Are Good-Governance Stocks a Wise Investment?

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Abstract

I test whether long-short corporate governance strategy (long good-governance stocks and short poor-governance stocks) generates abnormal returns in the stock exchange of Thailand. The results based on equal-weighted portfolios show abnormal returns in both extreme (long highest-governed firms and short lowest-governed firms) and non-extreme (long higher-governed firms and short lower-governed firms) strategies. I find that the global financial crisis from 2007 to 2009 contributes to such abnormal returns, implying that the strategy is related to a flight to quality, the situation in which investors reallocate their investments from high-risk assets to safe assets. Results are robust among different asset pricing models. Moreover, I find that investors are insensitive to change in corporate governance scores, a fact which may impede a firm's incentive to improve its governance level.

Keywords: Corporate Governance, Financial Crisis, Asset Pricing

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การลงทุนในหุ้นที่มีระดับธรรมาภิบาลดีเป็นการลงทุนที่ชาญฉลาดหรือไม่?

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บทคัดย่อ

ผู้วิจัยทดสอบว่ากลยุทธ์การลงทุนในหุ้นธรรมาภิบาลแบบ Long-Short (ซื้อหุ้นที่มีระดับธรรมาภิบาลดีและขายหุ้นที่มีระดับธรรมาภิบาลต่ำ) สามารถก่อให้เกิดผลตอบแทนที่ผิดปกติในตลาดหลักทรัพย์แห่งประเทศไทยได้หรือไม่ ผลการศึกษาซึ่งอ้างอิงจากกลุ่มหลักทรัพย์ที่ถ่วงน้ำหนักเท่ากัน (Equal-Weighted Portfolio) แสดงให้เห็นว่า (1) กลยุทธ์ซื้อหุ้นที่มีระดับธรรมาภิบาลดีมากที่สุดและขายหุ้นที่มีระดับธรรมาภิบาลต่ำมากที่สุด และ (2) กลยุทธ์ซื้อหุ้นที่มีระดับธรรมาภิบาลดี และขายหุ้นที่มีระดับธรรมาภิบาลต่ำ ให้ผลตอบแทนเกินปกติทั้งคู่ ผู้วิจัยยังพบว่าผลตอบแทนเกินปกตินั้นเกิดขึ้นในช่วงวิกฤตการณ์การเงินโลกปี ค.ศ. 2007-ค.ศ. 2009 ดังนั้นอาจกล่าวได้ว่ากลยุทธ์การลงทุนในหุ้นธรรมาภิบาลเป็น Flight to Quality หรือสถานการณ์ที่นักลงทุนย้ายการลงทุนจากหลักทรัพย์ที่มีความเสี่ยงสูงไปยังหลักทรัพย์ที่มีความเสี่ยงต่ำ โดยผลการศึกษาข้างต้นมีความเถรตรงภายใต้แบบจำลองการกำหนดราคาหลักทรัพย์อันหลากหลาย นอกจากนี้ ผู้วิจัยพบว่านักลงทุนไม่สนใจในระดับธรรมาภิบาลของบริษัทที่เปลี่ยนไปซึ่งอาจทำให้บริษัทไม่มีแรงจูงใจยกระดับธรรมาภิบาลให้ดีขึ้น

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1. Introduction

Numerous studies have investigated the relation between corporate governance and firm performance (Bauer et al., 2004; Core et al., 2006; and Giroud and Mueller, 2010). The current research addresses the issue for listed companies in Thailand. The majority of Thai firms are owned by family-owned and state-owned companies in which a controlling shareholder retains enough power to quash minority shareholder rights and maintain the status quo rather than maximize shareholder values (Mullins and Schoar, 2016). The prevalent ownership structure translates to lower corporate governance level and higher cost of debt (Boubakri and Ghouma, 2010; Ginka et al., 2015; and Yeh et al., 2001). Consequently, these types of firms are interesting in terms of corporate governance study.

Corporate governance and firm value are empirically tested using global stock market data (Bauer et al., 2004 and Renders and Gaeremynck, 2011). Asia-Pacific and emerging markets are also examined (Balasubramanian et al., 2010 and Kusnadi, 2011). Connelly et al. (2012), using Thailand data, find that good-governance helps increase the value of the firm. Moreover, much research focus on the role of corporate governance in affecting stock returns during periods of financial crisis (Baek et al., 2004; Lemmon and Lins, 2003; and Mitton, 2002). Gupta et al. (2013), for example, find evidence from developed markets that well governed firms did not outperform poorly governed firms during the 2008 global financial crisis. They claim that stock markets generally became less efficient in incorporating firm-specific information into stock prices during the crisis. When considering times of financial upheaval, much literature considers the roles of some financial assets as flights to quality, the situation in which investors reallocate their investments from highly risky assets to safer investments (see Opitz and Szimayer, 2017). Less risky assets can take the form of bonds (Baur and Lucey, 2009), gold (Baur and Lucey, 2010), or Swiss franc and Japanese yen currencies (Ranaldo and Soderlind, 2010).

The broad concept of corporate governance can be measured using multiple criteria including shareholders, board of directors, executive compensation, etc. (Bebchuk and Weisbach, 2010). In many circumstances, corporate governance index or rating is simply used as a proxy for the corporate governance standard. Some existing literature including Gompers et al. (2003) and Bebchuk et al. (2009) construct their own corporate governance indices. Gompers et al. (2003) also study the relation between corporate governance and abnormal stock returns (alpha) in the United States during the 1990s and discover the abnormal returns from their investigation. The long-short corporate governance strategy, buying the good-governance stocks and selling those with poor-governance, generates 8.5% of abnormal return per year. Similar results can be observed in other markets. Drobetz et al. (2003), among others, confirm that if an investor attempts to follow such a strategy, the said investor would have earned abnormal return of around 12.0% per year in German markets. Nevertheless, Bebchuk et al. (2013) find that such abnormal returns disappear in the 2000s. They argue that investors learned from the past experience

to differentiate between the good-governance and bad-governance firms. Gu and Hackbarth (2013) also find similar results. Recently, Dumitrescu and Zakriya (2017) find an inverse relationship between good-governance level and stock returns. Indeed, they report that the long-short strategy provides negative returns of 16.0%; the long aspect on a poor-governance portfolio and the short on a good-governance portfolio can create significant and positive alphas.

In Asia Pacific, Kouwenberg et al. (2014) study the relationship between corporate governance and stock returns in selected Asian market. They find that, if controlled for investor protection in each country, long-short governance portfolio is not able to generate alpha. On the other hand, investors who are able to find firms with the potential to improve their governance will be rewarded with abnormal returns. The argument shown here leads this research to establish the research question whether long-short governance portfolio is able to generate abnormal returns (alphas). In addition, I am interested how the portfolio behaves in terms of each factor in the recognized asset pricing models. There is no clear evidence in the Thai market whether long-short corporate governance strategy can lead to success. Therefore, I would like to investigate if the governance strategy can earn investors abnormal returns.

This research contributes to the existing literature in multiple ways. First, whereas other studies employ panel data on each company to analyze on the role of corporate governance and firm value during the financial crisis, I have chosen to investigate an issue on aggregate level in which calendar-time portfolio approach suggested by Fama (1998) is used. To the best of my knowledge, this paper is the first work outside of the US market to do so. Subsequently, the results showing the value of corporate governance investment during bad times are highly noteworthy. Second, the current study also examines whether changes in governance levels affect investment return. To be specific, I test whether investors can earn abnormal profits from stocks whose governance levels are upgraded or downgraded. Third, a robustness check with different asset pricing factors is also provided. This research is the first to apply the corporate governance concept to the Fama-French five-factor model (Fama and French, 2015).

I apply the Fama-French-Carhart four-factor asset pricing model to explain the above-mentioned corporate governance level and stock returns relationship. The method is used to explore whether applying long-short strategy, long good-governance stocks and short poor-governance stocks, can obtain abnormal returns to investors. I also check whether long-short extreme (long highest-governed firms and short lowest-governed firms) and non-extreme long-short (long higher-governed firms and short lower-governed firms) strategies will lead to differing results. The corporate governance scores that are used in this paper come from Thai Institute of Directors (Thai-IOD). The scope of this study is all of the stocks listed on the Stock Exchange of Thailand (SET) during the period from January 2007 to December 2017 (henceforth 2007 to 2017). Through the results of this research, it is evident that abnormal returns from long-short governance strategies exist across various asset pricing models, whether they belong to extreme or non-extreme strategy. Further findings suggest that such abnormal returns results from

the global financial crisis from August 2007 to May 2009. More interestingly, during the crisis, the poorly-governed portfolio registers negative abnormal returns of 21.2% per year whereas it offers positive abnormal returns of 11.8% during regular period. Long-short strategy during the crisis yields abnormal returns of as much as 39.6%. I conclude that application of the abovementioned strategy during the crisis can be seen as a flight to quality in which investors reallocate their investment to safer assets. Furthermore, I find that different portfolio weight construction, namely value-weighted and equal-weighted constructed portfolios, provides different results. Investors whose portfolios are equal-weighted constructed collect negative abnormal returns in most long-only governance strategies. The approach of investing in most highly-governed firms could bring non-negative abnormal returns to investors. This result confirms that Thai stock markets are driven by large stocks.

The organization of this paper is as follows. Section 2 provides supportive reasons and evidence for choosing Thailand as my playing field. Section 3 describes the data used and methodology. Section 4 shows the empirical results and Section 5 considers another strategy on investing in upgraded and downgraded stocks. Section 6 includes the conclusion and discussion.

2. Data and Methodology

2.1 Corporate Governance Scores

Research to date has drawn upon a combination of manual governance ratings and scores rated by relevant institutions for corporate governance (Gompers et al., 2003; Masulis et al., 2007). For the current research, I have chosen to use the Corporate Governance Report of Thai Listed Companies (CGR) from Thai Institute of Directors Association (Thai-IOD). This information is widely accepted among investors in Thailand. Many mutual funds in Thailand use this source as criteria when selecting stocks. The criteria for evaluation are in line with OECD principles of corporate governance. They can be separated into five groups, namely: rights of shareholders, equitable treatment of shareholders, roles of stakeholders, disclosure and transparency and board responsibilities. Thai-IOD uses the firm's information such as annual report, 56-1 form, invitation of meeting form, and minutes of the general meeting, to derive a score for each company. The previous year's information will be used for determining the current year raw score. For example, the score report published in 2016 is based on information from 2015. The raw score for each company is then calculated, and placed within one of six groups of corporate governance description ranging from excellent to N/A as shown in Columns 1 and 2 of Table 1. Thai-IOD then labels each description with a CG score for ease of understanding. CG scores range from 5 (highly-governed firms) to 1 (poorly-governed firms) and N/A in the case that a raw score is less than 50. However, Thai-IOD only reports firms with scores of 3, 4, and 5. As a result, I group the remaining firms together. For simplicity, I then rescore each group ranking from "CG = 4" (highly-governed firms) to "CG = 1" (poorly-governed firms).

The latest score can be seen in the last column of Table 1. Property funds and REITs are not included. The results of data categorization are shown in Table 2. The current system of assigning numerical scores was introduced in 2006. Thus, the dataset includes figures from 2006 onwards.[1]

Table 1 The Corporate Governance Score from Thai Institute of Directors Association

Description	Raw Score	CG Score	Adjusted CG Score
Excellent	90-100	5	4
Very Good	80-89	4	3
Good	70-79	3	2
Satisfactory	60-69	2	1
Pass	50-59	1	1
N/A	< 50	N/A	1

This table illustrates raw scores for each company. Thai-IOD labels each description with a CG score for ease of understanding. CG scores range from 5 (highly-governed firms) to 1 (poorly-governed firms) and N/A in the case that a raw score is less than 50. However, Thai-IOD only reports firms with scores of 3, 4, and 5. As a result, I group the remaining firms together. For simplicity, I then rescore each group ranking from "CG = 4" (highly-governed firms) to "CG = 1" (poorly-governed firms) as can be seen in the last column.

Table 2 Number of Firms in Each Corporate Governance Group in Each Year

	Number of Firms										
Portfolio	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CG = 4	9	9	20	46	64	46	57	81	30	52	74
CG = 3	49	49	104	115	153	131	133	143	98	134	158
CG = 2	113	113	146	66	110	140	134	120	140	149	142
CG = 1	233	233	178	219	120	136	130	113	197	150	126
Total	**404**	**404**	**448**	**446**	**447**	**453**	**454**	**457**	**465**	**485**	**500**

[1] Even though Thai IOD started its CGR in 2001, the earlier data from 2001 to 2005 are reported only as pass or not pass in terms of corporate governance. There were no ranks as in today yet. Furthermore, the Institute changed the weight of each governance category in 2014, causing many firms to fall into the poor-governance group (CG = 1, 2).

This table shows the number of firms in each corporate governance portfolio regarding Thai IOD scores. This paper focuses only on the firms listed in the Stock Exchange of Thailand (SET) due to their higher trading liquidity. The full samples are the firms that have trading price, market capitalization and accounting data for the previous year. For example, when considering the full samples of 2016, I use the firms that have the above-mentioned information in 2015. As Thai IOD only reports firms with scores 3 to 5, I place the remainder of the firms (excluding property funds and REITS) in the last group with the label "CG = 1, 2".

2.2 Asset Pricing Factor Models

The portfolios are reallocated after new CG information becomes available (usually between October and December of every year). For example, if CG reports are announced in October, a portfolio will be reset at the end of October and reflect returns starting in November. I create four portfolios based on their CG scores. Also, I group companies given "CG = 4 and 3" and "CG = 2 and 1" to form two more portfolios. There are six portfolios classified by two weighting schemes, equal-weighted and value-weighted portfolios. Next, I calculate monthly returns of each portfolio. Apart from these returns, I also calculate long-short portfolio returns in extreme and non-extreme ways. Extreme returns are returns of portfolios with "CG = 4" minus "CG = 1" whereas non-extreme returns are calculated from portfolio returns with "CG = 4 and 3" minus "CG = 2 and 1". I employ the time-series Fama-French-Carhart four-factor model to find the relationship between each portfolio in terms of loading factor coefficients, alpha, and individual t-test.

$$R_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + e_t \quad (1)$$

In this regression, R_t is the excess return of certain portfolio at time t, $RMRF_t$ is the excess returns over the risk-free rate at time t, SMB_t is the difference of return from diversified portfolio of small and big stocks (size factor), HML_t is the difference of return from diversified portfolio of high and low B/M stocks (value factor), and MOM_t is the difference of return from diversified portfolio of winner and loser stocks in the previous one year (momentum factor). The financial data of companies and the market are imported from Datastream and the risk-free rate data are from Thai Bond Market Association (ThaiBMA). Details of forming the above loading factors and their components can be found in Fama and French (1993), Carhart (1997) and Kenneth French's website.

2.3 Summary Statistics

To form the organizational structure, I create four portfolios which combine stocks with similar scores. For instance, a good-governance portfolio in 2007 is the collection of 9 stocks given the score of "CG = 4" in 2006. On the contrary, a poor-governance portfolio in 2007 is the grouping of stocks assigned to "CG = 1" in 2006. Each portfolio is rebalanced every year at the beginning of January, following the issuance of the reported CGR from the previous year. Once components in each portfolio are known, value-weighted and equal-weighted returns can be calculated.

Table 3 shows descriptive statistics of excess returns of equal-weighted (EW) and value-weighted (VW) corporate governance portfolios in each group whereas Table 4 reports correlation matrix of excess returns. In both tables, I report CG portfolio returns and risk premiums, both comprised of 132 monthly data. CG portfolio returns can be grouped in long-only returns and long-short returns. Long-only returns are reported as CG4 (good-governance portfolio), CG3, CG2, and CG1 (poor-governance portfolio). Long-short returns are reported as LS1 and LS2, corresponding to extreme and non-extreme strategies, respectively. Risk premiums include RMRF, SMB, HML, and MOM as explained in the previous subsection. Overall, excess returns of both portfolios across governance levels are positive while EW returns are lower than VW returns. As VW portfolios place more weight on large stocks, it can be interpreted that, on average, bigger stocks drive excess returns. EW and VW good-governance portfolios (CG4 from Table 3) generate annual excess returns of 11.01% and 12.68%, respectively. With the value-centric portfolio, CG4 performs worse than CG1 whereas CG1 yields higher returns in equally weighted strategy. This leads to completely opposite cases of extreme long-short returns (LS1) of -3.76% and -11.06% for EW and VW, respectively. This corresponds to Sharpe ratios of both weighting portfolios. EW good-governance Sharpe ratio is equal to 0.55, higher than 0.43 of the index, but lower than the poorly-governed portfolio whose Sharpe ratio equals 0.73. The result is, however, aligned with Frazzini and Pedersen (2014), Kaewthammachai et al. (2016), and Saengchote (2017), who find the so-called low-risk anomaly, the situation in the Thai market where low-volatility stocks have higher risk-adjusted returns. The negative relationship between corporate governance and returns is also discussed in Bebchuk et al. (2013).

Table 3 Descriptive Statistics of Annualized Returns

	Equal-Weighted			Value-Weighted		
	Annualized Mean Return	Annualized SD	Sharpe Ratio	Annualized Mean Return	Annualized SD	Sharpe Ratio
CG4 (Good)	11.01%	20.02%	0.55	12.68%	21.93%	0.58
CG3	13.53%	19.30%	0.70	18.35%	20.40%	0.90
CG2	11.95%	18.42%	0.65	14.58%	21.20%	0.69
CG1 (Poor)	14.76%	20.20%	0.73	23.74%	19.88%	1.19
LS1	-3.76%	12.72%	-0.30	-11.06%	16.37%	-0.68
LS2	-0.42%	6.98%	-0.06	-4.80%	11.84%	-0.41
RMRF				8.53%	19.87%	0.43
SMB				18.18%	16.84%	1.08
HML				1.12%	15.53%	0.07
MOM				7.20%	14.00%	0.51

This table reports descriptive statistics of corporate governance portfolio excess returns of value-weighted (VW) and equal-weighted (EW) portfolio in each group (CG1 to CG4), including the extreme and non-extreme long-short governance portfolios (LS1 and LS2). The table also shows risk premiums, including RMRF, SMB, HML, and MOM, denoting the market, size, value, and momentum factors, respectively. Annualized mean returns, annualized standard deviations, and Sharpe ratios are reported. It also shows descriptive statistics of RHS independent variables. The number of observations is 132 reported monthly from January 2007 to December 2017.

Table 4 reports correlation matrix of each EW portfolio return and loading factor. The portfolio excess return positively correlates to one another, but the correlation diminishes as the governance level difference becomes greater. For example, CG4 and CG3 portfolios have correlation of 0.924 whereas CG4 and CG1 portfolios have 0.800 correlation. Moreover, LS portfolios are negatively correlated with SMB and MOM factors, but they do not show a clear relation to the HML factor.

Table 4 Correlation of Excess Return of Each CG Portfolio and Loading Factors

	CG4	CG3	CG2	CG1	LS1	LS2	RMRF	SMB	HML	MOM
CG4	1.000									
CG3	0.924	1.000								
CG2	0.877	0.958	1.000							
CG1	0.800	0.891	0.926	1.000						
LS1	0.303	0.038	-0.090	-0.329	1.000					
LS2	0.320	0.197	-0.027	-0.229	0.867	1.000				
RMRF	0.951	0.916	0.862	0.781	0.256	0.326	1.000			
SMB	-0.188	-0.026	0.103	0.247	-0.688	-0.679	-0.292	1.000		
HML	0.155	0.243	0.210	0.169	-0.023	0.099	0.160	-0.342	1.000	
MOM	-0.177	-0.071	0.003	-0.027	-0.142	-0.212	-0.180	0.366	-0.071	1.000

This table reports correlation matrix of long-only governance portfolio excess returns (CG1 to CG4), long-short governance portfolio returns using extreme and non-extreme strategies (LS1 and LS2), and risk premiums (RMRF, SMB, HML, and MOM).

3. Empirical Results

3.1 Main Results

Table 5 shows alphas from the Fama-French-Carhart four-factor model reported by each type of governance portfolio for both equal-weighted (EW) and value-weighted (VW). Panel A exhibits EW portfolio whereas Panel B shows VW portfolio results. Overall, the table shows the result of regression starting from the highest corporate governance score (CG = 4) to the lowest corporate governance score (CG = 1), including the long-short governance portfolio in the Columns 5 and 6 (extreme and non-extreme long-short strategies). The results of each coefficient are market premium, size effect, value effect, and momentum effect as well as abnormal return (alpha). As VW portfolio returns can be dominated by large stocks, I put emphasis on EW portfolio returns. Equal-weighted regressions result in insignificant alphas for CG4 while showing economic and significant alpha of -52 bp for CG1. The extreme (non-extreme) long-short portfolio reports positive alpha of 53 (36) bp per month or 6.4% (4.3%) per annum. In other words, investing in the high corporate governance portfolio and the short low corporate governance portfolio generates returns of 6.4% above the risk-adjusted market returns.

There are multiple interesting points that can be seen in this panel. First, three factors, including market, size, and value premiums, are significant throughout all governance portfolios. This is inconsistent with Kouwenberg et al. (2014) who report insignificance of the HML factor among selected Asian markets. This finding proves that the model performs well with our sample period. Second, SMB and HML loadings gradually increase from highly-governed portfolio to poorly-governed portfolio. Size loadings grow from 0.119 in CG4 portfolio to 0.741 in CG1 portfolio whereas value coefficients rise from closed to zero to 0.297. Therefore, this can be viewed as the opposite case of the findings in Campbell et al. (2008) that financially distressed firms have high market betas and high loadings on SMB and HML factors. The corresponding long-short governance portfolio reports size, value, and momentum loadings of -0.622, -0.253, and 0.140, respectively. The strategy performance, thus, behaves similar to big, growth, and momentum-gaining stocks. Third, R-squared values are high in all portfolios.

Panel B of Table 5 also shows results based on VW portfolios. The regression shows that investing in highly-governed portfolio (CG4) earns 64 bp abnormal returns whereas investing in other portfolios with lower governance level (CG1) also yields significant and positive abnormal returns. The results also show that long-short strategy leads to no abnormal returns for both extreme and non-extreme long-short strategies which differs from results as shown in Panel A in which the same strategy does carry abnormal returns. VW portfolios place greater emphasis on bigger stocks compared to the EW portfolios; the abnormal returns generated in the highly-governed VW portfolio reflect the better performance of bigger stocks. Abnormal return drivers, hence, are from large stocks, not small stocks. This is consistent with Table 3 in which average excess returns of VW portfolios across governance levels are higher than those of EW portfolios. R-squared values are high and aligned from 93.5% of the highly-governed portfolio to 79.8% of the poorly-governed portfolio, suggesting higher idiosyncratic risk in low governance firms. The higher corporate governance can be more completely explained by the four-factor model. For the low-governed portfolio, nevertheless, it is necessary to add further variables to achieve an accurate prediction.

Table 5 Corporate Governance and Stock Returns

	Dependent Variables					
Panel A-EW	**(1) CG4 (Good)**	**(2) CG3**	**(3) CG2**	**(4) CG1 (Poor)**	**(5) LS1**	**(6) LS2**
Alpha	0.01%	-0.14%	-0.42%***	-0.52%***	0.53%***	0.36%***
	(0.06)	(-1.07)	(-2.94)	(-2.99)	(2.30)	(2.68)
RMRF	0.986***	0.952***	0.893***	0.926***	0.060	0.055**
	(35.82)	(42.13)	(36.40)	(31.52)	(1.54)	(2.37)
SMB	0.119***	0.376***	0.487***	0.741***	-0.622***	-0.296***
	(3.31)	(12.70)	(15.16)	(19.23)	(-12.18)	(-9.78)
HML	0.045	0.247***	0.249***	0.297***	-0.253***	-0.074**
	(1.24)	(8.39)	(7.79)	(7.78)	(-4.99)	(-2.48)
MOM	0.035	-0.002	0.036	-0.105**	0.140***	0.031
	(0.87)	(-0.05)	(1.02)	(-2.45)	(2.46)	(0.97)
R-squared	0.914	0.938	0.920	0.904	0.576	0.505
Panel B-VW						
Alpha	0.64%***	0.71%***	-0.02%	0.67%***	-0.03%	0.30%
	(4.15)	(3.99)	(-0.10)	(2.76)	(-0.08)	(1.23)
RMRF	1.020***	0.981***	1.036***	0.907***	0.114**	0.060
	(38.80)	(32.46)	(29.54)	(21.95)	(1.99)	(1.45)
SMB	-0.167***	0.048	0.290***	0.380***	-0.546***	-0.426***
	(-4.84)	(1.21)	(6.31)	(7.01)	(-7.27)	(-7.88)
HML	-0.128***	0.087**	0.103**	0.254***	-0.382***	-0.246***
	(-3.74)	(2.21)	(2.26)	(4.73)	(-5.12)	(-4.59)
MOM	-0.074	0.072	0.082	0.111	-0.184**	-0.118
	(-1.92)	(1.64)	(1.59)	(1.84)	(-2.21)	(-1.97)
R-squared	0.935	0.901	0.872	0.798	0.445	0.452

This table reports the results of asset pricing regressions the model: $R_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + e_t$. The dependent variables, R_t, are excess returns of each corporate governance portfolio, including the extreme and non-extreme long-short governance portfolios in Columns 5 and 6. $RMRF_t$ is the excess returns over the risk-free rate at time t, SMB_t is the difference of return from diversified portfolio of small and big stocks (size factor), HML_t is the difference of return from diversified portfolio of high and low B/M stocks (value factor), and MOM_t is the difference of return from diversified portfolio of winner and loser stocks (momentum factor). Panel A exhibits equal-weighted (EW) portfolio whereas Panel B shows value-weighted (VW) portfolio results. The t-statistics are reported in parentheses. ** and *** indicate statistical significance at the 5% and 1% levels, respectively.

3.2 Corporate Governance and the Global Financial Crisis

Not only did the financial crisis between 2007 and 2009 affect the U.S. financial markets, but also many stock markets around the world (Bekaert et al., 2012, Dungey and Gajurel, 2014, Hau and Lai, 2017, Nikkinen et al., 2012, and Wang, 2014). The Thai stock markets (SET index) fell from its peak of over 900 points in 2007 to 380 points in 2008, a plunge of more than 58% in less than one year.[2] Carpenter et al. (2014), among others, use commonly monitored rate spreads to determine the global financial crisis as from May 2007 to June 2009.[3] I conduct Bai and Perron (1998) test using the spread between three-month LIBOR and the Treasury bill yield (TED spread) and find structural break in August 2007 and May 2009, close to those of Carpenter et al. (2014). The full result set is available upon request.

I use the following model to explain whether financial crisis affects alphas from corporate governance strategy. I examine and compare the abnormal returns to governance portfolios by again regressing monthly returns of each governance strategy on the four factors with CRISIS dummy to account for the global financial crisis period. The dummy variable can be interpreted as abnormal returns during the crisis period (henceforth crisis-alpha).

$$R_t = \alpha + \beta_c CRISIS_t + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + e_t \quad (2)$$

Table 6 reports the results of asset pricing regressions from equation (2). Columns 1 to 4 report each governance portfolio results whereas Columns 5 and 6 report long-short portfolio results in the same manner as Table 5. A number of intriguing results can be seen in this table. First, for long-only good-governance portfolios, crisis-alphas equal 65 bp and 153 bp for EW and VW portfolios, respectively. Second, long-only poor-governance portfolios (CG1) generate crisis-alphas of -122 bp and -177 bp per month. Poorly-governed firms deliver abnormal returns close to zero during a non-crisis period, implying that all abnormal returns are generated from the period of crisis. The positive crisis-alphas of good-governance portfolio and the negative crisis-alphas of poor-governance portfolios lead to high

[2] Source: Stock Exchange of Thailand.
[3] Examples of–money market spreads used in their papers include the three-month LIBOR-OIS spread, the spread between three-month forward rate agreements (FRA), etc.

positive crisis alphas of long-short portfolios. Column 5 of each Panel shows that investors gain 22.3% and 39.6% of annual alphas in crisis periods for EW and VW portfolios, respectively. Non-extreme portfolios provide significant results only in VW scheme. The alphas of both portfolios in the normal period are not significantly different from zero.

The results shown above are aligned with Lemmon and Lins (2003) who find poor-governance firms have lower stock returns during crisis period. Further, the abnormal returns generated during the financial crisis can be viewed as a flight to quality. As investors realize that a crisis is occurring, they flee from higher risk assets (poor-governance portfolio) in the direction of lower risk assets (good-governance portfolio) even though good- governance portfolio does not offer much more in terms of risk. Although flight to quality is often examined in the investigation of the stock-bond correlation (Baur and Lucey, 2009), I argue that abnormal returns can also be found in highly-governed stocks so that investors do not have to reallocate their investments across asset classes. In fact, investors merely need to transfer their investment from the poor-governance portfolio to the good-governance portfolio. In summary statistics not reported, during the global financial crisis the Sharpe ratio of good-governance firms is -0.29 (-0.05) compared to -0.58 (-0.63) of poor-governance EW (VW) portfolio, confirming the higher risk-adjusted returns of highly-governed firms.[4]

[4] These statistics are not included for sake of brevity, but are available from the author upon request.

Table 6 Corporate Governance and Stock Returns with Financial Crisis Dummy

	Dependent Variables					
Panel A-EW	(1) CG4 (Good)	(2) CG3	(3) CG2	(4) CG1 (Poor)	(5) LS1	(6) LS2
Alpha	-0.10%	-0.02%	-0.30%	-0.30%	0.20%	0.28%
	(-0.58)	(-0.16)	(-1.93)	(-1.66)	(0.84)	(1.88)
CRISIS	0.65%	-0.68%**	-0.69%	-1.22%***	1.86%***	0.48%
	(1.57)	(-2.03)	(-1.90)	(-2.83)	(3.31)	(1.39)
RMRF	0.994***	0.944***	0.884***	0.912***	0.083**	0.061**
	(31.34)	(41.58)	(35.83)	(31.34)	(2.17)	(2.59)
SMB	0.115***	0.381***	0.492***	0.750***	-0.635***	-0.299***
	(3.18)	(12.98)	(15.41)	(19.92)	(-12.88)	(-9.90)
HML	0.045	0.246***	0.248***	0.297***	-0.252***	-0.074**
	(1.26)	(8.48)	(7.86)	(7.97)	(-5.16)	(-2.48)
MOM	0.045	-0.013	0.025	-0.124***	0.170***	0.040
	(1.57)	(-0.38)	(0.70)	(-2.94)	(3.07)	(1.18)
R-squared	0.916	0.940	0.922	0.910	0.610	0.512
Panel B-VW						
Alpha	0.37%**	0.79%***	-0.09%	0.98%**	-0.60%	-0.07%
	(2.35)	(4.09)	(-0.42)	(3.79)	(-1.73)	(-0.28)
CRISIS	1.53%***	-0.50%	-0.66%	-1.77%***	3.30%***	2.10%***
	(4.10)	(-1.09)	(-1.25)	(-2.94)	(4.05)	(3.55)
RMRF	1.039***	0.975***	1.028***	0.885***	0.154***	0.083**
	(41.20)	(31.75)	(28.89)	(21.70)	(2.80)	(2.13)
SMB	-0.178***	0.052	0.295***	0.392***	-0.570***	-0.441***
	(-5.45)	(1.30)	(6.40)	(7.43)	(-8.01)	(-8.49)
HML	-0.127***	0.087**	0.103**	0.253***	-0.380***	-0.245***
	(-3.93)	(2.20)	(2.26)	(4.85)	(-5.40)	(-4.77)
MOM	-0.049	0.065**	0.071	0.082	-0.131	-0.085
	(-1.34)	(1.44)	(1.37)	(1.39)	(-1.64)	(-1.45)
R-squared	0.943	0.902	0.877	0.817	0.509	0.501

This table reports the results of asset pricing regressions the model: $R_t = \alpha + \beta_c CRISIS_t + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + e_t$. The dependent variables, R_t, are excess returns of each corporate governance portfolio, including the extreme and non-extreme long-short governance portfolios in Columns 5 and 6. $CRISIS_t$ is the dummy variable which is equal to 1 if t is between August 2007 and May 2009 and is equal to 0 otherwise, $RMRF_t$ is the excess returns over the risk-free rate at time t, SMB_t is the difference of return from diversified portfolio of small and big stocks (size factor), HML_t is the difference of return from diversified portfolio of high and low B/M stocks (value factor), and MOM_t is the difference of return from diversified portfolio of winner and loser stocks (momentum factor). Panel A exhibits equal-weighted (EW) portfolio whereas Panel B shows value-weighted (VW) portfolio results. The t-statistics are reported in parentheses. ** and *** indicate statistical significance at the 5% and 1% levels, respectively.

3.3 Other Asset Pricing Models

I conduct further regressions using different asset pricing models. In Table 7, I report four different models, namely, Fama-French three-factor model, Fama-French-Carhart four-factor model (the same as in previous tables), Fama-French five-factor model, and Fama-French five-factor model with the addition of momentum factor. The five-factor model is the three-factor model plus investment and profitability factors (Fama and French, 2015). The dependent variables are extreme (Panel A) and non-extreme (Panel B) governance strategies. The table shows both annualized abnormal returns and annualized crisis alphas for value-weighted and equal-weighted scenarios. Findings show the same results as reported in previous tables, including the disappearance of alphas, same factor coefficient signs with economic and statistical impacts.

Moreover, from the findings not reported here, I find that good-governance firms behave in the same way as profitable firms.[5] Again, this can be regarded as the completely antithetical characteristic of financially distressed firms. However, though the additional models can explain the behavior of governance portfolio, the R-squared figures of all regressions in Table 7 are not different. Those who seek parsimony of models may consider the Fama-French-Carhart four-factor model in explaining behaviors of stock returns.

4. Corporate Governance Score Upgrades and Downgrades

Long-run event studies in finance focus on corporate events such as security offerings (Eckbo et al., 2007; Lowry et al., 2017), mergers and acquisitions (Betton et al., 2008), bond ratings changes (Dichev and Piotroski, 2001), dividend initiations or resumptions (Boehme and Sorescu, 2002), etc. To the best of my knowledge, no literature to date has studied long-run stock performance and corporate governance changes. Similar to dividend initiations/omissions and bond ratings changes, corporate governance upgrades or downgrades can be observed as one of the special corporate events. There are two methods of long-run return catching, buy-and-hold returns (BHAR) and calendar-time portfolio returns.

[5] Results are available upon request.

In this analysis, calendar-time portfolio abnormal returns method is of better choice compared to the BHAR method. The calendar-time portfolio method is suggested by Fama (1998) as it has an advantage of accounting for cross-correlations, thus enabling significant tests.

Table 7 Other Factor Models

	Good-Governance – Poor-Governance			
	Equal-Weighted		Value-Weighted	
Panel A: LS1	(1) Alpha	(2) CRISIS	(3) Alpha	(4) CRISIS
FF3F	0.28%	1.58%***	-0.66%	3.52%***
	(1.13)	(2.75)	(-1.91)	(4.35)
FFC	0.20%	1.86%***	-0.60%	3.30%***
	(0.84)	(3.31)	(-1.73)	(4.05)
FF5F	0.18%	1.86%***	-0.71%**	3.79%***
	(0.75)	(3.33)	(-2.07)	(4.73)
FF6F	0.13%	2.04%***	-0.65%	3.54%***
	(0.55)	(3.69)	(-1.90)	(4.45)
Panel B: LS2				
FF3F	2.97%**	0.41%	-0.11%	2.25%***
	(2.92)	(1.21)	(-0.43)	(3.82)
FFC	0.28%	0.48%	-0.07%	2.10%***
	(1.88)	(1.39)	(-0.28)	(3.55)
FF5F	0.24%	0.53%	-0.14%	2.41%***
	(1.65)	(1.55)	(-0.55)	(4.13)
FF6F	0.23%	0.56%	-0.10%	2.26%***
	(1.58)	(1.62)	(-0.39)	(3.87)

This table reports other factor asset pricing regressions, namely, Fama-French three-factor model (FF3F), Fama-French-Carhart four-factor model (FFC), Fama-French five-factor model (FF5F), and Fama-French five-factor model with the addition of momentum factor (FF6F). The five-factor model is the three-factor model plus investment and profitability factors (Fama and French, 2015). The dependent variables are the difference between returns of highly-governed firms and poorly-governed firms. The table shows both abnormal returns and crisis alphas. The dependent variable in Panel A is returns from extreme long-short governance strategy whereas the dependent variable in Panel B is returns from non-extreme strategy. The t-statistics are reported in parentheses. ** and *** indicate statistical significance at the 5% and 1% levels, respectively.

I construct portfolios by classifying them into three groups, the upgraded group, downgraded group, and stable group. The upgraded group contains stocks whose corporate governance scores have been upgraded from the previous year, e.g. from CG = 2 to CG = 3 or CG = 4. The downgraded group contains stocks whose corporate governance scores have been downgraded from the previous year. The stable group is the portfolio in which each stock's governance level does not change from the earlier year. The test is conducted to observe whether upgrades and downgrades in corporate governance rankings provide abnormal returns to investors.

Table 8 reports regression on upgrade-downgrade strategy. The dependent variables are excess returns of upgraded (Columns 1 and 5), stable (Columns 2 and 6), and downgraded corporate governance portfolios (Columns 3 and 7), including the long-short governance portfolios in Columns 4 and 8. The results show that investing in both EW downgraded and upgraded portfolios delivers alphas which are close to zero whereas the stable portfolio offers significant and economic abnormal returns of -31 bp per month. The key reason is that a majority of the companies within this stable group is poorly-governed firms. Investors, however, do not gain from long-short portfolio using this strategy. In fact, of all companies categorized in this specific group in 2017, 43.1% are from the poorly-governed firms with CG score of 1. A mere 9.0% are from the highly governed firms with CG score of 4. Investing in long-short strategy in upgraded and downgraded companies does not offer abnormal returns over the market. This result is the same for VW portfolios as can be seen in Column 8. Nevertheless, the VW stable portfolio generates positive abnormal returns of 44 bp per month, consistent with results of VW highly-governed portfolio alpha from Table 5. Surprisingly, the results from both weighting schemes suggest no evidence of significant abnormal returns in long-short strategy; the alpha is never significant at conventional levels. The result may hinder a company from improving its CG level as there are no financial benefits to investors.

Table 8 Upgraded, Downgraded, and Stable Corporate Governance and Stock Returns

	Equal-Weighted				Value-Weighted			
	(1) Upgrade	(2) Stable	(3) Downgrade	(4) U-D	(5) Upgrade	(6) Stable	(7) Downgrade	(8) U-D
Alpha	-0.30%	-0.31%**	-0.30%	<0.00%	0.10%	0.44%***	0.81%	-0.70%
	(-1.43)	(-2.37)	(-1.04)	(0.00)	(0.41)	(5.56)	(1.89)	(-1.38)
RMRF	0.923***	0.922***	0.961***	-0.038	1.188***	0.997***	0.970***	0.218***
	(21.75)	(35.54)	(16.36)	(-0.52)	(23.76)	(63.04)	(11.31)	(2.12)
SMB	0.520***	0.504***	0.590***	-0.070	0.208***	-0.025	0.218**	-0.010
	(11.16)	(17.67)	(9.14)	(-0.87)	(3.79)	(-1.43)	(2.32)	(-0.09)
HML	0.271***	0.226***	0.351***	-0.079	0.173***	-0.012	0.218**	-0.045
	(5.15)	(7.00)	(4.80)	(-0.87)	(12.79)	(-0.58)	(2.04)	(-0.35)
MOM	0.038	-0.023	-0.020	0.058	0.028	-0.010	0.203	-0.175
	(0.78)	(-0.78)	(-0.29)	(0.69)	(0.48)	(-0.56)	(2.04)	(-1.47)
R-squared	0.854	0.938	0.776	0.016	0.855	0.976	0.588	0.069

This table reports the results of asset pricing regressions the model: $R_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + e_t$. The dependent variables, R_t, are excess returns of upgraded, downgraded, and stable corporate governance portfolios, including the long-short governance portfolio in Columns 4 and 8. $RMRF_t$ is the excess returns over the risk-free rate at time t, SMB_t is the difference of return from diversified portfolio of small and big stocks (size factor), HML_t is the difference of return from diversified portfolio of high and low B/M stocks (value factor), and MOM_t is the difference of return from diversified portfolio of winner and loser stocks (momentum factor). The t-statistics are reported in parentheses. ** and *** indicate statistical significance at the 5% and 1% levels, respectively.

5. Concluding Remarks

This study finds the relationship between corporate governance and the equity pricing explained by the widely-known asset pricing models. The sample used in this study covers all stocks listed on the Stock Exchange of Thailand (SET) from all industries, between January 2009 and December 2017. The current research both confirms and differentiates from prior literature in at least three notable ways.

First, the study shows different results in equal-weighted and value-weighted strategies. Previous literature often reports same results for both strategies. I find that equal-weighted strategy can earn a greater amount of positive abnormal returns for both extreme and non-extreme strategies. Second, both strategies lead to the same conclusion that investing in good-governance firms can be interpreted as a flight to quality during crisis, although the degree of impact is not uniform. The crisis has a more noticeable effect on value-weighted rather than equal-weighted. However, more evidence is needed in order to support the reason of flight to quality. For example, volumes of trade may serve as key supporting evidence as to whether investors reallocated their investment from poorly-governed stocks to highly-governed stocks. Third, investing in governance-upgraded and governance-downgraded firms does not provide abnormal returns for both weighting schemes. These results may lead to a lack of incentive for firms to increase their overall corporate governance levels especially among large firms.

The current research significantly adds to the concept of employing asset pricing models for validity test of corporate governance portfolio returns. However, it is slightly limited when attempting to calculate the exact governance score of each firm. It may be beneficial if future research is able to ascertain the exact corporate governance score through a summarization of a company's annual reports. In the event that this is achieved, those scores can be used to create another asset pricing factor similar to size and value factors, etc. In addition, the laborious collection can help further the study and importance of each governance sub-criteria and nature of stock behavior. Moreover, as low-risk anomaly can be spotted in our summary statistics, further studies may achieve success by including such a factor into the model. In other words, the addition of betting-against-beta factor as studied in Frazzini and Pedersen (2014), Kaewthammachai et al. (2016), and Saengchote (2017) may allow investors to more fully comprehend the connection between corporate governance returns and low-risk factor.

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