An empirical analysis of the effect components of Corporate Governance Index on firm value –evidences from Taiwan financial industry

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Abstract

Prior empirical evidence in Taiwan supports the wealth expropriation hypothesis that the controlling stockholder tend to expropriate minority wealth, which result in reducing firm value. However, it is still unclear whether corporate governance mechanism is related to this type of expropriated behavior in financial institution. To answer this question, This paper chooses 10 corporate governance variables and uses principal component analysis (PCA) to construct 3 composite indexes to proxy for the risk of expropriation by the controlling shareholder, which to solve interactions within variables (i.e., to mitigate multicollinearity problems). Namely, stockholders’ behavior, credit rating, information transparency, and outside directors and supervisors. Besides, we also add another 6 control variables to model regression equation which is to explain Tobin's q. We collect 27 financial companies to be our samples which are listed on TSE in 2001-2006. The evidence suggests that the regression model for Tobin’s q is significant at 1% level, the adjusting \( R^2 \) is 0.708. In the meantime, the stockholders’ behavior is negatively related to Tobin’s q, credit rating and information transparency have significantly positive effect on Tobin’s q. outside directors and supervisors are negatively related to Tobin’s q, but it is not significant, even after controlling for 6 controlled variables. However, it is still unclear whether outside directors and supervisors are related to firm value in Taiwan. This is consistent with Hermelin and Weisbach (1991) suggestions that different governance structures are optimal for different firms. The reason is that each company has it’s own management problems and the solving method.

Key words: Corporate Governance, Tobin’s q, Principal Component Analysis, Financial Holding Company.

Introduction

In the wake of the recent subprime mortgage, corporate governance practices and securitization have received heightened attention. Shareholders, creditors, mutual funds, credit rating institution, government regulators, and academics are examining the decision-making process in financial corporations and other related organizations and are proposing changes in governance structures to enhance accountability and efficiency. To the extent that these proposals are based on academic research, they generally draw upon many studies on the governance of financial firms, such as financial holding companies, and nonfinancial holding companies.

“Corporate Governance” is a mechanism which is used to reduce the agency problems between the managers and stockholders, including the inside decision and control systems and effects of outside market. Shleifer and Vishny(1997) argued that corporate governance is dealing with the ways that suppliers of finance to corporations assure themselves of getting a return on their investment. Under a well Corporate Governance mechanism, basic regulation in legislation and efficient execution, we can promote the overall level of Corporate Governance of listed companies in TSE. Furthermore, we also can maintenance company’ long-term competitive power. For individual company, Corporate Governance is not
only monitoring the managers which is protected the basic equity of investors, but also increasing the firm value and constructing the base of company’ long-term development. Consequently, the individual company can raise the market value by adopting good Corporate Governance mechanism. My goal is to provide useful information for thinking about the relationship between governance of financial institution and firm value proxy index — Tobin’s q.

The corporate governance of financial institutions is different from that of unregulated, nonfinancial firms. Because there are the number of parties with stakes in an institution’s activity complicates with the governance of banking system. In addition to investors, depositors, credit rating institutions, investment banks and regulators have a direct interest in bank performance. Generally speaking, government regulators are concerned with financial institutions governance effect, because the health of the overall economy depends upon their performance.

**Literature Review**

To measure the potential benefits and cost of corporate governance of financial institutions, there are many variables for measurement of mechanism. However, these variables are ultimately part of a simultaneous system that determines the corporation’s value. Also, different governance mechanisms may be substitutes for one another. Thus, the quality of governance of financial institutions must be evaluated along a number of dimensions.

**Board of directors**

The Taiwanese corporate governance structure includes the board of directors and supervisors. The Taiwanese board of directors (BOD) differs from an U.S. board. All of the board members are participated in managing the company. Supervisors are the agents who are designated to monitor the BOD. They are responsible for scrutinizing the decisions made by the BOD, reviewing and auditing the reports provided by the BOD to the shareholders, and resolving any dispute between the shareholders and directors. Basically, the research results in Taiwan support the argument that the more percentage of ownership of total board of directors own, the better the cost reduction in operation is, and the company will has better performance. Most research findings support that percentage of ownership of total board of directors has positive correlation with performance and negative correlation with financial crisis. (such as Kesner,1987; Morck, Shleifer, and Vishny,1988; McConnell and Servase,1990; Callahan Millar and Schulman, 2003).

In addition, the Corporation Law of Taiwan allows institutional shareholders to send representatives to be directors and supervisors. This makes opportunity for the controlling family to set up nominal investment companies as a tool of shareholding. Actually, their controlling powers are strengthened by appointing family members or persons they trust to BOD, and to be directors and supervisors. For the size of board of directors, most research supported that large size of board of directors has positive effect to firm performance(Bacon,1973: Pearce and Zahra,1989),but Jensen (1993) pointed out that the larger size of board of directors, the greater the loss of firm value. Smith and Watts (1992) also pointed out firm size is the function of firm investment opportunity, and they believed that there exist positive relationship between firm size and Tobin’s q. Board structure plays an important role in monitoring CEOs and thereby in firm’s value(Weisbach(1988), Hermalin and Weisbach(1991), and Jensen(1993))

**Structure of Ownership**

Jensen and Meckling(1976), Mehran(1995) point out that a large managerial equity ownership will reduce agency cost
and increase firm value by aligning manager’s benefits with shareholders. However, Morck et al. (1988) suggest that a high level managerial equity ownership will induce managerial entrenchment effect.

However, a few research findings which are supported percentage of ownership of total board of directors has negative correlation or independent with firm value. Callahan, Miller, and Schulman (2003) argued that percentage of ownership of institutional investors has positive correlation with firm value. For the effects of inside directors, Patton and Baker (1987) believed that higher percentage of family inside directors is beneficial for business operation, on the contrary, Morck, Shleifer and Vishny (1998) supported that higher percentage of inside directors have adverse effects to business operation. Lemmon and Lins (2001), Claessens et al. (2002), and La Porta et al. (2002) examined the relationship between firm value, the ownership structure and the strength of legal institutions. These studies found that firm value is positively related to investor protection measures. Hermalin and Wisbach (1991) thought that there is no relationship between percentage of inside directors and performance. For the percentage of managers’ shareholding, Mehran (1988) argued that shareholding of managers has positive relationship with firm value.

Outside directors and supervisors

According to agency theory, if managers operate independently, they may make financing, investment, and dividend payout decisions that are detrimental to shareholders. To mitigate the conflict between managers and shareholders, previous literature offers several solutions, such as monitoring by the outside directors and blockholders, compensation contacts, and managerial equity investment. For the effects of outside directors, Lee et al. (1992), Byrd (1992), Brickley (1994), Dechow, (1996) support the number of outside directors has positive contribution to performance when outside directors have controlling rights to vote. On the other hand, a few research results present percentage of outside directors have negative contribution or no relationship to performance. Such as Agrawal (1996), Callahan, Millar, and Schulman (2003) support percentage of outside directors has negative contribution to performance. Yermack (1996), Bhagat (1999) think there is no relationship between outside directors and performance. But Fosberg (1989) pointed out that there is no evidences to prove the hypothesis of outside director will increase firm performance. The reason is that CEO will probably let someone who is incapability or no willing to be outside directors, and they could not able to monitor firm operation. Besides, CEO probably leave only a little space for outside directors. All of the above situation will let people has feelings of no neutrality, especially, under the ownership concentration for most Taiwan family business, it is hard to develop the function of monitoring and mutually balance. So, we should stand the objective ground, and set a well system regulation. Milunovich and Tseui (1996) evidences and analysis suggested that Tobin’ q is better than others accounting performance indexes. Outside directors are more likely to exert effective monitoring over CEOs than indirectors who are also executives (Fama and Jensen, 1983).

Largest, Second Largest and Institutional Shareholders

For the percentage of ownership of the largest stockholder side, according to the research findings of La Porta et al. (1999), Claessens et al. (2000), Lemmon and Lins (2001), there exists positive relationship between controlled stockholder’s ownership and firm value. Yeh, Lee and Woidtke (2001) examined the monitoring and managerial effectiveness of the BOD of Taiwanese listed companies. Aside from the controlling family, the board may also include directors from the second largest family and/or institutional shareholders. In some cases, the controlling family may even appoint non-family members, such as professional managers, as directors to enhance the efficiency of the BOD. Both alternatives are designed to be feasible in avoiding the intention of the controlling family from expropriating
minority wealth. Their findings suggest that corporate performance is better when non-family members hold half of the board seats. This also indicates that the professionalism and the inclusion of outside members on the board provide a positive effect for corporate governance of Taiwanese listed companies. Shleifer and Vishny(1997) suggest that dispersed shareholders may lack of incentives to monitor CEOs due to the free rider problem associated with costly monitoring, while large shareholders (institutional investors) are more effective monitors of CEOs.

**Duality**

As CEO duality and corporate governance highlights in literatures. Agency problem could be higher when CEO is also to be the Chairman of BOD. Since the evidence on the relationship between CEO duality and firm value is mixed. Some studies find that CEO duality enhances performance and firm value in large firms (Rechner and Dalton, 1991; Brickley, Coles, and Jarrell, 1996). Others point out higher performance and value of firms where the positions of CEO and Chairman of BOD are split (Patton and Baker, 1987; Rechner, 1989; Pi and Timme, 1993; Baliga, Moyer and Rao, 1996). Essentially, CEO duality weakens the independence of the monitoring role from the CEO decision-making.

**Information Transparency and Disclosure**

Information Transparency and Disclosure is defined as company release financial and nonfinancial information actively. Such as annual reports and voluntary earnings forecasts can raise market efficiency and reduce the information asymmetry between managers and investors (Ruey-Dang Chang, 2007)

Many previous literature use the accuracy of analyst forecasts as a proxy of information disclosure (Koga and Uchino, 2006). One of the potentially serious problems is using the forecast errors is the effect of window dressing (Barth and Hutton, 2000; Lang and Lundholm’s, 1993; Abarfanell and Bushee, 1997). In addition to the effect on business information of change of Certified Public Accountants law responsibility (Kothari et al, 1988; Melumad and Thoman, 1990).

**Crediting Rating**

Crediting rating is defined as an assessment of the credit worthiness of corporations with respect to a particular debt security or other financial obligation. It is based upon the history of borrowing and repayment, as well as the availability of assets and extent of liabilities. This assessment is based on a comprehensive, defined rating methodology and rating criteria. Essentially, a credit rating is a trusted gauge of potential risk that investors and counterparties can use to supplement other important decision-making factors. This research adopt Taiwan Rating Company (TRC) credit rating.

In summary, there are no consistent conclusions about effects of inside and outside directors in the directions to firm operation performance in the previous literatures. The purpose of this study is that discuss the effect of corporate governance mechanism on firm value and performance of Taiwan listed financial companies. Corporate governance mechanism include percentage of ownership of total board of directors, duality, outside directors, inside directors, size of board of directors, the percentage of largest stockholder and second largest stockholder, and information disclosure. The firm performance measures are proxy Tobin’s q.
There are four parts in this paper. The first part is that the research background, including literature discuss and the purpose of this research. The second part is the research method and variables, including data sources, variables’ selection, construction of Corporate Governance index, and regression analysis. The third part is the research results and the analysis. The forth part is research conclusion and suggestion.

**Research Variables and Research Method**

**Data sources**

We collected samples from financial companies that publicly traded in Taiwan Stock and Futures Exchange (TSFE) between 2001 and 2006. Population of financial institutions consists of sixty-eight banks (including twelve financial holding companies) listed on TSE for 2001-2006. However, the number of financial institutions dropped to twenty-seven during those years due to missing financial data and 3 banks organized after 2002. Because the comparing basement is different, so we don’t select them. At last, we select 27 firms which include 11 Financial Holding Companies, non-Financial Holding Companies include 6 banks, 8 security underwriters, and 2 insurance companies.

While I am interested in examining how corporate governance index can influence the extent of firm value — Tobin’s q. There are other firm level factors that can influence firm value and which need to be controlled for in the estimation. Our main data sources include Tobin’s q, firm size, corporate governance variables, all of our data are captured from Taiwan Economic Journal(TEJ) — data base, public prospectus, annual reports and credit rating is derived from Taiwan Rating company; score of information transparency and disclosure are derived from the Information Transparency and Disclosure Ranking System of Security and Futures Institute(S.F.I). ¹

Table 1 presents the summary statistics for selected variables such as Tobin’s q, credit rating, score of information transparency and disclosure, and other controlled variables of 27 financial companies during 2001-2006. First, from Table 1, it shows that there exist significantly different changes of firm value of Taiwan listed financial companies. For dependant variable — Tobin’s q, the mean is 0.00 (median is -0.15), Polaris Security is the highest (2.91), First FHC is the lowest (-1.04), According to the results, the investors not only give the different appraisal to different managers, but also reflect on the stock price when there have any information in market. According to the results of performance about financial industry valuation by Taiwan Credit Rating company, the standard of score used in our study is: the highest level is 100, second is 90 etc. Each level decrease 10. After give score to each financial companies, the mean score of credit rating is 49.26 (median is 50). Hua Nan FHC is the highest (100), Bank of Overseas Chinese is the lowest (0). For information transparency and disclosure, the mean score is 49.93 (median is 50). It reveals that the conception of information transparency and disclosure is still not common in Taiwan and it’s execution is not well-function. Both Mega Holdings FHC and Fubon FHC get the highest score (65.71), Cosmos Bank gets the lowest score (28.57). In general, the higher score of information transparency and disclosure, the greater Tobin’s q, and the better performance in Corporate Governance valuation. In summary, Fubon FHC and Mega Holdings FHC got the highest score in

information transparency and disclosure (65.71). It means that both of the FHC have more complete, transparency and
clearer information disclosing than others. And their firm value measure index—Tobin’s q is better too. On the contrary,
Shin Kong FHC and E. Sun FHC have the lowest score (38.57). Their information transparency and disclosure and firm
value are worse than others.

Table 1 Summary Descriptive Statistics of 27 financial industry firms

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s q</td>
<td>0.00</td>
<td>-0.15</td>
<td>0.74</td>
<td>-1.04</td>
<td>2.91</td>
</tr>
<tr>
<td>score of credit rating</td>
<td>49.26</td>
<td>50.00</td>
<td>27.45</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>score of information transparency and disclosure</td>
<td>49.93</td>
<td>50.00</td>
<td>9.87</td>
<td>38.57</td>
<td>65.71</td>
</tr>
<tr>
<td>Firm SIZE(ln MVE)</td>
<td>23.88</td>
<td>23.91</td>
<td>1.47</td>
<td>20.44</td>
<td>26.06</td>
</tr>
<tr>
<td>the percentage of ownership by the largest shareholders (OWN)</td>
<td>26.11%</td>
<td>22.44%</td>
<td>24.38%</td>
<td>0%</td>
<td>96.9%</td>
</tr>
<tr>
<td>the percentage of ownership by management (MOP)</td>
<td>7.61%</td>
<td>3.9%</td>
<td>10.57%</td>
<td>0%</td>
<td>39.84%</td>
</tr>
<tr>
<td>Duality</td>
<td>0.1852</td>
<td>0</td>
<td>0.3958</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Ratio of Equity book value to market -value ratio (BE/ME)</td>
<td>118.61%</td>
<td>94.94%</td>
<td>36.79%</td>
<td>43.20%</td>
<td>283.91%</td>
</tr>
</tbody>
</table>

For firm size—the natural log of equity market value(ln MVE), the mean is 23.88 (median is 23.91). It reveals that
the difference between firm size of Taiwan listed financial companies are not large. Fubon FHC has the highest firm
size (26.06), Taitung Business Bank has the lowest firm size (20.44). For the percentage of ownership by the largest
shareholders (OWN), the mean is 26.11% (median is 22.44%). Fubon FHC has the highest OWN(96.9%), Taitung
Business Bank and Taiwan International Security have the lowest OWN(0%). For the percentage of ownership by
management (MOP), the mean is 7.61% (median is 3.9%). Central Reinsurance Corporation has the highest
MOP(39.84%), Cathay FHC, E.Sun FHC, Shin Kong FHC, Sino Pac FHC, International Bank of Taipei, Taitung
Business Bank, Polaris Security, PSC security, Masterlink, KGI FHC, and Concord Security have the lowest MOP(0%).
For duality—chairman of board of directors is also CEO, the mean is 0.1852 (median is 0). It represent that there is
18.52% financial companies the dual situation in 2001 to 2006. For equity book value to market value(BE/ME), the
mean is 118.61% (median is 94.94%). Concord Security has the highest BE/ME(283.91%), KGI FHC has the lowest
BE/ME(43.20%)
The period of this research is from 2001 to 2006. We choose adjusted Tobin’s q to be firm value measure index and the dependent variables. Then we use the percentage of ownership by management (MOP), CEO is also chairman of the board of directors (Dual), the percent ownership by the largest shareholders (OWN), ratio of equity book value to market value(BE/ME), and firm size(SIZE) as the independent variables to describe the relationship and direction of causality between the dependent and independent variables. Where the formula of Tobin’s q is as follow:

(1) Tobin’s q is the proxy variable of the firm value measure. Originally, the formula of Tobin’s q is that market value of equity and debt divided by replacement cost of total asset. However, it is not easy to get the market value of debt and replacement cost of total asset. We use market value of stocks plus book value of debt and subtract current asset instead of value of the firm and use book value of total asset instead of replacement cost of total asset. The proxy Tobin’s q formula is:

\[
q = \frac{MVE + Debt}{TA}
\]

where:
- MVE: market value of equity
- Debt: book value of debt;
- TA: book value of total asset

Adjusted Tobin’s q is after type of organization adjusted, it is subtracted the industry organization Tobin’s q form original Tobin’s q.

**Independent Variables**

We use percentage of ownership held by management (MOP), the square of percentage of ownership held by management (MOP\(^2\)) to account for the nonlinear relationship between Tobin's q and management's ownership power. (Morck et al., 1988; McConnell and Servaes, 1990). “OWN” is the voting right of the largest stockholder ownership. Precious research has found evidence that the performance of CEO is also the chairman of the board of directors (Dual) is underperformance than that the separation of CEO and chairman positions (Pi and Timme, 1993). In this research, “SIZE” is natural log of equity market value, “BE/ME” \(^2\) is equity book value divided by equity market value. “Index” is the Index of Corporate Governance variables. “q\(_{it}\)-q\(_{it}\)” is adjusted Tobin’s q or EVA that is adjusted for organization effect by subtracting the industry Tobin’s q. In addition, Dual is a dummy variable, which is set equal to 1 if chairman of board of directors is also CEO. If they are not the same person, the variable is set equal to 0.

**Composite Index of Corporate Governance**

For each sample, we can construct several composite index of the underlying factors of several quantitative information that disclose on the public prospectus and annual report by principal component analysis (PCA) that. (William and Goldstein, 1984). The intent of this index method is to avoid interaction and interdependence between Corporate Governance’s variables. Through the Composite Indexes, we discuss the effect of Index of Corporate Governance to firm value and performance. Besides, we also discuss the relationship and the direction of causality book value to market value of equity was described in Banz, 1981, Fama and French, 1992.
between components of Composite Indexes and the Indexes.

About the effect of the management participation to firm value and performance, there exist a wide range of variables in the literature, and these measures not only have conceptually similarity, but also have multicollinearity in them. In other words, there is no generally accepted measurement of management’s influence. In order to measure the relationship between corporate governance mechanism and firm value, in this research, we adopt Corporate Governance’s variables about the structure of directors to construct model\(^3\). In addition to the ownership structure, Yeh, Lee and Woidtke (2001) also pointed out a negative relationship between corporate financial performance and the percentage of board seats occupied by the controlling family. Thus, board composition also serves as a proxy for wealth expropriation. In general, measurement for factors internal consistency\(^4\), at least must be greater than 0.5. If \(\alpha<0.5\), it can’t be accepted. We use 3 composite Indexes in this research. Alpha of Index 1 is 0.9182; Alpha of Index 2 is 0.6385. Index 1 and index 2, the internal consistency is already significantly; Alpha of Index 3 is 0.4943. It is under 0.5, but the bias is not significant, so we also include index 3.

**Operating variables related to Composite Index**

1. Percentage of ownership held by the largest shareholders
   
   This is defined as the number of stock that are held by the largest shareholder as a percentage of the total number of stock outstanding. This variable is a measure of the degree of control over the board by the largest shareholder.

2. Percentage of ownership held by second largest stockholders
   
   This is defined as the number of stock that are held by second largest stockholders as a percentage of the total number of stock outstanding. It is designed to measure the counterbalance power in BOD.

3. Percentage of the largest stockholder is also director
   
   This is defined as the number of director that are held by largest stockholders as a percentage of the total number of directors. It is designed to measure the controlling power of the largest stockholder in BOD.

4. The largest stockholder is also CEO or Chairman of board of directors
   
   This is a dummy variable that takes the value of one if the controlling shareholder (including its members) also serves as the chairman and CEO of the company, and takes the value of zero, otherwise. This variable represents the degree of management participation. When the members of the controlling shareholder takes both the positions of chairman of the board and CEO, the corporate governance mechanism is regarded as weak if not vanish.

5. Percentage of the twentieth largest stockholders is also directors
   
   This is defined as the number of director that are held by the twentieth largest stockholders as a percentage of the total number of directors. It is designed to measure the controlling power of the twentieth largest stockholder in BOD.

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\(^3\) percentage of ownership held by largest stockholders, percentage of ownership held by second largest stockholders, percentage of the largest stockholder is also director, the number of the largest stockholder is also CEO of Chairman of board of directors, score of credit rating, percentage of the twentieth largest stockholders is also directors, score of information transparency and disclosure, the percentage of outside directors, the number of supervisors.

\(^4\) It means the factors item selected by factor analysis are already got the standard of internal consistency.
6. Score of credit rating

According to the results of performance about financial industry valuation by Taiwan Credit Rating Company, the standard of score used in our study is: the highest level is 100, second is 90 etc. Each level decrease 10.

7. Score of information transparency and disclosure

According to the results about information transparency and disclosure by Security and Futures Institute, the standard of score used in our study is: each information transparency and disclosure item get 1 score, and summed up total score.

8. Percentage of outside directors

This is defined as the number of outside directors as a percentage of the total number of directors. It is designed to measure the independent power of the BOD.

9. Number of supervisors

This is defined as the number of supervisors in BOD. It is designed to measure the monitoring power of the BOD.

Research method - regression analysis

We use Tobin’s q to measure the firm value. Tobin’s q had been used in the Corporate Governance research of Demsetz and Lehn, 1985 and Mork, Shleifer, and Vishny, 1988. We adopt the method that is similar as Kaplan and Zingalies, 1997; Chung and Fruitt, 1994; and Callahan, Millar and Schulman, 2003 to calculate proxy Tobin’s q. We use regression model to analyze the relationship between dependent variables and independent variables. Where, in regression equation, \( q_{it} \) is adjusted for organization’ type (FHC or non-FHC) which is firm q minus organization mean. Firm value measure regression model as follow:

\[
q_{it} - q_{it}^\text{mean} = \beta_0 + \beta_1 \text{Index}_{1, it} + \beta_2 \text{Index}_{2, it} + \beta_3 \text{Index}_{3, it} + \beta_4 \text{MOP}_{it} + \beta_5 \text{MOP}^2_{it} + \beta_6 \text{DUAL}_{it} + \beta_7 \text{OWN}_{it} + \beta_8 \text{BE} / \text{ME}_{it} + \beta_9 \text{SIZE}_{it} + \epsilon_{it}
\]

(2)

Where:

“\( q_{it} - q_{it}^\text{mean} \)” = Tobin's q is adjusted for organization’ type.

Index= the composite index of components of board of directors, Index 1= Stockholders’ Behaviors, Index 2= Credit Rating and Information Transparency and Disclosure, Index 3= Outside Directors and Supervisors

“MOP” = managerial ownership power.

“MOP^2” = square of managerial voting power.

“DUAL” = CEO is also the chairman of board of directors, if the same person, DUAL=1, else, DUAL=0.

“OWN” = Percentage of ownership by the largest stockholders.

“BE/ME” = Ratio of equity book value divided by equity market value.

“SIZE” = Firm Size=natural log of equity market value.

We use equation (2), which data from 27 financial companies and 6 years data, so, it is panel data regression.

Null hypothesis:

Null hypothesis of this research is:
There is no relationship between Index of management participation about Corporate Governance and long-term value Index – Tobin’s q. Rejection of the null hypothesis means that to form a unique index by mathematically combined multi-variables about Corporate Governance mechanisms will affect firm value measurement -adjusted Tobin’s q which is adjusted for mean of different organization structure. In other words, each composite Index (namely, Principal components) which is linear weighted average of multi-variables will affect Tobin’s q. Formally, null hypothesis as equation (3):

Tobin’s Q
\[ H_0 : \beta_1 = \beta_2 = \Lambda = \beta_9 = 0 \]
\[ H_a : \beta_i \neq 0; \quad i=1,2,\ldots,9 \]  

Correlation analysis between components of Corporate Governance index to firm value

Table 2 is the correlation analysis summary of components of Corporate Governance indexes to Index and firm value measurement index – Tobin’s q:

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variables</th>
<th>Tobin’s q</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direction to firm value</td>
<td>Correlation</td>
</tr>
</tbody>
</table>

Index 1: The behavior of stockholders

1. Percentage of ownership of second largest stockholder is also director
   - Negative
   - Correlation: -0.137

2. Percentage of ownership of the largest stockholder is also supervisor
   - Negative
   - Correlation: -0.121

3. Percent of official representative is also directors
   - Negative
   - Correlation: -0.173

4. Percentage of directors represented by the largest stockholder
   - Negative
   - Correlation: -0.123

5. CEO or Chairman represented by the largest stockholder
   - Negative
   - Correlation: -0.285

Index 2.: Credit rating, information transparency and disclosure

1. Score of Credit Rating
   - Positive
   - Correlation: 0.170

2. Percent of directors 20 represent largest stockholder
   - Negative
   - Correlation: -0.074

3. Score of information transparency and disclosure
   - Positive
   - Correlation: 0.098

3. Outside directors and supervisors

1. Percentage of outside directors
   - Positive
   - Correlation: 0.679**
Column of correlation of Table 2 is components of Corporate Governance index correlation and eigenvalue to firm value, correspondingly. The absolute value of correlation means components of Corporate Governance index contribute to index and firm value. (+) represent positive or negative contribution. Index 1 (The behavior of stockholders) has negative contribution to firm value index—Tobin’s q. Where the percentage of ownership of second stockholder is also director (-0.137), percentage of ownership of the largest stockholder is also supervisor (-0.121), percentage of official representative is also directors (-0.173), percentage of directors represented by the largest stockholder (-0.123), and CEO or chairman represented by the largest stockholder (-0.285) have negative effect to the behavior of stockholder and Tobin’s q. Index 2 (Credit rating and information transparency and disclosure) has positive contribution to Tobin’s q. Where the percent of directors represent 20 largest stockholder (-0.074) has negative effect to credit rating, information transparency and disclosure, and negative contribution to Tobin’s q. Score of credit rating (+0.170) and Score of information disclosure (+0.098) have positive contribution to credit rating, transparency and information disclosure have positive contribution to credit rating and information disclosure, and have positive contribution to Tobin’s q. Index 3 (Outside directors and monitors) has negative effect to Tobin’s q. Where Percentage of ownership of outside directors (+0.679**) and Numbers of supervisors (+0.438) have positive effect to outside directors and monitors, and positive contribution to Tobin’s q.

Results and analysis

Regression model

Our research use three corporate governance index and six controlled variables to be independent variables, and use firm value measurement—Tobin’s q to be dependent variable, and then proceed regression analysis. The results of regression analysis as Table 3:

From empirical evidence of Table 3, when dependent variable is Tobin’s q (2001-2006), regression model after added composite index 1, index 2, and index 3 (the behavior of stockholder, credit rating, information transparency and disclosure, and outside directors and supervisors) are significant at α=1% level with adjusted R²=0.7080. It means that the whole control variables, including indexes can explain 70.80% variance of firm value measurement—Tobin’s q. Where index 1—the behavior of stockholder has significantly negative effect on Tobin’s q, index 2—credit rating, information transparency and disclosure has significantly positive effect on Tobin’s q, index 3—outside directors and supervisors has negative effect on Tobin’s q, but it does not reach significant level. It implies that the relationship between components of the behavior of stockholders and Tobin’s q are negative, government should emphasize controlling and monitoring these five components of the behavior of stockholders. Furthermore, outside directors and supervisors in Taiwan may not actually independent, due to they nominated by chairman or CEO, or they serve concurrently too many job, and to concentrate their attention on their duty.

In controlled variables, managerial ownership voting power (MOP) has significantly negative effect on Tobin’s q, the square of managerial voting power(MOP²) has significantly positive effect on Tobin’s q. It implies that MOP has nonlinear relationship with Tobin’s q. Tobin’s q will decrease with MOP increase, when reach an critical point of MOP, Tobin’s q reached lowest point, and then Tobin’s q will increase with MOP increase. The curve of MOP—Tobin’s q is U
shaped. While CEO is also the chairman of board of directors (DUAL), Percentage of ownership by the largest stockholders (OWN), natural log of equity market value (FIRM SIZE) have significantly positive effect on Tobin’s q. At last, ratio of equity book value divided by equity market value (BE/ME) has negative, but not significant effect on Tobin’s q.

**Table 3 Regression Analysis of Composite Index of Corporate Governance, Controlled Variables to Tobin’s q**

<table>
<thead>
<tr>
<th>Tobin’s q</th>
<th>Coefficient (t-Statistic)</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-1.5960 (-2.58102)</td>
<td>0.0119**</td>
</tr>
<tr>
<td>Index 1</td>
<td>-0.0051 (-4.97723)</td>
<td>0.0000***</td>
</tr>
<tr>
<td>Index 2</td>
<td>0.0032 (2.945829)</td>
<td>0.0044***</td>
</tr>
<tr>
<td>Index 3</td>
<td>-0.0024 (-0.7512)</td>
<td>0.4550</td>
</tr>
<tr>
<td>MOP</td>
<td>-0.01769 (-6.24521)</td>
<td>0.0000***</td>
</tr>
<tr>
<td>MOP²</td>
<td>0.000193 (6.61559)</td>
<td>0.0000***</td>
</tr>
<tr>
<td>DUAL</td>
<td>0.1678 (1.725259)</td>
<td>0.0888*</td>
</tr>
<tr>
<td>OWN</td>
<td>0.0127 (2.80764)</td>
<td>0.0064***</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.0639 (2.334742)</td>
<td>0.0224**</td>
</tr>
<tr>
<td>BE/ME</td>
<td>-0.0003 (-0.84043)</td>
<td>0.4035</td>
</tr>
<tr>
<td>Adjusted R-squire</td>
<td>0.7080</td>
<td></td>
</tr>
<tr>
<td>F-Statistic</td>
<td>22.5511***</td>
<td></td>
</tr>
<tr>
<td>Number of Samples</td>
<td>162</td>
<td></td>
</tr>
</tbody>
</table>

Composite index 1 = the behavior of stockholder composite index 2 = credit rating, information transparency and disclosure, composite index 3 = outside directors and supervisors

“MOP” = managerial ownership voting power. “MOP²” = square of managerial voting power.

“DUAL” = CEO is also the chairman of board of directors, if the same person, DUAL=1, else, DUAL=0. “OWN” = Percentage of ownership by the largest stockholders. “BE/ME” = Ratio of equity book value divided by equity market value. “SIZE” = Firm Size = natural log of equity market value.

* significance level α=10%, ** significance level α= 5%, *** significance level α= 1%

**Conclusions and Suggestions**

This research is followed Callahan, Mullar and Schulman, 2003; and Tsun-hsiu Li, 2002 Corporate Governance analysis and then designed our research model. We adopted 27 financial companies which listed on TSE during 2001 to 2006 to be our empirical samples, and verified the correlation between components of Corporate Governance variables, related control variables and firm value measurement – Tobin’s q. This empirical analysis is used 10 Corporate Governance variables and use Principal Component Analysis to construct 3 Composite indexes which aim is to mitigate interaction (multicollinearity) between variables. We proceed regression analysis which include dependent variables – Tobin’s q and independent variables – 3 composite indexes and 6 controlled variables. The results supports the suggestion of Hermalin and Weisbach (1991) – “For different firms have different optimal governance structures.” The summary of regression analysis results are as follow:
Among Corporate Governance’s variables, our findings is consistent with Smith and Watts (1992), who pointed out that FIRM SIZE is function of investment opportunity, and it has positive correlation with Tobin’s q. This research finds out that board of directors is a mechanism which is used to conduct and monitor management, and it could reduce the agency problems between managers and stockholders. In the same time, we also find out that the controlling stockholder’s behavior which let firm realized performance is higher than financial reports.

For the percent of manager’ ownership (MOP), Mdhran(1988) points out that there exist positive correlation between MOP and firm value. Our research result is different with Mdhran, the probable reason is that the current trend for financial industry is moved toward to conglomerate. For job entrenchment of managers, they will oppose some cases which could benefit to firm value, such merge and tender offer.

For CEO is also chairman of board of directors(DUAL) : Rechner and Dalton(1991) supported that CEO and Chairman is the same one will benefit to business operation. While Patton and Baker (1987) and Rechner (1989) suggest DUAL will harm to business operation. Our research’s finding is that DUAL benefit to firm’ operational performance, the reason is that there exist concentration of ownership and management in Taiwan. Namely, firm operational decision is dominated by largest holder, and largest stockholder of most listed companies enhance their dominated power by management participation.

For the percentage of ownership of largest stockholder (OWN), According to research findings of La Porta et al.(1999),Claessens et al.(2000), and Lemmon and Ling(2001), there exists positive relationship between the percentage of ownership of control stockholder and firm value. This conclusion is consistent with our empirical results. It means that the percent of ownership of largest stockholder will bring positive benefits and has positive contribution to firm’ value. The reason is that family controlled is an key factors which between controlled rights and market valuation. The higher percentage of controlled stockholder shareholding, the greater intensives they monitor managers whether managers engage in firm operation. And managers will not invade and occupy stockholders’ wealth. So, it will has positive effect on firm value. But if controlled stockholder’s purpose is to invade and occupy firm wealth, then the higher controlled rights, the sooner the purpose reach.

For the composite indexes, we adopt value measurement — Tobin’s q to be regression model dependent variable. We find out that index 1 (the behavior of stockholder) has significantly negative effect to Tobin’s q. Our research finds out that while the second largest stockholder has significantly effect in the directors, he will protect his benefit and try to monitor or oppose control stockholders. Sometimes, he will control the firm’s operation decision. He usually adopts some activities which are based on his own personal benefits, but are not beneficial for firm value promotion. These actions always lead poor firm operational performance and result in loss of firm value. Furthermore, the largest and second largest stockholders could use some under-table action to expropriate minority interests. Index 2 (credit rating, information transparency and disclosure) has significantly positive effect on Tobin’s q. the reason is that according to information signaling theory, firm has good information transparency and disclosure will reveal that it has higher standard firm performance signal, and it will has lower cost of capital. The relationship between cost of capital and information transparency and disclosure is direct and opposite. It implies that the more information transparency, the
lower cost of capital, and the higher firm value. Therefore, firm can increase information transparency to promote investors’ confidence, and to increase firm value. From the above, firm financial transparency and information disclosure are already become the measurement of firm value. Composite index 3 (outside directors and auditors) has negative contribution to value measurement-Tobin’s q, but is not significant. This results violate prior empirical evidence that outside directors could monitor management decision to protect minority wealth, and avoid decision which controlling shareholder benefit himself and reduce corporate value. Accurately, if firm decisions are monitored by outside directors, it should have higher value and performance.

In summary, we find out that whatever in size of board of directors or structure of ownership, the higher percent of ownership of controlling stockholder is directors or supervisors can monitoring the behavior of the managers effectively, and then increase firm value. In the same time, the companies whose managers do not work hard have bad performance. On the contrary, Increasing percent of ownership of outside directors and decreasing percent of ownership of the largest stockholder is also directors has became an international trend. In addition, according to TSFE, the IPO listed companies on TSE has to set 2 outside directors and 1 outside supervisor after January 2002. We can find out that the more independency between the structure board of directors and firm, the better improvement mechanism of monitoring of firm operational function and mechanism of Corporate Governance. It will easily raise firm’s value. Our research suggest that all the listed company on TSFE should set independent directors mechanism and full information transparency and disclosure in order to protect the stockholders’ equity and create firm value.

Reference


30.