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Article

Executives' Educational Level, Corporate Social Responsibility and "De-noising" Financial Performance--Empirical Data from Chinese Listed Companies Disclosing Social Responsibility Report*

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Abstract

Based on the upper echelons theory and stakeholder theory, and applying the System GMM method, this paper empirically analyzes the impact of executives' educational level and corporate social responsibility (CSR) on "de-noising" financial performance, with the research samples collected from the A-share listed companies on the Shanghai and Shenzhen Stock Exchanges that disclosed their social responsibility information reports within the period of 2009 to 2015. Research results show that the corporate social responsibility lagging two phases has a significant positive effect on the current financial performance, the executives' educational level lagging two phases has a significant positive effect on the current corporate social responsibility and executives' education level plays no regulatory role in the impact of corporate social responsibility on financial performance.

Keywords

Executives' Educational Level • Corporate Social Responsibility • "De-noising" Financial Performance • Real Earnings Management

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With the rapid development of market economy and the acceleration of economic globalization, a number of social and natural problems such as corruption, employment difficulties, gap between the rich and the poor, terrorism, energy crisis, environmental pollution and global warming, etc., making enterprise and society increasingly intertwined and mutually influential. The business environment for enterprises has changed to a multiplex environment, where the society and the public are raising higher and higher requirements for enterprises. Now the society is already feeling unsatisfied about enterprises' pursuit of maximizing the profit and requiring enterprises to actively assume their corporate social responsibilities. According to the stakeholder theory, the benefits brought by the active assumption of social responsibility of enterprises go far beyond the short-term interest gained from their avoidance of social responsibility. Actively assuming corporate social responsibility can significantly improve the current financial performance of the listed companies (Yin, Liu, & Chen, 2014). Based on the upper echelon theory, executives' decisions are influenced by the individual background of executives. Executives' education level and other unique backgrounds have contributed to the formation of their unique values, cultural concepts, etc. All these complex factors affect the decision-making and behavior of senior executives, thus affecting the corporate social responsibility. Therefore, it is of great theoretical significance and practical significance to understand the relationship between executives' education level, corporate social responsibility and financial performance.

Researches on the relationship between corporate social responsibility and financial performance have not reached a consistent conclusion (Griffin, & Mahon, 1997; Roman *et al*., 1999). The empirical studies did not reach consistent conclusions, largely due to the different research methods and different performance measures (Ullmann, 1985; Li *et al*., 2011). The research method did not consider the lag, and the financial performance measurement did not consider the possible existence of "noise" to be the cause of inconsistent conclusions. Zhang *et al*. (2013) took the EBIT that excludes the accrued earnings management as an indicator to measure financial performance, but such studies are rare. Therefore, it is of great value for us to study the dynamic relationship between CSR and the financial performance having the real earnings management "noise" eliminated and to consider the regulating role of executives' education level.

This paper probes into the impact of executives' educational level and corporate social responsibility on "de-noising" financial performance, and the regulatory role of executives' education level, with the research samples collected from the A-share listed companies on the Shanghai and Shenzhen Stock Exchanges that disclosed their social responsibility information reports within the period of 2009 to 2015. The research results provide a reference to the listed companies to study the management decisions of rival enterprises.

Theoretical Analysis and Research Hypotheses

The stakeholder theory emphasizes that an enterprise cannot develop without the input or participation of various stakeholders and that the enterprise should pursue the overall interests of all stakeholders, rather than just maximize the shareholders' profits. The enterprise is, in essence, "a set of contracts" concluded among stakeholders, and the stakeholder groups are those who executives must take into consideration in the decision-making process (Jensen and Meckling, 1976; Freeman and Evan, 1990). Cornell & Shapiro put forward the

social impact hypothesis in 1987, that fulfilling corporate social responsibilities can improve the external image of an enterprise, enhance its reputation and reduce the implicit claim of the enterprise, and finally brings better financial performance to the enterprise. Jones (1992) and Barnett (2007) proposed the "instrumental stakeholder theory", which believes that enterprises can improve their financial performance through stakeholder management. The resource base theory explains how corporate social responsibility improves the financial performance of enterprises (Barney, 1991; Surroca, 2010; Zhang *et al*., 2012; Hu, 2015). According to the previous theoretical research conclusions: first, enterprises taking social responsibilities is a signal transmission mechanism; second, it is a transaction realization mechanism; third, it is a value creation mechanism. Therefore, it can be said that enterprises taking social responsibilities is not simply altruistic, but rather a win-win mechanism that "benefits both others and itself". It can bring long-term financial benefits to enterprises so that the enterprises can achieve their pursuit of profit maximization.

However, the capital market is not perfect in reality and it is interfered with by many non-rational factors, making stakeholders unable to comprehensively gain information about enterprises taking social responsibilities in a timely manner. In addition, an enterprise needs to experience a process where the corporate social responsibility information is generated, transmitted and finally accepted by various stakeholders if it wants to gain stakeholders' trust and support by assuming social responsibilities, and it needs another process if it wants to convert social responsibility to financial performance. Therefore, the influence of social responsibility taken by an enterprise on its financial performance is lagging; in other words, an enterprise taking social responsibilities will probably receive benefits in a lag phase. Zhang *et al*. (2013) believed that in the empirical analysis on the influence of corporate social responsibility on financial performance, if such lag is not considered, it will be difficult to draw a reliable conclusion. Based on the above analysis, this paper proposes Hypothesis 1:

Hypothesis 1: Compared with the financial performance in the current phase, the social responsibility taken by the enterprise in the current phase will have a significant positive influence on the financial performance in later phases.

According to the upper echelons theory, the higher the level of education is, the stronger the executives' adaptive capacity and handling capacity in a complicated environment is. The education level of an individual has an important effect on his/her values and cognitive competence, which will further affect his/her assumption of social responsibility. Hambrick (1984) pointed out that the values of executives have an important influence on the managers' decisions. At present, both the government and the society are calling on enterprises to fulfill their social responsibility. The requirements towards enterprises tend to be diversified. In the face of a more complex market environment, executives with higher education levels tend to be more capable of balancing interests of various parties in decision-making, and are more inclined to take on more corporate social responsibility.

According to Maslow's Hierarchy of Needs Theory, people with higher education will pay more attention to environmental protection and food safety after solving the problem of food and clothing (Sun, 2009). The higher the education level of executives is, the more likely they are to meet their own needs by assuming corporate social responsibility. Executives with high level of education think about a problem more

comprehensively. They will consider the long-term development of enterprises, not only focusing on short-term interests. Education and personal experience have a positive impact on corporate social responsibility (Manner, 2010). Accordingly, Hypothesis 2 was put forward herein:

Assumption 2: The higher the executives' education level is, the more positive impact it will have on the assumption of corporate social responsibility.

The principal-agent theory holds that the performing of CSR is essentially the individual behavior of the manager relying on the power and resources entrusted by the principal (Friedman, 1970). Executives are keen to improve their social status by fulfilling social responsibilities, thus creating a favorable personal development outlook (Galaskiewiez and Burt, 1991). Executives with high education level pay more attention to their social status and development prospects, so they will pay more attention to performing the corporate social responsibility. Even some enterprise system clearly requires enterprises to fulfill and disclose their corporate social responsibility. Under this background, the executive's motivation of pursuing individual development has a big impact on the fulfillment of social responsibility, and then the long-term financial performance of enterprises will be emphasized. Executives with low education level tend to pursuit profits and other short-term economic benefits, so there is uncertainty for them to fulfill corporate social responsibility. Therefore, the executive's motivation of pursuing individual development has a minor impact on the fulfillment of social responsibility. Accordingly, research Hypothesis 3 was put forward:

Assumption 3: Executives' education level plays a positive regulatory role in the relationship between corporate social responsibility and financial performance

Study Design

Sample selection and data source

The research samples are collected from the A-share listed companies on the Shanghai and Shenzhen Stock Exchanges that disclosed their social responsibility information reports within the period of 2009 to 2015 and are screened as per the following criteria: (1) excluding the listed companies engaged in finance and insurance business; (2) excluding the companies with significantly abnormal variable values; (3) excluding the companies that underwent special treatment (ST, *ST, etc.); (4) excluding the companies whose relevant financial data are unavailable; (5) excluding the industries with less than ten enterprises annually. After screening, 3,665 observations in 7 years were obtained. The data of corporate social responsibility are from the CSR Rating system of RKS and other data are from WIND and CSMAR. The analysis tools include EXCEL2007 and Stata14.

Variable Measurement

Corporate Social Responsibility (CSR)

Rankins CSR Ratings (RKS) is an authoritative third-party CSR rating agency in China. It independently developed the first social responsibility report evaluation tool, and its rating score indirectly measures the

performance and disclosure of corporate social responsibility reflected in CSR report. Featuring independence, expertise, relative authoritativeness, and public availability, RKS has been widely accepted by scholars and widely used in relevant researches. Starting from such four zero-level indicators as globality, content, technology, and industry, RKS respectively sets up 15 primary indicators and 63 secondary indexes to make a comprehensive evaluation of the report. Structural scoring by experts is adopted and the full mark is 100.

Financial performance

Previous empirical studies usually chose return on net assets or Tobin Q as the financial performance indicator, but did not take into account the "noise" of earnings management in these indicators. If this "noise" is not eliminated, it may affect the reliability of the empirical results. In order to eliminate it, this paper refers to the practices of Roychowdhury (2006), Cohen *et al*. (2008), Kim *et al*. (2012) and takes the net profit margin deducting non-recurring gains and losses after excluding the real earnings management factor as the financial performance indicator.

a. First of all, the measurement of real earnings management mainly refers to the practices of Roychowdhury (2006), Cohen (2008), Cohen & Zarowin (2010) and Li (2011), which is to measure the company's real earnings management activities from three aspects - sales control, production control and discretionary cost control. and use Model (1)-(5) to carry out calculation by industry and year. The specific calculation steps are as follows:

$$\frac{CFO_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 \frac{S_t}{A_{t-1}} + \beta_2 \frac{\Delta S_t}{A_{t-1}} + \varepsilon_t \quad (1)$$

Where, CFO_t refers to the company's net cash flow from its business activities at year t; A_{t-1} is the company's total assets at the end of the year t-1; S_t is the company's operation revenue at the year of t; and ΔS_t is the accrual of operation revenue at the year of t.

The cost of the product mainly consists of the cost of product sales plus the change in the inventory that year.

$$\frac{COGS_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 \frac{S_t}{A_{t-1}} + \varepsilon_t \quad (2)$$

$$\frac{\Delta NAV_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 \frac{\Delta S_t}{A_{t-1}} + \beta_2 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t \quad (3)$$

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 \frac{S_t}{A_{t-1}} + \beta_2 \frac{\Delta S_t}{A_{t-1}} + \beta_3 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t \quad (4)$$

Where, $PROD_t$ is the company's actual production cost at the year of t; $COGS_t$ is the cost of goods sales (operation cost) of the company at the year of t; ΔNAV_t is the inventory change of the company at the year of t.

$$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \beta_1 \frac{S_{t-1}}{A_{t-1}} + \varepsilon_t \quad (5)$$

Table 1
List of Definitions of Variables

Variable Type		Variable Symbol	Variable Name	Computing Method
Variables Investigated	Financial Performance	Unkroa	operation performance after excluding real earnings management behavior	(net profit after deduction of non-recurring profit and loss / average total assets)-(production manipulation degree-sales manipulation degree-expenses manipulation degree)
	CSR	CSR	corporate social responsibility	RKS scoring results of corporate social responsibility report
	Executive's Education Level	Edu	executive's education level	The education level of executives can be divided into technical secondary education or below, post-secondary education, undergraduate education, master education, doctor education or above, which are assigned the value of 1-6. The mean value is calculated and taken as the variable of executive's education level.
Control Variable	Characteristic Variable	Size	size of company	natural logarithm of the total assets
		TBQ	corporate value	Tobin' s Q value
		Debt	financial risk	asset-liability ratio
		B_risk	operation risk	asset turnover ratio
		Growth	growth	growth rate of operating income
		earn	surplus-deficit status	kroa= net profit after deduction of non-recurring profit and loss/average total assets；when kroa<0，it is 1，otherwise it is 0.
		big_4	audit cost	It is a dummy variable. If it is audited by one of the four international accounting firms, its value is 1, otherwise its value is 0.
		Rep	audit opinion	If standard opinion is given to the annual report, its value is 1, otherwise it is 0.
		E_financing	whether the company has equity financing in the next two years (allotment of share/secondary public offering)	If the answer is yes, its value is 1, otherwise its value is 0.
	Governance Variable	controller	type of controller	If the listed company is a state-controlled company, its value is 1, otherwise its value is 0.
		r_Indepe	ratio of independent directors	number of independent directors/ total number of board members
		T_O	duality	When Chairman and General Manager are assumed by the same person, its value is 1, otherwise its value is 0.
		Aud_c	audit committee	If there is an audit committee, its value is 1, otherwise it is 0.
		H_1	ownership concentration 1	shareholding ratio of the first majority shareholder
		H_5	ownership concentration 2	sum of shareholding ratio of the top five shareholders of the company
		Ins	institutional shareholdings	proportion of shares held by institutional investors of the listed company, such as funds, broker, brokerage products, QFII, insurance companies, social security fund, enterprise annuity and finance companies at the end of the year
		E_com	managerial compensation	natural log of the total salaries of the top three executives by salaries
		ESR	Executives' share-holding rate	Ratio of the share holding of executives to the total equity
		restatement	financial restatements	If there is financial statement, its value is 1, otherwise its value is 0.

Where, $DISEXP_t$ is the company's actual discretionary expenditure at the year of t, i.e. the sum of operating expenses and administration expenses. The discretionary expenditure here is replaced with the sum of sales cost and administration expenses.

The residual calculated by Model (1), (4) and (5) is exactly a manipulable value, which is respectively used as the abnormal manipulation measure index for the sales control, production control and discretionary expenditure. In theory, the residual is a random entry of regression equation, whose mean value should be zero. If its value is significantly different from zero, there is an abnormal manipulation.

Referring to the practices of Cohen *et al*. (2008) and Kim *et al*. (2012), a general index is constructed to measure the company's real earnings management degree:

$$RM_{i,t} = AB\_PROD - AB\_CFO - AB\_DISEXP \quad (6)$$

b. Then calculate the net profit margin after deducting non-recurring gains and losses

$$kroa_{i,t} = \frac{Unp_{i,t}}{AVA_{i,t}} \quad (7)$$

where, $Unp_{i,t}$ is the net profit after deducting non-recurring gains and losses during t years and $AVA_{i,t}$ is the average total assets of the company during t years.

c. And finally obtain the net profit margin after deducting non-recurring gains and losses without the real earnings management

$$Unkroa_{i,t} = kroa_{i,t} - RM_{i,t} \quad (8)$$

Executives' Education Level

The education level of executives can be divided into technical secondary education or below, post-secondary education, undergraduate education, master education, doctor education or above, which are assigned the value of 1-6. The mean value is calculated and taken as the variable of executive's education level.

Control variables

According to relevant research literatures, this paper considers control variables such as company size, corporate value, financial risk and so on. The interpretation of each variable is shown in (table 1):

Establishment of the empirical model

Glen *et al*. (2001), Gschwandtner (2005), Wintoki *et al*. (2012) and Zhang *et al*. (2013) suggest that the lagged term of the dependent variable in the dynamic model can satisfy the integrity of information if it lags for just two phases. According to their approach, in order to test the interactive and inter-temporal influences between corporate social responsibility and financial performance, between executives' educational level and corporate social responsibility, and the regulatory role of executives' education level, this paper constructs two dynamic models, both with two lag phases:

$$Unkroa\_(i,t) = \alpha\_0 + \alpha\_1\ CSR\_(i,t) + \alpha\_2\ Unkroa\_(i,t-1) + \alpha\_3\ Unkroa\_(i,t-2) + \alpha\_4\ Size\_(i,t) + \alpha\_5\ TBQ\_(i,t) + \alpha\_6\ Debt\_(i,t) + \alpha\_7\ B\_risk\_(i,t) + \alpha\_8\ Growth\_(i,t) + \alpha\_9\ earn\_(i,t) + \alpha\_10\ big\_4\_(i,t) + \alpha\_11\ \llbracket Rep \rrbracket\_(i,t) + \alpha\_12\ E\_financing\_(i,t) + \alpha\_13\ controller\_(i,t) + \alpha\_14\ r\_Indepe\_(i,t) + \alpha\_15\ T\_O\_(i,t) + \alpha\_16\ Audc\_(i,t) + \alpha\_17\ H\_1\_(i,t) + \alpha\_18\ H\_5\_(i,t) + \alpha\_19\ Ins\_(i,t) + \alpha\_20\ E\_com\_(i,t) + \alpha\_21\ ESR\_(i,t) + \alpha\_22\ restatement\_(i,t) + \alpha\_23\ \varepsilon\_(i,t) \quad (9)$$

$$CSR_{i,t} = \beta_0 + \beta_1 Edu_{i,t} + \beta_2 CSR_{i,t-1} + \beta_3 CSR_{i,t-2} + \beta_4 Size_{i,t} + \beta_5 TBQ_{i,t} + \beta_6 Debt_{i,t} + \beta_7 B\_risk_{i,t} + \beta_8 Growth_{i,t} + \beta_9 earn_{i,t} + \beta_{10} big\_4_{i,t} + \beta_{11} Rep_{i,t} + \beta_{12} controller_{i,t} + \beta_{13} r\_Indepe_{i,t} + \beta_{14} T\_O_{i,t} + \beta_{15} Audc_{i,t} + \beta_{16} H\_1_{i,t} + \beta_{17} Ins_{i,t} + \beta_{18} E\_com_{i,t} + \beta_{19} ESR_{i,t} + \beta_{20}\varepsilon_{i,t} \quad (10)$$

$$Unkroa_{i,t} = \lambda_0 + \lambda_1 Edu_{i,t-2} + \lambda_2 CSR_{i,t-2} + \lambda_3 Edu_{i,t-2} * CSR_{i,t-2} + \lambda_4 Unkroa_{i,t-1} + \lambda_5 Unkroa_{i,t-2} + \lambda_6 Size_{i,t} + \lambda_7 TBQ_{i,t} + \lambda_8 Debt_{i,t} + \lambda_9 B\_risk_{i,t} + \lambda_{10} Growth_{i,t} + \lambda_{11} earn_{i,t} + \lambda_{12} big\_4_{i,t} + \lambda_{13} Rep_{i,t} + \lambda_{14} E\_financing_{i,t} + \lambda_{15} controller_{i,t} + \lambda_{16} r\_Indepe_{i,t} + \lambda_{17} T\_O_{i,t} + \lambda_{18} Audc_{i,t} + \lambda_{19} H\_1_{i,t} + \lambda_{20} H\_5_{i,t} + \lambda_{21} Ins_{i,t} + \lambda_{22} E\_com_{i,t} + \lambda_{23} ESR_{i,t} + \lambda_{24} restatement_{i,t} + \lambda_{25}\varepsilon_{i,t} \quad (11)$$

Empirical Analysis

Descriptive statistics of variables

First, descriptive statistical analysis is performed on each variable in the model and the results are shown in Table 2, Figure 1, Figure 2 and Figure 3. As can be seen, the mean value of the corporate social responsibility (CSR) is 38.1068 (total score is 100), indicating that the overall performance of the sample companies in social responsibility is not good and needs to be further strengthened; the maximum value is 87.9478 and the minimum value is 13.33, indicating that there are large differences in the awareness and behaviors of social responsibility among sample companies. The net profit margin after deducting non-recurring gains and losses without the real earnings management factor is 8.24%, which is consistent with relevant data of the listed companies in China, indicating that the sample companies selected in this paper are representative. The mean value of executive's education level is 3.5274, indicating fairly sound education level of executives with sample companies. The maximum value is 5 and minimum value is 1.43, suggesting great gap between sample companies in terms of the education level of executives. Regarding the main control variables, the average shareholding ratio of the largest shareholder is 38.6585%, and average shareholding ratio of the top 5 shareholders is 54.8343%, which indicates that the equities of listed companies are relatively concentrated; the average asset-liability ratio is 49.5979%, indicating that the average debt level of listed companies is medium; loss making companies account for 14.02% of the total samples, indicating that about 86% of the sample companies are profitable; the average growth rate of companies is 13.0646%, indicating the average growth rate of the operating income of the companies is high; state-owned companies account for 63.71% of the total samples, indicating that more than two-thirds of the samples are state-owned. Among the control variables, financial risks, company growth, proportion of independent directors, equity concentration, proportion of shares held by organizations and

shareholding ratio of senior executives have very large differences between the maximum and minimum values. In order to reduce the effects of abnormal values on the empirical results, this paper Winsorizes each continuous variable by 1% up and down.

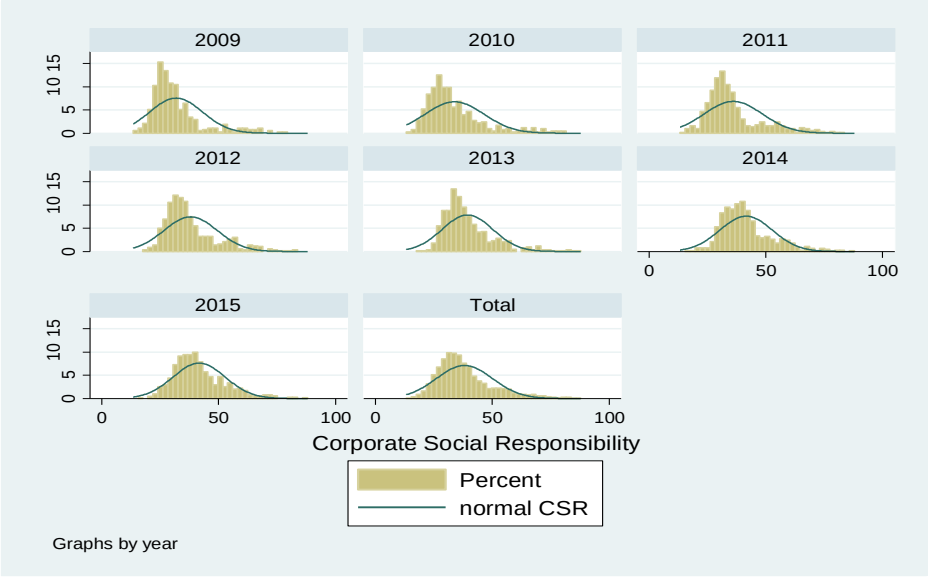

Figure 1. Distribution of Corporate Social Responsibility.

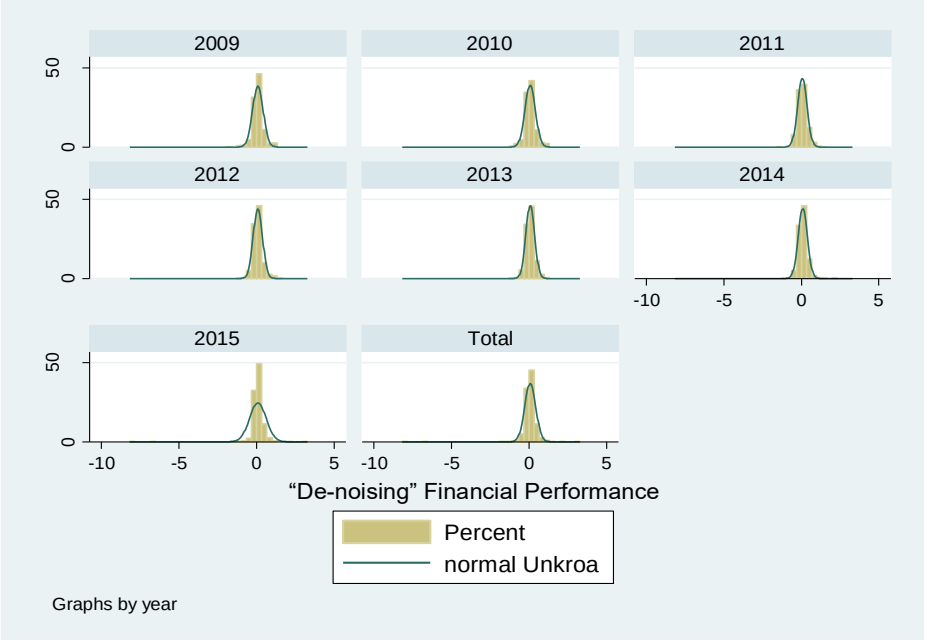

Figure 2. Distribution of "De-noising" Financial Performance.

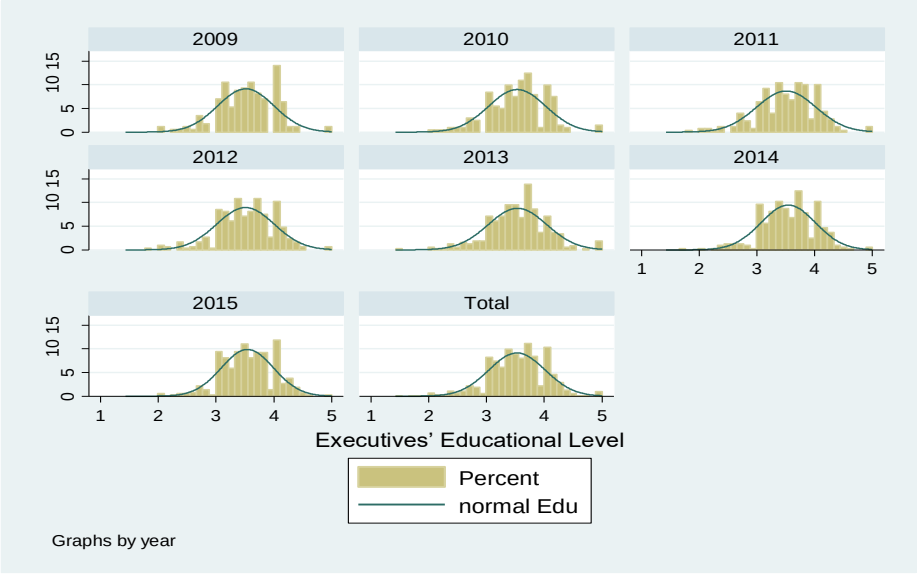

Figure 3. Distribution of Executives' Educational Level.

Table 2
Descriptive Statistics of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Unkroa	3665	0.0824	0.3553	-8.1561	3.2825
CSR	3665	38.1068	11.9702	13.33	87.9478
Edu	1932	3.5274	0.4873	1.43	5
Size	3665	22.9433	1.4363	19.5411	28.5087
TBQ	3665	1.9448	1.2962	0.6992	20.3643
Debt	3665	49.5979	20.1008	0.7969	134.4746
B_risk	3665	0.7265	0.5737	0.0015	7.8714
Growth	3665	13.0646	34.6130	-95.3214	729.2267
earn	3665	0.1402	0.3473	0	1
big_4	3665	0.1531	0.3601	0	1
Rep	3665	0.9905	0.0973	0	1
E_financing	3665	0.6753	0.4683	0	1
controller	3665	0.6371	0.4809	0	1
r_Indepe	3665	37.3260	5.9855	9.0909	80
T_O	3665	0.1574	0.3643	0	1
Aud_c	3665	0.9318	0.2521	0	1
H_1	3665	38.6585	16.2991	0.502	86.35
H_5	3665	54.8343	17.0166	0.827	99.23
Ins	3665	49.2583	22.6697	0	98.4892
E_com	3665	14.3919	0.7119	12.2096	17.3525
ESR	3665	2.7480	9.0590	0	84.325
restatement	3665	0.0592	0.2360	0	1

Correlation analysis of major variables

Figure 4 and Table 3 report the test results of the correlation between CSR and earnings management. It can be seen from Table 3 and Figure 4 that corporate social responsibility and financial performance are

significantly positively correlated at the level of 1%, indicating that enterprises which well performed the social responsibility have better financial performance. This results preliminarily support Hypothesis 1 in this paper. The executives' education level and corporate social responsibility are significantly positively correlated at the level of 1%, signifying the higher the education level of the executive is, the better the enterprise will perform its social responsibility. This preliminarily support Hypothesis 2. The executives' education level and financial performance are significantly positively correlated at the level of 1%, but the correlation coefficient is relatively small, demonstrating that the education level of executives doesn't have an obvious impact on the financial performance.

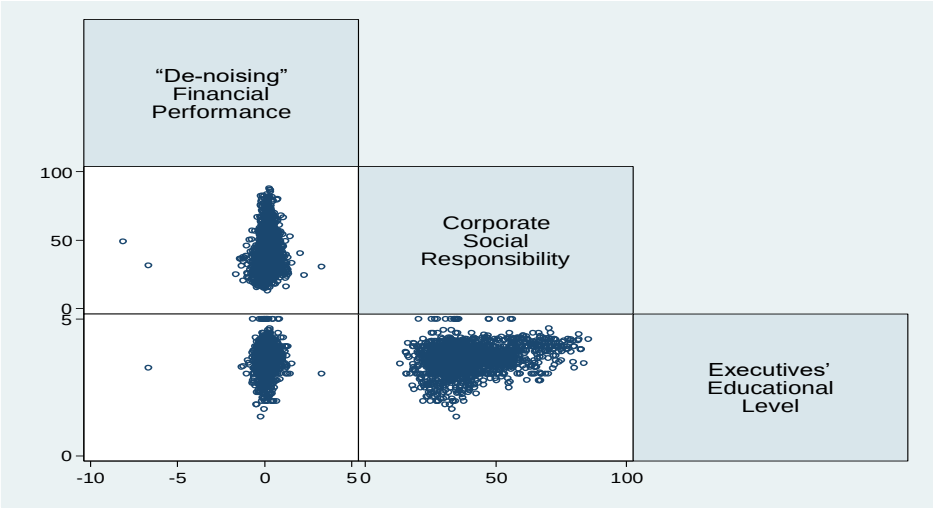

Figure 4. Scatterplot Matrix of the executives' education level, corporate social responsibility and financial performance

Table 3
Pearson Correlation Analysis of Key Variables

	Unkroa	CSR	Edu
Unkroa	1		
CSR	0.1102***	1	
Edu	0.0790***	0.2659***	1

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Regression analysis on the influence of corporate social responsibility on financial performance

In order to test the inter-temporal influence of corporate social responsibility on financial performance, we take social responsibility in the current phase, social responsibility lagging by one phase and social responsibility lagging by two phases as independent variables in Model (9) for regression analysis. Nickell (1981), Blundell & Bond (1998) and Wintoki *et al*. (2012) believe that, for a dynamic model involving lagged terms of dependent variables, using the OLS method and static fixed-effect regression may lead to bias and inconsistency of varying extents, while using the system GMM method may help obtain consistent estimates of the model. In this paper, as Model (9) involves lagged terms of dependent variables, the system GMM method is adopted for regression analysis.

Table 4
The Regression Results of the Impact of CSR on Financial Performance

dependent variable:		Unkroa	Unkroa	Unkroa
CSR		-0.0000521		
		(-0.04)		
	CSR_{t-1}		0.000877	
			(0.72)	
	CSR_{t-2}			0.00228**
				(2.19)
Size		0.0144	0.0147	0.00126
		(0.44)	(0.46)	(0.04)
TBQ		-0.00186	-0.00360	-0.00760
		(-0.09)	(-0.18)	(-0.47)
	TBQ_{t-1}	0.0546*	0.0500	0.0555**
		(1.79)	(1.60)	(2.33)
	TBQ_{t-2}	0.00185	0.00391	0.00268
		(0.11)	(0.23)	(0.19)
Debt		-0.000866	-0.000891	-0.000757
		(-0.84)	(-0.89)	(-0.87)
B_risk		0.0249	0.0345	0.0350
		(0.31)	(0.43)	(0.57)
Growth		0.00161***	0.00165***	0.00166***
		(5.34)	(5.34)	(6.26)
earn		-0.0402**	-0.0419**	-0.0410**
		(-1.97)	(-2.02)	(-2.30)
big_4		-0.0134	-0.0183	-0.0105
		(-0.26)	(-0.35)	(-0.29)
Rep		0.0525	0.0532	0.0550
		(1.20)	(1.18)	(1.41)
E_financing		0.0174	0.0192	0.0163
		(0.81)	(0.89)	(0.84)
controller		-0.219	-0.218	-0.211*
		(-1.62)	(-1.62)	(-1.81)
r_Indepe		0.000636	0.000611	0.000752
		(0.57)	(0.54)	(0.69)
T_O		0.0191	0.0199	0.0179
		(0.75)	(0.78)	(0.79)
Aud_c		-0.0138	-0.0135	-0.0126
		(-1.12)	(-1.09)	(-1.19)
H_1		0.00385*	0.00396*	0.00394**
		(1.77)	(1.84)	(2.30)
H_5		-0.00158	-0.00158	-0.00161
		(-1.05)	(-1.04)	(-1.15)
Ins		0.000786	0.000779	0.000803
		(1.47)	(1.42)	(1.64)
E_com		0.0521	0.0303	0.0504
		(0.46)	(0.26)	(0.51)
	E_com_{t-1}	0.152	0.169	0.159
		(1.22)	(1.32)	(1.41)
	E_com_{t-2}	-0.0766	-0.0805	-0.0835
		(-0.84)	(-0.91)	(-1.15)
ESR		0.00370	0.00354	0.00383
		(0.75)	(0.74)	(0.91)
restatement		0.00182	0.00235	-0.000385
		(0.11)	(0.14)	(-0.03)
Constant		-2.251**	-2.165**	-2.019***
		(-2.34)	(-2.30)	(-2.58)
	$Unkroa_{t-1}$	0.320***	0.333***	0.321***
		(4.30)	(4.44)	(5.64)
	$Unkroa_{t-2}$	0.0725*	0.0740*	0.0731**
		(1.88)	(1.92)	(2.15)
Wald		176.39	179.39	174.21
(p value)		(0.0000)	(0.0000)	(0.0000)
AR(1)		0.0000	0.0000	0.0000
(p value)				
AR(2)		0.6148	0.7839	0.7056
(p value)				
Sargan		0.3678	0.3998	0.3821
(p value)				
N		2194	2194	2194

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5
Regression Result of Executive's Education Level on CSR

Dependent Variable	CSR	CSR	CSR
Edu	-1.764		
	(-1.24)		
Edu_{t-1}		1.055	
		(1.22)	
Edu_{t-2}			2.560**
			(2.32)
TBQ	-1.241**	-0.500	-0.168
	(-2.05)	(-0.87)	(-0.33)
TBQ_{t-1}	0.707	0.356	-0.369
	(0.68)	(0.38)	(-0.41)
TBQ_{t-2}	-0.787	-0.748	-0.680
	(-1.38)	(-1.46)	(-1.46)
E_com	1.774	0.317	-2.868
	(0.57)	(0.10)	(-1.00)
E_com_{t-1}	-4.945	-4.627	-2.050
	(-1.57)	(-1.62)	(-0.82)
E_com_{t-2}	3.002	2.869	2.946
	(1.35)	(1.43)	(1.52)
ESR	0.556*	0.200	0.312
	(1.80)	(0.74)	(1.16)
ESR_{t-1}	-0.637**	-0.541*	-0.596**
	(-2.02)	(-1.93)	(-2.09)
ESR_{t-2}	0.0268	0.174	0.233
	(0.21)	(1.62)	(1.39)
Size	-0.229	-0.215	-0.161
	(-0.16)	(-0.17)	(-0.14)
Debt	-0.0570	-0.0377	-0.0576
	(-1.31)	(-0.92)	(-1.43)
B_risk	2.186	1.489	2.227
	(0.86)	(0.65)	(0.99)
Growth	-0.0145	-0.00562	0.00369
	(-1.41)	(-0.62)	(0.39)
earn	-1.445*	-1.968***	-1.365**
	(-1.76)	(-2.62)	(-1.99)
big_4	0.337	1.101	0.112
	(0.19)	(0.74)	(0.08)
Rep	-1.036	-0.723	-0.581
	(-0.99)	(-0.81)	(-0.65)
controller	1.171	1.490	2.675
	(0.26)	(0.38)	(0.76)
r_Indepe	-0.0800	-0.0744	-0.0295
	(-1.24)	(-1.24)	(-0.50)
T_O	-1.399	-0.639	-1.692
	(-0.81)	(-0.43)	(-1.25)
Aud_c	-0.970	-1.505**	-1.078**
	(-1.49)	(-2.54)	(-1.97)
H_1	-0.0327	-0.0363	-0.0248
	(-0.56)	(-0.65)	(-0.46)
Ins	-0.0173	-0.0211	-0.0247
	(-0.75)	(-0.97)	(-1.22)
Constant	35.36	44.04*	42.69*
	(1.55)	(1.86)	(1.72)
CSR_{t-1}	0.758***	0.721***	0.726***
	(12.91)	(12.94)	(12.16)
CSR_{t-2}	0.0292	0.0194	0.0149
	(0.61)	(0.46)	(0.38)
Wald	285.36	233.65	240.59
(p value)	(0.0000)	(0.0000)	(0.0000)
AR(1)	0.0000	0.0000	0.0000
(p value)			
AR(2)	0.8786	0.9701	0.7665
(p value)			
Sargan	0.2681	0.141	0.0578
(p value)			
N	1138	1105	1099

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6
Regression Results of the Impact of Executives' Education Level on the CSR and Financial Performance

Dependent Variable	(1)	(2)	(3)
	Unkroa	Unkroa	Unkroa
CSR_{t-2}	0.00228**		-0.00246
	(2.12)		(-0.32)
Edu_{t-2}		0.0391	-0.0155
		(1.16)	(-0.18)
$CSR_{t-2} * Edu_{t-2}$			0.00134
			(0.65)
TBQ	-0.00760	-0.0113	-0.0155
	(-0.36)	(-0.56)	(-0.68)
TBQ_{t-1}	0.0555*	0.0597	0.0586
	(1.76)	(1.40)	(1.33)
TBQ_{t-2}	0.00268	-0.0197	-0.0197
	(0.16)	(-1.11)	(-1.10)
E_com	0.0504	0.119	0.117
	(0.44)	(1.25)	(1.22)
E_com_{t-1}	0.159	-0.0548	-0.0474
	(1.26)	(-0.57)	(-0.48)
E_com_{t-2}	-0.0835	-0.0319	-0.0353
	(-0.95)	(-0.50)	(-0.58)
Size	0.00126	0.0472	0.0295
	(0.04)	(1.34)	(0.83)
Debt	-0.000757	-0.00201*	-0.00195*
	(-0.74)	(-1.69)	(-1.66)
B_risk	0.0350	0.170*	0.159*
	(0.44)	(1.85)	(1.71)
Growth	0.00166***	0.00117***	0.00131***
	(5.54)	(3.68)	(4.09)
earn	-0.0410**	-0.0216	-0.0250
	(-2.01)	(-0.81)	(-0.91)
big_4	-0.0105	0.0409	0.0463
	(-0.21)	(0.65)	(0.74)
Rep	0.0550	-0.0478	-0.0504
	(1.27)	(-0.88)	(-0.95)
E_financing	0.0163	-0.0000898	-0.00216
	(0.77)	(-0.00)	(-0.07)
controller	-0.211	-0.144	-0.128
	(-1.55)	(-1.27)	(-1.15)
r_Indepe	0.000752	0.000701	0.000506
	(0.67)	(0.46)	(0.34)
T_O	0.0179	0.0277	0.0254
	(0.71)	(0.68)	(0.60)
Aud_c	-0.0126	-0.0259	-0.0224
	(-1.06)	(-1.43)	(-1.25)
H_1	0.00394*	-0.00148	-0.00131
	(1.82)	(-0.68)	(-0.59)
H_5	-0.00161	-0.0000844	-0.000345
	(-1.05)	(-0.04)	(-0.18)
Ins	0.000803	0.00113	0.00116
	(1.50)	(1.58)	(1.59)
ESR	0.00383	0.00475	0.00470
	(0.78)	(1.08)	(1.04)
restatement	-0.000385	-0.0280	-0.0320
	(-0.02)	(-1.17)	(-1.31)
Constant	-2.019**	-1.626**	-1.126
	(-2.10)	(-1.98)	(-1.32)
$Unkroa_{t-1}$	0.321***	0.352***	0.371***
	(4.33)	(4.41)	(4.66)
$Unkroa_{t-2}$	0.0731*	0.128***	0.128***
	(1.89)	(3.08)	(3.04)
Wald	174.21	192.95	196.51
(p value)	(0.0000)	(0.0000)	(0.0000)
AR(1) (p value)	0.0000	0.0000	0.0000
AR(2) (p value)	0.7056	0.7619	0.7656
Sargan (p value)	0.73821	0.8513	0.7926
N	2194	1099	1099

t statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4 shows the regression results of Model (9). After considering the inter-temporal influence of corporate social responsibility on financial performance, this paper uses the system GMM method to perform regression analysis and finds that social responsibility in the current phase and lagging by one phase has no significant influence on financial performance, and that the social responsibility lagging by two phases has a significant positive influence on financial performance at the significance level of 5%. This shows that an enterprise fulfilling its social responsibilities will increase its financial performance, not in the current phase or one phase later, but in two phases later. In terms of control variables, the profit and loss level and type of the controller are significantly negatively correlated with financial performance while company value, growth rate of operating income and proportion of the largest shareholder are significantly positively correlated with financial performance. Other control variables and financial performance are not significantly correlated.

Regression analysis of the impact of executive's education level on corporate social responsibility

In order to test the inter-temporal influence of executive's education level on corporate social responsibility, we take executive's education level in the current phase, executive's education level lagging by one phase and executive's education level lagging by two phases as independent variables in Model (10) for regression analysis.

Table 5 shows the regression results of Model (10). After considering the inter-temporal influence of executive's education level on corporate social responsibility, this paper uses the system GMM method to perform regression analysis and finds that the executive's education level in the current phase and lagging by one phase has no significant influence on corporate social responsibility, and that the executive's education level lagging by two phases has a significant positive influence on corporate social responsibility at the significance level of 5%. This may be because it takes some time for the impact of executive's education level on the corporate social responsibility fulfillment to emerge and it also takes some time after the executive's decisions exert impact on the corporate social responsibility. Executives with higher education level tend to assume more social responsibility, always lagging two phases, rather than lagging one phase or at current period. This is not consistent with the idea that the education level of top management team has no significant impact on corporate social responsibility (Wang, 2016), because her research does not consider the cross-time impact of the two. In the aspect of control variables, the surplus-deficit status, executives' shareholding ratio lagging one phase, and the audit committee are significantly negatively correlated to corporate social responsibility, and the correlation between other control variables and corporate social responsibility are not significant.

Analysis of the regulatory role of executives' education level on the relationship between corporate social responsibility and financial performance

To test the regulatory role of executives' education level on the relationship between corporate social responsibility and financial performance, based on the estimation results of Model (9) and Model (10), regression analysis was made to Model (11) taking the corporate social responsibility lagging two phases, executive's education level lagging two phases, and the product of the two as the explanatory variables. And

the significance and direction of the product of the two are emphatically observed. Just like the regression analysis of Model (9) and Model (10), regression analysis was also made to Model (11) adopting system GMM method.

Table 6 shows the regression result of Model (11). The executives' education level doesn't have a significant impact on the relationship between corporate social responsibility and financial performance, thus Hypothesis 3 is not verified. Possible reason is that a person's value is not only the result of school education. The higher the education level is, the more knowledge executives will learn. However, the knowledge doesn't fully determine the moral level and social responsibility of executives. Some entrepreneurs with low levels of education may also attach great importance to performing corporate social responsibility. They are philanthropic-minded and actively take on corporate social responsibility, which in turn can improve the financial performance of their enterprises.

Robustness test

In order to test the reliability of the research conclusions, this paper performs robustness test in the following two aspects:

The net profit margin after deducting non-recurring gains and losses without the real earnings management being excluded is selected to indicate financial performance. The regression result is basically the same as that of the net profit margin after deducting the non-recurring profit and loss with the real earnings management being excluded. However, the significance levels are different – the regression result of the latter is significant at 5% (shown in Table 3 and Table 4), and that of the former is significant at 10% (due to space limitation, the regression results are omitted here).

Considering domestic and foreign studies haven't found a relatively correct and consistent method for CSR measurement, in order to reduce the influence of variable metric to the research conclusion, this paper adopted other methods to test the robustness of CRS using other approaches. Referring to the practice of Shen Hongtao *et al*. (2011), the social contribution value of per share is adopted to measure the fulfillment of CSR. The robustness testing result and the regression result of RKS' CSR report scoring is basically consistent (Due to space limitation, this regression result is omitted herein). The specific calculation formulas are as follows: social contribution value per share = (net profit + income tax expenses + business tax and surcharges + cash paid to the staff and for staff + payroll payable for current period - payroll payable for prior period + financing costs + donations – sewage charges and clearing expenses)/total number of shares.

Conclusions

Based on the upper echelons theory and stakeholder theory, and applying the System GMM method, this paper empirically analyzes the impact of executives' educational level and corporate social responsibility (CSR)

on "de-noising" financial performance, with the research samples collected from the A-share listed companies on the Shanghai and Shenzhen Stock Exchanges that disclosed their social responsibility information reports within the period of 2009 to 2015. Research results show that the corporate social responsibility lagging two phases has a significant positive effect on the current financial performance, the executives' educational level lagging two phases has a significant positive effect on the current corporate social responsibility and executives' education level plays no regulatory role in the impact of corporate social responsibility on financial performance. These results show that in the study of the influence of corporate social responsibility on financial performance and the impact of executives' education level on corporate social responsibility, the inter-temporal effect between the two must be taken into consideration respectively, and "de-noising" shall be conducted to financial performance, otherwise, it will be difficult to draw reliable conclusions. At the same time, these research conclusions help us deeply understand the impact of executives' education level on the relationship between corporate social responsibility and financial performance and are of enlightening significance for the enterprise to understand the function of executive education, to raise the sense of social responsibility and to fulfill the social responsibility consciously.

On final note, the samples selected in this paper are listed companies which disclose their social responsibility information reports to the public, which may have some limitations. Regarding this problem, we will try to include listed companies which do not disclose their social responsibility information reports for more comprehensive analysis in our future research.

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