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The Effect of Control–Ownership Disparity on Cost Stickiness* **

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Abstract

Purpose - If control–ownership disparity is large, managers will not actively reduce costs; rather, they will maintain unutilized resources or possess surplus resources even when sales decrease with the purpose of increasing personal utility from status, power, compensation, and prestige. These managers' utility maximizing tendencies cause cost stickiness. We examine whether asymmetric behavior related to costs becomes stronger when there is a large disparity between ownership and control rights.

Research design, data, and methodology - We construct a regression model to examine the relationship between control–ownership disparity and cost stickiness. STICKY, a dependent variable representing cost stickiness is a value found using the method of Weiss (2010), and Disparity is an interest variable that shows control–ownership disparity.

Results - This study is based from the unique situations in Korea, in which high control–ownership disparity is common in firms. Large control–ownership disparity was found to increase cost stickiness of corporations.

Conclusions - The results of this study imply that controlling shareholders may be regarded as a threat to the interests of minority shareholders and corporate values especially when controlling shareholders have significant influence over managers or the power to make managerial decisions as owners of a corporation.

Keywords: Control–Ownership Disparity, Wedge, Chaebol, Agency Problem, Cost Behavior, Cost Stickiness.

JEL classifications: G32, M41.

1. Introduction

Conglomerates dominate Korean economy. However, absolute power corrupts many leaders of these conglomerates, as evidenced by many reports of incidents related to owners of Chaebol groups. Monitoring of major shareholders and supervision of management is lacking in

these organizations, which results in irresponsibility of management due to underdeveloped governance structures. Owners of conglomerates operate within a deformed system characterized by control–ownership disparity in which internal shares (shares owned by owners, their relatives, and affiliated companies) of over 55% are secured, while less than 1% of shares are directly owned by external shareholders (i.e., circular share holding). In this system, owners cannot be prevented from making damaging decisions or infringing upon the benefits of other shareholders for their own interests. Under these circumstances, the voting rights of other shareholders are frequently violated and business transactions do not reflect the essence of shareholder capitalism.

In Chaebols, controlling shareholders (i.e., the owner's family members), who are in charge of managing these Korean corporations, commonly exercise more voting rights than shares that they actually own; the result is often an extremely large discrepancy between ownership and control, known as control–ownership disparity. Control–ownership disparity refers to the difference between shares directly or

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indirectly owned by controlling shareholders of a corporation and shares that can be directly or indirectly exercised by the controlling shareholders. A large control–ownership disparity suggests that the controlling shareholders own very few shares, but have high voting power. The difference between ownership and control rights can be exacerbated by a pyramidal share ownership structure and mutual (circular) share holding. Such disparities are characteristic of emerging markets and developing nations such as Korea, Thailand, Indonesia, and the Philippines (La Porta et al., 1999; Claessens et al., 2000; Faccio & Lang, 2002). Korean conglomerates are representative organizations with large disparities between ownership and control rights caused by pyramidal ownership structures or circular share holding. The most salient characteristic of Korean conglomerate ownership structures is that a controlling shareholder (such as the founder or his family member) owns the largest share, directly or indirectly participating in management to exercise control over the corporation. Therefore, the agency problem is very evident in Korea; it can be seen to occur between managing owners and minority shareholders, unlike in other countries in which governance mechanisms are strong, such as the United States.

Corporate managers have better access to and are more likely to use internal information about their corporations in comparison to minority shareholders and ordinary investors. When the disparity between ownership and control rights is high, managers have an incentive not to reduce costs despite declining sales because of their private spending. That is, the agency problem resulting from control–ownership disparity can have a significant impact on asymmetric cost behavior within corporations. A large control–ownership disparity is expected to increase opportunistic behaviors such as private spending, thereby increasing asymmetric cost behavior.

Previous studies have investigated various factors affecting cost stickiness. Anderson et al. (2003) argued that asymmetric cost behavior can be related to the pursuit of private benefits by managers. Therefore, it is necessary to verify whether cost stickiness is increased by the agency problem. In the literature, there has been no direct discussion about this. One study (Chen et al., 2012) indirectly inferred a relationship between the agency problem and cost behavior by investigating the effect of governance structure on cost stickiness.

To examine the situation in Korea, in which the agency problem results from the disparity between ownership and control rights, we directly test the argument of Anderson et al. (2003) by examining the effect of the control–ownership wedge on asymmetric cost behavior. Since the management entrenchment effect is greater in corporations with large control–ownership disparities in terms of control rights compared to the interest alignment effect in terms of ownership rights, cost asymmetry resulting from the agency problem is expected to be intensified in corporations with

large control–ownership disparity. This study contributes to the literature by discussing the effect of the agency problem on cost behavior based on the Korean situation, which is characterized by large disparities between ownership and control rights.

2. Literature Review and Hypotheses

Looking at research related to cost behavior of corporations, we see that earlier studies focused on asymmetric cost behavior. Anderson et al. (2003) empirically demonstrated, using selling and administrative expenses, that cost behavior can be asymmetric, and many follow-up studies also reported an association between various items and sticky costs. Anderson et al. (2003) argued that the ultimate incentive for a corporate manager to make decisions or actions inducing cost stickiness is related to pursuit of his or her own private benefits. This decision to maximize one's own utility is a major factor influencing agency costs. For instance, since downsizing and dismissal of employees who share the same interests may lower a manager's status, he or she may attempt to retain corporate resources in order to increase utility rather than utilizing them to improve corporate value. This results in cost stickiness.

Based on this reasoning, Anderson et al. (2003) and many subsequent studies seem to conclude that the major cause of sticky cost behavior is the agency problem resulting from the difference in interests between shareholders and managers. However, studies that directly examine the relationship between the agency problem and asymmetric cost behavior are hard to find. Chen et al. (2012) attempted to take a causative approach to stickiness by presenting the view that empire-building and privileged spending of managers induce asymmetric costs. However, studies that examine direct causes are still lacking.

Although no direct relationship between sticky cost behavior and the pursuit of private benefits by managers has been demonstrated in empirical research, the agency problem between controlling shareholders and minority shareholders has been examined more frequently. The agency problem is characteristic of corporations in East Asia, including Korea, unlike in developed nations, where share ownership is well dispersed and legal and institutional devices for protection of minority shareholders are readily available. When there is a control–ownership disparity, controlling shareholders benefit from decision-making in proportion to the number of shares they own and can only bear as much risk from decision-making as the number of shares they own. High control–ownership disparity increases the ability of controlling shareholders to make decisions that oppose corporate values (Fan & Wong, 2002). Also, when controlling shareholders effectively retain their control rights,

systems such as the board of directors, audit committee, and internal controls cannot fulfill their intended functions of monitoring and regulating controlling shareholders (Shleifer & Vishny, 1997; La Porta et al., 1999; Johnson et al., 2000).

Anderson et al. (2003) conducted an empirical study on asymmetric cost behavior. They tested the hypothesis that changes in cost differ when corporate activity levels increase and decrease, arguing that this cost asymmetry is related to pursuit of private benefits by managers. For example, managers have a strong tendency to avoid making decisions that reduce their own personal utility, such as downsizing and dismissal of well-known employees. They also avoid actively reducing surplus resources when sales decrease, thus showing sticky cost behavior.

Stickiness of selling and administrative expenses and general expenses was clearly addressed in the study of Anderson et al. (2003), but it is hard to find direct evidence on whether such stickiness is actually related to pursuit of private benefits by managers. In a related study, Chen et al. (2012) explained the empire-building incentive of managers as follows: managers tend to expand or maintain controllable resources for their own privileged spending purposes because they have easier access to internal information about corporations compared to other shareholders and investors. However, the study of Chen et al. (2012) measured the agency problem based on managers' ownership of stock options. Therefore, the findings of Chen et al. (2012) cannot appropriately be generalized and applied to Korea because stock options are not often used in Korea. Korean business organizations often have pyramidal governance structures and cross-ownership of shares, which causes a discrepancy where in the number of voting rights of controlling share holders exceeds the number of dividend rights. This is known as the share ratio disparity. The larger the difference between voting rights and dividend rights, the more likely it is that controlling shareholders will neglect the rights of minority shareholders for their own private benefits or transfer benefits to another company with a higher-quality share ratio by means of internal transactions (Morck et al., 1988; Shleifer & Vishny, 1997; Claessens et al., 2000; Faccio & Lang, 2002). The adverse effects of pyramidal governance structures are very clear in Korea, where protection of minority shareholders is minimal (La Porta et al., 1999). Accordingly, we examine whether managers focus more on increasing their own personal utility than on maximizing corporate profit through cost allocation when the control-ownership disparity is large based on characteristics of governance structure in Korean firms. When the disparity is large, sticky cost behavior is evident, as managers avoid actively reducing costs in pursuit of their own private benefits, including maintenance of status, when sales temporarily decrease. Furthermore, cost stickiness will increase when managers neglect long-term adjustment costs and make decisions to withdraw resources committed to current projects or discretionary fixed costs. Thus, more

asymmetric cost behavior can be predicted in firms with larger control-ownership disparities. We formulate our hypothesis as follows.

<Hypothesis> There is a positive relationship between control-ownership disparity and cost stickiness.

3. Sample Selection and Study Methodology

3.1. Sample Selection

In this study of cash flow rights, control rights, and the control-ownership wedge, the dataset was exclusively obtained from the Korea Fair Trade Commission (KFTC hereafter), and includes detailed information on large business conglomerates in Korea from 2006 to 2010. The data used in the analysis pertain to conglomerates and their affiliates available from KFTC's information disclosure system that satisfy following conditions:

- (1) Firms listed in the Korea Stock Exchange and the Korea Securities Dealers Automated Quotation;
- (2) Firms not in financial industries;
- (3) Firms with December 31 fiscal year-end; and
- (4) Firms with financial data available in the KISVALUE database provided by NICE Credit Evaluation, Inc.

We limit our sample to listed firms, using the market value of listed firms as a control variable. We include non-financial firms in our sample because the format and nature of accounts on the financial statements in financial firms differ from those of other firms, making it challenging to perform an industry analysis. Lastly, we select firms with a December 31 fiscal year-end to facilitate comparison.

3.2. Measurement of Control-Ownership Disparity

Measurement of ownership and control rights of controlling shareholders and the control-ownership disparity as major variables in this study may be explained as estimation of asymmetric cost behavior. The study model is devised to verify the relationship between control-ownership disparity and cost stickiness.

First, variables for ownership and control rights of controlling shareholders and control-ownership disparity based on information provided through the Large Corporate Group Information Disclosure System of the Fair Trade Commission are calculated using the following formulas.*****

***** Corporations (mostly conglomerates) that belong to large corporate groups in Korea are required to report information about control-ownership disparities and internal share ratios every April.

$$\begin{aligned}
 & \text{Cashflowrights} \\
 & = \frac{\text{Controllingshareholder'sdirectshareownership} + \text{Controllingshareholder'sfamilyownership}}{\text{Amountofcommonstock} - \text{Treasurystock}} \\
 & \text{Controlrights} \\
 & = \frac{(\text{Controllingshareholder'sdirectshareownership} + \text{Controllingshareholder'sfamilyownership} + \\
 & \text{Affiliate'sdirectshareownership} + \text{Directors'shareownership} + \text{Profitorganizations'shareownership})}{\text{Amountofcommonstock} - \text{Treasurystock}} \\
 & \text{Controlownershipdisparity} = \text{Controlrights} - \text{Cashflowrights} \tag{1}
 \end{aligned}$$

Here, the controlling shareholder is the actual person who controls the corporate group and is referred to in the Large Corporate Group Information Disclosure System of the Fair Trade Commission.

3.3. Measurement of Cost Stickiness

In this study, values computed by applying the model of Weiss (2010) to selling and administrative expenses are used to measure cost stickiness. Since previous studies mainly focused on cost behavior related to selling and administrative expenses, finding that these expenses are sticky, selling and administrative expenses will be used to measure cost stickiness in our basic analysis. An additional analysis on other costs will be performed after summarizing relevant previous studies.

The model of Anderson et al. (2003) of cost stickiness includes cost changes represented as changes in sales; however, it is difficult to measure cost stickiness in individual corporations using their model because changes in cost represented as changes in sales cannot be directly measured at the level of individual corporations. In other words, the model of Anderson et al. (2003) defined stickiness as the difference between the rate of increase in costs from cross-sectional increases in sales and the rate of decrease in costs from decreases in sales. By contrast, the model of Weiss (2010) directly measured this difference, defining it as cost stickiness. The model of Weiss (2010) can therefore be used to measure cost stickiness of individual corporations directly and explain asymmetric cost behavior. Therefore, in this study, STICKY, the stickiness measurement variable of Weiss (2010), is defined as the difference between the rate of decrease in costs from decreases in sales in the latest quarter and the rate of increase in costs from increases in sales in the latest quarter. It is measured using the following equation.

- : downward stickiness of costs for term t of enterprise i;
- : quarters during which sales decreased among 16 most recent quarters;
- : quarters during which sales increased among 16 most recent quarters;
- : change in sales of enterprise i for term t);
- : change in cost of enterprise i for term t

If cost behavior is symmetric, STICKY will be 0, indicating that the rates of increase and decrease in costs from increases and decreases in sales are the same. Thus, cost

stickiness in Eq. (1) is defined as the difference between the rate of increase in costs from increases in sales in the latest quarter and the rate of decrease in costs from decreases in sales in the latest quarter for 16 quarters (year t-3 to year t). A logarithmic model was used because it is easy to reduce potential heteroscedasticity and compare variables of individual corporations (Anderson et al., 2003). Since it was assumed that the directions of the rates of increase and decrease in costs from increases and decreases in sales are identical when predicting the value of STICKY in Eq. (2), as presented by Anderson & Lanen (2007), observations showing opposite directions of the values for changes in costs and sales are excluded. If costs are sticky, STICKY will return a negative value, since the rate of decrease in costs from decreases in sales is larger than the rate of increase in costs from increases in sales. However, for convenience of interpretation, in this study we use a positive value obtained by multiplying the value for STICKY by -1 as an alternative value for stickiness. Therefore, a large value for STICKY indicates extremely large cost stickiness.

3.4. Research Model

Lastly, the following study model is devised to verify the relationship between control-ownership disparity and cost stickiness, measured as above. STICKY, a dependent variable representing cost stickiness in Eq. (3), is a value found using the method of Weiss (2010), and Disparity is an interest variable that shows control-ownership disparity. Asset intensity, tangible asset intensity, and employee intensity, which generally affect cost stickiness, are included as control variables.

STICKY: STICKY1, STICKY2

STICKY1 = continuous variable for downward stickiness of costs scaled by selling and administrative expenses;

STICKY2 = continuous variable for downward stickiness of costs scaled by total costs;

Disparity : the difference between cash flow rights and control rights;

AssetC : ln (total assets/total sales);

PPEC : ln (plant, property and equipment/total sales); and

WORKER : (number of employees*1,000,000/total sales of current term).

4. Results of the Empirical Analysis

4.1. Descriptive Statistics and Correlations

The sample includes 361 firm-year observations. <Table 1> summarizes descriptive statistics of major variables used to test the hypothesis of this study. We winsorize continuous values among the independent variables and dependent variables at the 1% and 99% levels to mitigate the effects of outliers. The mean of the independent variable, Disparity, is 0.273, which implies that the control rights of controlling shareholders are greater by 27% on average compared to cash flow rights. The minimum and maximum values of Disparity are 0 and 0.9917, respectively, which indicates that the control-ownership wedge ranges from 0% to 99%.

STICKY1 and STICKY2 are values for downward cost stickiness that were multiplied by (-)1. Therefore, larger positive values of STICKY1 and STICKY2 can be interpreted as greater downward stickiness of cost behavior. To measure cost stickiness, we use the equation of Weiss (2010) including selling and administrative expenses and total costs. The mean (median) values of these variables, respectively, are 0.312 (0.148) and 0.222 (0.153), which are positive values, which indicates that the majority of firms showed downward cost stickiness. The dummy variable STICKYD1 represents downward stickiness of costs measured by selling and administrative expenses according to the protocol in Weiss (2010), taking a value of 1 when it represents a negative value and 0 otherwise. STICKYD2 is also a dummy variable from Weiss (2010) that measures downward cost stickiness based on total costs. The value of this variable is also 1 when it represents a negative value and 0 otherwise. In other words, firms that show downward cost stickiness are granted a value of 1 for these dummy variables. The mean (median) values of STICKYD1 and STICKYD2 are 0.654 (0) and 0.643 (0), respectively. The mean (median) value for the asset intensity variable SIZE is 0.049(0.086), with maximum and minimum values of -1.308 and 1.326, respectively. This shows a great difference in asset intensity between enterprises. The mean (median) value of the employee variable WORKER is -20.490 (-20.299), and the

mean (median) value of the cash flow variable for operating activities in the current term CFO is 0.071(0.068). The mean (median) value of the dummy variable representing the reduction in sales for term t-1 compared to term t-2, SALES, is 0.208 (0.000). Only 20% of enterprises showed reduction in sales during term t-1 compared to term t-2.

Variable definitions:

STICKY1 is a cost stickiness continuous variable representing sticky selling and administrative expenses.

STICKY2 is a cost stickiness continuous variable representing sticky total costs.

STICKYD1 is a cost stickiness dummy variable representing selling and administrative expenses that takes a value of 1 if sticky costs are less than 0, and 0 otherwise.

STICKYD2 is a cost stickiness dummy variable representing total costs that takes a value of 1 if sticky costs are less than 0, and 0 otherwise.

Disparity is the control-ownership wedge (=cash flow rights – control rights).

SIZE is the natural logarithm of total assets in the current term/total sales in the current term.

WORKER is the number of employees*1,000,000/total sales in the current term.

CFO is cash flows from operating activities in the current term/total assets in the current term.

SALES is a variable that takes a value of 1 if sales in term t-1 are decreased compared to sales in term t-2, and 0 otherwise.

<Table 2> presents the Pearson's correlation coefficients among the main variables. In general, the results show a significant positive association between STICKY1(STICKY2) and Disparity, which is consistent with our hypothesis. Correlations among all control variables were less than 0.5, which indicates that the multicollinearity problem is minimal.

Variable definitions: refer to <Table 1>. Values in parentheses are p-values.

<Table 1> Descriptive statistics (n=361)

Variable	Mean	Standard deviation	Minimum	Median	Maximum
Disparity	0.273	0.194	0	0.2805	0.9917
STICKY1	0.312	0.968	-1.741	0.148	4.859
STICKY2	0.222	0.755	-1.872	0.153	3.231
STICKYD1	0.654	0.476	0	1	1
STICKYD2	0.643	0.480	0	1	1
SIZE	0.049	0.460	-1.308	0.086	1.326
WORKER	-20.490	1.265	-24.674	-20.299	-18.321
CFO	0.071	0.073	-0.143	0.068	0.298
SALES	0.208	0.406	0	0	1

<Table 2> Pearson correlation matrix among variables

	STICKY2	Disparity	SIZE	WORKER	CFO	SALES
STICKY1	0.1668 (-0.0015)	0.1584 (0.0025)	-0.025 (0.6332)	0.2694 (<.0001)	-0.0721 (0.1713)	0.0207 (0.6944)
STICKY2		0.6479 (<.0001)	0.0924 (0.0794)	0.0830 (0.1141)	-0.0145 (0.7834)	0.0569 (0.2804)
Disparity			0.1120 (0.0334)	0.1151 (0.0286)	-0.0997 (0.0582)	0.0114 (0.829)
SIZE				0.24733 (<.0001)	-0.24603 (<.0001)	0.08733 (0.0976)
WORKER					0.20099 (0.0001)	0.01208 (0.819)
CFO						-0.02555 (0.6285)

<Table 3> Effect of controlling shareholders' ownership on cost stickiness

Variables	Dependent variable			
	STICKY1		STICKY2	
	Coeff.	t-value	Coeff.	t-value
Intercept	-1.949	-1.93*	1.000	1.29
Disparity	1.134	4.03***	0.927	4.3***
SIZE	0.397	3.16***	0.178	1.85*
WORKER	-0.100	-2.18**	0.038	1.09
CFO	0.595	0.74	-0.608	-0.98
SALES	0.098	0.79	-0.103	-1.09
Year dummies	Included			
Industry dummies	Included			
F-value	2.4***		3.05***	
Adj R ²	0.07		0.10	
Sample size	361		361	

Notes: ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Variable definitions: refer to <Table 1>.

<Table 4> Effect of controlling shareholders' ownership on coststickiness measured as a dummy variable

Variables	Dependent variable			
	STICKYD1		STICKYD2	
	Estimate	Wald χ^2	Estimate	Wald χ^2
Intercept	0.974	0.1741	3.379	2.0302
Disparity	1.998	8.8614***	1.739	6.7177***
SIZE	0.311	1.126	0.328	1.2347
WORKER	0.001	0.0003	0.100	0.8943
CFO	-0.231	0.0151	-2.761	2.1362
SALES	0.275	0.8455	-0.036	0.0156
Year dummies	Included			
Industry dummies	Included			
Likelihood ratio χ^2	41.3175***		42.2406***	
Pseudo R ²	0.08		0.08	
Sample size	361		361	

Notes: ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Variable definitions: refer to <Table 1>.

4.2. Multivariate Regression Analysis

<Table 3> reports the results of the analysis of the effect of controlling for shareholders' ownership on cost stickiness measured as continuous variables according to the method of Weiss (2010). The interest factor β_1 showing the effect of Disparity on STICKY1 is positive and significant at the 1% level ($\beta_1 = 1.134$, $t = 4.03$). The coefficient showing the effect of Disparity on STICKY2 is also statistically significant at the

1% level ($\beta_1 = 0.927$, $t = 4.30$). As the control-ownership wedge in firms increases, the actual level of cost stickiness increases. These findings provide more support for our hypothesis that an increase in the control-ownership wedge reduces cost asymmetry. Control-ownership disparity therefore exacerbates agency problems between controlling shareholders and minority shareholders as a result of increased information asymmetry.

4.3. Additional Analysis

We conduct an additional analysis using STICKY dummy variables to examine the effect of controlling shareholders' ownership on downward stickiness of costs. Here, we follow the protocol in Weiss (2010) for measuring cost stickiness. An increase in the control-ownership wedge will increase agency problems, which ultimately increases cost stickiness. Here, STICKYD1 (STICKYD2) represents cost stickiness as a dummy variable. <Table 4> provides the results of the logistic regression analysis. The estimated value of Disparity is 1.998 (Wald $\chi^2 = 8.8614$) when STICKYD1 is the dependent variable and 1.739 (Wald $\chi^2 = 6.711$) when STICKYD2 is the dependent variable. These values are positive and significant at the 1% significance level. When the control-ownership wedge increases in firms, cost behavior becomes stickier even when dummy variables are included. These findings also support our hypothesis.

5. Summary and Conclusion

With reference to the peculiar corporate governance structure of firms in Korea, where controlling shareholders exercise control rights with minimal ownership of shares, we examine whether controlling shareholders pursue benefits opportunistically and make decisions contrary to corporate values and the interests of minority shareholders when control-ownership disparity is large. Specifically, we investigate the relationship between decision-making of controlling shareholders according to their ownership rights and control-ownership disparity using real data about the cost behavior of corporations. The results of this study are as follows. Large control-ownership disparity was found to increase cost stickiness of corporations. This result can be interpreted as verification of the cost behavior of corporations in nations with high control-ownership disparities such as Korea and other countries in Southeast Asia. It implies that firms in nations with weak legal protection of external minority shareholders have stronger opportunistic incentives for managers and controlling shareholders in comparison to firms in other nations. Moreover, since controlling shareholders directly or indirectly participate in management of corporations in Korea, monitoring and regulation of controlling shareholders and professional

managers may be insufficient. In situations where controlling shareholder have significant influence over managers or the power to make managerial decisions as owners of a corporation, they may be regarded as a threat to the interests of minority shareholders and corporate values. In this study, we examine the ambivalent effects of the cost behavior of controlling shareholders on corporate values.

Contributions of this study are as follows. First, unlike previous studies in which the analysis included corporate

characteristics and environmental characteristics in a direct investigation of the agency problem as a cause of cost stickiness, as presented in Anderson et al. (2003), we focus on the explicit situation in which managers are likely to pursue private benefits. Second, as this study was based on the unique situation in Korea, in which high control-ownership disparity is common in firms, its findings may be valuable for researchers examining corporate cost behavior in corporations with high disparity elsewhere in the world.

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