

MANDATORY GOVERNANCE, VOLUNTARY GOVERNANCE AND FIRM PERFORMANCE —AN ANALYSIS OF CHINA LISTED FIRMS

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Abstract

Under the background of evolution of the corporate governance institution from mandatory governance to voluntary governance, the paper examined the effects of mandatory governance and voluntary governance on firm performance, which based on a constructed index for China listed firms voluntary governance level. We find that mandatory governance has no significant effect on firm performance; voluntary governance has an impetus effect on firm performance, and the impetus effect of voluntary governance on firm performance is higher with lower mandatory governance. These results are still exist even considering the endogeneity of voluntary governance.

Keywords: Corporate Governance; Voluntary Governance; Mandatory Governance; firm Performance; Endogeneity

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1. Introduction

With the impact of the international capital flows, increasing foreign investors and strengthening investors self-awareness, competition became increasingly fierce between enterprises, corporate governance institution balance was broken. In order to attract investors, raise capital and reduce financing costs, get an invincible position in global competition, companies have their own willingness to strengthen corporate governance. Improve corporate governance efficiency, thereby enhancing the competitiveness of enterprises force the company continues to implement governance innovation activities based the requirement of the mandatory law. States gradually formed a consensus in the protection of investors and strengthen the capital market supervision, and embody in company law, securities law and other legal reforms, so as to establish the institution foundation of corporate governance reform. However, legal reform is a long process, far slower than the practice of corporate governance reform, the major countries of corporate governance are exposed to varying degrees question: Why governance scandals still exist in the country where there was the full protection of investors? Why the private benefits of control shareholders has a significant difference in the countries from the same law origin.

The existing corporate governance reform path excessively concerned about mandatory governance under the national legal system, which unable to meet the requirements of quality of corporate governance investors from investors, even unable to optimize corporate governance, improve the efficiency of governance.

The voluntary governance from company level may be able to explain this issue. Level of autonomy of the management company may be able to explain this issue. More and more firms voluntary practice the governance innovation activities beyond on the legal supervision, enhance investor protection (Klapper et al., 2005). Corporate governance as an institution results from linked game equilibrium between organizational domain and financial domain, is a self-enforcing mechanism for investors, workers and managers involved interactive strategy (Akoi, 2001). For Institutional complementarily, corporate governance as a self-enforcing institutional arrangement is to be bounded by complementary domain. Thus, the change of the law and corporate governance environment as exogenous rules of the game in organizational domain, systematically alters the perceptions of individual agents in organizational domain as regards how the pattern of their strategic interaction is formed and accordingly induces a qualitative change in their actual strategic choices in

critical mass, triggers the evolution of institution. Under the consequences of repeated games between induced institutional shocks of exogenous rules of the game and spontaneous disequilibrium cumulative impacts of endogenous rules of the game, Corporate governance institutions achieve a shift from one equilibrium to another equilibrium, and during the process of evolution association with the extent of the implementation of the two games sides between exogenous mandatory and endogenous voluntary show mandatory governance and voluntary governance. Mandatory governance is exogenous legal regulatory rules hold the dominant status in the process of game with endogenous self-enforcing mechanism in organizational domain, compel affecting actions of agents, make listed companies passive meet the minimum regulatory requirements of law rules on corporate governance, achieve non-voluntary “trustworthy”, rather than listed companies internal requirement of improving corporate governance; under mandatory requirements of external law rules. Voluntary governance is endogenous self-enforcing mechanism of agents hold the dominant status in the process of game with exogenous legal regulatory rules in organizational domain, listed companies take the initiative to carry out corporate governance innovation activities, which based on meeting the regulatory requirements of the law on corporate governance, and under the internal needs of improve corporate governance efficiency and achieve corporate value creation.

Previous literature on relations between corporate governance and firm performance main along two path. one is the relations between individual governance mechanism and firm performance, for example, board composition, ownership characteristics and executive compensation, or disclosure and transparency. These studies, take together, often show conflicting results, indicating that the link between good corporate governance and superior firm performance is not clear. Different aspects of corporate governance have complex interrelations and may be complementary. Therefore, the lack of a particular aspect may be offset by the presence of other aspects.

The divergence of findings in these studies may be due to different proxies being used to measure corporate governance. The lack of consistency may also be attributed to the narrow focus of previous studies. Typically, studies consider one or at most a few components constituting corporate governance instead of a composite measure. Studies on the association between overall corporate governance and firm performance are limited, but work by Gompers et al. (2003), Black (2001), Beiner et al. (2003), Drobetz et al. (2004), Klapper and Love (2004), Durnev and Kim (2005). Gompers et al. (2003) construct a governance index to proxy the level of shareholder rights with respect to takeovers. For Russian firms, Black (2001) finds a positive relation between corporate governance behavior and market

performance; however, his result is based on a small sample of 21 firms. Drobetz et al. (2003) follow the approach of Gompers et al. (2003), developing a governance index and linking it to the performance of German firms. Durnev and Kim (2005) use the Credit Lyonnais Securities Asia (CLSA, 2002) governance index and the S&P disclosure score (Standard and Poor's, 2002) to measure corporate governance practices for a sample of 859 large firms in 27 countries. Klapper and Love (2003) use the CLSA governance index and find a positive correlation between market value and corporate governance for 374 firms in 14 countries.

From the literature review, measuring the quality of corporate governance practices is clearly an important issue, most of which is mandatory requirement of legal regulatory from country-level, but Burkart et al. (1997) think that mandatory governance may decrease the initiatives, and affect performance. Country law excess intervention will weaken the effect of private governance mechanism, then affect the motivation of firm voluntary rectify limitation of governance. At present, listed firms more be in mandatory “compliance” stage. Carvalho et al. (2005) find that the private contract between investor and listed firms will increase the welfare of investor, and promote capital market development. Only rely on mandatory governance can not insure investor interest, new governance mechanism beyond mandatory governance must be found. Therefore, call for and encourage listed firms to practise mechanism innovation, implement voluntary which based on the optimizing mandatory governance may be a key of improving firm performance, some researchers began to explore the effect of voluntary governance on performance.

Alves & Mendes (2004), De Jong et al. (2005), Gilson & Milhaupt (2005), Nowak (2006) respectively examine the association between voluntary governance and firm performance for Portugal, New Zealand, Japan, and German firms, they find governance innovation mainly rely on self-regulatory, and has not effect on performance or stock price. But McKnight et al. (2005) find the significantly positive association for England firms. Chhaochharia & Laeven (2007) distinguish voluntary governance and mandatory governance, and find there is significantly positive association between voluntary governance and performance.

Despite the existing literature examine the association between voluntary governance and firm performance, but get different conclusions, the main reason may be voluntary governance based on “innovation” in the capital market in recent years is the new type governance, its mechanism with performance has not been explored in depth by theoretical community, whether the level of voluntary governance is not affected by mandatory governance has not theoretical explanation and can not form consistent conclusion.

At the same time, the level of voluntary governance is affected by many factors, the conclusion of research may lack the stability and reliability, while not in full control of other factors .

Since 2007, the Chinese securities regulatory departments take governance innovation activities as a special survey content during the strengthen specific activities of corporate governance, voluntary innovative activities get great concern. China listed firms governance evolution process is from mandatory "compliance" stage to voluntary "innovation" stage.. the extent to which the level of voluntary governance can affect the firm performance, how does its internal mechanism ? Whether the effect of voluntary governance on firm performance or not be moderated by mandatory governance? The existing literature on these issues are not for research. Therefore, this paper intended to theoretical analysis and empirical testing for the association between the mandatory governance, voluntary governance and firm performance for China firms, deepening study accumulation for voluntary governance, actively encouraging listed firms to implement voluntary governance , increasing the effective supply of the securities market information, and promoting continuous and healthy development of securities markets. This paper firstly analyse the relations between mandatory governance,voluntary governance and performance from the theory perspective, and then empirical test for the China A-shares listed firms in 2006.In the process of Empirical studies, we refer to related literatures, and evaluation of governance innovation by the China Securities Regulatory Commission's special corporate governance self-inspection activities in 2007 , from four dimensions for the rights of shareholders, board efficiency , manager incentive and constraint , investor relations management design the measurement of voluntary governance index, from the perspective of law enforcement intensity to design mandatory governance indicators.

The findings show that mandatory governance is not significantly related to firm performance, but voluntary governance can significantly increase performance, and the valuation effect of voluntary governance is obvious in the lower level of mandatory governance. At the same time, we test the endogeneity of voluntary governance and firm performance,and using a three-stage squares method analyse the simultaneous equations ,find the coefficient and significant both increase, Voluntary governance has an significantly impetus effect on firm performance ,and firm performance has significantly feedback effect on voluntary governance. the conclusion is steady, and amplify the research direction in corporate governance field.

2. Theoretical background and hypothesis

We develop corporate governance research path based on the La Porta et al.(2002) theory model, explore the

relations between the mandatory governance, voluntary governance and firm performance. La Porta et al(2002)find the model of maximizing the shareholders benefits is $\alpha(1-s)RI + sRI - C(k,s)RI$ (1), The firm has the amount of cash I,which it invests in a project with the gross rate of return R.The firm has no cost,so the profits is RI .The manager divert a share s of the profits from the firm to himself,before he distribute the rest as dividends. Here k denotes the quality of shareholders protection, c is the cost -of -theft function, $C(k,s)RI$ is the profits that he wastes when s is diverted.

The first order condition fot the equation (1) is

$$Cs(k,s) = 1 - \alpha \quad (2)$$

Differentiating the first-order condition with respect to k ,we get

$$Cks(k,s) + Css(k,s) \frac{\partial s}{\partial k} = 0, \text{ that is}$$

$$\frac{\partial s}{\partial k} = - \frac{Cks(k,s)}{Css(k,s)} < 0 \quad (3)$$

The firm performance is given by $Q = (1-s)R$

$$(4)$$

We assume the mandatory governance level is k_1 , voluntary governance level is k_2 based on the La Porta et al. (2002) research.so the quality of investor protection is k , k is the function of k_1, k_2 ,that is $k = (k_1, k_2)$.since the voluntary governance is the corporate governance innovation which is based on the law requirement.the firm can implement the k_2 after implement the k_1 .so we assume $k = k_1 k_2$,denote the total quality of investor protection. We assume the cost-of-theft function of

$$c(k,s) = \frac{1}{2} ks^2$$

manager tuning is ,with this assumption, we get

$$Cs(k,s) = ks, \quad Cks(k,s) = s, \quad Css(k,s) = k,$$

Differentiating equation (4) with respect k_1, k_2 ,we obtain

$$\frac{\partial Q}{\partial k_1} = - \frac{\partial s}{\partial k} k_2 R \quad ; \text{ since}$$

$$\frac{\partial s}{\partial k} = - \frac{Cks(k,s)}{Css(k,s)} < 0, \text{ so ,}$$

$$\frac{\partial Q}{\partial k_2} = - \frac{\partial s}{\partial k} k_1 R > 0 \quad (5)$$

$$\frac{\partial Q}{\partial k_1} > 0 \quad (6)$$

Differentiating equation(5) with respect k_1 , we obtain

$$\frac{\partial Q}{\partial k_2 k_1} = \frac{\partial \left[\frac{C_{ks}(k,s)}{C_{ss}(k,s)} k_1 R \right]}{\partial k_1} = \frac{\partial \left(\frac{s}{k_2} R \right)}{\partial k_1} = \frac{1}{k_2} R \frac{\partial s}{\partial k_1} < 0 \quad (7)$$

We have three testable prediction:
other things being equal,

Hypothesis 1: Firm with higher voluntary governance should the higher performance

Hypothesis 2: Firm with higher mandatory governance should the higher performance

Hypothesis 3: The effect of voluntary governance on performance will be lower with higher mandatory governance

3. Empirical tests

3.1 Measurement of variables

3.1.1 The Measurement of Voluntary Governance

Voluntary governance mainly come from the governance innovation activities of the listed companies, which can increase investors concerns on quality of corporate governance, reduce the information asymmetry in capital market, increase the level of scientific decision-making. In research literature of measuring the voluntary governance, Klapper et al.(2005) by two governance provision which is accumulating voting and proxy voting ; Anand et al. (2006) by the board directors and CEO, independent auditing commitment, beyond the 2/3 proportion independent directors, and training the new board members; Chhaochharia and Laeven(2007) from the shareholders rights, information disclosure

,boards operation and conflicts among the stakeholders.

In order to comprehensive measure the level of voluntary governance, refer to foreign scholars, and inspect voluntary governance practices from the perspective of external investors, public data which investors can access get, combined with evaluation of corporate governance innovations in corporate governance special self-inspection activities carried out by the China Securities Regulatory Commission, we construct voluntary governance index from the rights of shareholders, board composition and operation, manager incentive and constrain mechanisms, investor relations management, a total of 30 indicators (indicators of the content of table 1).

In indicator of the design process, the original data belongs to the qualitative indicators, translate the qualitative indicators to quantitative by semantic difference evaluate, the original data belongs to the quantitative indicators, which is by non-dimensional treatment by the coefficient of effective. experts according to 1-9 ratio rate the scale of the factors, constructed evaluation matrix, and its calculation of the greatest features and the corresponding feature vector, and consistency test. Each of the main factors given the same weight, lower in the subjective evaluation of indicators. This index ranges from zero to 100. The descriptive statistics is loading in Table 2.

As some part of voluntary governance index is very strong indicator of subjectivity, and is constituted by the four dimensions, need analysis of the internal consistency among sub-index to evaluate the reliability of indicators. This article from Botosan (1997) test method, find the correlation coefficient of Cronbach's alpha is 0.61, indicating the indicators set with higher reliability.

Table 1. Voluntary Corporate Governance Index

Governance Dimension	Voluntary Governance Index (VGI)
Shareholders Rights(SR)	Adopt internet voting
	Adopt Collecting voting
	Adopt accumulating voting
Board Efficiency(BE)	CEO is also the chairman of the board
	Board secretary is executive
	Salary committee
	Nominate committee
	Investment strategy committee
	Audit committee
	Independent directors can not take part in board meeting for 3 times
	Part-time chairman
The percent of independent directors beyond 1/2	
Executive Incentive and Constrain (EIC)	Equity incentive mechanism
	Internal accountability institution
	Executives from the controlling shareholder
	Whether CEO emolument or not be disclosure by Company's Web site or annual report,
Investor Relations Management (IRM)	Set up investor relations management department
	Design investor relations management institution
	Call, fax letters, telephone lines
	Corporate network communication platform
	Internet communication
	One-on-one communication
	Welcome investors to visit the site

	Take the initiative to contact, visit investors
	Mailing information, annual reports, etc
	Media interviews, reports and cooperation
	Analysts meetings and road shows
	Tracking Analysts and take initiatives to maintain contact
	Regularly publish investor relations weekly, securities information, IRM manual
	Investor relations management staff training

3.1.2. Measurement of Mandatory Governance

The law by the finance and law is refers to the Civil Code, particularly the protection of the interests of investors, private property and private contractual arrangements and the implementation of the law. La Porta et al. (1999) construct investor protection index from law contents and law implement based on the country level, and analyse how the law environment affect the listed companies' corporate governance level. At the regional legal environment research, Zhang yi, Ma guang (2005) construct the 3 group law efficiency indicators to measure the procuratorial system, court system and the effectiveness of counsel system

Xia Li-jun, and Fang Yi-qiang (2005), Wang Peng (2008) use the scoring of market intermediaries and the legal system environment by Fan Gang and Wang Xiao-lu (2003) as measure the intensity of legal protection for investors. Mandatory governance is that listed company passive meet the minimum corporate governance regulatory requirements by mandatory requirement of the external laws and regulations .

Although China's listed companies under the same contract by the same legal system supervision, but because of China's vast territory, regional unbalanced development ,different areas of the market process, and the Government-to-business level of intervention and protection for investors are very different , Which may affect the quality of listed companies from different regions and the game

between larger and small shareholders. Therefore, the listed companies of the different regions to follow the law in the governance requirements of the mandatory standards still exist in the great differences. Combine China's unique system of background, we were used the market intermediary organizations and the legal system environmental indicators by Fan Gang et al. (2006) calculated as a proxy variables for mandatory governance of listed companies, evaluate the rule of law or judicial system efficiency.

3.1.3. Measurement of firm performance

The dependent variable is a proxy of market valuation, the MTVB. which is the ratio of market value of common stock to book value of common stock. and we drop firms with negative book value of common stock . This ratio provides an estimate of the total value of a firm and reflects firm performance. MTVB is considered a better measure of firm performance than accounting measures because is based on market value ,not just accounting earnings and is not affected by earnings management or accounting manipulations. So we use the MTBV as a proxy for firm market value. and eliminate the effect of industry.

3.1.4. Control Variables Selection

In order to explore the relations among the mandatory governance , voluntary governance and firm performance, we select some control variables which include firm size, debt to equity ratio, ownership and risk factors. Concretely definition are presented in Table 3.

Table 2. The Definition of The Control Variables

Variables	Definition
Size	Natural log of total assets
Risk	Firm risk
Lev	Debit to equity ratio
Herfin	Squares of percentage of total outstanding shares held by the five largest shareholders.
Top25	Percentage of total outstanding shares held by the second to the five largest shareholders.
Indu	Dummy variables. 12 industry intercalate 1 industry dummy variables.

3.2. Sample selection

With the background of China Securities Regulatory Commission implement corporate governance special self-inspection activities from March to October in 2007. Self-inspection report of corporate governance for listed firms and annual reports as the study contents, which from the Shanghai and Shenzhen Stock Exchanges, excluded incomplete investigation report and the missing data samples, the final

effective sample consisted of 969 firms. other related data comes from CCER data-base

3.3 Model

Our study including two parts, firstly, analyze the statistic features of variables; secondly, study possible effects of mandatory governance, voluntary governance and other control variables on firm performance. However, voluntary governance index

including board quality, investor relations management maybe interactive effects with firm performance .listed firms maybe realize the benefits of increasing corporate governance , more voluntary develop corporate governance innovation ,after get better firm performance. so the endogeneity is maybe exist in voluntary governance and firm performance, and results in bias, we will carry through Hausman(1978) tests, and minimize endogeneity by a system of simultaneous equations using a three-stage least squares method, which presented in robustness tests. so we firstly not consider the endogeneity of variables, I construct the following model to test the above hypothesis

$$Perf = \beta_0 + \beta_1VGI + \beta_2Mg + \beta_3Mg * VGI + \beta_4Lsize + \beta_5Lev + \beta_6Herfin + \beta_7Top25 + \beta_8Risk + \epsilon$$

(1) 。

4.Results

4.1 Univariate tests

Table 4 contains descriptive statistics of VGI and its four sub-indices. On a scale of 0-100.The total level of VGI is not higher, average score is 55.67; The results of the sub-indices indicate that companies do best in board quality with mean scores of 63.25, do

worse in manager incentive and constrain with mean scores of 45.51.According to industry classification, descriptive statistical analysis of voluntary governance which presented in Table 4, found that industry has more obvious impact on the level of voluntary governance, mean and median of social services industry is lowest, The extractive industries is highest.. At the same time, we have non-parametric test for our sample, chi-square statistics showed that the level of gap of voluntary governance of listed firms between the industry is significant.

For the initial explore the relations between the level of voluntary governance and firm performance, we divided into two groups mean by mean (55.67) ,the first group less than 55.67, the second group is greater than or equal to 55.67 and firms mean performance (T test) and the median (Mann-Whitney U test) between group to compare tests, empirical results listed in Table 5. Firm performance of group 2 is to be significantly better than in group 1, The median and mean of firm performance between groups comparative analysis provide the preliminary evidence for firm performance and voluntary governance.

Table3. Descriptive statistics for voluntary governance index and sub-indices

	VGI	SR	BE	EIC	IRM
Mean	55.67	57.3	63.25	45.51	56.65
Median	50	66.67	70	50	46.15
SD	13.75	26.88	14.41	25.8	22.2
N	969	969	969	969	969

Table4. Descriptive Statistics for Voluntary Governance Index by Industry Classification

Industry	N	VGI		
		Mean	Median	SD
Mining	17	60.58	56.67	13.91
Culture and Leisure	9	54.81	56.67	17.73
Electricity ,Coal, and Running Water	39	54.56	50	10.70
Real Estate	39	54.17	46.67	12.04
Construction	20	55.33	50	10.95
Transportation and Storage	41	56.35	43.33	13.56
Agriculture, Forestry and Fishery	22	55.27	43.33	12.49
Wholesale and Retail	74	60.73	51.67	15.57
Social Services	29	53.28	41.67	10.51
Information Technology	56	54.42	48.33	15.99
Manufacturing	571	53.53	46.67	13.91
Others	52	54.81	46.66	11.10
Total samples	969	55.67	50	13.75

Kruskal-Wallis H Tests : Chi-Square Statistical quantity is 18.92 , P is 0.042

Table 5. Voluntary governance and firm performance: comparative analysis of between group

	Group1	Group2	Group1 and Group2
	Mean (Median)	Mean (Median)	T (Z)
Perf	-0.165 (-0.08)	0.107 (0.110)	9.799*** (-11.191***)
N	539	430	

4.2 Multivariate tests

To test hypothesis (1)-(3), we adopted equation (1), with OLS regression analysis. In multiple regression

model, if independent variables were multiple linear, will have a negative impact on stability, parameter estimation, statistical model and test the reliability of estimates. In order to determine whether there is a

multi-linear for regression model and pre-tested explain related extent and direction between independent variable and dependent variable, we analyse the correlated of main variables, and found that in addition to firm size and level of voluntary governance and ownership concentration, the higher the correlation coefficient (0.118 and 0.313, respectively), and 1 percent level significantly, among other variables are less relevant, but because of the correlation coefficient no more than 0.6, so it that the correlation is not Serious, which means that there is no serious multicollinearity problems.

However, when all the variables correlation coefficient are little, as there may be a linear relationship between a single variable and a group of other variables, so, to some degree, multicollinearity may still exist. Therefore, we calculated Variance Inflation Factor, used the performance of the firm into the regression models, find the greatest VIF observed is 1.326, the VIF of all variable are less than 1.5, indicating that there is no model of multiple collinearity problems. Therefore, this regression model has great reliability. The tests results of the assumption 1-3 are listed in Table 6.

Table 6 displays ordinary least squares regression results for the VGI, MGI and control variables. The first column in Table 6 shows the results of regressing performance on VGI. The VGI coefficient is 0.039, and is statistically significant at the 5 percent level. We progressively add control variables in model (2), and obtain similar results: VGI is positively and significantly associated with firm performance. This indicates that the listed firms implement voluntary governance mechanism beyond the requirement of requirement of law, improve the quality of information disclosure, increase the information supply, optimize the allocation of information rights; then improve firm transparency, build up the investors' trust in firm, reduce the information asymmetry and agency cost, which is significant impetus for improving earnings, growth and capital operation, validate the hypothesis 1, voluntary governance can significant firm performance in Chinese capital market.

In control variables, ownership concentration is positive with firm performance, but not statistically significant; balance of shareholder structure is negative related to firm performance and is statistically significant at the 5 percent. May be too high degree of balance of shareholder structure, often means that the first larger shareholder equity concentration decreased, which would undermine the control ability of the controlling shareholder and reduce their diligence and the positive incentive effect, increased agency costs, leading the firm performance

to decline. Company size, debt levels is significantly related to firm performance at the 1 percent. Firm risk is significant positive related to firm performance at the 5 percent level.

We sequentially introduce the four sub-indices as an independent variable to regression equation (1), and regress on firm performance, the results shown in Table 7. The results show that of the four sub-indices, the shareholders rights, board efficiency and investor relations management is significant relations with firm performance. Managers incentive and control is not significant related to firm performance. This shows that in the context of cumulative voting rights, collecting voting and network voting rights have not been a formal system for listed firms to be voluntarily implemented by listed firms, cumulative voting rights, collecting voting and network voting rights to strengthen the protection of investors rights, promote firm performance is of a great plastic space.

Board is the core of corporate governance mechanism (Fama and Jensen, 1983), and became a mechanism of solve information and agency problem between external investor and listed firms. Board play a signaling role, improve the transparency of information of listed firms in the capital market, which become the focus for shareholders particular minority shareholders concern. In China, the market of professional manager has not yet formed, the listed firms lack of an effective mechanism for selecting managers, information transfer mechanism of managers can not be recognized by investors.

Investor relations management is positively and significantly associated with firm performance at the 1 percent level. IRM is strategic activities by fully voluntary information disclosure and actively interact communicating with investors, maximizing firm performance. In the capital market, the information is linked between listed firms and investors and is the basis for investment decisions. As a voluntary governance mechanism, IRM is more represent the voluntary information communication, enhance corporate transparency and rational allocation of the right to information between listed firms and investors and potential investors. Firm are a nexus for a set of contracting relationships (Jensen and Meckling, 1976), therefore, IRM provide the information communication channels for sign, implement and supervise various contract of firm, and became an important component of the contract to reduce communication costs (such as contract costs, monitoring costs), easing the contract friction and communication friction for the listed firms and investors, reduce the agency costs and improve firm performance.

Table 6. Voluntary governance and Firm performance

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Constant</i>	-0.65*** (0.000)	-2.78*** (0.000)	-2.71*** (0.000)	-2.93*** (0.000)	-2.77*** (0.000)	-2.53*** (0.000)
<i>VGI</i>	0.039** (0.021)	0.026** (0.036)				

<i>SR</i>			0.002** (0.031)			
<i>BE</i>				0.003** (0.042)		
<i>EIC</i>					0.003 (0.118)	
<i>IRM</i>						0.004*** (0.003)
<i>Lnsize</i>		0.118*** (0.000)	0.128 (0.000)	0.134 (0.000)	0.131*** (0.000)	0.116*** (0.000)
<i>Lev</i>		-0.447*** (0.000)	-0.481 (0.000)	-0.492 (0.000)	-0.475*** (0.000)	-0.46*** (0.000)
<i>Herfin</i>		0.090 (0.38)	0.129 (0.225)	0.139 (0.196)	0.099 (0.351)	0.08 (0.412)
<i>Top25</i>		-0.207** (0.04)	-0.185* (0.082)	-0.211** (0.049)	-0.18* (0.080)	-0.202* (0.053)
<i>Risk</i>		0.081** (0.04)	0.091** (0.022)	0.085** (0.035)	0.077* (0.054)	0.08** (0.032)
<i>Adjust R2</i>	0.139	0.413	0.375	0.365	0.376	0.393
<i>Prob(F-statistic)</i>	0.000	0.000	0.000	0.000	0.000	0.000

*,**,and*** denote statistical significance at the 10%,5%,and 1% level

The test results for hypothesis 2 and 3 are shown in Table 7. From the regression (7), we can see that mandatory governance is positive related to firm performance but not statistically significant at conventional levels, hypothesis 2 can not be verified. This may be the listed firms have reached "compliance" requirement, realize the protection of investor basic rights under the mandatory requirement of law in China's capital market, especially in 2005 after enact the new "Company Law". However, when all listed companies are in "compliance" stage, the quality of governance of listed firms to form a pool equilibrium, investors can not assess the quality of corporate governance according to the level of mandatory governance, reduce asymmetric information, thus unable to improve firm performance.

We estimate regression (8) to (12), with firm performance as a dependent variables, independent

variables are mandatory governance, voluntary governance, an interaction term of mandatory governance with voluntary governance, sub-indices. Table 8 reports results. The interaction term with mandatory governance has the expected sign for VGL, sub-indices, and is significant for four of five, consistent with our hypothesis, that the effect of voluntary governance on performance will be lower with higher mandatory governance, which validate the hypothesis 3.

This may be the quality of voluntary governance is relatively scarce in areas for lower level of mandatory governance under the other conditions remain unchanged. therefore, fewer firms which have higher level of voluntary governance are more likely to get the trust of investor, reduce financing costs and improve firm performance.

Table 7. Mandatory governance, Voluntary governance and firm performance

	(7)	(8)	(9)	(10)	(11)	(12)
<i>Constant</i>	-2.672*** (0.000)	-2.931*** (0.000)	-2.771*** (0.000)	-2.951*** (0.000)	-2.830*** (0.000)	-2.622*** (0.000)
<i>VGI</i>		0.036** (0.023)				
<i>SR</i>			0.003* (0.051)			
<i>BE</i>				0.003*** (0.007)		
<i>EIC</i>					0.002 (0.441)	
<i>IRM</i>						0.005*** (0.000)
<i>Mg</i>	0.004 (0.362)	0.017 (0.281)	0.004 (0.571)	(0.005) (0.306)	0.003 (0.519)	0.003 (0.558)
<i>Vg*Mg</i>		-0.001** (0.041)				
<i>SR*Mg</i>			-0.006* (0.051)			
<i>BE*Mg</i>				-0.016** (0.032)		
<i>EIC*Mg</i>					-0.018 (0.535)	
<i>IRM*Mg</i>						-0.002** (0.044)
<i>Lnsize</i>	0.131***	0.120***	0.131***	0.137***	0.135***	0.119***

	(0.00)	(0.00)	(0.000)	(0.000)	(0.000)	(0.000)
<i>Lev</i>	-0.491*** (0.00)	-0.449*** (0.00)	-0.482*** (0.000)	-0.493 (0.000)	-0.476 (0.000)	-0.462*** (0.000)
<i>Herfin</i>	0.122 (0.262)	0.089 (0.394)	0.139 (0.193)	0.153 (0.155)	0.106 (0.321)	0.112 (0.286)
<i>Top25</i>	-0.201* (0.061)	-0.207** (0.043)	-0.199* (0.061)	-0.222** (0.038)	-0.199* (0.060)	-0.219** (0.035)
<i>Risk</i>	0.091** (0.032)	0.075* (0.051)	0.088** (0.027)	0.081** (0.044)	0.072 (0.072)	0.082** (0.037)
<i>Adjust R²</i>	0.355	0.414	0.378	0.367	0.378	0.398
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000	0.000

*, **, and *** denote statistical significance at the 10%, 5%, and 1% level

4.3 Robustness

To check the robustness of our findings, we perform two additional tests. First, we address whether the voluntary governance index, mandatory governance index in our sample is affected by any particular question or questions. The second test examines the validity of the regression model. We propose using an instrumental variable approach and a three-stage regression model to correct for endogeneity.

4.3.1 Variables Selection

Voluntary governance is an institutional arrangement to optimize the allocation of information rights between investors and listed firms, give investors more information rights to facilitate the exercise of supervisory powers, the right to know and recommendations right to protect their interests, and make the right investment decisions. Shenzhen Stock Exchange rating the information disclosure level of listed firm every year and published its evaluation results on the website, which, to a certain extent, can measure the level of external information supply. Based on this, we consider using the information disclosure evaluation of Shenzhen Stock Exchange annually through the annual reports of listed firms as alternative proxy variable for voluntary governance. Evaluation results will be the divide level of information disclosure into excellent, good, pass and fail grades, respectively on behalf of 5, 4, 3, 2 scores. Since only Shenzhen Stock Exchange listed firm to be evaluated, we select tested samples 198 for the Shenzhen Stock Exchange listing from 969, the result of the research is consistent with Table 7, so that the results of this paper has strong Stability.

4.3.2 Endogeneity

Although our results are consistent with the predictions of the model, there is an endogeneity problem in the regression analysis. One problem troubling all corporate governance studies is the potential for endogeneity. In regression corporate governance and performance may be related because high-value stock in emerging market attract international investors, and greater foreign ownership may lead to better

governance. To address the unresolved endogeneity issues, we estimate regression (1) and (2) as a system of simultaneous equations using a three-stage least squares method. While this estimation technique allow for endogeneity between governance and performance, we need to identify some exogenous parameters that affect only governance or valuation, but not both. Identify truly exogenous parameters is difficult; therefore the results presented below must be interpreted with caution.

VGI is the measure of the level of innovation for listed firms in capital market. Innovation is not only a driving force for the development of the country, but also an accelerator for the development of firm in capital market. Currently there is no other research institutions develop evaluation and analysis for voluntary governance based on "innovation" activities in China. At the same time, voluntary governance for the listed firms are subject to impact of the level of regional development and innovation capacity which firm located in. Therefore, we assume China 31 provinces Innovation Index in 2006 developed by Renmin University of China as an instrumental variable for voluntary governance.

In order to be a valid instrumental variable, the Innovation Index needs to satisfy two conditions in the regression model. First, the covariance between Innovation Index and the residual (ξ) from regression model should equal 0

$$Cov(\text{Innovation Index}, \varepsilon) = 0$$

The second condition is that covariance between innovation index and the VGI should not equal 0,

$$Cov(\text{Innovation Index}, VGI) \neq 0$$

We calculate the correlation between Innovation Index and ξ and the correlation between Innovation Index and VGI. The results in Table 8. (coefficient=0.01, p-value=0.7081) indicate that Innovation Index and ξ are not related. For the correlation between Innovation Index and VGI, the results (coefficient=0.428, p-value=0.0007) indicate that Innovation Index and VGI are indeed related. Therefore, the innovation index is confirmed as a valid instrumental variable.

Table 8. Correlation Test of instrumental Variable

	VGI	Residual ϵ
Innovation Index	0.428	0.0100
(p-value)	(0.0007)	(0.7081)

With Innovation Index as an instrumental variable, the Durbin-Wu-Hausman test uses a two-stage least squares model to check whether our model suffers from endogeneity. In the first stage, VGI is regressed on the Innovation Index and the set of control variables. A statistically significant coefficient on the first-stage residual is evidence of endogeneity. In the second stage, we regress performance on VGI, the control variables, and the residual term (the variation in VGI that cannot be

explained by innovation index and the control variables) from the first stage regression. If the coefficient of the residual is statistically significant, factors other than VGI and the control variables can explain the variation in performance.

Table 9 shows the results of the Hausman tests. In the second-stage regression, the coefficient of the residual (ξ) is positive and statistically significant at the 5 percent level. The results show that the original ordinary least squares model suffers from endogeneity.

Table 9. Hausman Test for Endogeneity

Dependent Variable	residual (ξ)	P	T	F
Perf	0.058	0.0467	-1.991	79.44

To address the unresolved endogeneity issues, we estimate (2) as a system of simultaneous equations using a three-stage least squares method. In the three-stage least squares estimation, the governance equation contains VGI as the dependent variable, and Performance as a simultaneously determined variable. We use the same set of control parameters as in Table 6, excluding MG, interaction terms, risk, and ownership concentration, adding industry dummies. Although not reported, the coefficients on industry dummies are jointly significant in regression reported in Table 6. At the same time, the performance variable during its production process eliminates the effect of industry. Thus, we assume that industry classification does not affect performance but does affect governance.

The valuation equation contains performance as the dependent variable, governance as a simultaneously determined variable, and the same control parameters as the governance equation, adding the ownership concentration and risk variable, excluding industry dummies. Since investors assign higher evaluation to firms that enjoy high valuation rather than corporate governance being priced in the stock market, firms rely more on external financing. This may be to show higher performance (Durnev and Kim, 2005). We assume the Extfin as an instrumental variable for the Performance.

$$Extfin = \sqrt{\frac{Totalassets_t}{Totalassets_{t-1}}} - \left[\left(\frac{Roe_t}{1 - Roe_t} + \frac{Roe_{t-1}}{1 - Roe_{t-1}} \right) / 2 \right]$$

, Extfin does not affect governance but does affect performance.

$$Perf = \beta_0 + \beta_1 Vg + \beta_2 Lnsiz + \beta_3 Lev + \beta_4 Herfin + \beta_5 Top25 + \beta_6 Risk + \epsilon \quad (2)$$

$$Vg = \alpha_0 + \alpha_1 Perf + \alpha_2 Lnsiz + \alpha_3 Lev + \sum_{i=1}^n \alpha_{i+1} Industry_i + \epsilon \quad (3)$$

Table 10 reports three-stage estimation results. From the results, we find the significance and validity of the model have been increased. VGI is significantly positive related to firm performance. Voluntary governance has an impetus effect on firm performance and will be better if the endogeneity of voluntary governance is controlled. At the same time, firm performance has significant feedback effect on voluntary governance. When the endogeneity is controlled, the statistically significant is at the 1 percent level in 3SLS model rather than at the 5 percent level in OLS model. The coefficient increase from 0.026 to 0.054, but the sign is consistent. This shows that the conclusion for the voluntary governance is positive and significant in performance equation is robust. The valuation effect of voluntary governance based on “innovation” exist in China capital market and under the premise of “compliance”, better firm performance more vulnerable to the favor of capital markets, easily access to capital, and more motivated to implement voluntary governance activities, further to optimize corporate governance mechanism, enable firm to get more growth opportunities.

Table 10. Three-Stage Least Squares Regression Estimation of the Relation between Performance and Voluntary Governance

Performance Equation		Governance Equation	
Indep. Variable	Dep. Variable Perf	Indep. Variable	Dep. Variable VGI
Constant	-2.896***(0.00)	Constant	15.28***(0.00)
Vg	0.054***(0.00)	Perf	3.53**(0.03)
Lnsiz	0.101***(0.00)	Lnsiz	0.121(0.81)

<i>Lev</i>	-0.401***(0.00)	<i>Lev</i>	-0.085(0.96)
<i>Herfin</i>	0.122(0.23)	Agriculture, Forestry and Fishery	-5.573*(0.07)
<i>Top25</i>	-0.144(0.12)	Mining	-1.198(0.09)
<i>Risk</i>	0.068*(0.06)	Manufacturing	-2.091*(0.06)
		Electricity, Coal, and Running Water	-3.06**(0.03)
		Construction	-2.147(0.11)
		Transportation and Storage	-2.60*(0.06)
		Information Technology	-1.489**(0.03)
		Wholesale and Retail	-0.939(0.12)
		Real Estate	-1.778*(0.06)
		Social Services	-2.853**(0.03)
		Culture and Leisure	0
		Others	-2.13* (0.093)
R ²	0.447	R ²	0.122
Notes: The regression is run at the system environment of Eviews5.0. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level.			

5. Summary and conclusions

The corporate governance optimization research in the context of corporate governance reform will continuous develop in breadth and depth. From mandatory governance of country-level to voluntary governance of firm-level to analyze a number of key issues have become an international research direction. In the world economy and the trend of financial integration, corporate governance innovation based on the legal requirement is the most positive force for optimizing governance, also common direction of all countries in the world optimize corporate governance mechanism. We define the voluntary governance and mandatory governance which is the evolution path of corporate governance institution, construct the indicators of China listed firms voluntary governance, and further study relations between mandatory governance, voluntary governance and firm performance by theoretical models and empirical research.

We find that the mandatory governance is not significantly related to firm performance, but voluntary governance can significantly increase performance, and the valuation effect of voluntary governance is obvious in the lower level of mandatory governance. At the same time, we test the endogeneity of voluntary governance and firm performance, and using a three-stage squares method analyze the simultaneous equations, find the coefficient and significant both increase, the conclusion is steady, amplify the research direction in corporate governance field.

Caveats are in order. Need to more accurate definition of mandatory governance and voluntary governance. Although we have attempted to address endogeneity, a full treatment requires time-series analyses of changes in corporate governance practices a task we plan to pursue upon sufficient accumulation of data over time.

China security market has make great progress for more 10 years development, the legal regulatory constantly perfect, the listed firm has gone into the “compliance” stage. However, with the development

of security market, the decision-making of investors is rational, and their requirement for the quality of corporate governance is increasing, which urgently need the listed firms take their governance innovation activities, optimize the corporate governance based on meeting the requirement of legal regulatory. Compare to mature capital market, the level of voluntary governance of China listed firm is lower, and the motivation mechanism of innovation is not enough. Voluntary governance not only increase the firm performance on the macro-level, but also accelerate the development of the security market. Therefore, China security regulatory department should award more autonomy rights for devising agility and efficient corporate governance mechanism.

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