An Analysis of Structural Determinants of Organizational Effectiveness
The Case of Business Firms in Korea

Eui Hang Shin
University of South Carolina
and
Moon-Gi Suh
Brown University

This study examines the relationship between structural characteristics of business firms and their effectiveness in South Korea, using multivariate regression analysis. The objective is to analyze the relationships between organizational characteristics and financial structure. This study is not concerned with individual-level variables (for example, interaction patterns and role conflict) or psychological variables (motivation, individual stress), although these are also important aspects of organizations. The view of organizations in the present study is strongly influenced by the work of scholars who argue that organizations are characterized by structural relationships among interdependent attributes.[1]

The primary goal of this paper is to broaden understanding of differences in effectiveness between large monopolistic firms and small competitive firms by assessing the influence of organizational characteristics. These characteristics are operationalized with financial data, which include (1) a firm's current financial position, as reflected in its accounting records, and (2) the results of organizational operations.[2] We attempt to advance the analysis of organizational effective-

ness in several ways. First, as a theoretical approach for comparative research, the present study builds on the structural perspective, in order to focus on how variation in the structural characteristics of economic organizations affects variation in organizational effectiveness. Each variable in the analysis is considered to represent one of several structural properties of a business organization. Second, the study considers variables that previous studies ignored, such as export orientation, family control, industry category, and firms' affiliation with large *chaebol* groups. Third, as a case study, the present analysis explores the financial aspects of the Korean business firms using quantitative measures of organizational characteristics, focusing on their influences on effectiveness. Thus, the study may shed light on the factors influencing firm effectiveness in newly industrializing countries. Fourth, to control for organizational differences between business firms affiliated with conglomerates (*chaebol*) and small and medium-size non-affiliated firms, a dummy variable for affiliation is specified. This dummy variable is used to test the hypothesis that *chaebol* groups are more effective than non-affiliated firms, due to the former's large share of the market and the advantages of state support.

In the first part of the paper, a critical review of previous studies is presented; the second part presents models of the determinants of effectiveness, based on a structural perspective.[3] These models explain how differences in some organizational characteristics lead to differences in firm effectiveness. The models are tested by analyzing Korean firms.

A critical review of the literature on organizational effectiveness shows that some previous analyses simply assert that effectiveness is improved or decreased by some degree, without adequately identifying the causes of the effectiveness change.[4] The studies have made little progress in estimating economic effects. One reason for this lack of progress is that much research in this area has been done by social scientists who are more interested in individual and psychological factors than in economic outcomes of work.[5] Another reason is that previous studies analyzing organizational structure have been more concerned with processes than with outcomes.[6] In contrast to these studies, this paper focuses on assessing one type of economic indicator

— effectiveness — as a function of structural characteristics.

Korea may be an appropriate case study for investigating organizational effectiveness as a function of a firm's structural characteristics in Newly Industrializing Countries (NICs). Korea, like other NICs, has maintained an outward-looking development policy based on export-driven industrialization under state guidance. This policy has generated inequalities between export-oriented industries and domestic industries.

In particular, there are significant differences between the big *chaebol* groups — conglomerates of a number of industrial and business firms — and small and medium-size firms.[7] In order to maximize capital accumulation so as to increase international competitiveness under conditions of limited resources, the state gives priority to large-scale conglomerates by financially repressing small and medium-size firms.[8] Thus, membership in large *chaebol* groups may be an important factor in organizational effectiveness, net of other structural characteristics.

Theoretical Background and Literature Review

Numerous researchers have analyzed the nature of structure and its influence on effectiveness in organizations, and their studies have been guided by the structural perspective.[9] This perspective is concerned with the following questions: (1) What are the relationships among structural characteristics of organizations? (2) What determines variability in the structural characteristics of organizations? (3) What are the consequences of structural variance for variability in organizational outcomes? It would be fruitless to examine effectiveness without considering the various structural characteristics that might be related to forms of effectiveness.

The growing body of comparative organizational studies is guided by a conceptual scheme that facilitates comparability among organizations with respect to effectiveness and that guides the empirical steps of operationalization and quantification.[10] Since organizational effectiveness is one of the most complex issues in the study of organizations, many difficulties arise when we attempt to define it. Generally, effectiveness has been defined as "the degree to

which an organization achieves its goals,"[11] and as "a desired state of affairs which the organization attempts to realize."[12]

The three main theoretical perspectives on organizational effectiveness are (1) the goal-based approach, (2) the system approach, and (3) the multiple approach. Considerable differences exist among theoretical (and empirical) approaches. As noted in an early definition by Chester I. Barnard, effectiveness is the degree to which the organization accomplishes its specific objectives.[13] This is the central point of the goal-based approach.[14] The system approach defines organizational effectiveness in terms of an organization's bargaining position, as reflected in the ability of the organization, in either absolute or relative terms, to exploit its environment in acquiring scarce and valued resources.[15] Another perspective on organizational effectiveness focuses on constituent definitions of effectiveness and proposes that the criterion of organizational effectiveness should include measures relevant to employees, society, and management.[16]

Without a universal theoretical perspective that adequately treats the concept of organizational effectiveness, research efforts have, for the most part, proceeded unsystematically, failing to consider the conceptual aspects of organizational effectiveness. The present study adopts the goal-based approach, since it seems to safeguard the analysis against subjective biases.

Several observers have argued that the structure of an organization is closely related to its context, and that much of the variation in organizations might be explained by structural or contextual factors.[17] Many such factors, including size, have been suggested as important determinants of organizational structure and functioning. Starting from this theoretical framework, the present study explores how differences in the effectiveness of Korean business firms are related to their characteristics.

It is not clear that a single model can be formulated with effectiveness defined as financial viability. However, it is both convenient and useful to construct a model for a single idea, such as financial viability. Effectiveness can be defined in a variety of ways; there is no one best way to define the term. Some definitions, however, may be more useful than others.

In the present study, organizational effectiveness is conceptualized as the extent to which an organization is financially viable. The reasons for conceptualization of effectiveness as profitability in terms of financial viability are as follows: First, financial viability is relatively easy to measure. Acquisitions of land and equipment may be relatively easily ascertained, but the quality of labor and managerial knowledge are not so simple to evaluate. Second, financial viability appears to be strongly and positively correlated with traditional views of effectiveness. This is central to the goal-based approach. Third, financial viability allows one to formulate a theoretical model of the determinants of effectiveness.

Conceptual and Empirical Background

The concept of size is highly relevant to the study of organizations.[18] According to John R. Kimberly, size can be conceptualized in several ways, namely, (1) physical capacity of an organization (e.g., numbers of beds in hospitals), (2) financial characteristics (e.g., assets), (3) amount of input or output (e.g., sales), and (4) human resources (e.g., numbers of employees).[19] Generally, these four categories are strongly interrelated.[20] The size of an organization is conceptualized in the present study as asset volume and as human resources, measured by the number of employees. Since the purpose of the multivariate analysis is to better understand a wide variety of business firms, the use of financial performance as the basis for the analysis of organizational effectiveness allows more kinds of organizations to be included. For example, when the work process requires expensive equipment or automation, the number of employees or organization members is not very meaningful in investigating organizational effectiveness.

Of the various structural variables, size is perhaps the one most likely to be associated with other organizational characteristics.[21] Conceptual and empirical examination of economies of scale[22] have sought an optimum firm-size, one that results in the lowest cost per unit of production.[23] In addressing the size-effectiveness relationship, some researchers find it a negative one,[24] and others, a positive one.[25] Despite their contrasting findings, each study holds that size may influence organizational effectiveness.

The relationship of borrowed funds to effectiveness is also important.[26] Debt is problematic for a firm, for debt requires fixed interest payments on specific dates and eventual repayment. Unusual business operations are another potential influence on organizational effectiveness. In Korea there are many cases of capital gains from selling of real estate by firms.[27] It is easy to find firms that own undeveloped industrial sites and are waiting for the land price to rise. As a financial term, "unusual income" includes such infrequent events as the disposal of fixed assets, including land and buildings.[28] By considering this characteristic, the present study explores how this unusual factor influences organizational effectiveness.

Previous studies have examined the effects of organization age on change in organization structure and activities.[29] Because the effectiveness of an organization changes over time, the age of the organization is controlled in this study. According to Carroll, two characteristics — age and size — appear to affect organization mortality rates, regardless of environmental conditions.[30] He finds that organization death rates decrease with age, and that organization dissolution rates are also consistently higher for small organizations than for large ones. This suggests that both factors are important to organizational effectiveness in terms of the organization's survival.

The differences between export- and non-export oriented firms are examined here. In Korea, the expansion of exports was strongly dependent upon the country's comparative advantages in cheap but highly skilled labor in the world market. Small domestic markets, relatively abundant labor, and relatively scarce land and capital made export-oriented industrialization the most efficient route of achieving rapid growth.[31]

Organizational effectiveness is both a cause and a consequence of the evolution of the dynamics of technical progress and accumulation of capital resources. Some empirical studies suggest that organizations in high-technology industries, such as machinery, electrical equipment, and electronics are more effective organizations than those in low-technology industries, such as textiles.[32] It is, therefore, necessary to control for industry in assessing organizational effectiveness. The industrial categories utilized in this study are textiles,

apparel, machinery, electrical, and electronics.

One important feature of Korean business firms is the *chaebol*, a family-controlled group of business firms operating in many unrelated industries. In Korea, there are fifty large *chaebols*. They usually operate in several industrial sectors, make diversified products, and generally are owned and controlled by individuals and their families though influenced by the state through its control of the banking system. The personal investment of the controlling families, such as direct investments and investments through securities companies, supplements the vertical corporate holdings to form a solid ownership of affiliated companies. Founded on pyramidal ownership structures, *chaebols* maintain a unified and centralized management structure that is in some respects similar to the pre-war Japanese *zaibatsu*. Despite their similarities in management structure, Japanese *zaibatsu* differ from *chaebols* in terms of their separation of ownership and control. Due to their short industrialization history, Korean *chaebols* still remain under tight family ownership, typically under the control of the founder, who often occupies the position of president or chairperson of the board.[33]

One interesting observation is that large *chaebol* groups in Korea operate under a system of highly centralized family control through holding companies. It has been suggested that around 21 percent of executive positions in the large *chaebol* groups can be accounted for by family ties with the firm owners.[34] *Chaebol* groups have allowed their members to avoid rapid structural changes (e.g., market instability, risks) and maintain strong solidarity based on family ties.[35] This phenomenon usually can be found in small, medium-size, and large firms in Korea.

Models and Variables

The study develops a model of organizational effectiveness based on multidimensional aspects of organizations and tests several hypotheses concerning effectiveness. The models suggest that effectiveness is related to a variety of organizational characteristics.

Developing a measure of organizational effectiveness is somewhat problematic, since, as discussed earlier, the concept is

difficult to operationalize, and no measure is universally accepted.[36] The main hypothesis of the analysis is that variation in the structural characteristics of firms affects variation in organizational effectiveness, that is, organizational success in the Korean economy. The study analyzes, as a dependent variable, a widely used measure of profitability for organizational effectiveness: returns on sales (ROS). Returns on sales (ROS) is defined as the *won* (Korean dollar) value of net income divided by the *won* value of sales. This measure is used to take into account cost control.

The present analysis uses comparable data from financial statements of selected firms. Since financial statements essentially report the results of a firm's management activities, they can be viewed as the principal source for evaluating management's performance.[37]

As explanatory variables, several theoretical arguments call for inclusion of firm-size.[38] Size is measured in terms of total assets volume (ASSETS). Another measure of size is the number of employees (EMPLOYEES). To capture the effect of debt on organizational effectiveness, debt utilization ratios are used. Debt ratios include the ratio of debt to total assets (DEBT-TO-ASSETS) and the ratio of debt to equity (DEBT-TO-EQUITY) as a measure of a firm's ability to meet its short-term obligations.

Other variables are selected on the basis of the literature review. The number of years in business up to 1987 is used for the measure of FIRM'S AGE. Measures of being conglomerated with large *chaebol* groups (CONGLOMERATION), of being an export firm (EXPORT), as well as being a family-controlled firm (FAMILY) are included as dummy variables. UNUSUAL INCOME is utilized as a measure of firm's speculation activities. Five industry categories are used for the classification of firms by industry (TEXTILES, APPAREL, MACHINERY, ELECTRICAL, and ELECTRONICS). The textile industry is the reference category.

In sum, a regression model for organizational effectiveness can be specified:

$$\begin{aligned} \text{ROS (Returns on Sales)} = b_0 &+ b_1\,(\text{ASSETS}) \\ &+ b_2\,(\text{DEBT-TO-EQUITY}) \\ &+ b_3\,(\text{UNUSUAL INCOME}) \\ &+ b_4\,(\text{FIRM'S AGE}) \\ &+ b_5\,(\text{CONGLOMERATION}) \\ &+ b_6\,(\text{APPAREL}) + b_7\,(\text{MACHINERY}) \\ &+ b_8\,(\text{ELECTRICAL}) \\ &+ b_9\,(\text{ELECTRONICS}) \\ &+ b_{10}\,(\text{EXPORT}) + b_{11}\,(\text{FAMILY}) \\ &+ e \end{aligned}$$

All variables are as defined in TABLE 1, and e is the error term. Note that the model utilizes both total ASSETS and EMPLOYEES as a size variable.

Hypotheses

On the basis of the above framework, we have formulated the following hypotheses:

1. The size of firms (ASSETS, EMPLOYEES) will be positively associated with organizational effectiveness. The size of an organization's asset base implies that larger organizations are more likely than smaller ones to possess discretionary resources. These resources can be used to acquire other resources that are crucial to continued organizational effectiveness, such as rewards to retain productive employees or mergers for organizational expansion. This use of assets can contribute to organizational viability and suggests that larger size can increase organizational effectiveness through economies of scale.
2. Debt ratios (DEBT-TO-EQUITY, DEBT-TO-ASSETS) will be negatively associated with effectiveness, since these ratios refer to the firm's ability to meet its obligations. If these ratios are high, the company's effectiveness will be decreased.
3. UNUSUAL INCOME will be positively related to effectiveness. This prediction follows from the same reasoning used in the previous hypothesis, following the conventional wisdom of financial viability.

TABLE 1. **Operational Form and Measurement of Variables**

Variable	Meaning	Measurement
Dependent Variable		
ROS (Returns on Sales)	Organizational Effectiveness	Net Income / Sales*
ROA (Returns on Assets)		Net Income / Total Assets*
ROE (Returns on Equity)		Net Income / Shareholder's Equity*
Independent Variable		
ASSETS EMPLOYEES	Size	Total Assets Number of Employees
DEBT-TO-ASSETS DEBT-TO EQUITY	Debt Ratios	Total Debt/Total Assets, Total Debt/Total Equity
UNUSUAL INCOME	Speculative Investment	Total Unusual Income
FIRM'S AGE	Years in Business	Number of Years in Business up to 1987
CONGLOMERATION	Affiliation with *Chaebol* Groups	1) 1 = in *Chaebol*
APPAREL	Clothes Products	2)
MACHINERY	Machinery Products	2)
ELECTRICAL	Electrical Machinery	2)
ELECTRONICS	Electronic Products	2)
EXPORT	Export Firms	1) 1 = export
FAMILY	Family-controlled	1) 1 = family controlled

* Ratios are multiplied by 100
1 Dummy variable
2 Reference group: Textile Products Industry

4. The age of firms (FIRM'S AGE) will be positively associated with organizational effectiveness. This hypothesis is based on Glen R. Carroll's findings.[39]

5. Being conglomerated (CONGLOMERATION) with large *chaebol* groups will increase the degree of organizational effectiveness. Large firms - *chaebol* groups - have the potential for monopoly profit, due to their high market-share, capital resources, and other advantages.

6. Organizations in industries with a relatively high degree of technology compared to textiles, such as machinery products (MACHINERY), electrical machinery (ELECTRICAL), and electronic products (ELECTRONICS), will be more effective than firms in textile products (TEXTILES) - used as the reference group.

7. Export-oriented firms (EXPORT) will have greater effectiveness than will non-export (domestic-market oriented) firms. This hypothesis is based upon the fact that export-oriented firms enjoy advantages from outward-looking economic development policies of the Korean government, as noted earlier.

8. Family control (FAMILY) will have a positive impact on organizational effectiveness. Some firms in large *chaebol* groups have a tendency to be family-controlled, due to both the Korean cultural characteristics (e.g., familism, resulting from Confucian heritage) and the strong solidarity among members.

Data and Methods

The data used in this study are from a set of publications of the Korea Productivity Center Headquarters, which provides significant information on all Korean business firms. The data to be analyzed in this study include general organizational characteristics: assets, capital, debt based on financial statements (e.g., balance sheet, income statement), industry, and age of firm as of 1987. To capture the export factor approximately, the present study uses data on the classification of companies as export and non-export companies. For classifying family-controlled firms, the present study utilizes data on the number of family members of the owner who occupy high-level positions - for

example, a board director of a firm - based on a direct family line, such as a father-son or brother-brother relationship. The present study also uses the list of 122 *chaebol* groups, ranging from Lucky Goldstar, the largest, with 57 companies, to the smallest, Samik, with only 2 companies.

The basic analytical strategy is to utilize multivariate regression techniques for estimating the model of organizational effectiveness. The present study employs a sample of 250 Korean business firms, selected by stratified random sampling of the population across each industry. We used the method of ordinary least-squares regression for our data analyses.

Findings

The mean and standard deviation for each variable is presented in TABLE 2.

The mean of each dummy variable (CONGLOMERATION, MACHINERY, ELECTRICAL, ELECTRONICS, EXPORT, and FAMILY) represents the percentage distribution of firms across these categories. For example, about 14 percent of the firms are conglomerated with large *chaebol* groups.

The Pearson correlation matrix of the bivariate relationships of each variable in the model is presented in TABLE 3.

The zero-order correlation coefficients in TABLE 3 show that the relationships between the size variables (e.g., assets and number of employees) are very strong, as noted earlier, whereas all other correlations are moderate to weak. The relationships between unusual income and the size variables are relatively strong, because assets and unusual income go hand in hand as financial aspects of business organizations. The unstandardized and standardized regression coefficients for the equation described above are shown in TABLE 4.

TABLE 2. **Summary Statistics (Mean and Standard Deviation of Each Variable in the Model)**

Variable	Mean	Standard Deviation	(units)
ROS (Returns on Sales	2.47	4.657	(%)
ROA (Returns on Assets)	4.67	16.083	(%)
ROE (Returns on Equity)	26.42	82.853	(%)
ASSETS	17,216.07	94820.738	million *won**
EMPLOYEES	488.32	1967.441	number of employees
DEBT-TO-ASSETS	7.83	2.136	ratio
DEBT-TO-EQUITY	5.75	7.364	ratio
UNUSUAL INCOME	34.82	172.146	million *won**
FIRM'S AGE	12.92	8.395	year
CONGLOMERATION	0.14	-	(%)
APPAREL	0.19	-	(%)
MACHINERY	0.18	-	(%)
ELECTRICAL	0.17	-	(%)
ELECTRONICS	0.22	-	(%)
EXPORT	0.68	-	(%)
FAMILY	0.37	-	(%)

* Note: 861.40 *won* = 1 U.S. dollar in December 1986. (Bank of Korea)

TABLE 3. **Matrix of Zero-Order Correlation Coefficients between Variables**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) ROS	-															
(2) ROA	.65	-														
(3) ROE	.58	.90	-													
(4) ASSE	.01	-.02	-.02	-												
(5) EMPL	.02	-.01	-.02	.91	-											
(6) DEBS	-.01	-.04	.29	-.04	-.04	-										
(7) DEBA	-.18	-.06	.06	-.03	-.04	.38	-									
(8) UNUS	-.39	-.45	-.24	.56	.56	-.05	.25	-								
(9) AGE	-.03	-.08	-.04	.28	.29	.07	-.06	.18	-							
(10)CONG	.02	-.03	-.01	.25	.31	.02	-.02	.31	.21	-						
(11)APPA	-.01	-.01	.01	-.06	-.03	.02	-.01	-.02	.03	-.14	-					
(12)MACH	-.03	-.05	-.02	.02	-.05	.07	.09	.07	-.03	.04	-.22	-				
(13)ETRI	-.05	-.01	-.05	-.04	-.04	-.09	-.05	-.08	-.05	.00	-.19	-.18	-			
(14)ETRO	.09	.13	.07	.04	.05	-.10	-.10	.16	-.11	.02	-.26	-.25	-.21	-		
(15)EXPO	.09	.06	.01	.11	.13	-.04	.00	-.03	.14	.26	.05	-.11	-.09	.06	-	
(16)FAMI	-.03	-.04	-.05	.08	.13	.00	-.04	-.02	.08	.06	.00	-.07	-.01	-.03	.07	-

1 Returns on Sales; 2 Returns on Assets; 3 Returns on Equity; 4 Assets; 5 Employees; 6 Debt-to-equity; 7 Debt-to-assets; 8 Unusual Income; 9 Firm's Age; 10 Conglomeration with *chaebol* groups; 11 Apparel products; 12 Machinery products; 13 Electrical machinery; 14 Electronic products; 15 Export firms; 16 Family-controlled firms

The findings are, by and large, consistent across the separate models. Overall, a statistically significant amount of the variance (about 40 percent) in the dependent variable, organizational effectiveness, can be explained by the models.

In model 1(a) (table 4), the coefficient for ASSETS is statistically significant at the 0.01 level in a one-tailed test, and its sign is in the expected direction (positive) when the effects of other variables are controlled. This result is in line with the hypothesis that assets will be positively associated with organizational effectiveness. It is estimated that an increase of 10,000 million *won* in assets is related to a 0.0013 increase in the ratio of net income to sales. Such an effect is comparable to 5 percent of the mean of the dependent variable, returns on sales. Transforming this finding into an elasticity reveals that returns on sales increase 0.09 percent for a 1 percent increase in assets. Also as predicted, the coefficient for conglomeration with large *chaebol* groups (CONGLOMERATION) has a positive sign and is significant at the 0.05 level in a one-tailed test, controlling for other variables. This result is consistent with the proposed hypothesis of a positive effect of conglomeration on organizational effectiveness.

Controlling for other variables, the coefficient for export firms (EXPORT) is statistically significant but marginally so, at the 0.10 level in a one-tailed test, and its sign is in agreement with the hypothesis that export firms will have greater effectiveness than will non-export firms. The coefficient for UNUSUAL INCOME is negative and, in a one-tailed test, significant at the 0.01 level. The sign of the coefficient for this variable is not in the hypothesized direction (positive).

In models 1(b) and 1(c), where the dependent variable is ROS (Returns on Sales), but the number of employees (EMPLOYEES) is the measure of size, the overall findings are consistent with the results of model 1(a), since the correlation between ASSETS and EMPLOYEES is very strong, as shown in TABLE 3.

It is possible that returns on sale (ROS) is not an accurate measure of organizational effectiveness, and thus the data did not provide evidence which is consistent with the hypothesized relationships. We wanted to check whether or not the results of our analyses

TABLE 4. **Unstandardized (b) and Standardized (*B*) Regression Coefficients Organizational Effectiveness Model (Standard Errors in Parentheses)**

Dependent Variable = ROS (Returns on Sales)

	Model 1(a)		Model 1(b)		Model 1(c)	
Variable	b	*B*	b	*B*	b	*B*
Intercept	-1.002567 (2.217)	-	-1.470 (2.224)	-	3.069 (4.520)	-
ASSETS	.000013*** (.0000045)		.394			
EMPLOYEES	.00069*** (.00022)		.402		.00063	.366
DEBT-TO-ASSETS					-5.405 (4.729)	-.136
DEBT-TO EQUITY	-.041 (.092)	-.047	-.051 (.093)	-.059		
UNUSUAL INCOME	-.013*** (.002)	-.690	-.013 (.002)	-.695	.012 *** (.0027)	-.637
FIRM'S AGE	-.023 (.061)	-.041	-.012 (.063)	-.022	-.029 (.063)	-.050
CONGLOMERATION	2.818** (1.608)	.209	2.320 (1.643)	.169	2.494 (1.653)	.182

APPAREL	1.333	(1.991)	.079	1.193 (2.000)	.071	1.024 (1.991)	.061
MACHINERY	.500	(1.963)	.031	1.664 (2.039)	.102	1.806 (2.014)	.111
ELECTRICAL	-.959	(1.931)	-.057	-.640 (1.950)	-.038	-1.206 (1.758)	-.069
ELECTRONICS	.852	(1.747)	.060	1.182 (1.762)	.083	2.487 (1.684)	.163
EXPORT	2.687*	(1.651)	.176	2.869** (1.654)	.188	.715 (1.280)	.058
FAMILY	.892	(1.260)	.074	.753 (1.278)	.062		
R^2	.3966			.3981		.4098	
R^2adj	.2878			.2878		.2997	
F	3.645			3.608		3.724	
P	.0006			.0006		.0005	
N	250			250		250	

* Significant at the 0.10 level ** Significant at the 0.05 level *** Significant at the 0.01 level (One-tailed tests)

would be significantly different if alternative measures of organizational effectiveness, returns on assets (ROA) and returns on equity (ROE), are used. We therefore considered two additional models. The results from these two models are presented in TABLES 5 and 6.

TABLE 5: **Unstandardized (b) and Standardized (*B*) Regression Coefficients for Organizational Effectiveness Model (Standard errors in parentheses)**

Dependent Variable = ROA (Returns on Assets)

Variable	b		*B*
Intercept	-.0903	(1.653)	-
EMPLOYEES	.00052***	(.00016)	.409
DEBT-TO-EQUITY	-.053	(.069)	-.081
UNUSUAL INCOME	-.010***	(.0019)	-.719
FIRM'S AGE	.028	(.047)	.066
CONGLOMERATION	.494	(1.222)	.048
APPAREL	.650	(1.487)	.051
MACHINERY	1.261	(1.516)	.103
ELECTRICAL	1.463	(1.449)	.116
ELECTRONICS	.538	(1.310)	.050
EXPORT	1.629*	(1.229)	.142
FAMILY	.980	(.950)	.108
R^2 = .4111			
R^2adj = .3032			
F = 3.808			
P = .0004			
N = 250			

*Significant at the 0.10 level **Significant at the 0.05 level ***Significant at the 0.01 level (One-tailed tests)

As shown in TABLE 5, when ROA (Returns on Assets) is used as the dependent variable, and the number of employees (EMPLOYEES) is the size variable, the results are by and large consistent with the results of model 1 (table 4), except that the conglomeration variable

(CONGLOMERATION) is not significant. The coefficient for EMPLOYEES and EXPORT have positive signs and are significant at the 0.01 and 0.10 level, respectively, in a one-tailed test, when all other factors are held constant. The relationship of UNUSUAL INCOME to organizational effectiveness is significant at the 0.01 level in a one-tailed test, but the sign of the coefficient is not in line with the hypothesis of a positive effect.

In TABLE 6, where ROE (Returns on Equity) is the dependent variable, the number of employees is the measure of size, and the debt-to-assets ratio is used for the debt-to-equity ratio, in order to avoid multicollinearity. Only the result for UNUSUAL INCOME is in agreement with the results from tables 4 and 5. The effect of this variable still is not in the hypothesized direction (positive). In this model, the coefficient for AGE is statistically significant at the 0.05 level in a one-tailed test and its sign is in the expected direction (positive). This result is in agreement with the hypothesis that the age of a firm will be positively associated with its organizational effectiveness.

For family-controlled firms (FAMILY), the coefficient is marginally significant at the 0.10 level in a one-tailed test and its sign is consistent with the hypothesized direction (positive). This result is in line with the hypothesis that family control will have a positive impact on a firm's organizational effectiveness. Likewise, the coefficient for MACHINERY (with textiles as the reference group) is statistically significant at the 0.01 level, and its sign is in the predicted direction (positive). Unlike the results from the other two models, the coefficients for the number of employees (EMPLOYEES) as a size variable, conglomeration with large *chaebol* groups (CONGLOMERATION), and export orientation (EXPORT) are not significant. If all other factors are held constant, EMPLOYEES, CONGLOMERATION, and EXPORT do not significantly affect organizational effectiveness, as measured by net income divided by shareholder's equity.

Discussion

This paper has examined several hypotheses on the relationships between organizational effectiveness and selected organizational

characteristics of Korean business firms. One of the major hypotheses of the present study was that large business firms would be more effective organizations than small and medium-size firms. This prediction was confirmed by the positive and statistically significant effects of the size measures (ASSETS and EMPLOYEES) on returns on sales. Therefore, arguments by Nan Weiner and Thomas A.

TABLE 6: **Unstandardized (b) and Standardized (*B*) Regression Coefficients for Organizational Effectiveness Mode (Standard errors in parentheses)**

Dependent Variable = ROE (Returns on Shareholders' Equity)

Variable	b		*B*
Intercept	-27.461	(22.259)	-
EMPLOYEES	.00116	(.00115)	.149
DEBT-TO-ASSETS	20.167	(23.306)	.112
UNUSUAL INCOME	-.042***	(.013)	-.467
FIRM'S AGE	.519**	(.308)	.201
CONGLOMERATION	8.708	(8.102)	.139
APPAREL	6.958	(9.805)	.091
MACHINERY	26.564***	(9.924)	.360
ELECTRICAL	6.165	(9.807)	.080
ELECTRONICS	5.747	(8.660)	.088
EXPORT	5.448	(8.260)	.078
FAMILY	9.357*	(6.270)	.170
R^2 = .2970			
R^2adj = .1681			
F = 2.304			
P = .0198			
N = 250			
*Significant at the 0.10 level			
**Significant at the 0.05 level			
***Significant at the 0.01 level	(One-tailed tests)		

Mahoney, and Heather A. Haveman, that size has a positive effect on organizational effectiveness, is supported, reflecting the benefits of

economies of scale.[40]

The analysis also showed that organizational effectiveness is related to conglomeration with large *chaebol* groups. The hypothesis that being conglomerated with large *chaebol* groups increases organizational effectiveness was confirmed. This finding implies that large *chaebol* groups facilitate organizational effectiveness. According to Leroy P. Jones and Il Sakong, the state's financial policy favors large and established borrowers with a subsidized rate, and this is the major cause of the growth of business conglomerates in Korea since the 1960s.[41] Allocation of credit by the state is one of the key functions of finance, and it is widely believed to affect organizational effectiveness.

In view of the powerful networks of relationships which *chaebol* groups command, it is reasonable to expect that the firms which are affiliated with the *chaebols* would have substantial advantages over other firms in several important aspects of organization. First, the affiliated firms would have more highly qualified, competent personnel, ranging from top-level managers to entry-level employees, due to the prestige as well as the compensation and benefit programs attached to such positions, than would unaffiliated firms. Second, the affiliated firms can take advantage of the connections of the mother company in securing bank loans and other financial programs with favorable terms. Third, *chaebol*-affiliated firms may also have various support systems available from other firms within the *chaebol* group in terms of outsourcing raw materials, marketing, advertising, and selling their products. Fourth, affiliated firms would be in more strategically favorable positions in dealing with the various local and central government agencies through the assistance of the *chaebol* group headquarters.

The importance of export orientation in explaining organizational effectiveness is suggested by the significant and positive effect of the dummy variable for export-oriented firms. Since the launching of an export-oriented development strategy, the Korean state has supported the development of export-oriented sectors over that of the import-substitution and non-tradable goods sectors. State support for export firms thus may increase organizational effectiveness. The significant negative impact of unusual income on organizational effectiveness was

not in agreement with the hypothesized positive effect. This is surprising. However, it is possible that the firms which had experienced less than satisfactory performance might have sold their real estate holdings to alleviate their cash flow problems. Moreover, in view of the high rate of appreciation of real estate property values, the firms whose returns on assets are reasonably high would not sell their properties. This linkage may account for the observed negative relationship between unusual income and organizational effectiveness.

The outlier analysis showed somewhat different results than the original analysis due to the characteristics of the omitted cases (N=34), which were mainly big firms. In point of fact, the size variables did not significantly affect organizational effectiveness, as in the original analysis.

Several limitations of the study must be acknowledged. ROS (Returns on Sales), ROA (Returns on Assets), and ROE (Returns on Equity) - profitability ratios - were used as organizational effectiveness measures because public data for other effectiveness measures were not available for most of the firms in the sample. Different results might have been obtained with other organizational effectiveness measures. It is also necessary to take into account other explanatory variables, such as specialization of activities, standardization of procedures, formalization of documentation, centralization of authority, and division of labor. Notwithstanding these limitations, the present study may contribute to a preliminary understanding of the relationship between organizational effectiveness and the structural characteristics of economic organizations. One meaningful implication of the analysis is that studies of organizational effectiveness should consider the business-state relationship. This implication is suggested by the importance of large *chaebol* groups' political connections in improving organizational effectiveness.

Studies of economic development assume that within the developing world entrepreneurial organizations have made major contributions to the economic growth of their nations.[42] Therefore, increasing attention has been focused on removing obstacles that retard or restrain economic growth. Thus, firm behavior in a developing country is an important area for the study of organizations. Important

aspects of economic organization in developing economies can be assessed by examining the effect of organizational characteristics on output, as indicated by effectiveness, since organizational effectiveness is a basic determinant of economic growth.

Notes

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29. See Singh, Tucker, and Meinhard, "Are Voluntary Associations Structurally Inert?"; Baum, "Internal and Adaptive Patterns"; Delacroix and Swaminathan, "Cosmetic, Speculative, and Adaptive Organizational Change"; Dawn Kelly and Terry L. Amburgey, "Organizational Inertia and Momentum: A Dynamic Model of Strategic Change," *Academy of Management Journal* 34 (1991), 591–612; Amburgey and Miner, "Strategic Momentum."
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39. Carroll, "Stochastic Model of Organizational Mortality."

40. Weiner and Mahoney, "Model of Corporate Performance," and Haveman, "Organizational Size and Change."

41. Jones and Sakong, Government, Business, and Entrepreneurship.

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