

Do Family Businesses Perform as Poorly as is Claimed? Evidence from Thai Firms In 1996

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Abstract

There have been claims in the popular press that family-centered “crony capitalism” significantly contributed to the Asian financial crisis of 1997. Small, tightly focused firms can, however, be well managed by family hierarchies. As firms grow and diversify, family management is often displaced by diffuse ownership and independent managers. Between these two extremes, a firm run by two or three families may find its assets subject to expropriation as a commons. This paper provides empirical support for this story of development with analysis of a data set from Thailand, where regulations facilitate accurate identification of family influence on boards of directors. Regression results show the single-family managed firms and “corporate”-style firms (in which directors are not related) have significantly higher Tobin’s q than “family-partnership” managed firms (in which a small number of different families dominate the Board), and higher Tobin’s q is associated in the data set with higher firm performance. Thus, family partnerships, not family firms, may create problems for emerging economies.

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1. Introduction

Failures in East Asian corporate governance have recently received wide attention, even taking some of the blame for the East Asian Financial Crisis of 1997. Faccio, Lang, and Young (2001) showed that family-based management and ownership is common in the region and has become a major focus of analyses of the crisis. Our findings suggest that a blanket condemnation of family ownership is overly simplistic; as in other regions and times, single-family control provides an appropriate and productive control structure for smaller and newer East Asian firms.

In most countries, it is difficult to distinguish family-run companies from other types of management structures using publicly available data. Thailand presents a unique case that is especially well adapted to addressing the effect of family ownership and control. Thai law is very strict in requiring that last names can only be shared by family members, which allows us to identify family-run firms with some precision. Therefore, this paper studies the directorship of listed companies from the stock exchange of Thailand in 1996 and sees whether family companies are associated with poor investment and performance, using a variety of performance indicators.

Firm ownership and control often follows a pattern, or life cycle, as the firm expands. The literature on corporate management (e.g., Alfred Chandler (1977)) suggests that small, tightly focused firms can be well managed by traditional single-family hierarchies. As firms grow and diversify, however, this structure becomes increasingly inadequate, and eventually firms adopt the more modern, corporate “m-form” style of governance.

Businesses in Thailand, as in most other countries, often begin with certain skills and expertise within a single family. As the business expands and seeks new capital, it may become listed on the Stock Exchange of Thailand. After the first generation passes on, sons-in-law are taken in as part of the family. In this process, additional last names are added to the firm's directorship, creating what we refer to here as a "family partnership" firm. These family partnership firms are not as well adapted as either the well-focused family firms or the larger corporate m-form firms.

With diversity of family ownership, the firm's assets may take on the characteristics of a commons. As with the classic "tragedy of the commons," each family may be unable to stop the other families from appropriating assets, and therefore each family has a strong incentive to appropriate those assets for itself first. If the firm survives the partnership stage, it may evolve into a full-fledged modern corporation with full separation between ownership and control. Thus, it is not family firms per se, but transitional family partnership firms that may create problems for emerging economies.

Our data and analysis in this paper support this pattern of transformation. From the directors' last names we classify each as a "family firm," a "partnership," or a "corporation" (in which no directors are related). As opposed to the corporate form, following the literature we define a "crony" firm as either a family-run or a partnership firm. While we find that "crony" firms so defined perform worse than "family firms" and "corporations", our evidence strongly suggests that grouping family and partnership firms together is misleading. In fact, there is no significant difference between family and "corporate" firms, and both perform significantly better than partnerships.

In the next section, I review some literature about family businesses and their performance. In section 3, I describe data used in the study. In section 4, I discuss the empirical results. Section 5 concludes.

2. Literature review

Akira Suehiro (1993) defined the family business as “a form of enterprise in which both the ownership and management are controlled by a family kinship group, either nuclear or extended, and the fruits of which remain inside that group, being distributed in some way among its members.” In the broadest sense of the term, a business formed through an affiliation such as a family, personal relationship, or similar place of origin may be defined as a family business. Later on, we will see this broad definition of a family business may not be the best way to classify firms according to performance.

Faccio, Lang, and Young (2001) present evidence that Asian corporate governance problems are more severe than some commentators have suggested. Using low dividend payments as an indicator, they assert that owner-manager firms expropriated benefits from listed companies in East Asia. Lower dividend payments may be a sign of poor performance, but it is not the only explanation for low dividend payments, so it is important to assess a variety of performance indicators before drawing conclusions.

The majority of the stock of a family business is held by family members, and directors are chosen from among the family members as well. In contrast, a typical publicly held corporation generally has a large number and variety of shareholders who are distinct from the firm’s managers. Shleifer and Vishny (1997) argue that a good

corporate governance system should combine some large investors with legal protection of both their rights and those of small investors. Fama and Jensen (1983) suggest that decision-making and control can usefully be combined in a proprietorship, small partnership, or closed corporation.

In many developing economies, the majority of businesses begin as family businesses. Claessens, Djankov, and Lang (2000) showed that two thirds of East Asian corporations are family business, in the sense that a single family holds a major share of the firm. Although Shleifer and Vishny (1997) may question East Asian family firm governance, the entrepreneur in a developing economy may have little choice but to enter the capital market as a family business. By subsequently going public, the family firm may be able to acquire the capital it needs to expand to efficient scale. From a social welfare point of view, expanded ownership opportunities afforded by public capital markets may reduce the inequality of income distribution. Liquidity and predictability in capital markets improve as the judicial system and accounting standards evolve and improve in developing economies.

2.1 Evaluation of Family Business Performance

Two approaches dominate the literature on evaluation of family businesses. First, the business science approach, including the business history literature, discusses the issue from the standpoint of corporate control. Second, the sociological approach attempts to understand business management from the aspects of social relationships and family structure.

The business science approach developed within American scholars of how business transformation through time. Alfred Chandler (1977) argued that a firm is

forced to change its management style when it expands its scale sufficiently. Thus, independent management eventually takes over a successful family business. Useem (1984), a supporter of Chandler's theory, describes the developmental stages of US capitalism using his concept of "the inner circle." Useem divides the history of capitalism into three distinct stages. First, family capitalism is based on an "upper class" principle. The second stage of management capitalism is based on the "corporate" principle. Third, Institutional Capitalism is based on a "class-wide" principle.

The sociological approach, in contrast, focuses on the social relationships of owners and managers of family businesses. One type of family firm keeps all of its business within the family and marriage. The "chaebol" in Korea are good examples of this category. The second type of family business includes a wide range of relationships in the broader sense. The "keiretsu" in Japan, as well as Chinese-run business groups in Taiwan and South East Asian countries such as Thailand, are examples of "affiliation networks."

These two approaches provide a framework for analysis of management in Thai companies. A single-family company may not be at great risk for expropriation, but an "affiliation network" or "partnerships" of families may be a better target for the abuses of crony capitalism. Owners can expropriate benefits by transferring high costs or debts from their own accounts to that of the listed company. This paper examines whether it is accurate to lump single-family firms and family-partnership firms together as "crony capitalist" firms, or whether the pejorative "crony" label should apply only to the partnerships.

2.2 Firm Performance and Ownership Concentration

Many analyses of corporate governance systems focus on legal protection of investors and on ownership concentration in corporate governance systems around the world. For example, Shleifer and Vishny (1997) conclude that high outside-ownership concentration is associated with high performance, because outsider owners with a large stake in the firm will monitor and change management whenever necessary. With lower concentration of outside ownership, poor performance is more likely due to expropriation.

Todd Mitton (2002) also argues that firms with higher ownership concentration tend to perform better. Firms with higher disclosure quality (such as having ADRs and auditors from “Big Six” accounting firms) generally performed better during the Asian Financial Crisis of 1997. He believes that the benefit of concentrated ownership does not extend to concentrated ownership by managers. Similarly, Yurtoglu (2000) used data from Istanbul Stock Exchange to describe the characteristics of ownership structure of listed Turkish companies. He found that lower outside ownership concentration and pyramidal ownership structure have a negative effect on performance, as measured by return on assets, market to book ratio, and dividend payments.

Wiwattanakantang (2001a) investigated the effects of controlling shareholders on corporate performance using data from the Stock Exchange of Thailand 1996. Her work confirms the same result that the firms with a high concentration of non-management shareholders have higher performance as measured by return on asset and sales to asset ratio. However, if the controlling shareholders are also managers then the performance of the firm tends to suffer, which supports the idea that expropriation might occur in

firms owned and managed by the same family. However, she showed that family-controlled firms displayed significantly higher performance than the non-family firms did. Similarly, Anderson and Reeb (2003) find that family firms perform better than non-family firms do when a family member serves as CEO.

The regression models in these articles are similar in their choices of control and explanatory variables. The explanatory variable is ownership concentration by outsiders, while the control variables are firm size, dummy variables indicating industry, and leverage. Measurement of ownership concentration by outsiders is tedious and inaccurate, largely because it is often difficult to determine who owns the firm. Much of the stock may be owned by firms, which in turn are owned by individuals and other firms. Moreover, ownership can sometimes change hands rapidly.

The shareholders of the listed firms are irrelevant to firm performance if they are not involved in management of the firm. A family may also participate in the capital market as a major shareholder while professional management runs the business. As Lim (2000) shows, the Korean chaebol is owned and operated by the family whereas Japanese keiretsu is owned by group's member companies and run by the professional manager. The Japanese keiretsu allows professional management to maximize shareholder wealth. In Thailand, many firms with concentrated shareholding, such as Siam Cement Group, are managed by professional managers. The major shareholder of the Siam Cement Group is the Crown Property Bureau. There are more than ten listed firms in the group such as the Siam Cement Public Company Limited, the Siam Pulp and Paper Public Company Limited, Siam Tyre Public Company Limited. All are run by professional

managers. In addition, these firms are among the best performing firms in the stock exchange of Thailand.

On the other hand, a Board of Directors is easy to identify, controls the firm, and generally will hold office at least one year before changes occur. Therefore, unlike previous studies I use the family structure of on the Board membership to identify family firms. The significance of the composition of the Board of Directors is widely recognized in the literature. For example, Fama and Jensen (1983), and Klein (1998) support the idea that inside Directors provides valuable information to Boards about the firms' long-term investment decisions.

East Asian firms are much different from most American cases. First, the principal-agent problem in the form described by Jensen and Meckling (1976) is not important in East Asia because owners and managers are often the same people (Faccio, Lang, and Young 2001). Second, ownership concentration in East Asian firms is generally in the hands of owner-managers instead of outsiders. Large shareholders generally are able to put family members on the board of directors. Although small shareholders have the right to vote on important matters such as selecting the Board of Directors, in most cases they do not have enough power to select outsiders as directors. The Security Exchange Commission of Thailand requires all listed firms to have at least two outsiders on the Board, but the Board is allowed to appoint those "outsiders."

2.3 The Relationship Between Tobin's q and Performance

Tobin's q is traditionally defined as the ratio of the market value of the firm's installed capital to its replacement cost. The denominator, replacement cost, is the value of the physical capital if it were purchased today. A manager can raise the market value

of the firm by investing in new projects that will generate excess profits in the near future. By the traditional q theory, then, a high value of q indicates that investors recognize extraordinary talents or opportunities of present management.

On the other hand, the “financial q” theory assumes perfect substitutability between new and existing capital. According to this line of reasoning, if Tobin’s q is greater than one then the stock is overvalued. By the arbitrage theory of investment, the investor should invest in companies having q less than 1, since it is undervalued. Palley (2001) explored these contradictory views of the traditional q and financial q. He concludes that the relation between q and investment is an empirical issue.

The purpose of the present study is to examine whether there is a relationship between the roles of different styles of management and performance of the firm. In fact, as reported below, I find that the family structure of the Board has a significant impact on Tobin’s q. Interpretation of this result in terms of firm performance depends crucially on whether the traditional or financial interpretation of Tobin’s q applies in this case. Therefore, I also investigate the relationship between Tobin’s q and firm performance, and I find evidence in support of the traditional interpretation of Tobin’s q.

3. Description of data and variables

3.1 Description of data

The analysis in the following sections is based on publicly traded non-financial companies in Thailand in 1996. Bank, financial and insurance companies are excluded from the sample since it is difficult to measure their Tobin’s q. In addition, government regulates these sectors, which may affect their performances. The stock price, number of shares outstanding, and financial statements were collected from the I-SIMS database

produced by the Stock Exchange of Thailand. The first and last names of the board of directors were manually collected from Manager Information Services (1996). There were 346 listed companies at the end of the year 1996. All firms were included in the sample if they met two criteria: first, the company must have been listed before 1996, which provides necessary data for the study. Secondly, the first and last names of the board of directors must have been listed in the Manager Information Service.

Application of these two criteria reduced the sample size by approximately 10%, to 315 companies.

Table 1 shows the industrial composition and characteristics of these 315 companies listed in the Stock Exchange of Thailand in 1996. Firms in the sample vary widely in terms of assets, book value of equity, leverage ratio, total revenue, Tobin's q , and the performance variables. Table 1.1C indicates that firms spread fairly evenly across different management styles and industry sectors.

3.2 Description of variables

3.2.1 Dependent variables

Although Tobin's q is defined as the ratio of stock market value of the corporation to the replacement cost of its physical capital, it is not easy to accurately determine the amount of physical capital from the financial statement. Especially in the Thai case, standard accounting procedures are questionable. As in most empirical studies, I measure *Tobin's q* as the market value of equity, divided by the book value of the firm's assets.

To measure company performance, I use information from financial statements and from the I-SIMS database produced by the Stock Exchange of Thailand. The

variables are gross profit margin, return on assets, return on equity, and excess stock return. Each of the performance measurements offers a different perspective as follows:

Gross profit margin is the firm's revenue minus cost of goods sold divided by revenue. Controlling for industry and capital structure, profit margins should be similar. Firms with low gross profit margins may be transferring profit to family-owned subsidiaries by selling them their products more cheaply, or paying them inflated prices for raw materials. Alternatively, management of these firms may not be able to control the cost of goods sold.

Return on assets (ROA) measures whether the listed companies are using their assets productively. If the company owns unproductive assets, its return on assets will suffer. This might indicate expropriation if the management has acquired assets that serve the family or management, but not the company. For example, family directors might buy real estate using a loan from the bank in the company's name, and use it for unrelated family business or pleasure. There was a favorable climate for this type of expropriation in Thailand before the Financial Crisis, because real estate property markets in Thailand were highly volatile and accounting standards were poor.

Return on equity (ROE) is the ratio of net income to firm equity. It measures how effectively the company makes profit relative to firm equity. It is a volatile measure, though, because the proportion of equity in the firm's capital structure is highly variable, and is often quite small. Because of its problems, ROE is notoriously difficult to explain using regression methods.

Excess stock return provides market information that may not be easily manipulated by the management of the firm. It is another way of measuring firm

performance from the perspective of outsiders who care how much the firm is really worth. Unlike the other measures, it is not dependent on accounting standards. Most financial economists prefer to use excess stock return, rather than accounting measures, to measure the performance of a firm.

3.2.2 Explanatory variables

Data from Thailand offer a unique advantage for this study, since by law Thai last names can be uniquely identified to members of a single family. In the past, many Chinese people migrated to Thailand. Many of them had the same last name or even the same first and last name without knowing each other, which caused confusion. To solve this problem, Thai law allowed each family to register a new unique Thai last name. Thai last names are lengthy for this reason, but it is easy to identify family directors by their last name.

For this study, I classified companies into three categories: Family, Partnership, and Corporation, using data about the last names of directors. *Family firms* are defined as those whose board of directors has only one family with more than one member on the Board of Directors. If a firm's Board of Directors has two or more families with more than one Board member, then it is a *partnership firm*. If a firm's Board of Directors has no families with multiple members on the Board, I will call it a *corporation*. To test whether family influence in general affects a firm's performance, for one set of regressions I create another category, the *crony capitalist firm*, which consists of all family firms and partnerships.

Cronyism is a kind of extended family oriented culture. In Asian countries, family expansion is normal, especially among wealthy families. The "cronies" stick

together to pursue benefits from family business as described by Suehiro (1993). The founder of the firm may be a talented businessman who leads the whole family to fame and fortune. He keeps the firm alive and prosperous, and provides a fair share to each family member who contributes to the firm. As the firm grows, another family or families may join the firm, creating a partnership firm. Regression results reported below indicate that the partnership form, and not the single-family form, may be solely responsible for the poor reputation of family firms.

Table 2 describes the characteristic of the four management style categories. Family firms are the smallest in average size, and they have the highest debt to equity ratio. The average debt ratio of family and partnership firms both are high, while the corporation average debt ratio is relatively low.

3.2.3 Control variables

The Stock Exchange of Thailand defines 31 categories of industries, which I combine into five industry sectors. The agriculture sector consists of agriculture, and food and beverage. The commerce sector consists of commerce, packaging, and pharmaceutical product and cosmetic industry categories. The construction industry sector consists of the building materials, household goods, and property development industries. The manufacturing sector consists of the chemicals and plastics, electrical products and computers, electrical components, jewelry and ornaments, machinery and equipment, mining, printing and publishing, pulp and paper, textile, and vehicles and parts industries. The service sector consists of communications, energy, entertainment and recreation, health care services, hotel and travel services, professional services, and transportation.

The size variable is measured by the natural logarithm of total revenue of the firm. Some articles also use total assets or market value as a measure of size. From our descriptive data, average size of listed firms within each sector, ranked from smallest to the largest as measured by total assets, are agriculture, commerce, manufacturing, construction, and service. Leverage is measured as the book value of the total debt divided by the book value of equity. It is lowest in the service sector and highest in the construction sector.

4. Econometric Model and Empirical results

For each of the performance measures I estimate two structural equations, with Tobin's Q and firm performance as the dependent variables.

$$\text{Tobin's } q = \alpha_1 + \gamma_1(\text{control variables}) + \beta_1(\text{Style dummies}) + \varepsilon_1$$

$$\text{Performance} = \alpha_2 + \gamma_2(\text{control variables}) + \beta_2(\text{Tobin's } q) + \varepsilon_2$$

The style dummies are dummy variables indicating the family structure of the Board of Directors (i.e., family, corporation, partnership, and crony, as defined above). The control variables for the Tobin's Q model are firm size, leverage, and industry dummies. I exclude leverage and the style dummies from the performance equation.

This is a triangular simultaneous equations model, and the endogeneity of Tobin's q is therefore of potential concern. In a triangular model, two-stage least squares (2SLS) from table 6 is consistent, but ordinary least squares (OLS) will be consistent and more efficient if the model is fully recursive, i.e., if the errors in the two structural equations are independent. I report both OLS and 2SLS results and do a Wu-Hausman test to check whether 2SLS is necessary or not. These tests support the use of OLS for all specifications except for ROE. Secondly, I test the over-identification restrictions for the

performance equations. I find that excluding family directorship structure from the performance equation is supported by the test for all performance variables except ROE.

Results

Table 4 presents the regression results of Tobin's q on the different types of company management. The first column appears to indicate that the "crony" structure (i.e., either family firm or family partnership firms) has a negative and significant effect on Tobin's q. The regression in the second column shows that first regression is misleading, however; both the family and corporate coefficients are positive and significant, indicating that both types of firms have significantly higher levels of Tobin's q than will be found in partnerships. In addition, an F test shows no statistically significant difference between the family and corporate firms ($F_{1, 306} = 1.93, p = .17$). Thus, the empirical results suggest that the low levels of Tobin's q associated with "cronies" may in fact be solely the result of failures of the family partnership form.

Table 5 shows results of regressing the various performance measures on Tobin's q and control variables, using OLS. The results indicate that Tobin's q is positively related to performance. Thus, family firms and corporations, which generally have higher levels of Tobin's q, can be expected to perform better than partnerships.

5. Conclusion

Family firms are smaller and more leveraged than other firms are. To be able to borrow more money, a family firm must have prospects for future income that convince financial institutions to lend them more money. These income prospects are reflected in Tobin's q, and a higher Tobin's q is associated with better firm performance, as measured by a variety of accounting measures and market returns. Regression results in this paper

clearly indicate that family and corporate-style firms have significantly higher Tobin's q than family partnership firms do.

A low Tobin's q indicates lower prospects for future profits, and lower levels of q are associated with family partnerships. This empirical result is consistent with our model of the family partnership type of firm as a transitional type that contains incentives for opportunistic expropriation of assets. These poor incentives are often attributed to family firms in general, but the results in this paper suggest strongly that single-family firms do not have such poor incentives.

The implication of this paper is that the relationships among board of directors' members play an important role in determining how firms perform. The "family firm" is the kind of "autocratically-run" firm where the founder of the firm manages and controls all aspect of the firm, resulting in good performance. The "partnership firm" is analogous to an oligopoly where a board of directors can choose to cooperate or where member can pursue their own interests. Mostly, the oligopoly will end up in a prisoner's dilemma situation. The corporate firm is the best format where all directors on the board pursue shareholder wealth. I suggest we can apply the ideas in the paper more generally to characterize the relationships among board of directors in developed capital markets.

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Table 1: Sample Descriptive

1.1A: Industrial composition and characteristics of companies listed in the sample (1996).

INDUSTRY	NO. OF COMPANIES
Agriculture	29
Building material	31
Chemicals and Plastics	12
Commerce	14
Communication	9
Electrical products and computer	12
Electrical components	7
Energy	8
Entertainment and recreation	6
Food and beverages	27
Health care services	11
Hotel and travel services	12
Household goods	8
Jewelry and ornaments	4
Machinery and equipment	5
Mine	2
Packaging	17
Pharmaceutical product and cosmetic	2
Printing and Publishing	9
Professional service	1
Property development	37
Pulp and paper	4
Textile	29
Transportation	6
Vehicles and parts	8
Others	5
Total	315

1.1B: Descriptive information of 315 listed companies in the sample.

Variable	Mean	Std. Dev	Minimum	Maximum
Total asset	6007	13434	248	144838
Total liability	3644	9621	14	114858
Equity	2362	4283	-2405	36615
Total revenue	2619	5168	24	61367
Leverage	1.48	3.10	-6.92	50.27
Gmargin	0.30	0.21	-0.54	0.96
ROA	0.0029	0.21	-2.07	0.36
ROE	0.0021	0.82	-12.43	2.63
Excess St-r	19.59	85.35	-54.82	986.68
Tobin's q	0.63	0.71	0.03	5.32

1.1C: Number of firms by style of management in five industry sectors.

Industry	Family	Partnership	Corporation	Total
Agriculture	30	9	17	56
Commerce	18	5	10	33
Construction	37	13	31	81
Manufacturing	44	21	27	92
Service	20	6	27	53

Table 2 Descriptive information of firms by styles of management

		Family	Partner	Corporation	Crony
Total asset	Mean	4658	7376	7142	5381
	Std Dev	9138	15551	16706	11229
	Minimum	278	421	248	278
	Maximum	85913	100636	144838	100636
Total liability	Mean	2719	4510	4458	3195
	Std Dev	5535	10348	12950	7154
	Minimum	24	129	14	24
	Maximum	51363	64020	114858	64020
Equity	Mean	1938	2866	2684	2185
	Std Dev	3823	5447	4210	4323
	Minimum	-2405	218	-1006	-2405
	Maximum	34550	36615	29979	36615
Leverage	Mean	1.725	1.417	1.190	1.643
	Std Dev	4.293	1.035	1.396	3.716
	Minimum	-5.972	0.047	-6.919	-5.972
	Maximum	50.266	4.949	7.432	50.266
# Obs		149	54	112	203

Table 3 Descriptive information of firms by industry sectors: Agriculture, Commerce, Construction, Manufacturing, and Service sectors.

		Agriculture	Commerce	Construction	Manufacturing	Service
Total asset	Mean	2071	3759	8349	4605	10420
	Std Dev	2415	4744	13431	10818	23145
	Minimum	385	336	248	294	373
	Maximum	16394	19210	87858	100636	144838
Total liability	Mean	1189	2124	5530	2747	5861
	Std Dev	1430	3108	9905	6936	17199
	Minimum	60	56	58	14	24
	Maximum	8647	13441	70172	64020	114858
Equity	Mean	882	1634	2819	1858	4559
	Std Dev	1255	1975	3973	3955	6833
	Minimum	-2405	-591	-1006	-133	2289
	Maximum	7747	7189	19849	36615	34550
Leverage	Mean	1.241	1.175	2.336	1.338	0.874
	Std Dev	1.608	1.161	5.591	1.558	0.705
	Minimum	-6.919	-1.856	-2.998	-5.972	0.015
	Maximum	4.949	4.251	50.266	10.593	3.831
# Obs		56	33	81	92	53

Table 4 Coefficient estimates from regressions of Tobin's Q on the management style variables using OLS.

t-statistics are given in the parentheses and asterisks denote significance levels: * indicates significance at the 10% level, ** at the 5% level, and *** at 1% level.

VARIABLE	TOBIN'S Q	TOBIN'S Q
Intercept	-0.371 (-0.74)	-0.742 (-1.46)
Size	0.076** (2.22)	0.080** (2.34)
Crony	-0.168** (-2.09)	
Family		0.191* (1.79)
Corp		0.309*** (2.75)
Leverage	-0.024* (-1.91)	-0.024** (-1.99)
Commerce	0.043 (0.30)	0.042 (0.29)
Service	0.456*** (3.50)	0.458*** (3.52)
Construction	-0.059 (-0.50)	-0.053 (-0.45)
Manu	0.027 (0.24)	0.041 (0.36)
#Obs	315	315
Adjusted R_square	0.093	0.099

Table 5 Coefficient estimates from regressions of performances on the Tobin's Q variables using OLS.

t-statistics are parentheses and asterisks denote significance levels: * indicates significance at the 10% level, ** at the 5% level, and *** at 1% level.

VARIABLE	GROSS MARGIN	ROA	ROE	EXCESS STOCK RETURN
Intercept	0.610*** (4.33)	-0.608*** (-4.20)	-0.492 (-0.82)	-19.924 (-0.34)
Size	-0.030*** (-3.17)	0.042*** (4.21)	0.040 (0.97)	1.523 (0.37)
Commerce	0.082* (1.96)	-0.024 (-0.57)	-0.006 (-0.04)	-13.457 (-0.77)
Service	0.234*** (6.24)	0.012 (0.32)	-0.097 (-0.61)	-11.797 (-0.75)
Construction	0.129*** (3.89)	-0.047 (-1.39)	-0.294** (-2.07)	-22.279 (-1.60)
Manu	0.046 (1.42)	0.014 (0.44)	-0.105 (-0.76)	0.079 (0.01)
Tobin's q	0.055*** (3.46)	0.040** (2.49)	0.072 (1.07)	43.196*** (6.49)
#Obs	315	315	315	315
Adjusted R_square	0.198	0.085	0.008	0.127

Table 6 Coefficient estimates from regressions of Tobin's q on the family director variables and Tobin's q on performance variables using 2SLS.

t-statistics are given in the parentheses and asterisks denote significance levels: * indicates significance at the 10% level, ** at the 5% level, and *** at 1% level.

Table 6 System of equations on Family and corporation

VARIABLE	TOBIN'S Q	GROSS MARGIN	ROA	ROE	EXCESS STOCK RETURN
Intercept	-0.742 (-1.46)	0.604*** (4.10)	-0.638*** (-4.11)	-0.075 (-0.05)	-30.817 (-0.51)
Size	0.080** (2.34)	-0.035*** (-3.14)	0.049*** (4.15)	-0.144 (-1.19)	0.442 (0.10)
Family	0.191* (1.79)				
Corp	0.309*** (2.75)				
Leverage	-0.024** (-1.99)				
Commerce	0.042 (0.29)	0.108** (2.36)	-0.034 (-0.72)	0.502 (1.03)	-0.192 (-0.01)
Service	0.458*** (3.52)	0.255*** (6.63)	0.036 (0.89)	-0.201 (-0.49)	6.633 (0.42)
Construction	-0.053 (-0.45)	0.165*** (3.96)	-0.070 (-1.61)	0.545 (1.23)	-6.452 (-0.38)
Manu	0.041 (0.36)	0.073** (1.98)	0.0102 (0.06)	0.464 (1.17)	13.820 (0.91)
Tobin's q		0.134* (1.71)	-0.068 (-0.83)	2.883*** (3.45)	64.676** (2.01)
Adjusted R_square	0.099	0.167	0.059	0.021	0.023
Wu-Hausman Test for endogeneity of Q		1.32 (0.2513)	1.79 (0.1814)	121.32*** (0.0001)	0.70 (0.4020)
Overidentifying Restrictions test		0.345 Fail to reject H ₀	0.284 Fail to reject H ₀	6.933 Reject H ₀ at 1%	0.032 Fail to reject H ₀