Business cycle, corporate governance, and bank performance

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ABSTRACT

The corporate governance structure can have a different effect on the performance and asset quality of the financial industry at different stages of the business cycle. The sample contains about 15,000 firm-year observations and covers two contraction periods, specifically, 1990-1991 and 2001 recession. This paper examines the relationship of the governance variables with the various performance measures and loan quality measures for economic contraction years and economic expansion years separately. The empirical evidence supports the hypothesis that bank performance and asset quality are related to different corporate governance variables for different stages of business cycle.

Keywords: corporate governance, bank performance, asset quality, economic expansion, economic contraction

INTRODUCTION

Most studies on corporate governance exclude firms in financial industry. An often cited reason is that the financial industry is a regulated industry; therefore corporate governance in this industry is not as important as in other industries. However, the 1994 Riegle-Neal Act and the 1999 Gramm-Leach Bliley Act deregulated the banking industry. With deregulation comes the increased expectation and burden of corporate governance structures to insure performance and manage risk taking. It is possible that there is a more significant effect of corporate governance on the bank performance after the passage of these two acts.

The optimal corporate governance can differ across industries (Gertner and Kaplan, 1996; Romano, 1996; and Hermalin and Weisbach, 2003). Some corporate governance features can be good for a certain industry due to its specific industry characteristics, but may not be good for other industries. So it is more appropriate to study the corporate governance structure within a single industry than across different industries. As banks are required to report financial information in a uniform way to their regulators, banking industry can be very suitable to investigate the relationship of corporate governance system and the performance and risk taking in a particular industry.

The optimal corporate governance can also differ for different stages of the business cycle. Cornett, McNutt, and Tehranian (2010) examine the corporate governance system and the performance of publicly traded U.S. banks in the most recent financial crisis. They find that bank performance decreases dramatically after the crisis, and corporate governance variables such as CEO ownership and board independence weaken significantly around the crisis. As corporate governance variables change from expansion years to contraction years, there may be different effects from these variables for these two stages of business cycle.

This paper takes a different direction from the prevailing literature in that it examines the significance of various governance factors on performance and risk taking during contraction phases and during expansion phases using data from 1990 to 2003 which includes two business cycles. It is hypothesized that there may be significant differences in the role these factors play depending on the economy and what may be very sound structures during expansion phases may not be best during contractions and their aftermath. This paper examines two factors representing CEO dominance and three factors representing board size and makeup, as well as institutional ownership.

LITERATURE REVIEW

The literature focuses on CEO pay, CEO ownership and the role the CEO plays on the Board. The literature has recognized that the dominance of the CEO can present an agency problem, but can also be a strong motivational factor in creating value. Nevertheless, the Board of Directors is the primary governance mechanism that oversees management decisions. It has been argued that when boards get bigger, they become more symbolic and less a part of the management process, thus the agency problems are more severe. More outside board members should increase firm value and manage risk better by providing expertise and objective opinions. The institutional investor group has a large ownership stake and thus has a strong incentive to monitor the managers and has a big impact on performance and risk taking.

CEO Dominance

CEO compensation and ownership can motivate the manager to create firm value and align the interest of managers and shareholders. Core, Holthausen, and Larcker (1999) find that CEO pay goes up with the number of outsiders appointed by the CEO, the number of directors over age 69, board size, and the number of busy directors (proxied by the number of additional directorships held by a director). It follows that firms that pay their CEOs higher compensation tend to have higher agency costs.

By owning the stocks of the bank they work for, CEO will be rewarded for good performance and punished for poor performance, so they are more motivated to make the right decisions and maximize shareholders' value. Previous studies have shown that CEO ownership is positively related to firm performance as measured by ROA or Tobin's q (e.g. Morck, Shleifer, Vishny, 1988; McConnell and Servaes; 1990, Mehran, 1995). The more recent literature focuses on the relationship of CEO ownership and risk taking behavior of banks. Without ownership of the bank, the CEOs may prefer playing it safe and are reluctant to take on risky projects that may benefit the shareholders. Saunders et al. (1990) document evidence that banks with higher CEO ownership usually takes more risk. Spong and Sullivan (2007) used a sample of state-chartered community banks in the Midwest and find that CEO ownership can improve banks' performance and encourage banks to take more risk.

Institutional Ownership

Institutional ownership represents the large blocks of shares owned by institutional investors such as mutual funds and pension funds. Due to their large ownership stake, institutional investors usually play an important monitoring role of corporate managers (Shleifer and Vishny, 1997). As the depositors are protected from explicit deposit insurance and have few incentives to monitor the banks, the monitoring role of the institutional investors is more essential for the banks. Previous research has documented evidence that institutional ownership is positively related to shareholder's value (Smith, 1996), future operating performance (Coffee, 1991; Bushee, 1998), and bank performance (Elyasiani and Jia, 2008; Grove et al, 2009).

Board Characteristics

There is a cost for large board. For example, Jensen (1993) argues that larger board is less effective because of the free-riding problems. Yermack (1996) examines the relationship between the board size and Tobin's q after controlling for other variables that are likely to affect Tobin's q. He documents a significant negative relationship between board size and Tobin's q. However, large board can also be beneficial because of the increased pool of expertise and resources available to the firm. Adams and Mehran (2005) used a sample of banking firms during 1959-1999 and found that for banking firms, larger board is not associated with poor performance in terms of Tobin's q. Their results suggest that the advantages of larger board outweigh the costs for banking firms.

It is argued that outsiders on the board of directors act like referees between shareholders and managers (Fama, 1980). The prevailing empirical evidence implies that more outsiders on the board are related to better governance. In particular, Brickley and James (1987) find that more outsiders on the board can decrease managerial consumption of perquisites in the banking

industry. Gillette, Noe, and Rebello (2003) find that uninformed outsiders on board can implement institutionally preferred policies if the board consists of a majority of outsiders. All these studies document evidence that more outsiders on boards can effectively reduce agency costs. Previous studies find that more outside board members are related to better stock returns and operating performance (Baysinger and Butler, 1985; Rosenstein and Wyatt, 1990; Byrd and Hickman, 1992; Cornett et al., 2006; and Ravina and Sapienza, 2009). However, Adams and Mehran (2005) find that there is not a significant relationship between board composition and performance for the banking firms.

According to Brickley et al. (1997), the CEO also serves as the chairman of the board (duality) for eighty percent of U.S. companies. This concentration of power can weaken the effective monitoring from the board of directors and is considered as an indicator of weak governance (Yermack, 1996; Larcker et al., 2007). Studies such as Carpeto et al. (2005) find the separation of the roles of CEO and chair of board can result in significant abnormal returns. However, separating the CEO and Chairman positions can be costly. For example, there are costs in monitoring the Chairman, costs of information sharing between CEO and the Chairman, and incentive costs related to the succession process in which the CEO is promised the Chairman title. Brickley, Coles, and Jarrell (1987) find that firms that combine the duties do not underperform those that separate them. They also find that for the firms that separate the titles, most of them eventually granted their good performing CEOs both titles. It follows that some firms use the title of Chairman as an incentive for new CEOs, and the difference in duality may largely reflect the cross-sectional differences in the timing of CEO successions.

SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

The sample starts with all commercial banks that are included in the Compustat dataset. Commercial banks are identified as firms with SIC codes that are between 6000 and 6099. Then it is merged with Compact disclosure dataset to get the corporate governance variables. The final sample contains 11,517 firm-year observations from year 1990 through 2003. The fourteen year period covers two business cycles that make it possible to study how the corporate governance variables affect bank performance and risk-taking behaviors differently for different stages of business cycle. The contraction years are defined as the years when the economy is from peak to trough and the year after it. The rest of the years in the sample are defined as expansion years. There are 3,780 firm-year observations for the contraction phases, and the remaining 7,737 observations for the expansion phases.

Three different variables are used to measure bank performance. The first measure is the quality of revenue ratio (QOR), which is the ratio of cash collected from customers over the bank's reported revenues. Banks that lend money to borrowers with poor credit history, or book asset sales as revenue have lower quality of revenue ratio. The second measure is the return on assets, which is often used as an accounting-based performance measure. The third measure is Tobin's Q, which is calculated as the market value of a firm's assets divided by the book value of its assets. This variable is usually used as a market-based performance measure for firms.

There are two proxies for the riskiness of bank's assets: the loan loss reserve ratio (LAA) and the non-performing assets ratio (NPAA). The loan loss reserve ratio is the loan loss reserve scaled by total assets. It represents how much the net loan losses is relative to the average loans outstanding for a specific period of time. Non-performing assets refers to the loans on which the borrower is not current on payments (such as restructured loans, foreclosed properties and

repossessions) and reflects the losses in the banks' loan portfolio. It is calculated as the ratio of non-performing assets over total assets.

The corporate governance variables are all computed using the data in Compact disclosure dataset. The CEO compensation, CEO ownership, board size, composition and duality, as well as institutional ownership are used as the basic corporate governance structure of the banking firms. To control for bank characteristics, we constructed bank size (natural log of total assets) and growth opportunities (book value to market value of bank's equity). Because the book value to market value of a bank's equity is highly correlated with Tobin's Q, this variable is excluded from the regression when Tobin's Q is the dependent variable.

Table 1 displays the summary statistics of bank characteristics and governance characteristics during contraction years and expansion years, separately. The control variable, bank size, is larger for contraction years than for expansion years. This is consistent with the 'too big to fail' in the banking industry, and the fact that the larger banks are more likely to survive the hard time. The other control variable, book to market value, is higher for contraction years, which is also consistent with the fact that the market value usually falls during those years.

The lower ROA and Tobin's Q for contraction years can be related to the fact that firms are more reluctant to take on new projects during the economic downturn. There is also a lower non-performing assets ratio for contraction years, which may be related to the increased caution and strictness for banks to extend loans during these years than during economic expansion years.

As to corporate governance characteristics, banks pay their CEO less and tend to have larger board in contraction years. The lower CEO pay is more likely to be a result of poor bank performance during the economic downturn, and the larger board in contraction years can be related to larger bank size for these years. The other corporate governance variables do not seem to be quite different for these two stages of business cycle. Unlike the study by Cornett, McNutt, and Tehranian (2010), which examines the most recent recession, this paper does not find any changes in CEO ownership and board composition.

Regression analysis is used to analyze the factors. The model used in both contraction and expansion years is

$$Z_{it} = a + b * X_{it} + c * Y_{it}$$

Where Z_{it} represents a performance or risk measure and X_{it} represents the control variables and Y_{it} represents CEO dominance factors, institutional ownership and board characteristics.

RESULTS

Results regarding how the corporate governance characteristics affect bank performance and risk taking during contraction years are reported in Table 2. The first column shows the relationship of quality of revenue and corporate governance variables: the larger the board, the higher the quality of revenue. The board size is also positively related to return on assets and negatively related to non-performing assets. This implies that larger boards can be beneficial to firms in the banking industry. Specifically, a larger board can improve the quality of revenue and accounting-based revenue, and decrease non-performing assets.

Institutional ownership is the most important governance variable in explaining the bank performance and asset riskiness for contraction years. Except for the quality of revenue, all the other bank performance measures and asset riskiness measures are significantly related to institutional ownership. Higher institutional ownership is related to better firm performance and

higher asset quality. It seems that institutional owners plays an essential role in monitoring the firms and is very effective in controlling agency costs and improving bank performance and asset quality in contraction years.

Another important corporate governance variable for contraction years is CEO compensation. CEO compensation is positively related to both the accounting-based performance and market-based performance, and is negatively related to the loan loss reserve ratio. CEO compensation may reflect CEO capability; then it follows that CEOs with higher capabilities will have better bank performance and loan quality.

CEO ownership aligns the interest of CEO with that of the shareholders, and CEOs with a big ownership stake will have a stronger incentive to increase firm value. It is shown that CEO ownership has a positive effect on return on assets. However, CEO ownership also promotes risk taking. It is associated with an increased level of non-performing assets.

The board composition has the least effect on bank performance and asset quality for contraction years. It is only significantly related to the loan loss reserve ratio. The loan loss reserve ratio is higher for banks with more outsiders on board. This is inconsistent with the agency cost theory.

In sum, the institutional ownership, board size and CEO compensation are more important than other governance variables in explaining the bank performance and risk taking in contraction years.

Table 3 reports the relationship of bank performance and risk taking with corporate governance variables for expansion years. Column 1 indicates that banks that pay their CEO more and have a higher percentage of outsiders on board have better quality of revenue. This suggests that outside board members play a very important role for monitoring and consulting purposes and can improve the quality of revenue in expansion years. Now board size is no longer significant. This is different from the results for contraction years.

The most important governance variable for contraction years, institutional ownership becomes the least important for expansion years. It is only significantly related to return on assets. This implies that institutional owners are more vigilant in monitoring the banks they invest in during contraction years than during expansion years.

The least important governance variable for contraction years, the board composition, becomes one of the most important governance variables for expansion years. More outsiders on board are positively related to quality of revenue ratio and accounting-based performance, but it is also positively related to loan loss reserve ratio and non-performing assets. This indicates that outsiders on board that serve as the monitors of the firm can have a positive effect on bank performance, but it comes with a cost of poor asset quality.

The CEO ownership has a positive relation with all the performance measures and asset quality measures except for quality of revenue ratio. This is consistent with the previous finding that CEO ownership can enhance bank performance but it also encourage risk taking.

CEO compensation is positively related to all three performance measures and negatively related to loan loss reserve ratio, implying that the banks with more capable CEOs are usually have superior performance and loan quality.

Board size is positively associated with both accounting-based performance and market-based performance, and negatively associated with non-performing assets for expansion years. It seems that banks with larger board performed better and have fewer non-performing assets. This suggests that it is preferable for banks to have a large board. To summarize, board composition,

CEO ownership, CEO compensation and board size play a more important role on bank performance and risk taking in expansion years.

CONCLUSION

This study investigates whether corporate governance variables can affect bank performance and risk taking differently for contraction years and for expansion years. It is found that institutional ownership is the most important governance variable for contraction years, but is least important for expansion years. On the other hand, the board composition is the least important governance variable for contraction years, but it is one of the most important governance variables in explaining the bank performance and risk taking for expansion years. CEO ownership is also much more important for expansion years than contraction years. As to each performance measure and asset quality measure, it is also affected by different corporate governance variables for these two stages of business cycle. For example, quality of revenue ratio is only affected by board size for contraction years, but is affected by CEO compensation and board composition for expansion years. Two common factors across contraction and expansion phases is the larger the Board the better, and the more capable the CEO the better.

An important implication from this study is that investors should focus on different governance variables for different stages of business cycle. Specifically, they should choose banks with higher institutional ownership during contraction years and choose banks with higher percentage of outside board members and higher CEO ownership during expansion years. But no matter which stage of business cycle, the larger board and more capable CEO are always beneficial to the banks.

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Table 1 Summary Statistics of Firms in Contraction Years and in Expansion Years

This table displays summary statistics of the firm characteristics and governance characteristics for firms split by contraction years and expansion years. Contraction years include years from peak to trough and the year after it. LSIZE is the natural Log of total assets, QOR is the ratio of cash collected from customers and the firm's revenue; ROA is income before extraordinary items over total assets; TOBINQ is the market value to the book value of assets; LAA is the loan allowance over total assets; NPAA is the ratio of non-performing assets to total assets; BKTOMK is the book value to market value of total assets. PAY, CEOOWN, BINS, NUMDIR, DUAL, and INST are from the Compact Disclosure dataset. PAY (in thousands) is CEO compensation; BINS is the percentage of insiders on board; NUMDIR is the board size; DUAL is a dummy variable that takes the value one if the CEO is also the Chair of the Board, and is zero otherwise; and INST is percentage ownership by institutions. The table includes 11,517 firm-year observations from 1990 through 2003. 3,780 of these belong to contraction years, and the remaining 7,737 belong to expansion years. The difference in mean (median) is conducted using a t-test (Wilcoxon two-sample z-test).

Variable	Contraction (N=3780)			Expansion (N=7737)			Difference (Contraction-Expansions)	
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	T-Stat	Z-Stat
LSIZE	7.433	7.196	1.776	6.903	6.527	1.730	12.33[a]	13.84[a]
QOR	3.384	0.574	17.163	2.768	0.216	14.994	1.39	11.69[a]
ROA	0.021	0.021	0.011	0.022	0.022	0.010	-6.70[a]	-7.68[a]
TOBINQ	1.039	1.023	0.077	1.057	1.040	0.082	-9.26[a]	-12.05[a]
LAA	0.010	0.009	0.006	0.009	0.008	0.005	6.85[a]	6.26[a]
NPAA	0.007	0.005	0.009	0.008	0.005	0.010	-3.92[a]	-2.87[a]
BKTOMK	0.966	0.977	0.059	0.951	0.962	0.063	10.56[a]	12.05[a]
PAY	476.3	273.4	686.4	542.1	285.5	765.4	-4.09[a]	-4.30[a]
CEOOWN	0.019	0.006	0.039	0.020	0.008	0.036	-0.33	-3.22[a]
BINS	0.270	0.214	0.222	0.264	0.222	0.191	1.33	-2.33[b]
NUMDIR	10.711	10.000	4.928	10.342	9.000	4.704	3.82[a]	4.53[a]
DUAL	0.454	0.000	0.498	0.437	0.000	0.496	1.62	1.62
INST	17.698	11.040	18.933	17.205	11.375	18.123	1.23	0.27

[a]: Significant at 1% level;. [b]: Significant at 5% level;. [c]: Significant at 10% level.

Table 2 Bank Performance and Risk Taking with Governance Factors: Contraction Years

This table displays regression analysis of bank performance and governance factors split by contraction years and expansion years. Contraction years include years from peak to trough and the year after it. LSIZE is the natural Log of total assets, QOR is the ratio of cash collected from customers and the firm's revenue; ROA is income before extraordinary items over total assets; TOBINQ is the market value to the book value of assets; LAA is the loan allowance over total assets; NPAA is the ratio of non-performing assets to total assets; BKTOMK is the book value to market value of total assets. PAY, CEOOWN, BINS, NUMDIR, DUAL, and INST are from the Compact Disclosure dataset. PAY is CEO compensation; BINS is the percentage of insiders on board; NUMDIR is the board size; DUAL is a dummy variable that takes the value one if the CEO is also the Chair of the Board, and is zero otherwise; and INST is percentage ownership by institutions. Value is the parameter value of each regression.

	(1)QOR		(2)ROA		(3)TOBINQ		(4)LAA		(5)NPAA	
Variable	Value	T-stat	Value	T-stat	Value	T-stat	Value	T-stat	Value	T-stat
PAY	0.0000	-1.25	0.0000[a]	2.59	0.0000[a]	10.78	0.0000[c]	-1.79	0.0000	0.93
CEOOWN	-6.2259	-0.45	0.0209[a]	2.89	-0.0639	-1.15	0.0013	0.31	0.0169[a]	3.06
BINS	-3.0134	-1.33	-0.0006	-0.46	0.0006	0.06	-0.0019[a]	-2.72	0.0011	1.28
NUMDIR	0.3029[b]	1.96	0.0001[c]	1.69	-0.0002	-0.29	0.0000	0.95	-0.0002[b]	-2.23
DUAL	1.3923	1.12	-0.0005	-0.69	-0.0039	-0.81	0.0004	1.01	-0.0006	-1.28
INST	-0.0187	-0.44	0.0001[a]	2.72	0.0005[a]	3.13	0.0000[a]	-3.42	0.0000[b]	-2.06
LSIZE	0.0731	0.11	-0.0003	-0.87	-0.0131[a]	-4.97	0.0017[a]	8.03	0.0009[a]	3.17
BKTOMK	2.0977	0.21	-0.0773[a]	-14.68			0.0116[a]	3.18	0.0341[a]	6.57

[a]: Significant at 1% level;. [b]: Significant at 5% level;. [c]: Significant at 10% level.

Table 3 Bank Performance and Risk Taking with Governance Factors: Expansion Years

This table displays regression analysis of bank performance and governance factors split by contraction years and expansion years. Contraction years include years from peak to trough and the year after it. LSIZE is the natural Log of total assets, QOR is the ratio of cash collected from customers and the firm's revenue; ROA is income before extraordinary items over total assets; TOBINQ is the market value to the book value of assets; LAA is the loan allowance over total assets; NPAA is the ratio of non-performing assets to total assets; BKTOMK is the book value to market value of total assets. PAY, CEOOWN, BINS, NUMDIR, DUAL, and INST are from the Compact Disclosure dataset. PAY is CEO compensation; BINS is the percentage of insiders on board; NUMDIR is the board size; DUAL is a dummy variable that takes the value one if the CEO is also the Chair of the Board, and is zero otherwise; and INST is percentage ownership by institutions. Value is the parameter value of each regression.

	(1)QOR		(2)ROA		(3)TOBINQ		(4)LAA		(5)NPAA	
Variable	Value	T-stat	Value	T-stat	Value	T-stat	Value	T-stat	Value	T-stat
PAY	0.0000[b]	2.49	0.0000[a]	7.38	0.0000[a]	11.30	0.0000[b]	-2.35	0.0000	0.19
CEOOWN	-8.4411	-1.33	0.0194[a]	4.56	0.1469[a]	3.52	0.0105[a]	4.04	0.0303[a]	6.00
BINS	-3.0459[b]	-2.26	-0.0027[a]	-2.96	0.0030	0.34	-0.0022[a]	-3.97	-0.0041[a]	-3.89
NUMDIR	0.0783	1.21	0.0002[a]	3.50	0.0013[a]	3.03	0.0002[a]	6.39	-0.0001[b]	-2.41
DUAL	0.1085	0.23	-0.0001	-0.28	0.0059[c]	1.88	0.0000	-0.08	0.0004	1.01
INST	0.0107	0.63	0.0000[a]	3.50	-0.0002	-1.47	0.0000	-0.54	0.0000	0.16
LSIZE	-1.4776[a]	-5.62	-0.0011[a]	-6.14	0.0020	1.15	0.0004[a]	3.98	0.0000	0.10
BKTOMK	14.3757[a]	3.96	-0.0662[a]	-27.22			-0.0041[b]	-2.43	0.0318[a]	9.70

[a]: Significant at 1% level;. [b]: Significant at 5% level; [c]: Significant at 10% level.