

# The Characteristics of CEO's Education Background and the Effectiveness of Enterprise Internal Control: Chinese Evidence

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**ABSTRACT:** This paper took the listed companies as samples and discussed closely around the executive subject of the internal control—CEO. On the basis of distinguishing the CEO's degree education and professional title education, this paper fully discussed the influence of CEO's education level on the effectiveness of internal control of enterprise. This study found that the CEO's high degree education and high professional title education level are greatly helpful to improve the effectiveness of the internal control, and the further study also shows that the CEO's "double high" education level also helps to enhance the level of internal control effectiveness. This study inspired us that the enterprise internal control behaviors need to embed its CEO's education background, meanwhile, it also provides a guidance for the scientific implement of human resources management and especially provides a reference for the CEO selection.

**KEYWORD:** degree education; professional title education; the effectiveness of internal control; scientific management

## 1 INTRODUCTION

How to improve the level of internal control effectiveness, effectively protect the interests of the investors and enhance the efficiency of capital market has constantly been the important topic concerned by our Chinese government supervision department, and academic field. Since 2008, our enterprise internal control work continues to make progress, and gradually forms a standard system which centered at basic norms and guidance of the enterprise internal control. Besides, accord with the prevailing international COSO internal control framework in the main aspects (wang Jun, 2010), the enterprise management and control measures have been further completed and the scientific management has been enhanced. In recent years, scholars have constantly maintained close attention on this field and resulted a lot of research fruits. (Doyle et al., 2007; Liu Qiliang etc., 2012; Liu Qiliang, etc., 2013; Lu Dong etc., 2014; etc.).

However, the existing studies of the enterprise internal control are mostly unfolded from the internal financial characteristics and outside system of the enterprise, and they often ignore the role of people in the efficient operation of internal control. In fact, in the practice of the enterprise internal control, managers are responsible for leading the daily operation of enterprise internal control, among

which the CEO is especially critical. However, the existing literatures generally ignored the heterogeneity of administrators and homogenized the managers. It is obviously not consistent with reality. The differences of education background, age and other aspects between different managers always lead to different behaviors (Jiang Fuxiu etc., 2009). In addition, building an effective internal control system in a enterprise is a systematic project, involving all employees and all the business, which requires constant investment to build and self-perfect. If the enterprise is unable to find a manager who has a profound understanding of the practice of the internal control system and can simplify the operation effectively, it is likely to cause the enterprise fail to resume invalid physical cost. This shows that the core of the efficient operation of the internal control is the CEO's execution, and execution of the CEO is likely to be influenced by the factors such as education level.

## 2 LITERATURE REVIEW

The effective internal control needs everyone participate in the whole process. People is the main part of the internal control, AND is also the object of enterprise internal control. Specifically, in the practice of internal control, the CEO is in the center

of the internal control and can comparatively reflect the intention of managers(Lu Dong etc., 2014). However, because enterprise internal control basically covers the enterprise cash flow, material flow, information flow, human flow each and other business and issues, it needs to be controlled from the internal environment, activities control, means control and other eighteen aspects. Plus, the construction of enterprise internal control is a systematic project. The average cost of carrying out items in SOX404 reaches up to\$2.2 million and the average cost of auditing and authenticating is \$850000 (Krishnan et al., 2008). Hence, we can see the construction of enterprise internal control and the effective implementation requires a CEO to have deep understanding of the internal control system and the ability to simplify the operation efficiently, and this ability depends CEO's high education level. Otherwise, the company will pay the huge rectification and hidden costs.

Finkelstein and Hambrick(1996) found that the education level of managers is positively correlated with enterprises' market share, profits and other organizational performances. The existing studies have found that people's education background affects people's ways of thinking and behavior as well as the flexible abilities to process information (Hambrick, 1994), and has further impact on the effectiveness of internal control. Therefore, this paper put forward **hypothesis 1: the CEO's degree education is positively correlated with the effectiveness of enterprise internal control.**

The Upper Echelons Theory regards that CEOs and other executors 'profound professional theory and superb professional skills can bring them high prestige in actual management and more excellent performance in dealing with the complicated situation, which is helpful to the improvement of the effectiveness of internal control. Therefore, this paper put forward **hypothesis 2: the CEO's professional title education is positively correlated with the effectiveness of enterprise internal control.**

### 3 RESEARCH DESIGN

#### 3.1 sample selection and data sources

Considering "the enterprise basic internal control norms " is published in 2008, the samples selected in this paper are all non-financial a-share listed companies from 2008 to 2012. After eliminating ST or PT and companies whose data is seriously missed or whose CEO personal characteristics are difficult to judge, finally there remains 1111 sample. In addition, The Chinese listed company internal control index" comes from Shenzhen DI BO enterprise risk management technology co., LTD., and the rest data is from CSMAR database.

Agent variables reflecting the effectiveness of enterprise internal control. According to the interpretation of the enterprise internal control evaluation guidelines by the ministry of finance and accounting department, the effectiveness of internal control refers to the reasonable assurance that the establishment and implementation of enterprise internal control provide for the achievement of controlling objectives. Thus it can be seen that the effectiveness of the internal control system can be measured by the achieving situation of internal control strategies, management, reports, compliance and assets security (Chinese listed company internal control index research group, 2011). The Chinese listed company internal control index" launched by Shenzhen DI BO enterprise risk management technology co., LTD "di bo covers the execution results(market share and risk coefficient) of the enterprise strategy ,return (return rate and net profit margin of invested capital), the authenticity and integrity of information disclosure (the audit opinions and the financial restatement), the compliance legality (laws and regulations violation as well as lawsuit), asset security (asset value maintenance and improvement) . it also supplies and corrects the defects of internal control. In fact, this index reflect the main part of enterprise internal control goals, and it is also the manifestation of effective implementation of the internal control . Therefore, we should choose this index as the proxy variable to reflect the effectiveness of internal control.

#### 3.2 the test of model and relevant variables illustration

In order to test the hypothesis A, we establish the following model (1):

$$IC_{it} = \beta_0 + \beta_1 CEO_{it} + \beta_2 age_{it} + \beta_3 dual_{it} + \beta_4 indrate_{it} + \beta_5 lev_{it} + \beta_6 growth_{it} + \beta_7 roa_{it} + \beta_8 first_{it} + \beta_9 auditop_{it} + \beta_{10} big4_{it} + \sum Industry_{it} + \sum Year_{it} + \varepsilon_{it} \quad (1)$$

In the model (1) above, the dependent variable is the index of the internal control (IC), which reflects the effectiveness degree of the enterprise internal control. The higher the index shows, the higher the effectiveness degree of internal control is. Inspection variable stands for CEO's education background which specifically includes: the CEO's degree education (educa) and CEO's professional education level (profes). In the CEO's degree education, 1 represents secondary technical school degree and below; 2 symbolizes academy degree; 3 stands bachelor degree;4 is master graduate ,and 5 equals to doctor degree. In CEO's professional education level (profes), if the CEO owns the senior titles or assignment like senior accountant, senior economist, senior engineer, professor and researcher, it will be

expressed as 1, otherwise, it's 0. Control variables include the CEO's, personal characteristics, corporate finance and governance features, year and industry. Specifically, the Liu Qiliang et al. (2013) studied the influences of the centralized senior management to the internal control. Therefore, we control Some variables on behalf of CEO's personal characteristic, such as dual and so on. After referring to Doyle et al. (2007) , Liu Qiliang et al. (2012), Lu Dong et al. (2014)researches, we also control the asset-liability ratio (Lev), revenue growth rate (growth), return on assets (roa), company's biggest shareholder's ownership percentage(first),whether the financial statements audit is standard (auditop), the audit companies is the biggest accounting firms(big4), and finally the Year and Industry factors.

## 4 THE TEST OF RESULTS AND ANALYSIS

### 4.1 descriptive statistics

Table 1 provides the descriptive statistics of the main variables. In addition, we calculated the VIF (variance inflation factor) of every major variable. For the most, the values are within 2 and are far less than 10, which indicates that the model does not exist serious multicollinearity.

### 4.2 regression analysis

The table 2 examined the impact of CEO's education background on the effectiveness of enterprise internal control. In regression 1, the regression coefficient of CEO's degree education level (educa)

is positive ( $P < 0.01$ ), implying that the higher the CEO's education is, the more effective the internal control will be, which has supported hypothesis 1. In regression 2,the regression coefficient of CEO's professional title education level (profes) is positive ( $P < 0.01$ ), indicating that the higher CEO's professional title education level is, the more effective the internal control will be, which has supported the hypothesis 2. Moreover, in regression 3, when the CEO has "double high" ( high education, high professional title) education level, the regression coefficient of the "double high" education level is positive ( $P < 0.01$ ). The coefficient is 0.2407 and is higher than the coefficient of inspection variables in regression 1 and regression 2, which implies that when the CEO has "double high" education level, the effective level of enterprise internal control will become higher.

Table1 descriptive statistics of the main variables

Variable	N	Mean	SD	Median	Min	Max
IC	1111	6.8718	1.0673	6.9145	0.0000	9.7878
educa	1111	3.6103	0.7535	4.0000	2.0000	5.0000
profes	1111	0.7813	0.4136	1.0000	0.0000	1.0000
age	1111	48.198	5.5449	48.0000	31.0000	67.0000
dual	1111	0.1152	0.3194	0.0000	0.0000	1.0000
indrate	1111	0.363	0.0529	0.3333	0.1250	0.6000
lev	1111	0.5211	0.1925	0.5430	0.0071	0.9934
growth	1111	0.1509	0.6623	0.1025	-0.7716	21.0755
roa	1111	0.0432	0.0671	0.0339	-0.3464	0.4770
first	1111	0.3935	0.1617	0.3814	0.0449	0.8471
auditop	1111	0.9757	0.1541	1.0000	0.0000	1.0000
big4	1111	0.0522	0.2225	0.0000	0.0000	1.0000

Table 2 the test of hypothesis 1 and hypothesis 2

Variable	dependent variable					
	regression 1		regression 2		regression 3	
	coefficient	T-value	coefficient	T-value	coefficient	T-value
educa	0.1906***	4.9535				
profes			0.2094***	2.8161		
educa&profes					0.2407***	4.4183
age	0.0228***	4.0658	0.0148***	2.7909	0.0196***	3.6052
dual	-0.0632	-0.7578	-0.0486	-0.5735	-0.0494	-0.5883
indrate	0.9724	1.6221	0.9777	1.6105	0.8769	1.4666
lev	0.7252***	4.1210	0.7285***	4.1772	0.7020***	3.9869
growth	0.0078	0.1426	0.0019	0.0340	0.0054	0.0995
roa	7.1782***	8.0415	7.2037***	7.9153	7.3011***	8.1204
first	0.6218***	3.3988	0.6558***	3.5334	0.6162***	3.3356
auditop	1.0599***	3.7827	1.0473***	3.6141	1.0339***	3.6100
big4	0.4626***	2.9056	0.5421***	3.4113	0.4846***	3.0694
cons	3.1425***	5.8090	3.9966***	8.1332	3.8780***	7.8973
Year	control		control		control	
Industry	control		control		control	
R <sup>2</sup>	0.3183		0.3077		0.3134	
F	14.77***		14.07***		14.44***	
Obs	1111		1111		1111	

Ps: (1) the number in the table is estimative coefficient and the t value after adjusted by Robust standard error (2)\*\*\*, \*\*, \*stand for the significance level of 1%, 5% and 10% respectively.

### 4.3 the robustness test

In order to improve the reliability of the results in this paper, we also conducted the following robustness test: (1) Considering the extreme value of variables might have potential adverse effects, this paper has carried on 1% Winsorize process on all continuous variables and has redone the multivariate regression analysis. And the results shows that the main conclusions of this paper still robust; (2) Considering the function of the CEO's education is likely to be reflected on the next phase of the effectiveness of internal control, we improved the model (1) and examined the influence of the CEO's education level on internal control effectiveness in next phrase. And the basic conclusions stay no change.

## 5 CONCLUSION AND IMPLICATIONS

This paper took the listed companies as samples, and on the basis of senior manager echelon theory", discussed the influence of CEO's education background on the effectiveness of enterprise internal control. Different from previous researches, the main conclusions and contributions of this paper include the following two aspects: Firstly, based on the enterprise internal control theory and practice and on the basis of distinguishing CEO degree education and professional title education, this paper fully revealed the influence of CEO's education background on the effectiveness of enterprise internal control and proved that the CEO's high degree education and high professional title education contribute to the improvement of the effectiveness of internal control. Secondly, this paper was no longer limited to analyze the traditional frame of enterprise internal control research from the perspective of corporate finance, governance and the system characteristics (Ashbaugh - Skaife et al., 2007 LuDong etc., 2014; etc.). Instead, it chose the heterogeneity of CEO as entry point and found that the CEO's high degree education and high professional title education level are helpful to improve the effectiveness of enterprise internal control, and the further study also showed that the CEO's "double high" (high degree education and high professional title education) level is more helpful to enhance the effectiveness of internal control.

The research results above indicate that the CEO's degree education and high professional title education background are the key to improve the effectiveness of enterprise internal control at this stage. The results of this paper open up a new angle for us to better understand the enterprise internal control behaviors and also provide a specific guidance and reference for the human resources management and especially for the board of directors

to select the appropriate CEO to improve the effectiveness of enterprise internal control.

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