of an empirical-oriented research, may be involved in the same or similar disadvantageous features to the previous literature, such as the possibility of obtaining any discerned results, which may be, in part, resulted from utilizing the different sample data and methodology applied and therefore, warrant further investigation. However, the findings obtained from each corresponding hypothesis test comprehendeding the pre-and post-global financial crisis periods, may have a beneficial use for an incumbent management for both a foreign and a domestic corporate organizations, given the current progress of the Korean capital markets scheming to be classified into the advanced one, which may well, in large part, depend upon the levels of the profitability of the chaebol firms.

참 고 문 헌

[1] H. Kim, "A Review on the Contemporary Changes of Capital Structures for the Firms belonging to the Korean Chaebols," Journal of the Korea Academia-Industrial Cooperation Society, Vol.15, No.1, pp.1-16, 2014.

[2] H. Kim and P. Berger, "The Management Characteristics of Korean Chaebols vs. non-Chaebols: Differences in Leverage and Its Ramifications: Myth or Reality?," Advances In Management, Vol.2, No.2, pp.26-35, 2009.

[3] H. Kim, "A Review on the Financial Profile of Profitability for the KOSDAQ Listed Firms Headquartered in 'Chungcheong' Province in the Republic of Korea," Journal of the Korea Academia-Industrial Cooperation Society, Vol.14, No.11, pp.1-16, 2013.

[4] J. Kim and C. Ham, "An Empirical Study on the Characteristic of Financial Structure in Chungbuk Regional Firms," Hoegye-Yeongu, Vol.10, No.2, pp.355-377, 2005.

[5] D. Park, J. Yun, and B. Cho, "A Research on the Determinants of Investment of Chaebol Firms," The Korean Journal of Financial Management, Vol.26, pp.35-61, 2009.

[6] J. Goddard, M. Tavakoli, and J. Wilson, "Sources of Variation in Firm Profitability and Growth," Journal of Business Research, Vol.62, pp.495-508, 2009.

[7] J. Choi, "A Comparison of Management Structure between the Rising and Falling Chaebols," The Korean Journal of Industrial Organization, Vol.18, pp.79-100, 2010.

[8] A. Gill, N. Biger, and N. Mathur, "The Effect of Capital Structure on Profitability: Evidence from the United States," International Journal of Management, Vol.28, No.4, pp.3-16, 2011.

[9] H. Kim, "Further Investigations on the Financial Attributes of the Firms listed in the KOSDAQ Stock Market," International Journal of Contents, Vol.9, No.2, pp.27-37, 2013.

[10] E. Brigham, F. Houston, H. Jun-Ming, K. Kee, and A. Bany-Ariffin, *Essentials of Financial Management*, Cengage Learning, 2013.

[11] H. Park, "Practical Guides To Panel Data Analysis," 2011. http://www.iuj.ac.jp/faculty

[12] D. Scott, Jr. and J. Martin, "Industry Influence on Financial structure," Financial Management, Spring, pp.67-73, 1975.

[13] H. Kim, "Inter- and Intra-leverage Analyses

for Large Firms in the United States and Korea," Journal of Asia-Pacific Business, Vol.10, No.1, pp.34-64, 2009.

[14] R. Aggarwal, "International Differences in Capital Structure Norms: An Empirical Study of Large European Companies," Management International Review, Vol.27, pp.75-88, 1981.

[15] D. Choi, *Hankuk Chaebol Yeungu*, Mail Kyeongje Shinmun Sa, Seoul, 1991.

[16] S. Chang, *Financial Crisis and Transformation of Korean Business Group*, Cambridge University Press, 2003.

[17] E. Fama and K. French, "Size Book-to-Market Factors in Earnings and Returns," Journal of Finance, Vol.50, No.1, pp.131-155, 1995.

[18] C. Kim, *Business Analysis*, Myung-gyeong Sa, Seoul, 2012.

[19] H. Kim, "Financial Leverage of Korean Business Conglomerates "Chaebols" in the Post-Asian Financial Crisis," Journal of the Korea Academia-Industrial Cooperation Society, Vol.12, No.2, pp.699-711, 2011.

[20] H. Kim, "Determinants of Leverage for Manufacturing Firms Listed in the KOSDAQ Stock Market," Journal of the Korea Academia-Industrial Cooperation Society, Vol.13, No.5, pp.2096-2109, 2012.

[21] H. Kim, "Financial Profile of Capital Structures for the Firms Listed in the KOSPI Market in South Korea," Journal of the Korea Contents Association, Vol.13, No.11, pp.829-833, 2013.

[22] J. Noh and Z. Ko, "Improvement of the Legal System and Constraints on the Investment Between Korea, China and Japan," Journal of the Korea Contents Association, Vol.13, No.12, pp.702-714, 2013.

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