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Agency Costs and Ownership Structure: Evidence from the Small Business Finance Survey Data Base

A Working Paper by Jacky Yuk-Chow So
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December 2005

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Small Business Research Summary

Advocacy: the voice of small business in government

December 2005 No. 268

Agency Costs and Ownership Structure: Evidence From the Small Business Finance Survey Data Base

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2005. [32] pages. Under contract SBAHQ-04-M-0136

Agency problems* arise when a corporate organization (the principal) employs a professional manager (the agent) and thereby separates the business owner(s) from control of the business. Most previous studies of such agency problems used data from publicly traded companies. Applying these study results to small owner-controlled business reveals two limitations. First, in most publicly traded companies, the largest shareholders seldom own more than 50 percent; therefore, the results may not be applicable to problems faced by smaller, family/owner-managed firms. Second, since control is not separate from ownership, these small firms should, by definition, have no agency problem. Family shareholders usually are less likely to expropriate bondholder wealth than other shareholders; family firms may also have incentive structures that result in fewer agency conflicts between equity and debt claimants.

The author hypothesizes that agency problems suffered by larger firms are not statistically significant for smaller owner-manager or family-owned firms. The Federal Reserve Board's 1993 National Survey of Small Business Finances (NSSBF) database was used to test the hypotheses.

Findings

1. Agency costs of owner-managed and outsider-managed firms—as measured by the ratios of operating expenses to sales and sales to assets—are not significantly different. Similar results are documented for the family-owned small company. However, owner-managed firms are statistically different from outsider-managed firms in ratios of cash flow to assets for 100 percent management-owned firms and firms in which no owner or family owns more that 50 percent (diffused ownership). These results, together with the higher efficiency of the diffused-ownership firms, show that agency problems do not exist for smaller firms.

2. The above results do not take into account the interactive effect of internal monitoring, derived from ownership, and external monitoring derived from bank loans/debt holders. When regression analysis is used to study all these effects, it can be said that a large number of nonmanager stockholders will decrease the efficiency of small firms. The overall effect of bank monitoring is negative; therefore, the benefits of bank monitoring may be outweighed by the associated "hold-up" costs. For example, if a firm has only one creditor, it may incur higher refinancing costs because borrowing from other creditors is more costly.

3. Since the coefficients associated with family ownership are not significant statistically, but the debt-to-assets ratio is, it appears family ownership cannot mitigate, nor is it related to, agency problems of small firms.

4. After factoring in the "interactive effect" by using a more powerful statistical method, the above findings are maintained with the exception that family ownership indeed plays an important role in eliminating agency problems. The empirical evidence, therefore, supports the alignment-based governance system proposed by John and Kedia.

Implications for Business Owners

The study's findings have significant implications for small business owners. Because owner-managers are the most effective mechanism for eliminating agency costs, it is important for owners of small

*In this paper, "agency" refers to the relationship between a principal, such as a business owner or owners, and his or her agent, such as a manager.

firms to participate actively in investment and financial decision-making. When the size of the company increases, as measured by sales, and when professional managers are recruited, delegation of authority becomes necessary. To reduce the associated agency costs, corporate control mechanisms involving family members and/or banking relationships should be established to monitor the behavior of the nonowner managers. Otherwise, the Wall Street scandals that plagued the Fortune 500 companies may become a reality for the small firm.

Methodology

To test the hypotheses, the author used, as proxies to measure agency costs, ratios of operating expenses to sales and sales to assets. Their joint effect is analyzed using the ratio of cash flow to assets. It is assumed that these three variables are affected by log sales, industry effect, firm age, different ownership (internal control dummy variable) schemes (owner-managed; >50 percent family owned; >50 percent primary owner), log of number of nonmanager stockholders, and external monitoring (number of banking relationships, length of the longest banking relationship, and debt-to-asset ratio).

Firms of two types—owner-managed and outsider-managed—are also grouped into six sub-groups: 1) all corporations; 2) corporations in which the primary owner owns 100 percent of the firm; 3) corporations in which the primary owner owns more than 50 percent of the firm; 4) corporations in which a single family owns more than 50 percent of the firm; 5) corporations in which no owner or family owns more than 50 percent of the firm; and 6) proprietorships. The average of each of the agency cost proxies was estimated and t-tests or z-tests were performed to examine the differences between owner-managed and outsider-managed firms.

The ordinary least squares (OLS) method was used to study the relationship between the dependent variables (the agency costs) and the independent variables mentioned previously. Since the multi-equation system was more appropriate for studying the optimal governance system, the author employed the seemingly unrelated regression (SUR) method to simultaneously test the variables of these ratios: operating expenses to sales, sales to assets, and cash flow to assets. The estimates from the SUR are believed to be more efficient than the OLS estimates.

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AGENCY* COSTS AND OWNERSHIP STRUCTURE: EVIDENCE FROM THE SMALL BUSINESS FINANCE SURVEY DATA BASE

I. INTRODUCTION

Following recent Wall Street scandals, where many corporate executives were found to have committed accounting fraud benefiting themselves at the expense of the shareholders (see *Wall Street Journal*, March 16, 2005, A1), corporate governance has been more seriously scrutinized by regulators and corporate stakeholders. Congress has joined in, passing new legislation which requires stricter control of the selection of independent directors, implements monitoring mechanisms, and results in greater corporate transparency.

Potential conflicts between managers and shareholders have long been recognized in professional financial literature. For example, Brigham and Houston (2003, p. 20) state "managers may have personal goals that compete with shareholder wealth maximization. Managers are empowered by the owners of the firm—the shareholders—to make decisions, and that creates potential conflicts of interest known as agency theory." According to this theory, agency problems arise whenever managers of a firm own less than 100 percent of the firm's common stock. In an owner-managed proprietorship, the owner-manager will operate so as to maximize his or her own welfare, seeking the highest profits to enhance personal wealth, and balancing fringe benefits and leisure expenditures. But when this same owner-managed company becomes a corporation, and stock is sold to outsiders, potential conflicts of interest immediately arise. The managers often choose to apportion themselves perquisites, such as luxurious offices, expense accounts, limousines, corporate jets, generous retirement plans and the like, because the

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costs of such are now borne by outside shareholders. Worse, the former sole owner-manager may find him/herself working less strenuously than before, resulting in less profit, since the wealth of the company is now being shared by these new shareholders. The problem can be even more serious for large corporations because their managers usually own only a small percentage of the stock. Normal corporate control mechanisms and policies—such as managerial compensation, shareholder intervention, and the threat of firing and/or takeover, which are usually set to motivate managers to act in shareholders' best interests—are of questionable effectiveness in solving these agency problems.

Numerous studies have empirically tested one of the most well known agency theories in finance developed by Jensen and Meckling (1976). Most of these studies used data from companies whose shares are traded in organized stock exchanges such as the NYSE and/or NASDAQ. However, since no publicly traded firm is entirely owned by management, Jensen and Meckling's zero agency problem/cost base ratio theory cannot be examined directly as to its application to the agency problem we are concerned with. Recently, several authors recommended applying these theories to small firms owned solely by a *single* owner-manager, since the interest of the owner and the manager should be closely aligned in such firms, and therefore agency costs should be nil. Using the Federal Reserve Board's National Survey of Small Business Finances (NSSBF) database, Ang, Cole, and Lin (2000, hereafter ACL) found that the costs of this agency problem, "agency costs," are significantly higher when an outsider manages the firm and when there are more nonmanager shareholders. They further found that in this situation, managers' ownership share and bank monitoring may be an effective corporate control mechanism that can reduce agency costs.

Singh and Davidson (2003, hereafter SD) adopted the approach used by ACL to study large firms. Unlike ACL, who use administrative expenses to measure agency cost, SD used sales and general and administrative expenses. Moreover, SD analyzed the role

of corporate leverage, rather than the banking relationship, in influencing the agency costs experienced by large corporations, since large corporations have greater access to the public debt market and generally rely less on bank financing. They found results similar to ACL in that higher managerial ownership does positively influence asset utilization efficiency. However, such ownership cannot reduce excessive discretionary expenses. Outside block ownership and larger board size does not improve the efficiency of a large corporation, either. Note that the impact of takeover forces generated by the stock market are not examined and since they are not available to discipline smaller firms, the comparison between large and small firms in this study is incomplete. Moreover, the results obtained by ACL have the following pattern: ownership variables and external monitoring variables are highly significant statistically when a single regression is applied. However, some of these variables, such as family ownership and a banking relationship (see tables III and IV), become insignificant when they are regressors of the multiple regressions. Questions arise: Why are these variables important in corporate governance individually, but not jointly? Is the behavior consistent with any financial theory, and how would they affect the results documented by previous studies?

This study examines the relationship among agency costs (the monitoring costs incurred for aligning the managers' interest with the shareholders; see more discussion in Section II), corporate governance, and ownership structure of small firms using the NSSBF database from the 1993 survey. We will focus on the combined effect of the two variables used by previous studies to measure agency costs: higher operating expenses and inefficiency. The combined effect will further be analyzed using their components: *internal control*, measured by the ownership variables, and *external control*, measured by the firms' relationship to their bank, and the debt-to-asset ratio. We argue that the "combined effect" approach implies that the more appropriate measure of managerial performance is cash flow since it captures not only efficiency, but also leverage, which is measured by the debt-to-asset ratio. Our recommendation is also consistent with the

rational behavior of entrepreneurs who are interested in maximizing profits or their own wealth. Knowing that there will be a significant agency problem, these entrepreneurs do not hire managers unless the marginal benefit is higher than the potential agency cost (see more discussion below). We extend the ACL and SD studies by including the monitoring effect of family ownership and other than bank loan debt, as these internal and external control mechanisms may act to reinforce or replace the role played by the bank. Nonbank borrowing, however, may create another kind of agency problem that is the conflict between shareholders and bondholders.

A relatively new and original theory developed by John and Kedia (2003) will be used as the theoretical foundation of this study and to address some statistical problems inherent in previous studies. The John and Kedia theory is recommended because it highlights the importance of recognizing corporate governance as a system that allows ownership and external monitoring variables to interact with each other. Using this theory, the "interaction effect/combined effect," not the "individual effect," is relevant for studying corporate governance. Moreover, the interaction effect reveals that a multivariate regression model is more appropriate than simple regression for testing agency problems. The interaction effect motivated us to ask the following research questions related to efficiency, agency cost, and self-screening (or signaling):

1. If rational entrepreneurs know *ex ante* that there will be significant agency costs associated with hiring professional managers, the fact that they are hired implies that *ex ante* gains from the service provided by these managers may also be higher. In other words, performance measures such as efficiency should be positive and significant statistically. If this is the case, why hasn't there been documentation of "agency benefits," or higher efficiency provided by managers.
2. Similarly, if rational managers know that bank monitoring will reduce their personal wealth, why do they not use nonbank financing alternatives? Is it possible that managers,

consistent with the screening effect hypothesis found in finance literature, use bank loans to portray themselves as "good" managers?

3. Will the use of nonbank debt create another kind of agency problem between bondholders and shareholders? How would this kind of problem affect the owner-manager agency problem documented by the literature?

The remainder of this paper is organized as follows: related studies are reviewed in three different sections to provide background information, further explain the motive for our study, and present the issues and hypotheses. Section II discusses the role of ownership and banks in corporate governance; Section III analyzes efficiency and agency costs wherein we propose that "good" managers may use debt to differentiate themselves from "bad" managers– the "screening effect"; Section IV studies the monitoring effect of debt, bank loan and family ownership; Section V discusses the hypotheses, methods, data, and its source, the Survey of Small Business Finances database; analyses and results of the study are reported in Section VI with conclusions and suggestions for further research.

II. **Optimal Corporate Governance: Ownership and Bank Monitoring**

In their seminal work, Jensen and Meckling (1976) demonstrate that the corporate form of organization, which allows owners to separate control from ownership and to hire professional managers to manage the companies, gives rise to the principal (shareholder)-agent (manager) problem, wherein the manager seeks to maximize his/her own wealth rather than the firm's. Jensen and Meckling define agency costs as monitoring costs, or the expenses necessary to prevent such principal-agent problems. Agency costs may take the form of awarding themselves on-the-job perks, shirking of responsibility, and making self-interested and entrenched decisions which ultimately reduce shareholder wealth, and such costs may include the monitoring costs to discipline managers. Free cash flow may also be an indicator of agency problems [Jensen (1986)]. It should be noted that Jensen

and Meckling assume that the labor markets are inefficient and cannot eliminate agency problems [see Fama (1980)], nor may optimal labor contracts be feasible.

If agency costs are significantly higher when an outsider manages the firm where there are more nonmanager shareholders, as found by ACL, then agency problems are a serious consideration for the small company. Too, the finding that a manager's ownership share *and* banks may be effective corporate control mechanisms that can reduce agency costs is puzzling. Since managers become owners of the firm and their incentives are seemingly aligned with those of the shareholders, why is bank monitoring necessary? The optimal governance structure theory developed by John and Kedia (2003, hereafter JK) may be useful in solving this puzzle.

JK examined how different economies would design an optimal corporate governance system structured from three main mechanisms of corporate governance (managerial ownership, monitoring by banks, and disciplining by the takeover market). According to the authors, only three configurations can arise as optimal governance structures, no matter what the characteristics of the embedding economy. These configurations can be characterized as:

> "1) concentrated ownership by managers or insiders with no role for takeovers or monitored debt (referred to as alignment-based (AB) governance structures), 2) monitored debt accompanied by concentrated ownership by managers with no role for takeovers (referred to as pre-commitment-based (PB) governance structures), and 3) takeovers accompanied by diffuse ownership with no monitored debt (referred to as intervention-based (IB) governance structures)." (p. 6)

Although the JK theory focuses on an international governance system, it can be reinterpreted and applied domestically, so that a less developed business sector within a well developed country can be compared to a less developed country. For example, as pointed out by JK, alignment-based (AB) governance structures have the characteristics

of what is commonly referred to as family-based systems. On the other hand, the pre-commitment-based governance structures can also be applied to small firms in the United States if the owners of the firms are also the managers. Takeovers are a very powerful mechanism to discipline managers of publicly traded companies [see Manne (1967); Bhaget, and Jeferis (2002); and Jensen (1986)]; on the other hand, small and medium-sized companies in the United States are mostly privately-owned and are not exposed to takeover threats despite the fact that U.S. stock markets are the largest and most well developed around the world.

III. Efficiency, Agency Costs and Self-screening

Financial theory reveals that cash flows are a more appropriate measure of efficiency and profitability [see Anderson et. al. (2003)]. Singh and Davidson (2003) actually state "...A higher asset turnover ratio shows a large amount of sales and ultimately cash flow that are generated for a given level of assets." (p. 799). Cash flow is more appropriate to appraise the net benefit of employing a professional manager if, in addition to awarding themselves perks, they also improve the efficiency of the company with their experience or expertise in management and/or technology. DeYoung, et al., (2001) and Evenoff and Israilevich (1991) showed that small banks that hired managers are more efficient. Their findings further reveal that rational business owners are not willing to assume agency costs unless there are foreseeable gains in efficiency. Therefore, a tradeoff between efficiency and agency costs must be considered. At equilibrium, the rational firm would choose the organizational form that maximizes the wealth of their owners, i.e., when marginal gain from efficiency is offset by the marginal cost that must be incurred to monitor the owner's agent. Although the argument is similar to the PB governance structure, its prediction is quite different: the correlation between agency costs and efficiency is not statistically significant.

Although not explicitly stated, researchers ACL assume that small business companies use PB governance structure when they test the agency costs using both

ownership variables and external monitoring variables, such as banking relationship and debt-to-asset ratio. The PB governance structure has two unique features, i.e., monitoring and ownership. As stated in JK (p. 5): "whenever bank monitoring is part of an optimal governance system, it is accompanied by concentrated ownership." Since the owners are also managers in small firms, the managers' incentives are aligned with those of the shareholders, and the importance of the monitoring role of financial institutions is questionable. Indeed, consider the manager of the firm with alignment-based governance: the degree of his alignment and the level of his private benefits determine his/her decisions. As pointed out by JK,

> "...once bank debt is chosen, bank monitoring ensures that the right project is implemented. In this case monitored debt captures the intuition of self-imposed pre-commitment by the manager to forego his private benefits, and undertake the good project..." (pp. 10-11)

Thus, bank monitoring should be negatively correlated with agency costs and positively correlated with efficiency. The former is confirmed by ACL, but the latter is not. In fact, the regression coefficient of the number of banking relationships is negative. Whether or not a family owns more than 50 percent of the firm is also found to be unrelated to the agency costs and efficiency of firms. We hypothesize that with no role for takeovers or monitored debt, and ownership concentrated in the hands of insiders, it is possible that the AB governance structure of the family-based system is optimal for small and medium-sized companies in the United States.

IV. Monitoring: Debt, Bank Loans and Family Ownership

In addition to bank loans, many small companies obtain financing for their investments in forms such as leasing, credit cards, trade credit, and bonds. Because of asymmetric information, and since shareholders are the residual claimants of the corporations after bondholders or other forms of debt are satisfied, shareholders may have an advantage over bondholders by substituting risky assets for safe assets [Jensen

and Meckling (1976)] or by taking excessive risk during financial distress. Bond financing may also create an under-investment problem [Myers (1977)] in that a positive net present value project may be rejected if the benefit from accepting the project accrues to the bondholders without also increasing shareholders' wealth. Because the creditors are aware of the potential conflict, higher interest rates or other costly measures may be charged and paid. Banks, as creditors of the companies, often demand access to nonpublic information, closely monitor investment decisions, and more efficiently decide whether to liquidate or refinance the firm during financial distress. Thus inefficiencies may be reduced or eliminated.

Correspondingly, Diamond (1991) found this kind of monitoring may be more valuable to small firms without established reputations. Cole, Wolken, and Woodburn (1996) report that more than 60 percent of the dollar amount of small businesses' outstanding credit usually takes the form of bank loans. Berger and Udell (1995), Petersen and Rajan (1994), and Cole (1998) find that small U.S. firms with close banking ties have facilitated access to lower costs of credit. Bank loans, thus, may be more effective in reducing agency costs. Additionally, this concept is valuable for small firms that have high growth. However, Myers (1977) shows that the problems of under-investment may be more serious for firms that have more growth opportunity than assets in place. Since the decision to invest in growth opportunities depends greatly on managerial discretion, and since asymmetric information may be more severe than for assets in place, bond financing may not be as effective as bank loans in resolving the agency problems between shareholders and bondholders. The advantage of using bank loans is affected by the way monitoring costs are allocated. Fama (1985) argues that banks may recover the monitoring costs for the firms via financing terms. Moreover, if a firm has only one creditor, it may have to pay for a side payment (the "holdup" cost) during refinancing because borrowing from other creditors is more costly. Houston and James (1996) find that high-growth firms have less bank debt if they rely on a single bank

or do not have public debt. Anderson and Kakhija (1999) believe that this result suggests that U.S. banks hold back high-growth borrowers.

Significant holdup costs can be used to explain the puzzle documented by ACL. The authors find that

> "... the length of the firms' longest banking relationship variable is inversely related to the sales-to-asset ratio, and is statistically significant at better than the 10 percent level. This runs counter to our hypothesis that agency costs are lower when a firm's bank had more time to develop valuable private information about the firm..." (p. 102)

Moreover,

> "...the number of banking relationships is negative and statistically significant ... this finding conflicts with our hypothesis in which multiple banking relationships reduce each bank's incentive to monitor, and therefore, increase agency costs. One possible explanation... is that the number of banking relationships may proxy for factors other than the banks' incentive to monitor the firm..." (p. 100)

Observing both bank loans and other debt used by the same company may also indicate that the monitoring role of bank loans and other debt is complementary rather than a substitution. In well functioning capital markets and the corporate world, different instruments and their mixture, should be created and used to overcome different kinds of agency problems. This argument is consistent with the theory developed by JK, who also emphasize the importance of treating corporate governance as an integrated system, rather than unrelated, isolated variables. However, if the effect of bank loans is not statistically significant, and its monitoring role is rejected, the alignment-based governance structure may be more relevant for studying smaller U.S. companies. Previous studies, such as Anderson, et al., (2003) and James (1999) found that family shareholders could be less likely to expropriate bondholder wealth than other shareholders because of their extended investment horizons. Consequently, it is the fact

of family ownership, not the bank relationship or bank loan, that mitigates the agency cost of debt caused by the conflict of interest between shareholders and bondholders.

Note that the "systemic" approach of JK reveals that monitoring variables may interact with each other. For example, ownership variables that provide internal control mechanisms, such as when the "manager is a shareholder," "one family owns >50% of the firm," "ownership share of primary owner," and "log of the number of nonmanager stockholders," may reinforce or replace each other. Similarly, external monitoring variables such as the length of the longest banking relationship, the number of banking relationships, or the debt-to-asset ratio can also be substitutes or complements to each other. The same argument can be extended to the "across- group" variables, i.e., internal versus external variables. Most likely, these two groups of variables will be the complement of each other. The within-group variables, conversely, may tend to be substitutes or replacements. We test this hypothesis by using a system of equations and by the product of related variables in regression analysis. Stepwise regression will also be implemented.

V. HYPOTHESES, DATA AND METHOD

A. Hypothesis

The John-Kedia theory emphasizes the interaction mechanism between internal control, reflected by ownership, and external control, measured by proxy variables such as bank loans and bank relationships. These variables are part of a system that can be used to resolve agency problems. The single equation ordinary least squares (OLS) method used by previous studies, however, is not appropriate and a multivariate regression model is recommended. Since the errors in different equations may be correlated by taking these cross-equation correlations into account, the efficiency of the estimation can be improved. Several related hypotheses will be directly or indirectly tested in this study:

a. Hypothesis 1: Small firms with high family ownership are more consistent with alignment-based governance than a self-imposed pre-commitment by the manager, i.e., the pre-commitment-based governance assumed by ACL is not supported by empirical evidence.

b. Hypothesis 2: Both agency costs and the efficiency of managers significantly affect the cash flow of a firm.

c. Hypothesis 3. The monitoring role of bank involvement is more effective in resolving agency problems between business owners and managers. Family ownership, on the other hand, more appropriately resolves the agency problem between shareholders and bondholders. These can be examined by the cash flow analysis in Hypothesis 2 above.

d. Hypothesis 4: The internal and external control variables interact with each other, jointly affecting the resolution of agency problems.

e. Hypothesis 5: The multivariate regression model is more appropriate for studying agency problems with operating expenses and inefficiency as dependent variables. The estimates from the latter will be more efficient.

B. Data and Variables

1. Data

As mentioned before, data were downloaded from the website of the Federal Reserve Board. Further, data were collected from the 1993 NSSBF. The timeframe was chosen so that our results could be compared with Ang, et al., (2000). Since some firms have data items that are very large or very small, there are many "outliers." Moreover, when the data items have zero value, another statistical problem is created for some financial ratios: the results obtained by dividing any variables by zero will be undefined. To avoid the outlier problem, we followed Ang, et al., (2000, p. 94, footnote 11) by capping the sales-to-assets ratio at the 95th percentile. We also exclude the 5th percentile and 95th percentile. The results are similar and therefore are not reported in order to save

space. Note that with outliers, most z-tests from the analysis of variance will not be significant statistically. Thus, outliers do, indeed, have significant impact on studying agency problems of small firms.

2. Variables.

a. Agency costs: Following the accounting and financial economic literature, we use two variables to measure agency costs of the firm: the expense ratio and the asset utilization ratio. The former is defined as operation expense, scaled by annual sales, and the latter is annual sales divided by total assets. The expense ratio is a measure of how effectively the firm's management deploys its assets. While higher expense ratio is positively correlated with agency costs, asset utilization ratio is inversely correlated with agency costs. When the management makes bad investment decisions, purchases unproductive assets, exerts insufficient effort, or awards excessive perquisites, the firm will have a low asset utilization ratio that implies high agency costs.

b. Internal control variables: two variables: ownership and the debt-to-asset ratio are used to study the impact of internal corporate control. Ownership is further grouped into four categories: "manager is a shareholder" (dummy variable), "one family owns >50% of the firm" (dummy variable), "ownership share of primary owner" (%), and "log of the number of nonmanager stockholders." The predicted signs of these variables, including the debt-to-asset ratio, should be negative, with the exception of the last one.

c. External control variables: two variables, the length of the longest banking relationship and the number of banking relationships, are used as proxies for corporate control imposed by outsiders. Banks generally require a firm's managers to report results honestly and regularly; consequently, managers may be forced to run the business efficiently and profitably. Thus, bank monitoring complements the monitoring of managers by shareholders, thereby indirectly reducing owner-manager agency cost.

d. Control variables: because the independent variables discussed above may be correlated with firm age, the firm size, which is measured by log sales, and the industries

of the firms are included in these variables in our regression analysis. A dummy variable method is employed to capture the industry effect.

C. Method

Hypotheses 1-3 will be tested by using the Z-statistics to test the difference in the means from different groups. The OLS method and seemingly uncorrelated regression (SUR) will be used to study hypotheses 4 and 5, using data from the firms with corporate charters only. SUR is also known as joint generalized least squares or Zellner estimation, and is a generalization of OLS for multi-equation systems. Like OLS, the SUR method assumes that all the regressors are independent variables, but SUR uses the correlations among the errors in different equations to improve the regression estimates. The SUR method requires an initial OLS regression to compute residuals. That provides us the opportunity to compare the estimates from both methods. The OLS residuals are used to estimate the cross-equation covariance matrix. Precisely, the following regressions will be run:

(1) $$y_i = \alpha + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots\ldots\ldots + \beta_n x_{ni} + \varepsilon_I,$$

(2) $$q_i = \alpha' + \beta'_1 x_{1i} + \beta'_2 x_{2i} + \ldots\ldots\ldots + \beta'_n x_{ni} + \kappa_I$$

where y_i = agency costs of i firm, measured by the ratio of operating expenses to annual sales;

x_{ni} = manager is a shareholder (dummy variable); one family owns > 50% of the firm (dummy variables); ownership share of primary owner; log of the number of nonmanager stockholders; length of the longest banking relationship; number of banking relationships; debt-to-asset ratio; two-digit SIC dummies; log of annual sales.

ε_i , κ_i = the disturbances.

q_i = agency costs of i firm, measured by the ratio of annual sales to total assets.

α, β and α', β' are the intercept and slopes coefficients. Let (x'x) be a matrix formed from predicted values and let z be the instrument set and r the regressor set, then $x = (z'z)^{-1} zr$. For ordinary least squares method and SUR, z is the identity matrix. (x'x) is formed as $[r'(s^{-1} \Omega z(z'z)^{-1} zr]$. S is an estimate of the cross-equation covariance matrix. For SUR to be effective, the models must use different regressors. We therefore introduce time-interest-earned to capture bankruptcy risk. Note that time series data are not available. Otherwise, standard deviation of sales or cash flows would be used. In order to study the net effect of agency costs and efficiency, we add a third equation:

$$(3) \qquad p_i = \alpha'' + \beta''_1 x_{1i} + \beta''_2 x_{2i} + \ldots\ldots\ldots + \beta''_n x_{ni} + \kappa'_I$$

where p_i is the cash flows of firm i and the other variables are as defined before.

VI. RESULTS

1. Industry Effect and Descriptive Statistics

Figures 1 to 3 reveal the means of the three dependent variables used in this study: sales-to-assets ratio, operating expenses-to-sales ratio, and the cash-flows-to-asset ratio in 1993 for seven industries: construction (1), manufacturing (2), transportation (3), wholesale (4), retail (5), insurance and real estate (6), business services (7). Those in the manufacturing industry tend to have the highest agency costs, are inefficient and therefore their cash flows are the lowest. The retail industry, on the other hand, is quite efficient as is reflected by their low operating expenses ratio and high sales-to-assets ratio; however, retail cash flows are only about average. Interestingly, the business service industry has a different pattern. It has high agency costs and is quite inefficient, yet its cash flows are among the highest.

Table 1 reports the descriptive statistics. It is quite obvious that measurements of agency costs and cash flows are quite skewed. Some ownership variables and monitoring variables also have similar tendencies. Another feature is non-normality. Since kurtosis is

much larger than 3, the value for a normal distribution, the distributions of the dependent variables, are sub-Guassian. Therefore, the assumption of normal distribution is violated.

Figure 1:

Figure 2 :

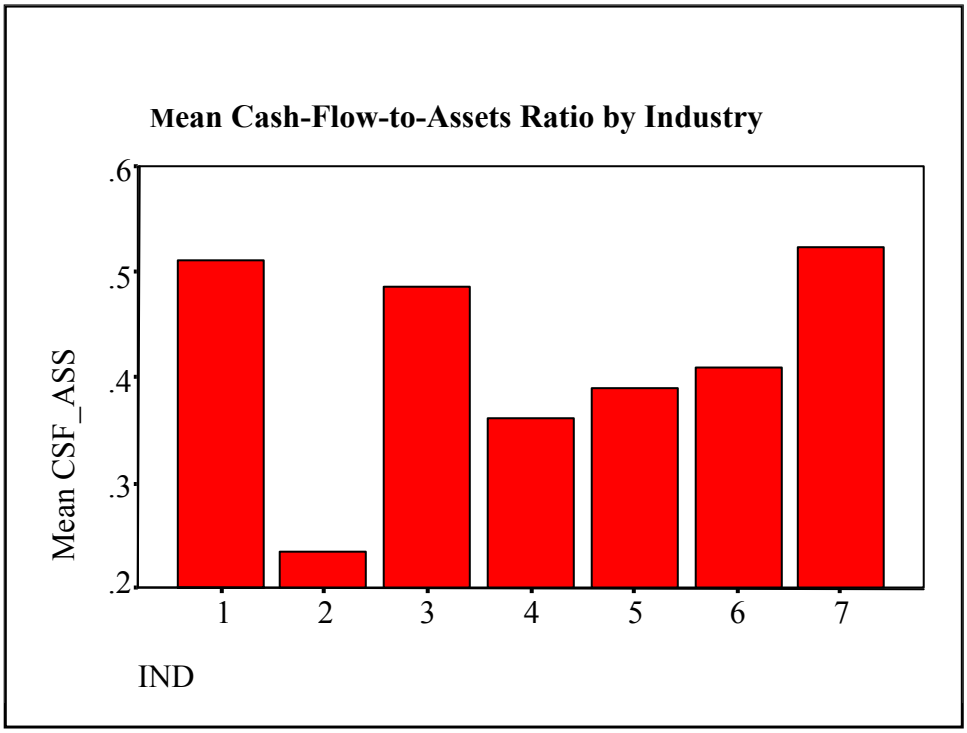
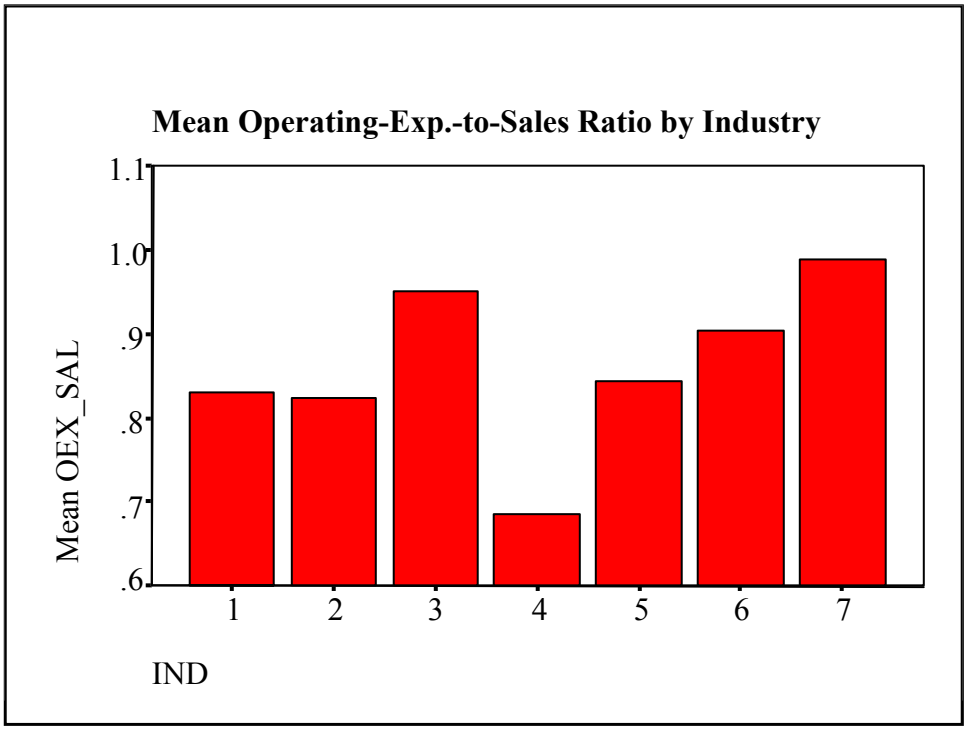


Figure 3



In addition to capping the 95th percentile, we cap the 5th percentile to reduce the impact of outliers in order to force the distributions to be closer to normal distributions.

B. Pre-Committed Based Governance: Correlation and Endogeneity

Table 2 reveals that the two measurements of agency costs are negatively correlated with cash flows, with a correlation coefficient s of –0.6498 and –0.2246. The negative relationship between cash flow and operating expenses is reasonable. However, it is difficult to document the negative relationship between cash flow and efficiency. It is possible that the profit margin associated with sales is very low, even negative. Family ownership, on the other hand, is highly correlated with principal ownership share; thus, family ownership tends to indicate majority ownership of the firm. The number of nonmanager stockholders, however, is negatively related to owner-manager, family ownership, and large shareholders. This is reasonable since they are practically a substitute for each other. The number of years of the bank relationship is weakly correlated with the internal control variables such as principal shareholders and

nonmanager stockholders. These variables may then be able to provide unique contributions to a corporate governance system. Since the debt-to-asset ratio has a correlation of 0.2417 with the number of banking relationships, a large portion of the indebtedness of small firms may be bank loans. These results show that the "interaction" effect of the John-Kedia governance system indeed exists. Hypothesis 4 is therefore not rejected (see more evidence below).

In order to study the "endogeneity" of agency costs and financing, i.e., whether agency cost affects financing, we regress the longest banking relationship (measured by years) on an operating-expenses-to-sales ratio, sales-to-assets ratio, and cash flows. The same procedure is repeated for the other two external control variables: total number of banking relationships and debt-to-assets ratio. Since this approach is consistent with the pre-committed-based governance structure in which managers choose whether or not to opt for monitored debt, it can also be reinterpreted as a test of the Pre-Committed Based structure.

The results in Table 3 reveal that the longest banking relationship is not affected by the two measures of agency costs and cash flows. Only at the 10 percent level is the total number of banks negatively affected by sales-to-assets ratio. Thus, the hypothesis is not supported. Moreover, only the slope coefficient for the operating expenses-to-sales ratio is negative and significant at the 5 percent level when debt-to-asset ratio is the endogenous variable. None of the coefficients for cash flows are significant. Therefore, the pre-committed based structure is not supported by the empirical evidence. In other words, the implied assumption made by Ang, et al., (2000) is not acceptable and Hypothesis 1 is rejected. Since endogeniety may exist for the efficiency variable, and to a lesser degree for operating expenses, a system of equations is therefore necessary.

Table 1: Descriptive Statistics

Variables	Label	N	Mean	Median	Minimum	Maximum	1st Pctl	5th Ptcl	95th Pctl	99th Pctl	Kurtosis	Skewness
CSF_ASS	Cash Flow to Assets Ratio	928	-1.1916	-0.4983	-54.5409	13.3800	-11.6743	-4.8726	0.5665	2.2934	102.8529	-8.3405
OEX_SAL	Operating Expense to Sales Ratio	928	0.8895	0.9170	-1.1280	5.1921	0.0598	0.1650	1.6383	2.2814	6.6058	1.1450
SAL_ASS	Sales to Assets Ratio	928	4.6560	2.8526	0.0501	160.6015	0.1648	0.5405	12.3539	37.7264	148.7159	10.5375
LSALE	Log Sales	928	14.5026	14.5900	9.1050	19.2961	10.3090	11.6952	17.1724	18.0946	-0.3086	-0.1860
P9	Rental Expenses	928	1048738.34	300000	0	100000000	0	3683	3700000	8407479	463.0729	19.4161
P10	Officers compensation/Partners	928	214415.07	89500	0	3000000	0	0	964048	2000000	13.9827	3.3850
OWNMAN	Owner Manager	928	0.7425	1	0	1	0	0	1	1	-0.7679	-1.1107
OWNFAM	Family Own More Than 50%	928	0.7306	1	0	1	0	0	1	1	-0.9177	-1.0413
OWNSHR	Principal Ownership Share	928	63.9494	52	1	100	5	15	100	100	-1.1831	-0.1014
LC39	Log number of nonmanager stock holders	928	1.2229	0.6931	0	9.1051	0	0	3.7136	7.3784	8.8708	2.6848
NYEAR	Max Number of YR. Relation	928	12.8244	10	1	78	1	3	30	45	7.1237	2.0555
NBANK	Number of Banks	928	1.4019	1	0	13	0	0	4	6	6.5693	1.8735
DEBTASS	Debt to Assets Ratio	928	0.4957	0.4951	0.0003	0.9995	0.0332	0.0913	0.9148	0.9829	-1.0244	0.0365
FIRMAGE	Age of Firm	928	19.4634	15	4	130	4	5	48	84	11.4585	2.7793
IN2	Manufacturing IND	928	0.1875	0	0	1	0	0	1	1	0.5736	1.6039
IN3	Transportation IND	928	0.0571	0	0	1	0	0	1	1	12.6445	3.8233
IN4	Wholesale IND	928	0.1315	0	0	1	0	0	1	1	2.7793	2.1848
IN5	Retail IND	928	0.1950	0	0	1	0	0	1	1	0.3779	1.5418
IN6	Finance IND	928	0.0560	0	0	1	0	0	1	1	12.9818	3.8670
IN7	Service IND	928	0.2403	0	0	1	0	0	1	1	-0.5186	1.2176

Table 2: Correlations

Variables	CSF_ASS	OEX_SAL	SAL_ASS	LSALE	P9	P10	OWNMAN	OWNFAM	OWNSHR	LC39	NYEAR	NBANK	DEBTASS	FIRMAGE	IN2	IN3	IN4	IN5	IN6	IN7
CSF_ASS	1.000	-0.225	-0.650	0.066	-0.076	-0.116	0.002	0.044	0.019	0.051	-0.001	0.016	-0.014	-0.009	0.077	-0.025	0.095	0.071	0.091	-0.201
OEX_SAL	-0.225	1.000	-0.016	-0.307	0.043	-0.012	-0.048	-0.040	0.053	-0.094	-0.042	-0.012	-0.084	-0.075	-0.092	0.016	-0.121	-0.053	0.074	0.260
SAL_ASS	-0.650	-0.016	1.000	0.008	0.022	0.002	0.036	0.014	0.020	-0.088	-0.038	-0.064	-0.011	-0.032	-0.102	0.053	-0.038	0.004	-0.010	0.017
LSALE	0.066	-0.307	0.008	1.000	0.331	0.490	-0.149	-0.151	-0.252	0.398	0.191	0.185	0.159	0.238	0.184	0.033	0.109	-0.009	-0.032	-0.217
P9	-0.076	0.043	0.022	0.331	1.000	0.232	-0.100	-0.141	-0.146	0.192	0.137	0.022	0.066	0.104	0.030	0.144	-0.023	-0.057	-0.034	0.018
P10	-0.116	-0.012	0.002	0.490	0.232	1.000	-0.113	-0.248	-0.273	0.333	0.155	0.067	0.056	0.147	0.053	-0.013	-0.013	-0.139	0.014	0.111
OWNMAN	0.002	-0.048	0.036	-0.149	-0.100	-0.113	1.000	0.137	0.059	-0.324	-0.021	0.025	0.062	-0.067	0.018	-0.004	-0.033	0.004	0.111	-0.090
OWNFAM	0.044	-0.040	0.014	-0.151	-0.141	-0.248	0.137	1.000	0.441	-0.368	0.030	0.039	0.042	-0.023	-0.001	0.003	0.021	0.066	0.032	-0.102
OWNSHR	0.019	0.053	0.020	-0.252	-0.146	-0.273	0.059	0.441	1.000	-0.629	-0.133	0.020	0.010	-0.170	-0.087	0.042	-0.024	0.034	0.033	-0.003
LC39	0.051	-0.094	-0.088	0.398	0.192	0.333	-0.324	-0.368	-0.629	1.000	0.128	-0.015	0.017	0.216	0.137	-0.040	0.040	-0.045	-0.069	-0.016
NYEAR	-0.001	-0.042	-0.038	0.191	0.137	0.155	-0.021	0.030	-0.133	0.128	1.000	-0.006	-0.048	0.640	-0.005	-0.017	0.020	0.071	0.016	-0.026
NBANK	0.016	-0.012	-0.064	0.185	0.022	0.067	0.025	0.039	0.020	-0.015	-0.006	1.000	0.242	0.009	0.047	0.091	-0.048	-0.013	0.045	-0.020
DEBTASS	-0.014	-0.084	-0.011	0.159	0.066	0.056	0.062	0.042	0.010	0.017	-0.048	0.242	1.000	-0.042	-0.005	0.047	0.027	0.040	-0.011	-0.036
FIRMAGE	-0.009	-0.075	-0.032	0.238	0.104	0.147	-0.067	-0.023	-0.170	0.216	0.640	0.009	-0.042	1.000	0.036	-0.036	0.035	0.052	0.058	-0.050
IN2	0.077	-0.092	-0.102	0.184	0.030	0.053	0.018	-0.001	-0.087	0.137	-0.005	0.047	-0.005	0.036	1.000	-0.118	-0.187	-0.236	-0.117	-0.270
IN3	-0.025	0.016	0.053	0.033	0.144	-0.013	-0.004	0.003	0.042	-0.040	-0.017	0.091	0.047	-0.036	-0.118	1.000	-0.096	-0.121	-0.060	-0.138
IN4	0.095	-0.121	-0.038	0.109	-0.023	-0.013	-0.033	0.021	-0.024	0.040	0.020	-0.048	0.027	0.035	-0.187	-0.096	1.000	-0.192	-0.095	-0.219
IN5	0.071	-0.053	0.004	-0.009	-0.057	-0.139	0.004	0.066	0.034	-0.045	0.071	-0.013	0.040	0.052	-0.236	-0.121	-0.192	1.000	-0.120	-0.277
IN6	0.091	0.074	-0.010	-0.032	-0.034	0.014	0.111	0.032	0.033	-0.069	0.016	0.045	-0.011	0.058	-0.117	-0.060	-0.095	-0.120	1.000	-0.137
IN7	-0.201	0.260	0.017	-0.217	0.018	0.111	-0.090	-0.102	-0.003	-0.016	-0.026	-0.020	-0.036	-0.050	-0.270	-0.138	-0.219	-0.277	-0.137	1.000

Table 3: Agency Cost and Endogeneity

Variables	NYEAR		NBANK		DEBTASS	
	Coefficients	p-value	Coefficients	p-value	Coefficients	p-value
Intercept	5.3842	<.0001	1.2413	<.0001	0.4790	<.0001
SAL_ASS	-0.0211	0.4189	-0.0097	0.0631	-0.0003	0.7773
FIRMAGE	0.3811	<.0001	0.0004	0.9009	-0.0008	0.1497
IN2	-0.4618	0.5944	0.3232	0.0631	0.0309	0.3188
IN3	0.3973	0.7396	0.7603	0.0015	0.0817	0.0557
IN4	0.0427	0.9636	0.0087	0.9631	0.0518	0.1213
IN5	0.8486	0.3215	0.1615	0.3464	0.0556	0.0691
IN6	-0.6971	0.5646	0.4646	0.0557	0.0248	0.5667
IN7	0.2223	0.7861	0.1497	0.3622	0.0153	0.6005
F-value	80.67		2.43		1.08	
R-squared	0.4125		0.0207		0.0094	
Adj R-Squared	0.4074		0.0122		0.0007	
Intercept	5.2658	<.0001	1.1788	<.0001	0.4739	<.0001
CSF_ASS	0.0214	0.7701	0.0048	0.7427	-0.0021	0.4291
FIRMAGE	0.3815	<.0001	0.0005	0.8657	-0.0008	0.1432
IN2	-0.3943	0.6480	0.3597	0.0382	0.0342	0.2672
IN3	0.4019	0.7368	0.7632	0.0015	0.0821	0.0543
IN4	0.0817	0.9306	0.0335	0.8587	0.0555	0.0977
IN5	0.8740	0.3080	0.1784	0.3000	0.0583	0.0570
IN6	-0.6789	0.5766	0.4820	0.0485	0.0292	0.5010
IN7	0.2809	0.7317	0.1732	0.2924	0.0144	0.6213
F-value	80.55		2.01		1.15	
R-squared	0.4122		0.0172		0.0099	
Adj R-Squared	0.4071		0.0086		0.0013	
Intercept	5.1628	<.0001	1.2185	<.0001	0.5115	<.0001
OEX_SAL	0.0878	0.8540	-0.0596	0.5333	-0.0435	0.0105
FIRMAGE	0.3815	<.0001	0.0003	0.9104	-0.0009	0.1053
IN2	-0.3754	0.6626	0.3675	0.0335	0.0339	0.2677
IN3	0.3902	0.7447	0.7741	0.0013	0.0892	0.0365
IN4	0.1124	0.9041	0.0389	0.8352	0.0518	0.1183
IN5	0.8880	0.2991	0.1886	0.2720	0.0600	0.0486
IN6	-0.6675	0.5836	0.5091	0.0374	0.0389	0.3690
IN7	0.2327	0.7812	0.1926	0.2521	0.0324	0.2762
F-value	80.54		2.04		1.9	
R-squared	0.4121		0.0175		0.0163	
Adj R-Squared	0.407		0.0089		0.0077	

Table 4: Agency Cost and Ownership

Operating expense to Sales

		Owner Manager N	Mean (st. dev.)	Outsider-Manager N	Mean (st. dev.)	ANOVA (p-value)
C-Corp	All firm	693	0.860259 0.404345	232	0.886405 0.42275	0.710226 0.399587
	100% owner	201	0.891142 0.398065	68	0.817548 0.394046	1.745546 0.187569
	50% owner	404	0.874545 0.408285	124	0.834689 0.414164	0.89802 0.343748
	50% Family	530	0.8552 0.404429	152	0.864902 0.411598	0.067449 0.795166
	< 50%	126	0.854256 0.410256	69	0.934747 0.444392	1.617421 0.204982
Proprietorship		403	0.873184 0.347326	39	0.979728 0.383871	3.283202 0.070674

Sales to Assets

		Owner Manager N	Mean (st. dev.)	Outsider-Manager N	Mean (st. dev.)	ANOVA (p-value)
C-Corp	All firm	693	3.847438 3.160642	232	3.586103 2.76356	1.262711 0.261431
	100% owner	201	3.786594 3.04388	68	4.270799 3.292002	1.23324 0.267777
	50% owner	404	3.930259 3.202974	124	3.755094 2.856295	0.298036 0.585348
	50% Family	530	3.788127 3.086925	152	3.900085 2.992117	0.157492 0.6916
	< 50%	126	3.949303 3.422322	69	3.048605 2.137846	3.933195 0.04876
Proprietorship		403	3.269596 2.68602	39	3.220477 2.614372	0.011946 0.913017

Cash Flow to Assets

		Owner Manager N	Mean (st. dev.)	Outsider-Manager N	Mean (st. dev.)	ANOVA (p-value)
C-Corp	All firm	693	0.31738 0.549982	232	0.298003 0.553074	0.215144 0.642874
	100% owner	201	0.309669 0.555017	68	0.493045 0.723098	4.720504 0.030685
	50% owner	404	0.312695 0.531898	124	0.366941 0.6447	0.889299 0.3461
	50% Family	530	0.320798 0.559399	152	0.349259 0.598248	0.296304 0.586387
	< 50%	126	0.296495 0.511055	69	0.153299 0.351033	4.300691 0.039424
Proprietorship		403	0.66205 0.696304	39	0.508388 0.623179	1.762012 0.185062

C. Ownership, Efficiency and Agency Costs

Table 4 reports the impact of manager ownership and family ownership on agency costs and cash flows. When an owner or family owns less than 50 percent of the firm, the efficiency of the owner-managers, measured by the sales-to-assets ratio, is higher than when the firm is managed by outsiders where firms have more nonmanager shareholders. It appears, then, that these shareholders do not rely on professional managers to manage their companies. It should be noted that the performance of the two different types of managers is not significantly different for the sole proprietorship. Both major family ownership and major shareholders appear to have no impact on efficiency. Agency costs, measured by operating expenses-to-sales ratio, for both owner-manager and outside-manager, are the same no matter what types of ownership have been established. Internal control generated from ownership structure therefore is not important for our sample firms. Professional managers, however, do appear to improve efficiency for the sole proprietorship. Surprisingly, outsider managers are able to increase the cash flow of firms when the primary owner owns 100 percent of the firm or when a single family own more than 50 percent of the firm. Thus, the efficiency provided by the managers may, in fact, be greater than the agency costs.

It should be noted that our results are quite different from Ang, et al., (2000). The difference may be due to the fact that we are not able to replicate the operating expense related results obtained by the authors. We used three different definitions based on the survey conductor that defined "TOTEXP" as total operating expenses and "PROFIT" as gross profit, respectively, obtaining similar results from all three methods. We received sales-to-assets related results similar to Ang, et al.; however, to save space, these results will not be presented although they are available on request from the author.

Since cash flow may reflect the joint impact of agency costs and efficiency, we partition the firms into three groups: low, medium, and high, and test whether the agency problem proxies are statistically different from each other. Table 5 shows that efficiency is indeed lower for firms with an outsider-manager where they have lower net income and medium cash flows.

No significant results are documented for other groups or for the operating expenses/sales ratio. Thus the evidence supporting Hypothesis 2 is mixed and weak.

D. Ownership and Bank Monitoring—OLS versus SUR

Table 6 shows that using OLS and operating expenses, agency costs can be reduced by owner-managers, nonmanager shareholders, debt/assets and/or firm age. The impact from owner-managers is obvious. However, the positive impact of the second and third variables must be explained by the "interactive" effect described by the John-Kedia theory. Our results indicate that three groups of stakeholders work together to eliminate conflicts of interest. The efficiency indictor, the sale-to-asset ratio, also reveals results similar to Ang, et al., (2000). The coefficient associated with nonmanager shareholders is negative and significant. Given the results from the agency cost regression, these shareholders have a mixed effect on corporate governance. The number of banks coefficient is negative and significant as well. These results are consistent with the high holdup cost, rather than monitoring. Debt-to-asset ratios increase the efficiency of the firms; debt-holders thus may have replaced banks in monitoring the behavior of managers. It is also possible that higher debt increases risk and return, which is closely related to the efficiency measurement. The estimates from the cash-flow-to-assets ratio reveal that owner-managers and the length of the longest banking relationship have a positive impact on cash flows.

Table 5: Profitability, Cash Flows and Agency Problem

Operating Expense / Sales

Class	Owner-manger		Outside-Manager		T-test	T-test	F-test
	N	Mean (st.dev)	N	Mean (St. Dev)	Assume Equal Var (p-value)	Assume Unequal Var (p-value)	Ho: Equal Var (p-value)
Net income							
Low	210	0.9081	99	0.8622	0.75	0.71	1.43
		0.4696		0.5608	0.4531	0.4818	0.0351
Middle	233	0.9154	75	1.0386	-1.67	-1.85	1.51
		0.5793		0.4717	0.0958	0.0656	0.0393
High	229	0.797	59	0.8767	-1.05	-1.08	1.07
		0.5216		0.5034	0.2926	0.2844	0.7673
Proprietors	488	0.9561	41	1.0119	-0.29	-0.64	8.17
		1.2323		0.4312	0.7736	0.5253	<.0001
Cash flow							
Low	239	1.0561	70	1.1249	-0.83	-0.87	1.22
		0.6263		0.5669	0.4099	0.3852	0.3294
Middle	234	0.8111	74	0.8955	-1.4	-1.31	1.3
		0.4381		0.4989	0.1636	0.1945	0.1523
High	199	0.7251	89	0.7861	-1.09	-1.06	1.14
		0.4301		0.4593	0.2769	0.2897	0.4515

Sales / Assets

Class	Owner-manger		Outside-Manager		T-test	T-test	F-test
	N	Mean (st.dev)	N	Mean (St. Dev)	Assume Equal Var (p-value)	Assume Unequal Var (p-value)	Ho: Equal Var (p-value)
Net income							
Low	210	3.6464	99	2.8126	2.55	2.92	2.21
		2.9545		1.9854	0.0113	0.0038	<.0001
Middle	233	3.4682	75	3.3888	0.2	0.22	1.46
		3.0645		2.5344	0.8391	0.8231	0.0564
High	229	3.994	59	3.9365	0.12	0.11	1.09
		3.3637		3.5165	0.9077	0.9103	0.6376
Proprietors	488	3.3501	41	2.6912	1.18	1.54	1.88
		3.4919		2.549	0.2379	0.1299	0.0159
Cash flow							
Low	239	3.8391	70	3.4339	0.88	0.94	1.27
		3.467		3.0797	0.379	0.3491	0.2459
Middle	234	3.8412	74	3.0015	2.17	2.72	2.5
		3.1343		1.9813	0.0307	0.007	<.0001
High	199	3.3773	89	3.3975	-0.06	-0.06	1.06
		2.693		2.7739	0.9536	0.9541	0.726

Table 6: Agency Costs, Ownership and Bank Monitoring

Variables	Sales to Assets Ratio		Cash Flow to Assets Ratio		Operating Expense to Assets Ratio	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Intercept	9.5141	<.0001	-2.4514	0.0001	0.9980	<.0001
OWNMAN	0.0869	0.9083	0.0687	0.7991	-0.0772	0.0613
OWNFAM	0.1471	0.8494	0.2144	0.4393	-0.0531	0.2107
OWNSHR	-0.0200	0.1568	0.0084	0.0966	0.0001	0.9236
LC39	-0.7151	0.0198	0.2741	0.0126	-0.0399	0.0174
NYEAR	-0.0393	0.3470	0.0048	0.7483	0.0005	0.8218
NBANK	-0.4049	0.0579	0.0416	0.5859	0.0004	0.9753
DEBTASS	0.2728	0.8209	-0.4428	0.3044	-0.1456	0.0273
FIRMAGE	0.0125	0.6197	-0.0119	0.1878	-0.0021	0.1357
IN2	-3.9220	0.0003	0.9910	0.0113	0.0660	0.2690
IN3	-0.0537	0.9717	0.1572	0.7718	0.1755	0.0345
IN4	-3.1022	0.0086	1.3384	0.0015	-0.0074	0.9088
IN5	-2.1543	0.0461	1.0253	0.0080	0.0947	0.1089
IN6	-2.7183	0.0758	1.8398	0.0008	0.3149	0.0002
IN7	-1.9446	0.0606	-0.6739	0.0690	0.3738	<.0001
F-value	2.25		4.77		7.85	
R-squared	0.0333		0.0681		0.1074	
Adj R-squared	0.0185		0.0538		0.0937	

Table 7 reexamines the same issues using the SUR method. We add a logarithm of sales, time-interest earned, and growth rate to avoid identical equations. These variables are also relevant for studying the dependent variables. For example, log-sale (Lsales) is a proxy of size that may indicate economies of scale. Time-interest-earned is an indictor of default risk given that uncertainty or risk cannot be estimated because of the lack of time series data. Growth may be related to agency problems as discussed by Myers (1977).

The OLS coefficients and their p-values are quite different from those reported in Table 6: management and family ownership and sales are highly significant statistically. Thus the correlations among the disturbances generated by the OLS and system equations are indeed significantly different. Hypothesis 5 is not rejected. When sales-to-assets ratio is the dependent variable and then log-sales are added, the number of bank relationships is no longer statistically significant.

Table 7: Optimal Corporate Governance (OLS vs. SUR)

Variables	Sales to Assets Ratio				Cash Flow to Assets Ratio				Operating Expense to Assets Ratio			
	OLS		SUR		OLS		SUR		OLS		SUR	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Intercept	2.1322	<.0001	2.1322	<.0001	2.3235	0.4741	2.3222	0.4744	-2.6781	0.0216	-2.6879	0.0211
OWNMAN	-0.0957	0.0171	-0.0957	0.0171	0.2392	0.7507	0.2391	0.7509	0.0549	0.8389	0.0547	0.8396
OWNFAM	-0.0735	0.0750	-0.0735	0.0750	0.3521	0.6497	0.3522	0.6497	0.1782	0.5217	0.1792	0.5193
OWNSHR	0.0000	0.9849	0.0000	0.9849	-0.0192	0.1726	-0.0192	0.1725	0.0078	0.1201	0.0078	0.1208
LC39	-0.0073	0.6618	-0.0073	0.6617	-0.8957	0.0046	-0.8955	0.0046	0.2548	0.0251	0.2554	0.0245
NYEAR	0.0007	0.6717	0.0007	0.6716	-0.0497	0.2344	-0.0494	0.2364	0.0052	0.7278	0.0068	0.6487
NBANK	0.0158	0.1705	0.0158	0.1705	-0.4949	0.0221	-0.4949	0.0221	0.0328	0.6723	0.0326	0.6738
DEBTASS	-0.0757	0.2417	-0.0757	0.2417	-0.0699	0.9541	-0.0703	0.9538	-0.5124	0.2399	-0.5127	0.2393
LSALE	-0.0857	<.0001	-0.0857	<.0001	0.5226	0.0111	0.5228	0.0111	0.0267	0.7167	0.0278	0.7055
IN2	0.1019	0.0794	0.1019	0.0795	-4.1684	0.0001	-4.1679	0.0001	0.9929	0.0114	0.9942	0.0113
IN3	0.1889	0.0189	0.1889	0.0189	-0.1375	0.9274	-0.1375	0.9275	0.1537	0.7766	0.1538	0.7764
IN4	0.0220	0.7255	0.0220	0.7255	-3.2900	0.0053	-3.2895	0.0053	1.3245	0.0017	1.3277	0.0017
IN5	0.0857	0.1341	0.0857	0.1341	-2.1734	0.0436	-2.1730	0.0436	1.0576	0.0062	1.0607	0.0061
IN6	0.2956	0.0003	0.2956	0.0003	-2.6202	0.0858	-2.6190	0.0860	1.8378	0.0008	1.8455	0.0008
IN7	0.3135	<.0001	0.3135	<.0001	-1.5951	0.1257	-1.5949	0.1258	-0.6492	0.0824	-0.6473	0.0833
TIMEINT	0.0000	0.7075	0.0000	0.7074	-0.0001	0.1414	-0.0001	0.1415	0.0000	0.0276	0.0000	0.0273
SLGROWTH	-0.0005	0.4096	-0.0005	0.4107					-0.0005	0.8929	-0.0001	0.9843
FIRMAGE					0.0078	0.7571	0.0076	0.7637	-0.0128	0.1575	-0.0143	0.1076
F-value	11.08				2.53				4.23			
R-squared	0.1629				0.0426				0.0732			
Adj R-Squared	0.1482				0.0258				0.0559			

When agency costs are measured by operating expenses/sales, the regression results suggest that owner-management and family ownership are not effective in controlling a manager's behavior, and agency costs increase with the number of nonmanager shareholders. These results are consistent because the latter implies that added minority shareholders may not have the expertise or resources to monitor the behavior of managers. Note that the number of banks involved and the length of the bank relationship are not significant statistically; therefore, the external control mechanism also fails to eliminate the agency problem. The fact that the time-interest-earned ratio is significant indicates that the firm may have borrowed heavily and interest expenses are quite high.

The cash-flow/assets regression reveals that the number of nonmanager shareholders and the number of bank relationships reduce cash flow. Log-sales, on the other hand, have the opposite impact. If it is a proxy of the size of the firm, so that larger firms are more efficient and more profitable, the coefficient of log-sales should also be significant statistically. Given that this is the case, we believe that larger firms could be more efficient with proper corporate governance; otherwise, the agency problem could be serious.

VII. CONCLUSION AND SUGGESTIONS

Overall, our empirical results support the John-Kedia theory, which recommends treating optimal corporate governance as a system within which the internal control variables, such as manager-owners, family-owners, and major and minor shareholders, interact with the external agents such as banks and bondholders and act to minimize or eliminate agency problems. We argue in this study that if the internal variables provide similar functions, they could substitute for each other. Similar argument holds for external control variables. Since external stakeholders such as banks and bondholders have different claims than owners and shareholders, we hypothesize that external and internal monitoring mechanisms provided by these groups will be a complement; they will reinforce each other. Using the OLS method and SUR, we find that the interaction effect and substitute-complement relationship are supported

by the sales-to-asset data. Specifically, family ownership seems to replace bondholders in monitoring managerial behavior. We find that good managers do not attempt to differentiate themselves from the bad ones by pre-commitment. The pre-committed-based governance system proposed by John and Kedia (2003) is therefore not supported by the small firm samples. Finally, as predicted by financial theory, hiring professional managers improves efficiency, but simultaneously incurs agency costs; it appears that these two effects offset each other. Apparently, the famous "trade-off" proposed by the "M-M no arbitrage theory" of the 1960s is still valid.

The findings herein have significant implications for small business owners. Since owner-managers are the most effective mechanism for eliminating agency costs, it is important for owners of small firms to participate actively in investment and financial decision-making. When the size of the company increases, as measured by sales, and when professional managers are recruited, delegation of authority will, of course, become necessary; consequently, in order to reduce the associated agency costs, it is recommended that corporate control mechanisms involving family members and/or banking relationships, be established to monitor the behavior of the nonowner managers. Otherwise, the Wall Street scandals that plagued those Fortune 500 companies may soon become a reality for the small business firm.

VIII. Future Research Recommendations

This project started by using data from the 1998 NSSBF survey [see Robb and Wolken (2001) for details]. However, because depreciation expenses are not reported, and thus cash flows cannot be calculated, we were forced to conduct our study by using the 1993 survey data. It will be fruitful to develop a proxy for cash flow so that the results from 1993 can be compared with those obtained for the 1998 period. It would be beneficial to studies such as this for the Federal Reserve Board to collect cash flow data directly from small firms. This approach would allow us to test whether the current results are sensitive to a given time period. It is certainly possible that under different economic conditions, changes in regulations related to corporate governance, mergers and acquisitions, or technology during the late 1990s may have altered the behavior of corporate executives and consequently the agency costs.

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