

## Does Corporate Governance Matter? Evidence from New Chinese Corporate Governance Disclosures

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### Abstract

This paper examines the association between corporate governance, financial distress risk, and firm financial and market performance by using the Corporate Governance in Finance (CGF) Index developed for Chinese firms. We find that the CGF Index is significantly negatively associated with financial distress risk measured by the Zmijewski-score, O-score, and Z-score. We also find that accounting and market performance measures are significantly positively related to the CGF Index. Finally, for the short-window cumulative abnormal returns (CAR), we find that, around the release of CGF Index, the CAR of firms with lower scores are significantly negative, while that of firms with higher CGF Index scores are not significant. Our results provide further support for the important role of corporate governance effectiveness in the financial reporting process in the emerging markets.

**Keywords:** Corporate Governance; Financial and Market Performance; Financial Distress Risk

### Introduction

This paper examines the association between corporate governance, financial distress risk, and firm financial and market performance by using the Corporate Governance in Finance (CGF) Index, which was developed for Chinese firms in 2013. The relationship between corporate governance and firm performance in developed markets such as the United States has been addressed in prior research, and the conclusions are mixed. For example, Gompers, Ishii, and Metrick find a positive link between an index of 24 corporate governance (G-Index) measures and abnormal returns during the 1991-1999 periods [1]. In contrast, Bebchuk, Cohen, and Wang report no association between the Harvard Law School's Entrenchment Index (E-Index) of six important corporate governance measures and abnormal market performance during the 2000-2008 period [2]. Bebchuk et al. (2013) argue that earlier associations between corporate governance and financial performance (1991-1999) disappeared after market participants (investors) started differentiating between firms with high and low corporate governance indices in later years (2000-2008). However, the link between corporate governance and firm performance in emerging markets such as China is not well-addressed, primarily because of the unavailability of a Chinese corporate governance index until very recently.

Our paper lies at the intersection of two streams of research. The first stream of research is on the link between firm financial performance and corporate governance. This stream of research has used many proxies for corporate governance, including the G-index, size and composition of board of directors, existence and composition of audit committee, and extent of institutional ownership [2-13]. More recent work has emphasized the conditional nature of the association between financial performance and corporate governance and finds that the link has diminished in recent years [2]. The second stream of research examines corporate governance and its role in emerging markets such as China. This line of research suggests a different bundle of governance mechanisms for emerging markets due to their weak legal protection for shareholders and ineffective external governance mechanisms [14]. The financial scandal or even collapse of many famous firms in China has highlighted the importance of governance mechanisms in corporate finance [15].

The theoretical intuition for our prediction of the link between

the CGF index financial distress risk and firm performance is based on signaling theory and institutional settings in China as explained in details in section II. The signaling theory helps explain management incentives for reporting CGF governance measures as well as investors' reactions to the disclosure of the CGF index [16]. Motivated by prior studies and based on the theoretical intuition, our research questions include: (1) Is corporate governance effectiveness in the emerging markets linked to the firm distress risk? and (2) Is corporate governance effectiveness in the emerging markets associated with firm financial and market performance after controlling for endogeneity?

We use the Corporate Governance in Finance index (CGF Index), which was released by the Corporate Governance Research Center in Beijing Normal University (CGRC-BNU) and published by the Economic Science Press in December 2013 to investigate the links between corporate governance and financial distress risk and between firm financial and market performance. We find that the CGF Index is significantly negatively associated with financial distress risk measured by the Zmijewski-score, O-score, and Z-score. Further, after controlling for other factors that influence firm performance and endogeneity, we find that both accounting and market performance indices, including return on asset (ROA), return on equity (ROE), and one-year monthly average return (RETURN) are significantly positively related to the CGF Index. Finally, for the short-window cumulative abnormal returns (CAR), we find that, around the release of CGF Index, the CAR of firms with lower scores are significantly negative, while that of firms with higher CGF Index scores are not significant. Taken together, our findings suggest that Chinese firms with a high CGF Index exhibit lower financial distress risk, show better financial and market performance, and capital markets do respond to the release of the CGF

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Received July 04, 2016; Accepted October 17, 2016; Published November 15, 2016

Citation: Rezaee Z, Dou H, Gao M, Zhang H (2016) Does Corporate Governance Matter? Evidence from New Chinese Corporate Governance Disclosures. Int J Account Res 5: 140. doi:10.4172/2472-114X.1000140

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Index, especially for those firms with ineffective corporate governance as disclosed in the CGF Index.

We contribute to the literature by using new disclosures of Chinese firms' corporate governance in finance in constructing our CGF Index. Little is known about how corporate governance would affect firms' financial distress risk in China, a fast-emerging market where firms are typically faced with financial uncertainty and constraints. Although prior studies examine the link between several measures of corporate governance and financial and market performance in China, little is known about how corporate governance in finance index, a comprehensive measure of corporate governance effectiveness, affects firms' financial and market performance [17,18]. Our results suggest that firms with more effective corporate governance experience a better financial and market performance as well as a lower risk than those with less effective corporate governance in the emerging markets. These results confirm earlier studies in the United States and China that corporate governance does matter and firms that are managed more effectively are financially sustainable. Our results encourage policymakers, regulators to demand vigorous corporate governance measures in protecting interests of investors. The results also suggest that firms to strive in improving their corporate governance to generate sustainable performance.

The remainder of the paper proceeds as follows: the next section presents institutional background and research hypotheses concerning the relationship between the CGF Index and financial distress, firm performance and market reaction. This is followed by a methodology, description of our sample and descriptive analysis, then the study's results. Concluding comments complete the paper.

## Institutional Background and Hypothesis Development

### Global corporate governance

Corporate governance has played and will continue to play an important role in the quality of financial reports and the efficiency of financial markets [19]. Each country has its own corporate governance reforms that are shaped by its economic, cultural and legal circumstances. The worldwide responses to corporate scandals and the 2007-2009 global financial crisis promote convergence in corporate governance across borders. Convergence is particularly vital in the areas of investor rights and protections, board responsibilities, and financial disclosures. While total convergence in corporate governance reform may not be feasible, global corporate governance practices should be promoted to improve efficiency and liquidity in the global capital markets.

The Sarbanes-Oxley Act of 2002 (SOX) in the United States was enacted in response to the financial scandals of Enron and WorldCom, among others, and established a new set of corporate governance measures for public companies. Europeans have responded to several high-profile scandals such as Parmalat and Ahold by strengthening their corporate governance measures. Different types of corporate governance structures are exposed to different financial misconduct and scandals. For example, the dispersed ownership system of governance in the United States is prone to earnings management schemes (e.g., Enron, WorldCom) to align management interests with those of shareholders, whereas concentrated ownership systems are more vulnerable to the appropriation of private benefits of control (e.g., Parmalat) to ensure majority shareholders do not benefit at the expense of minority shareholders [20].

Corporate governance measures can be established at a corporate

level or at a country level, oftentimes with integration between both levels. The corporate governance system of a country and its internal and external mechanisms are determined by a number of interrelated factors, including political infrastructure, cultural norms, legal system, ownership structures, market environments, level of economic development, and its ethical standards [20].

The Chinese government has recently initiated several corporate governance measures to support economic and financial market growth. The Chinese government has also formed several state-run regulators to promote comprehensive and effective governance for listed companies in Mainland China and Hong Kong. The China Regulatory Commission issued a Code of Corporate Governance in 2002 that promotes governance principles and mechanisms for protecting shareholder rights and monitoring directors and executives of listed companies. The China Securities Regulatory Commission (CSRC) is responsible for developing regulations, policies, and guidelines for listed companies and monitoring effective implementation and enforcement of regulations.

Other corporate governance regulatory bodies, including the National People's Congress, the State Council, the Ministry of Finance, the People's Bank of China, Shanghai Stock Exchange, and the Shenzhen Stock Exchange also participate in establishing listing standards and corporate governance guidelines.

In January 2011, the Organisation for Economic Co-operation and Development (OECD) released its report indicating that corporate governance in China has emerged and developed as China has shifted from a planned economy to a market economy. Until 1978, most Chinese enterprises were state-owned with administration-driven, unified, and collective governance. The *Company Law* and the *Securities Law*, both introduced in 2006, provide the foundation for developing a corporate governance framework in China [21].

China's legal framework for corporate governance comprises four levels: basic laws, administrative regulations, regulatory provisions, and self-disciplinary rules. Prevailing shareholder rights in China include securing methods of conveying or transferring shares, ownership registration, getting relevant, reliable, and timely material information on the corporation, participating and voting in general shareholders' meetings, electing and removing members of the board, and sharing in the profits of the corporation. Information disclosures of Chinese corporate governance include company objectives, major share ownership and voting rights, companies' financial and operating results, and remuneration policy for directors and officers. The directors' election process consists of directors' qualifications, the selection process, governance structures, and policies. The content of any corporate governance code or policy and the process by which it is implemented should also be communicated to shareholders. The Chinese board system requires strengthening the board's fiduciary duties, including loyalty, due diligence and protection of the benefits of companies and shareholders, the establishment of the independent director system (at least one-third of the board), establishing special committees of the board, and the development of mechanisms for the board's supervision and restraints over management.

These provisions of Chinese corporate governance have recently been developed by the Corporate Governance Research Center in Beijing Normal University (CGRC-BNU) and published by Economic Science Press in December 2013. The newly developed Chinese corporate governance is called the CGF Index. The CGF Index is formulated by an evaluation completed by trained, independent

analysts who specialize in corporate governance. In this evaluation, analysts are asked to evaluate different companies by collecting information from firms' financial statement reports, websites, and specific information disclosure in response to 30 questions regarding firms' corporate governance in finance. The evaluation design follows the OECD's principles of corporate governance, specifically for developing countries. The CGF Index was developed in 2012, was released in December 2013 and is described in detail in Appendix A.

### Hypothesis development

Our theoretical framework is built on signaling theory and institutional setting in China. Signaling theory suggests that firms may attempt to signal "good news" through the use of various corporate governance mechanisms. However, the expected link between a firm's corporate governance and its performance and earnings management by using these signals is ambiguous. Healy and Palepu suggest that firm voluntary reporting, such as results from the CGF index, may act as complements to signal information about expected future performance resulting from more effective corporate governance [22].

Alternatively, these signaling mechanisms could be substitutes, suggesting a negative relationship between the probability of the disclosure and the use of these signals [16]. The disclosure of the CGF index postulates that "good type" firms with focus on more effective corporate governance have more incentives to disclose CGF index information to differentiate themselves from "bad type" firms with no focus on corporate governance in order to avoid the adverse selection problem [23,24]. Firms with superior (high) CGF index scores will signal their superior corporate governance, which is hard to mimic by inferior CGF Index firms.

Ashbaugh et al., Chen et al., and Pham et al., find that firms with strong corporate governance mechanisms are associated with a reduction in perceived risk and asymmetry of information [25-27]. We posit that effective corporate governance curtails managerial self-interest and protects shareholder interests. Corporate governance in finance in China should strengthen boards' oversight of managerial actions and provide incentives and opportunities for management to work for the best interest of stakeholders. Accordingly, Chinese firms in compliance with China's corporate governance and the best practices of the CGF Index are less likely to encounter financial distress risk. Thus, our first hypothesis is stated as follow:

*H1: There is a negative association between corporate governance effectiveness and the level of financial distress for Chinese firms.*

Hab, Johan, and Schweizer find systematic differences in performance persistence across listed companies in China in the sense that firms with better corporate governance exhibit higher performance persistence during 2001-2011 [28]. Firms may commit to superior corporate governance measures (CGF index) for a variety of reasons, including more effective corporate governance, that create more incentives and opportunities for better financial performance and fewer opportunities for earnings management. Disclosure of CGF Index may signal management commitment to be more transparent and thus affect information asymmetry. To the extent that the role that CGF index disclosures play in shaping the relationship between financial performance and corporate governance effectiveness is not clear ex-ante, we empirically investigate the association between disclosures of the CGF index and firm financial and market performance as stated in the following hypotheses:

*H2: There is a positive association between corporate governance effectiveness and financial and market performance for Chinese firms.*

*H3: There is a positive association between corporate governance effectiveness and cumulative abnormal returns for Chinese firms.*

### Methodology

#### Corporate governance and financial distress risk

The accounting and finance literature develops distress prediction models based on financial ratios, stock return volatility, or other firm characteristics [29,30]. We follow Tykova and Borell by using three methods, including the Zmijewski-score (Zmijewski 1984), O-score, Z-score (Altman 1968) to calculate firms' financial distress risk (FDR), and code them *ZMscore*, *Oscore*, and *Zscore*, respectively [31-35]. The three indices of FDR are calculated as follows:

$ZMscore = -4.336 - 4.513 * ROA + 5.679 * LEV + 0.004 * CA/CL$ , with CA being current assets and CL being current liabilities;

$Oscore = -1.32 - 0.407 * Size + 6.03 * LEV - 1.43 * WC/TA + 0.076 * CL/CA - 1.72 * TL - 2.37 * ROA - 1.83 * CFO/Liabilities + 0.285 * NL - 0.521 * (NI_t - NI_{t-1}) / (|NI_t| + |NI_{t-1}|)$ , with WC being working capital; TA being total assets; TL being 1 if total liabilities are higher than total assets, zero otherwise; NL being 1 if the company realized a net loss in the last two years, zero otherwise; and NI being net income.

$Zscore = 0.717 * WC/TA + 0.847 * RE/TA + 3.107 * EBIT/TA + 0.420 * BV/TL + 0.998 * SALES/TA$ , with RE being retained earnings.

A higher *ZMscore*/*Oscore* is associated with a higher financial distress risk, while a higher *Zscore* stands for a lower financial distress risk.

We use the following model to test the association between CGF Index and financial distress risk (FDR):

$$FDR_{i,t} = \beta_0 + \beta_1 * CGF Index_{i,t} + \beta_2 * SOE_{i,t} + \beta_3 * AGE_{i,t} + \beta_4 * RETV_{i,t} + \beta_5 * CFOV_{i,t-1} + Industryeffect + \varepsilon_{i,t} \quad (1)$$

We control factors (not included in the calculation of the three scores) that would affect FDR, such as whether the firm is SOE (SOE), firm age (AGE) and the volatility of stock return (RETV), and the volatility of operating cash flow (CFOV) in the model (1).

#### Corporate governance and firm performance

We use three measures of firm financial and market performance of the return on assets, return on equity, and stock return used in the business literature. We label ROA/ROE/RETURN as the proxy for performance, control the effect of firm size (SIZE), leverage (LEV), growth opportunity (MB), and whether the firm is SOE.

$$Performance_{i,t} = \gamma_0 + \gamma_1 * CGFI_{i,t} + \gamma_2 * SOE_{i,t} + \gamma_3 * SIZE_{i,t} + \gamma_4 * LEV_{i,t} + \gamma_5 * MB_{i,t} + Industryeffect + \varepsilon_{i,t} \quad (2)$$

Control variables in model (2) are whether the firm is SOE (SOE), firm size (SIZE), leverage (LEV), and market-to-equity ratio (MB).

As the literature pointed out, the corporate governance's contribution to firm performance/value would be overstated if we do not control for the endogeneity problem [36,37]. We employ the instrumental variable (IV) method suggested by Heckman and Robb and Moffitt to address the endogeneity problem [38,39]. We also control for variables which influence *CGFIndex*, but do not influence firms' accounting or market performance (and thus is not correlated with the random error term in the performance equation). Our choice of instrumental variable is the regional marketization index, which is highly correlated with the CCG Index, but is uncorrelated with firm



performance. This index is provided by Fan et al. and has been widely used as an instrumental variable in the literature [40-42].

### Corporate governance and cumulative abnormal returns

When any information assimilates into the market, investors' responses will reflect in the change of stock price. As the CGF Index includes the information about the quality of corporate governance of all listed firms, the stock returns will be influenced. Therefore, we use 10-day cumulative abnormal returns to measure the investors' reaction to the announcement of the CGF Index.

Following Menon and Williams, we construct the model below to examine the relationship between CGF Index and cumulative abnormal returns.

$$CAR_{i,t} = \beta_0 + \beta_1 \Delta Income_{i,t} + \beta_2 LMValue_{i,t} + \beta_3 EBIT_{i,t} + \beta_4 CFO_{i,t} + \varepsilon_{i,t} \quad (3)$$

The event date is the CGF Index announcement date. In equation (3), *CAR10* is the (-5, +5) 10-day cumulative abnormal returns around the announcement day of the CGF Index. *ΔIncome* is the change in net income scaled by total assets. *LMValue* is the natural log of the market value of equity at the end of the fiscal year. *EBIT* is the industry-adjusted operating income scaled by total assets. *CFO* is the operating cash flow scaled by total assets. According to Menon and Williams, we expect a negative intercept, which would indicate that the market reacts negatively to firms with the lowest CGF Index score even after controlling for contemporaneous disclosures of financial condition. Consistent with our hypothesis, we expect a positive intercept ( $\beta_0 > 0$ ) when the firms are in the higher CGF Index group and a negative intercept ( $\beta_0 < 0$ ) when the firms are in the lower CGF Index group [43-45].

### Data Source, Sample Selection and Descriptive Statistics

#### Data source and sample selection

We use *CGFIndex* from the Corporate Governance Research Center in Beijing Normal University. It is the first institution to release the index of Chinese firms' corporate governance in finance. Listed firms traded in the Shanghai and Shenzhen Stock Exchange market in fiscal year 2012, a total of 2,314 observations, are all included. We collect the financial data from the China Stock Market Accounting Research database (CSMAR). In accordance with common academic practice, to be included in our sample, a company must not be in the financial industry and must have filed the financial information required for our analysis. We have a total of 2,237 firms as our observations<sup>1</sup>. All variables are winsorized at the 1% and 99% levels.

#### Descriptive statistics

Descriptive statistics are presented in Table 1. The average CGF Index score is 57.507, the minimum is 25.155, the maximum is 81.15, and the median is 57.819. The above distribution suggests that the level of the CGF Index varies significantly among firms, which provides an unprecedented and unique setting for the research of its effect on market reaction and firm performance.

Table 2 compares the descriptive statistics of two groups of firms with higher and lower CGF Index scores. The results indicate that the group with high CGF Index *ZMscore*, *Oscore*, and *Zscore* were significantly different from that with low CGF Index scores (p value=0.02, 0.02, and 0.09, respectively), suggesting that the low CGF

Variables	N	Minimum	Mean	Median	Maximum	Standard
CGF score	2237	25.155	57.507	57.819	81.15	8.546
CGF Index	2237	3.225	4.039	4.056	4.396	0.157
CAR10	2175	-0.362	0.001	-0.003	0.466	0.065
ROE	2237	-0.427	0.066	0.066	0.418	0.103
ROA	2237	-0.15	0.038	0.034	0.201	0.051
RETURN	2237	-0.44	0.025	-0.028	1.063	0.278
SOE	2237	0	0.441	0	1	0.497
SIZE	2237	19.263	21.863	21.689	25.768	1.273
LEV	2237	0.042	0.442	0.444	0.947	0.228
MB	2237	0.547	2.796	2.113	19.934	2.599
AGE	2237	2	10.023	10	23	6.304
LOSS	2237	0	0.102	0	1	0.303
LMValue	2175	20.538	22.012	21.852	24.858	0.91
EBIT	2175	-0.245	0.002	0.001	0.171	0.059
ΔIncome	2175	-0.221	0.003	0	0.466	0.07
CFO	2175	-0.199	0.042	0.042	0.235	0.073

CGF Index is the natural log of the score of CGF Index. *CAR10* is the cumulative size-adjusted excess return over the ten days before and after the event date [-5, +5], because the event day is not a trading day. *ROE* is return on equity. *ROA* is return on assets. *RETURN* is one-year monthly average stock return. *SOE* is an indicator which equals 1 if the firm is controlled by state, and 0 otherwise. *SIZE* is the natural log of total assets. *LEV* is total debt divided by total assets. *MB* is market-to-equity ratio. *AGE* is the number of years a firm goes public. *LOSS* is an indicator equal to one if the firm occurs loss and zero otherwise. *LMValue* is the natural log of the market value of equity. *EBIT* is the industry-adjusted operating income (need to revise). *CFO* is the cash flow from operations

Table 1: Descriptive Statistics.

Variables	Low CGF Index	High CGF Index	Rank-Sum Z for the Difference (two-tailed p-value)
<b>Financial distress risk:</b>			
<i>ZMscore</i> (Higher values indicate higher distress)	-1.906 [1.275] (-1.893)	-2.032 [1.534] (-2.151)	-2.36** (0.02)
<i>Oscore</i> (Higher values indicate higher distress)	-9.640 [2.249] (-9.599)	-9.980 [1.836] (-9.697)	-2.36** (0.02)
<i>Zscore</i> (Higher values indicate lower distress)	2.122 [2.167] (1.694)	2.205 [1.594] (1.764)	1.33* (0.09)
<b>Firm performance</b>			
ROA	0.029 [0.058] (0.027)	0.045 [0.046] (0.042)	6.29*** (<0.01)
ROE	0.053 [0.119] (0.051)	0.080 [0.093] (0.081)	7.63*** (<0.01)
RETURN	0.022 [0.289] (0.028)	0.024 [0.275] (0.033)	0.66 (0.51)
<b>Market Reaction</b>			
CAR10 (CARs in the 10 days [-5,+5] of the event date)	-0.002 [0.064] (-0.005)	0.003 [0.066] (0.001)	2.49** (0.013)

A Wilcoxon-test is used to test the difference in median between two sub-samples. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% level, respectively in a two-tailed test. *ZMscore*, *Oscore*, and *Zscore* are indices for financial distress risk by following Zmijewski (1984), Ohlson(1989), and Altman(1968), respectively. *ROE* is return on equity. *ROA* is return on assets. *RETURN* is one-year monthly average stock return. *CAR10* is the cumulative size-adjusted excess return over the ten days before and after the event date [-5, +5].

Table 2: Sample Description and Comparison Between High and Low Cgf index Firms Average [Standard deviation], (Median).

Index group may have higher financial distress risk. The group with higher CGF Index scores performs better than that with lower CGF

<sup>1</sup>Due to the missing values, we get just 2,175 observations to test the short-window cumulative abnormal returns.

Index scores. Specifically, for the sample of 2,237 firms, the mean of *ROA*, *ROE*, *RETURN* for the group with lower *CGF Index* scores is 0.029, 0.053, and 0.022, respectively, significantly lower than the mean of that (0.045, 0.080, and 0.024, respectively) with higher *CGF Index* scores. In addition, the mean of *CAR10* is -0.002 for the group with lower *CGF Index* scores, which is significantly lower than the mean of that (0.003) for the group with higher *CGF Index* scores. The results of the above univariate tests support our hypothesis.

## Empirical Results

### Main tests

Table 3 presents the results of how *CGF Index* affects firms' financial distress risk. In Column 1, where *Zscore* is an independent variable, the coefficient on *CGF Index* equals 0.643 and is statistically significant at the 1% level, while the coefficients on *CGF Index* of Column 2 and Column 3 with *ZMscore* and *Oscore* as independent variables are -0.466 and -4.308, respectively, and both are statistically significant at the 1% level. All of the above results indicate that financial distress risk is negatively associated with firms' *CGF Index*. *SOE*, *AGE*, and *RETV* are significantly positively linked to *CGF Index*, suggesting that *SOE* firms listed earlier in the market and firms with higher stock return volatility are more likely to endure higher financial distress risk.

Table 4 presents the results of OLS regression of firm performance and market performance on corporate governance. The coefficients of the *CGF Index* in the three columns equal 0.137, 0.334, and 0.432, at the significance level of 1%, 1% and 10%, respectively. The above results suggest that the performance, including accounting and market index, of firms with higher *CGF Index* scores is consistently better than that of firms with lower *CGF Index* scores, supporting our hypothesis that firms with higher *CGF Index* scores attain relatively better accounting-based and market performance than do their lower counterparts. Other control variables are also significant and consistent with our intuition or extant literature.

Table 5 presents the results of OLS regression of 10-day cumulative abnormal returns around the event day on the control variables in

Variables	Zscore (Higher values indicate lower distress)	Zmscore (Higher values indicate higher distress)	Oscore (Higher values indicate higher distress)
<i>CGF Index</i>	0.643***	-0.466***	-2.038***
	-2.71	(-2.88)	(-8.24)
<i>SOE</i>	-0.394***	0.514***	0.529***
	(-4.55)	-8.7	-5.84
<i>AGE</i>	-0.098***	0.074***	0.115***
	(-14.11)	-15.74	-15.88
<i>RETV</i>	-0.633	1.118***	1.669***
	(-1.11)	-2.87	-2.8
<i>CFOV</i>	-0.009	0.029	0.013
	(-0.16)	-0.71	-0.21
Constant	0.817	-1.364**	-3.200***
	-0.82	(-2.01)	(-3.09)
Observations	2237	2237	2237
Adjusted R-squared	0.21	0.32	0.27

t-Statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% level, respectively in a two-tailed test. The dependent variable, *FDR*, is *Zscore*, *ZMscore*, and *Oscore* in the three columns. *CGF Index* is the natural log of the score of *CGF Index*. *SOE* is an indicator which equals 1 if the firm is controlled by state, and 0 otherwise. *AGE* is the number of years a firm goes public. *RETV* is the standard deviation of most recent 36 months of stock returns. *CFOV* is the standard deviation of most recent 5 years of cash flow from operations.

Table 3: *CGF Index* and Financial Distress Risk.

Variables	ROA	ROE	RETURN
<i>CGF Index</i>	0.137***	0.334***	0.432*
	-3.45	-3.47	-1.92
<i>SOE</i>	-0.011***	-0.022***	-0.039**
	(-3.85)	(-3.29)	(-2.43)
<i>SIZE</i>	0.009***	0.005	0.012
	-4.92	-1.1	-1.15
<i>LEV</i>	-0.114***	-0.045***	0.140***
	(-16.66)	(-2.71)	-3.59
<i>MB</i>	0.005***	0.008***	0.032***
	-9.79	-5.75	-10.04
Constant	-0.674***	-1.378***	-2.091***
	(-5.20)	(-4.37)	(-2.84)
Industry	Control	Control	Control
Observations	2237	2237	2237
Adjusted R-squared	0.18	0.18	0.03

t-Statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% level, respectively in a two-tailed test. The dependent variable, firm performance, is *ROA*, *ROE*, and *RETURN* in the three columns. *CGF Index* is the natural log of the score of *CGF Index*. *SOE* is an indicator which equals 1 if the firm is controlled by state, and 0 otherwise. *SIZE* is the natural log of total assets. *LEV* is total debt divided by total asset. *MB* is market-to-equity ratio.

Table 4: *CGF Index* and Firm Performance.

Variables	Dep. Var.=CAR10			
	(1)Top100	(2)Bottom100	(3) Top200	(4) Bottom200
$\Delta$ Income	0.012	-0.03	-0.057	-0.053
	-0.076	(-0.83)	(-0.64)	(-1.41)
LMValue	0.003	0.023***	-0.004	0.017**
	-0.56	-2.91	(-1.07)	-2.56
EBIT	0.174	0.019	0.136*	0.05
	-1.29	-0.28	-1.76	-0.78
CFO	-0.013	-0.09	0.028	-0.035
	(-0.14)	(-1.35)	-0.5	(-0.56)
Constant	-0.069	-0.514***	0.083	-0.379***
	(-0.57)	(-3.04)	-1.05	(-2.67)
Observations	100	100	200	200
Adjusted R-squared	-0.0135	0.0607	0.0026	0.0239

t-statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% level, respectively in a two-tailed test. The dependent variable, *CAR10* is the cumulative size-adjusted excess return over the ten days before and after the event date [-5, +5], because the event day is not a trading day. *LMValue* is the natural log of market value of equity. *EBIT* is the industry-adjusted operating income (need to revise). *CFO* is the cash flow from operations.

Table 5: Corporate Governance Index and Cumulative Abnormal Returns.

different *CGF Index* groups. The coefficients of the constant in Column (2) and Column (4) are -0.514, -0.379, at the significance levels of 1% and 1%, respectively. However, the coefficients of the constant in Column (1) and Column (3) are not significant at all. The above results suggest that investors respond negatively to firms with lower *CGF Index* scores, but there is no significant response to higher *CGF Index* scores.

### Robustness check

In order to ensure the reliability of our results, we employ the following robustness check. First, we use the following 1-year performance measures, including *FROA*, *FROE*, *FRETURN*, to proxy firm performance and market performance. Table 6 presents the results of regression of new performance measures on corporate governance. The coefficients of the *CGF Index* in the three columns equal 0.039, 0.056, and 0.055, at the significance level of 1%, 5% and

10%, respectively. The results are the same as the above evidence that firms with higher CGF Index scores perform better than do their lower counterparts.

Further, we change ways to divide our sample into two different groups of CGF Index. Table 7 presents the results of OLS regression of the control variables in different CGF Index groups. The coefficients of the constant in the column (2) and the column (4) are -0.222, -0.162, at the significant level of 5% and 1%, respectively. However, the coefficients of the constant in the column (1) and the column (3) are not significant. The above result is the same as our prior evidence. Overall, although we change the proxies of the performance measures and the rule of grouping the sample, the results are still the same. Therefore, our findings are robust and reliable.

Variables	FROA	FROE	FRETURN
CGF Index	0.039***	0.056**	0.055*
	-4.3	-2.56	-1.7
SOE	-0.009***	-0.014**	-0.072***
	(-3.67)	(-2.26)	(-4.61)
SIZE	0.015***	0.013***	0.020**
	-9.62	-2.69	-2.49
LEV	-0.129***	-0.052*	-0.069*
	(-15.00)	(-1.95)	(-1.67)
MB	0.005***	0.007**	0.032***
	-4.88	-2.1	-7.06
Constant	-0.388***	-0.407***	-0.238
	(-7.02)	(-2.86)	(-1.00)
Industry	Control	Control	Control
Observations	2237	2237	2237
Adjusted R-squared	0.29	0.28	0.05

t-Statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% level, respectively in a two-tailed test. The dependent variable, firm's performance in the 1 following year, is FROA, FROE, and FRETURN in the three columns. CGF Index is the natural log of the score of CGF Index. SOE is an indicator which equals 1 if the firm is controlled by state, and 0 otherwise. SIZE is the natural log of total assets. LEV is total debt divided by total asset. MB is market-to-equity ratio.

Table 6: Robustness Check: CGF Index and Firm Performance.

Variables	Dep. Var.=CAR10			
	(1) Top500	(2) Bottom500	(3) Top1000	(4) Bottom1000
$\Delta$ Income	-0.077	-0.043	-0.007	-0.062**
	(-1.28)	(-1.34)	(-0.14)	(-2.55)
LMValue	-0.003	0.010**	-0.002	0.007***
	(-1.23)	-2.28	(-0.84)	-2.78
EBIT	0.209***	0.083*	0.134***	0.092**
	-3.74	-1.72	-2.88	-2.55
CFO	0.054	-0.012	0.075**	-0.015
	-1.32	(-0.26)	-2.3	(-0.51)
Constant	0.069	-0.222**	0.04	-0.162***
	-1.18	(-2.34)	-0.84	(-2.79)
Observations	500	500	1000	1000
Adjusted R-squared	0.034	0.0125	0.0188	0.017

t-statistics are reported in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% level, respectively in a two-tailed test. The dependent variable, CAR10 is the cumulative size-adjusted excess return over the ten days before and after the event date [-5, +5], because the event day is not a trading day. LMValue is the natural log of the market value of equity. EBIT is the industry-adjusted operating income (need to revise). CFO is the cash flow from operations.

Table 7: Robustness Check: Corporate Governance Index and Cumulative Abnormal Returns.

## Conclusion

The primary role of corporate governance is to ensure that management acts in the best interest of the company and its stakeholders. Good corporate governance ensures the accountability of the board of directors and management to stakeholders, including shareholders. We explore the link between corporate governance in finance and firm distress risk as well as such association with firm financial and market performance after correcting for endogeneity. We use the corporate governance in finance index (CGF Index), released by the Corporate Governance Research Center in Beijing Normal University (CGRC-BNU) as published by Economic Science Press in 2013, and find that firms with high CGF Index scores have lower financial distress risk and exhibit better financial and market performance. We further document that in China, a typical emerging market, stockholders react significantly negatively to firms listed in bottom line of corporate governance.

Our analysis of China's listed firms reveals that the great variation among firms of their internal governance mechanism in corporate finance have significant economic consequences. CGF measures significantly affect financial distress risk, and firm financial and market performance. The early studies in the United States find a positive association between corporate governance and firm performance because there was a wide range of variations in corporate governance measures [1]. As Public companies complied with regulatory measures and best practices of corporate governance, the variance in compliance disappeared and the relation between corporate governance and firm performance is weakened [2].

Our results support the earlier studies in the United States by showing that the degree of compliance with CGF Index varies among Chinese firms and investors differentiate between good governance and bad governance of Chinese firms as reflected in CGF Index. These results should be relevant to global investors, regulators and auditors who are interested in assessing reliability, transparency and sustainability of Chinese firms. Our study has implications for policymakers, regulators, and corporations. Building corporate governance system is the key to the success of future reforms aiming to improve market efficiency and investor protection in emerging markets such as China.

Our results should be interpreted with caution because of potential limitations. First, The CGF Index mostly focuses on the financial aspect of the corporate governance effectiveness, which is an overriding concern in emerging markets. Although it's a timely and proper proxy for corporate governance effectiveness in finance,<sup>2</sup> a more comprehensive index on corporate governance effectiveness is still expected for further research. Second, due to data availability, we have just one year of observations in our study and thus are unable to include a time-series analysis of the CGF index. Future research should gather and conduct a panel data analysis on multiple years of the association between corporate governance effectiveness and financial distress risk and firm performance. Finally, we investigate the link between CGF Index and financial distress and firm performance for all listed firms traded in the Shanghai and Shenzhen Stock Exchange markets regardless of their types of ownership structure. Future research could develop this topic based on different types of firms (e.g., SOE, politically connected, and family controlled). Future research should further investigate the value-relevance of CGF disclosures and their impacts on earnings quality of Chinese firms.

<sup>2</sup>Some measures (such as, whether there is risk control committee on the board) in constructing the CGF Index in Chinese reflect the current situation of corporate governance development in China.

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