

Impact of board independence during the crisis period

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ABSTRACT

Corporate governance is seen as great importance for firm performance. It is said that poor corporate governance could be the cause of the latest credit crisis. The board of directors is a key mechanism of corporate governance, so the board failed to do its job properly due to its lack of independence? The agency theory states that this could be the problem. This research studies the impact of board independence on firm performance and specifically using top ranked USA firms during the period 2007-2010. A regression analysis is used to measure the impact of board independence on firm performance. With Tobin's Q and Return on Assets as measurements of firm performance, in addition firm size and leverage are used as control variables. The results show a negative relationship between board independence and firm performance. As this study has focused on the specific time period of last crisis, it is therefore difficult to say that in other time periods the impact would be the same. In addition the sample has only used USA firms, so the impact could be more or less similar to firms with a 1-tier board structure.

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Keywords

Corporate governance, Firm performance, Board Independence, Crisis Period

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1. INTRODUCTION

Around the world firms had to deal with the global crisis, which started as a credit crisis in the USA back in 2007 resulting even in global recession. Many firms had to cut costs in order to survive. Some say this crisis was caused by bad or poor corporate governance (Adams & Mehran, 2008; Beltratti & Stulz, 2012; Kirkpatrick, 2009).

Several researches have pointed out that corporate governance is of great importance in determining the firm performance (during a crisis). Many corporate governance mechanisms have been studied in their relationship to firm performance and it turned out that the board of a firm is one of the key mechanisms. The board of directors is one, if not the most, important internal corporate governance mechanisms (Daily, Dalton, & Cannella, 2003; Francis, Hasan, & Wu, 2012). The boards of directors had a central role in dealing with issues of cutting costs was for. As the board of directors is there to oversee and protect that managers will follow the interests of shareholders.

Corporate governance has been an issue since the Great Depression and this led to multiple laws, acts and codes to regulate corporate governance in listed firms. Across the world several systems developed and due to globalization those systems adopted features of each other. There are lots of characteristics that describe boards. Several have been found to have an impact on firm performance, others have not been identified as determinants for firm performance.

The goal of the research is to find out whether or not the board independence is a determinant for firm performance, especially during crisis in the period 2007-2010. Second objective is whether or not more independent boards were more successful during the recent crisis period. This leads to the following research question:

To what extent were more independent boards successful on firm performance during the credit crisis in 2007-2010 compared to less independent boards?

To examine the effect of board independence, firms from the USA will be used, because those firms have commonly a single tier board structure, where management and supervisor are operating in the same board. Furthermore the choice for the USA is explained by the fact the credit crisis started there and the first signs of recovery were made as well in the USA.

The choice to investigate effect of board independence is based on the fact that over time this particular characteristic of board is studied and had different results, but by my knowledge the effect is not studied with focus on the latest crisis.

The structure of the paper is as follows. In section 2 deals with both relevant theoretical and empirical literature as a way of a literature review; section 3 describes the methodology, data and the variables; section 4 discusses the results of this research and in section 5 the conclusion is drawn on these results.

2. LITERATURE REVIEW

2.1 Theoretical literature

2.1.1 Importance of a board

All listed companies are required to have a board by both law and stock exchange requirements. So it could be said that a board is just a simple product of regulation (Benjamin E. Hermalin & Weisback, 2003). However, most companies fulfil these regulatory requirements with ease.

The need for a board can be related back to the agency theory. This theory states in case of separation of control and ownership, conflicts will arise between the owner and an agent, who acts as the manager, where to go with the company and which risks to take. In public companies the case would be that the managers are self-interested and are willing to take more risk than the shareholders are willing to take to achieve certain targets and goals (Eisenhardt, 1989; Francis et al., 2012; Thomsen & Conyon, 2012).

The board is assigned with the task to control the management, since it very difficult and impracticable to have all the shareholders controlling the managers. The board has different methods to control the managers like incentives, monitoring (key) performance indicators, hiring and firing of managers. (Bhagat & Bolton, 2008; Benjamin E. Hermalin & Weisback, 2003; Klein, 1998; Peij, 2002). On the task of firing poorly performing executives, more independent boards tend to be more willing to remove these executives. (Daily et al., 2003)

2.1.2 Different types of boards

Around the world different types of board systems are present and numerous ways to group these different systems based on the grounds they are organised. However, these different types can be separated into the more general groups based on an important difference, 1-tier board system and the 2-tier board system. The first system is used by USA, UK and Japanese firms, while the later system is used by German and Scandinavian firms (Martynova & Renneboog, 2010; Peij, 2002; Thomsen & Conyon, 2012).

The 1-tier board, or single tier board, consists out of inside, executive directors and outside, non-executive, directors, who are elected by the shareholders. In the classical form of the 1-tier board the CEO of the firm is also the chairman of the board, the so called CEO-duality (Peij, 2002).

The difficulties of the 1-tier board system are that non-executive directors carry the same responsibilities as the executive directors by law and there is risk that the executive directors out balance the non-executive directors in the board. This unbalance could lead to conflict of interests with the shareholders. Furthermore the CEO, being the chairman as well, might try to consolidate his position as CEO by proposing trustees as candidate board members when the company operates well and so declining the independence of the board.

2.1.3 Impact of board independence on firm performance

The impact of board independence can be divided on two theories. Earlier discussed the agency theory and the stewardship theory, which states nearly the opposite and suggest that managers are capable to produce high profit and returns for shareholders (Dalton, Daily, Ellstrand, & Johnson, 1998). With the agency theory, the line is that the more independent the board is the better the firm performance. Since independent directors are capable to effectively monitor management, to fire poor performing managers and protect the shareholders long-term interests (Kyereboah-Coleman & Biekpe, 2006; Millstein & MacAvoy, 1998). While the stewardship theory line is that less independent boards lead to better firm performance since, inside managers have better access to firm specific information (Dalton et al., 1998; Kyereboah-Coleman & Biekpe, 2006).

Looking at historical data and reports, management-dominated boards invested in low-return growth and diversification, which resulted in a low return to shareholders. GM for instance was among the first to separate their board, but this turned out to have a negative influence on their market capitalization, which also happened at other firms which separated their board (Millstein & MacAvoy, 1998). So the pursuit of an independent board turned out to be negative. New insight have shown that some boards have been constituted at their optimal state in order to maximize the firms value, so an increase independence would be harmful to firm performance (Duchin, Matsusaka, & Ozbas, 2010). This optimization view suggest that when firms are forced to increase their board independence, their board gets outbalanced which leads to a decline in firm performance. The optimization view suggest that both agency theory and stewardship theory are right to certain point and that firms that found their optimal constitution will suffer from change in any direction of the level of independence of the board.

2.2 Empirical literature

2.2.1 Board independence and firm performance

Over the years many research have be done on the relationship between corporate governance, and in specific board characteristics, and its impact on corporate performance. Bhagat and Bolton (2008) did a study on corporate governance and firm performance. They found that board independence is negatively correlated to firm performance. This in contract to Francis, Hasan & Wu (2012) that found a positive correlation, but many other researches had failed to point out a significant correlation (Dalton et al., 1998). As many shareholders push for outside directors, April Klein (1998) found that inside directors have a positive relationship for several board committee, since these directors have valuable information on the firm. Although the positive relationship was also found by Kyereboah-Coleman & Biekpe (2006), their result was not significant.

2.2.2 Economic situation

During economic normal or booming periods the influence of the board on the CEO tend to be less, because of the bargain power the CEO has obtained by good performances (Francis et al., 2012; Benjamin E Hermalin & Weisbach, 1998). In contrast the board becomes more proactive and independent when the firm performances worse than required by the shareholders. But this holds not for all industries as found by Francis, Hasan & Wu (2012). They found that firm that the impact of the board independence on firm performance varies among industries, as they suggests based on the impact of the crisis on those industries.

3. METHODOLOGY

3.1 Hypotheses

Based on the findings of previous researches it would be plausible that more independent boards could perform better compared to less independent boards, because of the bargaining power of the CEO and executive management that is lower at such period and is also in line with the agency theory. This leads to the hypothesis of this research:

h1: Firms with a more independent board did perform better during the crisis than firms with a less independent board.

To test the hypotheses a multivariate regression analysis will be used. This paper estimate the following multiple regression model:

$$\text{Firm_Performance}_{it} = \alpha_0 + \beta_1 \text{Board_Independence}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Leverage}_{it} + \varepsilon_{it}$$

The model is tested only during the crisis period.

3.2 Variables

3.2.1 Dependent variables

To measure the firms' performances, this study uses, like many prior studies did, Tobin Q's, measured as ratio market value to book value, and ROA, measured as ratio net income to total assets (Duchin et al., 2010; Hillier et al., 2011).

3.2.2 Independent variables

The main independent variable for this research is the level of board independence. This is measured as the ratio of outside non-executive directors on the board divided by the total number of board directors, (named) executives and non-executives. This measurement is quite similar to the BDC ratio that was used by KyereBoah-Coleman & Biekpe (2006).

3.2.3 Controlling variables

Following prior studies, such as Kyereboah-Coleman & Biekpe (2006), Adams & Mehran (2008) and Francis, Hasan & Wu (2012), this paper controls for several risk factors that might affect firms' performance. The first one is firm size, measured by the natural logarithm of the book value of total assets. The second is leverage, measured as the ratio of total liabilities and debt to total assets.

3.3 Sample selection

As mentioned earlier, data on the effect of the crisis period will be used. This means that this papers uses data starting in 2007, the year of the start of the crisis on the stock markets S&P500, NASDAQ and Dow Jones (CNBC, 2014a, 2014b, 2014c), until 2010, the year where the USA GDP and GNI are recovered above their value of 2007 (Worldbank, 2014).

The stock markets were at 2010 not recovered to the level of 2007. The S&P500 and Dow Jones crossed this all-time high of 2007 in 2013(CNBC, 2014a, 2014c), while the NASDAQ did this around 2011(CNBC, 2014b). So, for the end of the crisis period for this research 2010 will be used since other macroeconomic factors were restored.

Furthermore only publicly listed companies from the United States of America are used to have a clear sample without interference of country specific legislation and all of those companies are neither operating as a bank neither as an insurance company, those are obliged to specific legislation. At last the top 100 companies with complete data were selected based on their market capitalisation.

4. DATA

Data is gathered by using the ORBIS database and the SEC filings, forms 10-K and DEF 14A. Table 1 gives the descriptions of the various statics that were used during the research.

Table 1. Descriptive Statistics: Individual Cases

	N	Min.	Max.	Mean	Std. Dev
Tobin's Q	400	0.51	6.75	1.66	0.80
Return on Assets	400	-0.49	0.27	0.06	0.07
Board Independence % (Non-Exec. Directors / Total board)	399	0.24	0.91	0.52	0.11
Leverage % (TLD/TA)	400	0.10	1.29	0.64	0.18
Firm Size (ln TA)	400	5.89	13.59	10.25	1.11

As shown in the descriptive statistics, this research use 399 valid cases originating from 100 companies. It turned out that one company had one year without accessible data on their board.

The variables are tested on correlation that might influences the results of the test. The results of the correlation test are shown in table 3. The independent variables show no correlation with each other. Except for firm size all of the independent variables have a small negative correlation to the dependent variables for firm performance.

Besides analysing the data on individual case level (company per year), another regression is done one the

average per company over the total period. The descriptive statistics are presented in table 2.

Table 2. Descriptive Statistics: Average Company

	N	Min.	Max.	Mean	Std. Dev
Average Tobin's Q %	100	0.65	4.87	1.64	0.69
Average Return on Assets %	100	-0.14	0.20	0.06	0.05
Average Board Independence % (Non-Exec. Directors / Total board)	100	0.32	0.90	0.52	0.11
Average Leverage % (TLD/TA)	100	0.14	1.10	0.64	0.17
Average Firm Size (ln TA)	100	7.00	13.57	10.26	1.09

There are no differences in the means for the independent variables, in contrast the means for the dependent variables are a bit shifted, based on calculating these after taking the average of the original underlying values. Instead of taking the averages on the Tobin's Q and RoA values per year. The number of cases used for the sample is 100, since there was no reason the excluded a company from the sample.

The results of the correlation between all the variables are presented in table 4. Like the correlations for the individual cases, the averaged cases show the same significant correlations.

Table 3. Correlations: Individual Cases

		Tobin's Q	RoA	Board Independence	Leverage % (TLD/TA)	Firm Size (ln TA)
\	Pearson Correlation	1	.527*	-.236*	-.291*	.035
	N	400	400	399	400	400
RoA	Pearson Correlation	.527*	1	-.170*	-.459*	.072
	N	400	400	399	400	400
Board Independence	Pearson Correlation	-.236*	-.170*	1	.049	.021
	N	399	399	399	399	399
Leverage % (TLD/TA)	Pearson Correlation	-.291*	-.459*	.049	1	-.074
	N	400	400	399	400	400

	N	400	400	399	400	400
Firm Size (ln TA)	Pearson Correlation	.035	.072	.021	-.074	1
	N	400	400	399	400	400
**. Correlation is significant at the 0.01 level (1-tailed).						

Table 4: Correlations: Average Company

		Avg. Tobin's Q	Avg. RoA	Avg. Board Independence	Avg. Leverage % (TLD/TA)	Avg. Firm Size (ln TA)
Avg. Tobin's Q	Pearson Correlation	1	.705**	-.270**	-.338**	.076
	N	100	100	100	100	100
Avg. Return on Assets	Pearson Correlation	.705**	1	-.226*	-.556**	.117
	N	100	100	100	100	100
Avg. Board Independence	Pearson Correlation	-.270**	-.226*	1	.079	.018
	N	100	100	100	100	100
Avg. Leverage % (TLD/TA)	Pearson Correlation	-.338**	-.556**	.079	1	-.075
	Sig. (1-tailed)	.000	.000	.218		.230
	N	100	100	100	100	100
Avg. Firm Size (ln TA)	Pearson Correlation	.076	.117	.018	-.075	1
	N	100	100	100	100	100
**. Correlation is significant at the 0.01 level (1-tailed).						
*. Correlation is significant at the 0.05 level (1-tailed).						

5. RESULTS

As mentioned earlier in this research firm performance is measured as Tobin's Q as well as the Return on Assets. Therefore two regression analysis are done to see the impact of board independence. The models of both Tobin's Q and Return on Assets for the individual cases regression are presented in table 6. For the averaged values of the companies the models are presented in table 7.

Table 5. Models: Individual Cases

	Tobin's Q	RoA
(Constant)	3.156	.189

	Tobin's Q	RoA
(Constant)	(7.634)	(5.581)
Board Independence	-1.594 (-4.743)	-.093 (-3.378)
Leverage % (TLD/TA)	-1.266 (-6.019)	-.175 (-10.123)
Firm Size (ln TA)	.014 (.411)	.003 (.945)
Adj. R-sqr	.130	.228
No. of Obs	399	399
<i>t-values in parentheses. Significant coefficients in bold.</i>		

Although both models for firm performance are significant. They only explain a small proportion of the variance in firm performance. While the model of Tobin's Q explain just 13% of the variance, the model of Return on Assets explains almost 23%. In both models the coefficient for Firm Size is not significant. A one percentage point increase in leverage would in both models negatively influence the firm performance, where this is at 1.266 percentage points for Tobin's Q while for RoA only a .175 percentage points decrease. Board Independence has a stronger negative impact on Tobin's Q than Return on Assets. This implies that when board independence is raised by one percent, the firm performance decreases by either 1.594 percentage points (Tobin's Q) or 0.093 percentage points (RoA). This result is in line with some of the studies (Bhagat & Bolton, 2008; Klein, 1998) that took place in the past, and is opposite of the expectation of the hypothesis.

Table 6. Models: Average Company

	Tobin's Q	RoA
(Constant)	2.915 (4.018)	.167 (3.469)
Board Independence	-1.605 (-2.647)	-.091 (-2.247)
Leverage % (TLD/TA)	-1.275 (-3.371)	-.163 (-6.488)
Firm Size (ln TA)	.036 (.611)	.004 (.979)
Adj. R-sqr	.151	.329
No. of Obs	100	100
<i>t-values in parentheses. Significant coefficients in bold.</i>		

Similar to the individual cases models, both models for firm performance using the averaged values are significant. They explain still a small proportion of the variance in firm performance, but more compared to the models based on the individual cases. Also similar is that the model for Return on Assets explains almost double the amount of variance compared to the model of Tobin's Q. Again the coefficient for Firm Size

remains insignificant in both models. There is on the other hand a slight differences between the impacts of board independence between the two samples. In the averaged sample the impact of board independence is a bit stronger on Tobin's Q, while the impact on RoA decreased a bit. The same holds for the impacts of leverage on Tobin's Q and RoA.

6. DISCUSSION

Based on the agency theory and several papers (Bhagat & Bolton, 2008; Francis et al., 2012; Benjamin E Hermalin & Weisbach, 1998) on the impact of board independence on firm performance, this paper hypothesized that during the recent crisis firms with a more independent board had a better performance. Furthermore this expectation is supported by the idea of less power bargaining power of management due to worse performance as result of the crisis.

The results on the other hand show a negative relationship between board independence and firm performance. Therefore the original hypothesis is rejected, because the found relationship negative and significant. This negative relationship between the impact of board independence and firm performance finds support in the stewardship theory and researches by Bhagat & Bolton (2008), Dalton et al. (1998) and Klein Kyereboah-Coleman & Biekpe (2006). Or the negative relationship could be explained by the optimization view (Duchin et al., 2010), meaning that any change in the board independence would have a negative impact on firm performance. However, this view is outside the scope of this research.

The used model has only explained a small proportion of the variance. This means that while the model is significant there are still factors present that have influence on firm performance.

7. CONCLUSION

This paper has studied the impact of board independence on firm performance during the last credit crisis on USA based firms. The issue of board independence is part of the bigger corporate governance problem. The theory and empirical evidence about the impact of board independence on firm performance show two contrasting sides. The agency theory strives for a higher independence, while the stewardship theory states that a higher independence leads an inferior performance because outside directors do not have the same access to vital firm information. In the USA most firms have a 1-tier board, which means that the non-executive directors have the same responsibilities as their executive colleagues.

It was expected that firms with a more independent board had performed better during this period compared to ones that have a less independent board. This hypothesis is in line with the agency theory and several

past researches found a positive relationship. As it turned out in this study the original hypothesis proved to be wrong and a negative relationship between board independence and firm performance was found. So the answer to the research question to want extend more independent board were successful on their firm performance is that more independent boards were not performing better than less performing board, in fact more independence has negative impact on firm performance. Taking into consideration the stewardship theory and the optimization view, the negative relationship makes sense.

Getting back to the research goal of this study, it could be said that board independence is a determinant for firm performance. The results shown a significant relationship, although the model of this study explained only a small part of the variance in firm performance.

From the research it can be concluded that board independence has a negative impact on firm performance during the last credit crisis. It is possible to generalize this outcome for other USA firms and countries that have a 1-tier board system during the same time period.

7.1 Limitations

Like any research his study has its limitations. First it focuses on a quite specific time period, so to generalize it for other periods is difficult. Second the data sample only consist of top ranked USA firms, which can influence the results as well that it is hard to say what the impact would be for other countries or lower ranked firms.

7.2 Future research

Future research could focus on either the differences on the impact of board independence across countries to further develop board independence as a determinant for firm performance. By investigating the perspective of the stewardship theory or the perspective of the optimization view. Or the focus could be placed on other corporate governance mechanism to find out their impact on firm performance in general or during a specific time period.

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