Equity Concentration and Capital Investment Efficiency of Companies in the Republic of Congo

Mourou Roscelin Serge Carrel[1]

[1] School of Economics, Shanghai University, Shanghai, China

Correspondence: MOUROU Roscelin Serge Carrel, School of Economics, Shanghai University, Shanghai, 716 JinQiu Road, Baoshan District, China. Tel : 86-157-2101-1047. E-mail: rosecarmourou@yahoo.fr

Abstract

This paper is based on the research samples of Congolese companies on the stock exchanges from 2004 to 2011. It directly measures the efficiency of capital investment by using investment-internal cash flow sensitivity, and uses the multilinear regression model to study the impact of corporate governance issues such as board independence, equity concentration and executive shareholding on capital investment efficiency. The results show that: Ownership concentration cannot effectively reduce the investment in Congolese companies - internal cash flow sensitivity. The concentration of ownership can reduce agency conflicts arising from investments - internal cash flow sensitivity.

Keywords: ownership concentration, investment-internal cash flow sensitivities, efficiency of capital investment

1. Research Methods

This paper mainly uses normative research methods and quantitative analysis methods to study equity concentration and executive shareholding on the efficiency of capital investment. Among them, the research hypothesis of the paper is obtained by using normative research methods, and the multilinear regression analysis method and chart method in econometrics are used to analyze and explain the equity concentration and executive shareholding on the capital investment efficiency of companies in the Republic of Congo.

2. Literature Review and Research Hypothesis.

Studies in the literature have found that corporate ownership in most countries is not highly decentralized but rather concentrated. The equity of the Congolese companies shows a high degree of concentration, because ownership is concentrated in the hands of major shareholders, large shareholders have sufficient ability to control these companies, and through various decisions affecting Congolese companies to obtain control of private income. Therefore, the core agency problem of modern enterprises is transformed from the agency conflict between shareholders and managers to the conflict of interest between large shareholders and small and medium-sized shareholders. At present, most of the domestic and foreign literatures use Richardson's expected investment model to distinguish the company's investment from overinvestment and underinvestment, and then study the impact of equity concentration or major shareholder control on the company's investment behavior.

For example, a study of the pyramid equity structure by the literature found that the greater the separation of control and cash flow rights, the more obvious the expansion opportunities for major shareholders to transfer distributable profits to fixed asset investment funds, increasing the likelihood of overinvestment. Rui and Wang found that in countries where small and medium-sized investors are less protected, the ultimate controlling shareholder tends to use fixed asset investment directly to seek stability of control and damage corporate value while increasing the pyramid control hierarchy to protect the interests of enterprise groups.

Koné and Ondo Ossa. A conducted a cause analysis of the company's investment behavior under the conflict between the controlling shareholder and the minority shareholder's agent.

Dornbusch (1976) examined the correlation between major shareholder control and inefficient investment of the republic of Congo companies after the share-trading reform, taking the 2007-2009 sample of Congolese companies. The research shows that the phenomenon of inefficient investment of samples companies in Congo is serious, and the overall performance is insufficient investment, and the equity concentration and inefficient investment are positive. Based on the sample of Congolese companies from 2007 to 2009, Ramsey et al.

analyzed the impact of the equity structure of listed companies on investment behavior using the multilinear regression model. It is found that the investment behavior of Congolese companies is positively related to equity concentration. Based on the sample of Congolese companies from 2005 to 2008, Koné and others used Richardson's expected investment model to measure the efficiency of capital investment, and studied the relationship between controlling shareholders' control, cash flow rights and the degree of separation of powers and over-investment behavior of companies in the republic of Congo.

The study found that the controlling shareholders of Congolese manufacturing companies have the dual influence of support and hollowing out. Based on the data of the republic of Congo small and medium-sized board manufacturing companies in 2009, Roche. C and Touna M. studied the impact of equity concentration and executive shareholding on the agency costs of Congolese companies. It is found that the high concentration of equity can reduce the cost of agency, while the shareholding of managers cannot play a role in reducing the cost of agency. It's found that the high concentration of equity can reduce the cost of agency, while the shareholding of managers cannot play a role in reducing the cost of agency. Using Congolese companies from 2001 to 2005 as a study sample, Koné and Touna M. used as a study to see whether investor protection can alleviate the company's under-investment and the impact of investor protection on the company's cash holding behavior.

Empirical results confirm that better investor protection can alleviate the company's underspending to some extent and restrain the controlling shareholder's motivation to transfer assets, thus prompting external investors to evaluate the higher value of the company's cash holdings. Empirical results confirm that better investor protection can alleviate the company's underspending to some extent and restrain the controlling shareholder's asset transfer motive, thus prompting external investors to evaluate the higher value of the company's cash holdings.

The study also found that the higher cash flow rights of controlling shareholders of companies in the Republic of Congo correspond to higher control, which results in a higher level of cash and a lower cash value.

Richardson expects empirical research on investment models that show that government-controlled companies overinvest more than private holdings, and that improvements in the external governance environment have curbed overinvestment to some extent. This study provides some explanation for the large-scale inefficient investment since Congolese government reform and opening up.

Looking at the above literature, Richardson's expected investment model is used to measure the efficiency of capital investment, and the sample duration is short. Therefore, we study the capital investment efficiency of the Republic of Congo companies based on the investment-internal cash flow sensitivity method in this section and analyze the impact of equity concentration on capital investment efficiency. Based on the above theoretical analysis and literature review, this section presents the following two research hypotheses to be tested:

Hypothesis 1: Equity concentration cannot effectively reduce the sensitivity of investment-internal cash flow, that is, equity concentration cannot improve the capital investment efficiency of companies in the Republic of Congo.

Hypothesis 2: The higher the concentration of equity, the less sensitive the investment-internal cash is due to proxy conflicts.

3. Samples and Data

This section is a sample of companies in the Republic of Congo of exchanges from 2004 to 2011. The following types of companies were excluded: (1) companies that excluded insolvent; (2) companies that excluded ST and ST; (3) companies that excluded incomplete and unusual data; and (4) companies that excluded initial public offerings in the current and previous years. In the end, we selected a total of 2,532 valid samples from the manufacturing industry over eight years. All data in this section are from the Congolese Economic and Financial Research Database, and all data processing and statistical analysis are processed using EXCEL2003 and econometric software Eviews 7.0.

4. The Variable Description and Model

Table 1. Main variable and definitions

Variables	Name of the Variables	Definition of the variable
Invest	New Capital Investment	Invest=(cash recovered from the construction of fixed assets, intangible assets + other long term assets) / the book value of the total capital
Q	Tobin'Q value	Q= Book value of tradable stock market value + book value of non-tradable shares + book values of liabilities / the book value of the total assets
Lev	Asset-liability ratio	Total liabilities / total assets
Cash	Cash only amount	(Monetary fund's + short investments) / book value total assets
Size	The size of the enterprise	The nature pair of book values of the total assets of the enterprise
CFO	Internal Cash Flow	Net cash flow / book value of total assets distribution activities
Sale	Sales revenue	Book value of main business income / total assets
HER	Equity concentration	The sum of the squared shareholdings of the top five shareholders

To test the research hypothesis in this section, the following multilinear regression model is constructed to measure the impact of equity concentration on investment-internal cash flow sensitivity: as shown in Table 1, we have also added control variables such as internal cash flow, asset-liability ratio, cash holdings and enterprise size to the regression equation. Finally, the multilinear regression equations constructed in this section are:

$$Invest_{i,t} = \beta_0 + \beta_1 Q_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 HER_{i,t} \times CFO_{i,t} + \beta_4 Lev_{i,t-1} + \beta_5 Sale_{i,t-1}$$
$$+ \beta_6 Cash_{i,t-1} + \beta_7 Size_{i,t-1} + \varepsilon_{i,t} \tag{1}$$

In the model, $Invest_{i,t}$ represents the company new capital investment for the i,t year; $Q_{i,t-1}$ is the Tobin'Q value for the company first year; $CFO_{i,t}$ is the company internal cash flow for the year i,t; $HER_{i,t}xCFO_{i,t}$ is the multiplication of equity concentration and internal cash flow to test the impact of equity concentration on investment-internal cash flow sensitivity; $Lev_{i,t-1}$ is the company Asset-liability ratio for $year_{i, t-1}$; $Sales_{i,t-1}$ is the company's $i,t-1$ year of sales revenue; $Cash_{i,t-1}$ is the company cash onlly amount for $i,t-1$; $Size_{i,t-1}$ is the size of the enterprise $i,t-1$ year.

The model represents the company's new capital investment in year one; Tobin Q value for the company's first year; internal cash flow for the company's first year; multiply equity concentration with internal cash flow to test the impact of equity concentration on investment-internal cash flow sensitivity; asset-liability ratio for the company's first year; sales revenue for the company's first year; cash holdings for the company's first year; and size for the company's first year.

5. Empirical Results and Analysis

5.1 Descriptive Statistics

In this paper, Eviews 7.0 software is used to make descriptive statistics on the relevant variables of the whole sample, and the descriptive statistics of each variable are given in Table 2.

Table 2. Variable descriptive statistics

Variable	Invest	Q	CFO	Lev	Sale	Cash	Size	HER
Average	0.059659	1.951794	0.042002	0.542585	0.700159	0.205877	21.29701	0.200003
Middle value	0.044813	1.473100	0.042959	0.446957	0.585884	0.153644	21.15545	0.166736
Maximum Value	0.551521	41.38180	0.708195	96.95931	15.89572	0.888988	26.15630	0.748524
Minimum value	-0.824553	0.000100	-1.568020	2.01E-13	1.99E-13	1.74E-13	16.50829	0.000113
Standard deviation	0.067371	2.050647	0.086257	2.317041	0.576043	0.169662	1.105903	0.133114
Sample size	2532	2532	2532	2532	2532	2532	2532	2532

5.2 The Regression Results of the Full Sample

Table 3 shows the regression results of the entire sample. As can be seen from the full sample regression analysis, the coefficient of internal cash flow is 0.135554, and it is significantly different from zero at the level of 1%, indicating that the investment is significantly sensitive to internal cash flow. The multiplier (HERXCFO) has a coefficient of 0.349529 and is significantly different from zero at the 1% level, which strongly supports the research hypothesis I in this section, which states that equity concentration does not reduce investment-internal cash flow sensitivity. This also shows that the equity concentration of the Congolese companies cannot improve the efficiency of capital investment.

Table 3. Full sample regression analysis table

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.029519	0.027500	-1.073430	0.2832
Q	-0.002951	0.000761	-3.877649	0.0001***
CFO	0.135554	0.015257	8.884927	0.0000***
HERXCFO	0.349529	0.061042	5.726077	0.0000***
Lev	8.20E-05	0.000642	0.127891	0.8982
Sale	-0.006513	0.002312	-2.816876	0.0049***
Cash	-0.019126	0.007769	-2.462001	0.0139**
Size	0.004439	0.001270	3.494328	0.0005***
R-squared	0.067532	Adjusted	R-squared	0.064946

5.3 Test Result Grouped by Proxy Conflict

Let's examine hypothesis two: the higher the concentration of equity, the less sensitive the investment- internal cash is due to proxy conflicts.

"Similar to section III, this section also reflects the strength of the company's agency conflict with internal cash flows." Depending on the size of the CFO, we divided the sample companies into two groups of 1,266 valid samples on average. A large group of CFOs act as a high proxy conflict group and a small group of CFOs act as a low proxy conflict group. Regression results can be found in Tables 4 and 5.

Table 4. High agent conflict group regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.007474	0.040929	0.182598	0.8551
Q	-0.001938	0.001208	-1.604526	0.1089
CFO	0.111415	0.045065	2.472329	0.0136**
HERXCFO	-0.232294	0.119508	-1.943754	0.0521*
Cash	-0.076720	0.013244	-5.792741	0.0000***
Lev	-0.044571	0.009127	-4.883565	0.0000***
Sale	-0.007259	0.002891	-2.511115	0.0122**
Size	0.004833	0.001875	2.578107	0.0100**
R-squared	0.046201	Adjusted R-squared		0.040873

From Table 4, it can be seen that there is significant investment-internal cash flow sensitivity of listed companies in high agent conflict groups (CFO coefficient is 0.111415, and significantly different from zero at the level of 5%, that is, the capital investment efficiency of listed companies in high agent conflict groups has not reached the optimal efficiency state). The coefficient of HERXCFO is -0.232294, and it is significantly negative at the 10% level, which strongly supports the research hypothesis II in this section, which shows that equity concentration can reduce the investment-internal cash flow sensitivity of high agent conflict listed companies, thus improving the efficiency of their capital investment.

Table 5. Low agent conflict group regression analysis table

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.008408	0.037984	-0.221368	0.8248
Q	-0.006612	0.001332	-4.964658	0.0000***
CFO	0.124217	0.037475	3.314662	0.0009***
HERXCFO	-0.389131	0.187864	-2.071343	0.0385**
Cash	0.008901	0.009926	0.896762	0.3700
Lev	0.001936	0.000835	2.317255	0.0207**
Sale	-0.005908	0.004101	-1.440817	0.1499
Size	0.003326	0.001767	1.882560	0.0600*
R-squared	0.065700	Adjusted R-squared		0.060481

From Table 5, it can be seen that the investment-internal cash flow sensitivity of listed companies in the low-agent conflict group is significantly positive at 1%, that is, the capital investment efficiency of the

Congolese companies in the low-agent conflict group is not high (it may be that factors other than the proxy conflict lead to higher investment-internal cash flow sensitivity, such as the company's financing constraints, management's irrational behavior, the company's institutional environment and other factors). However, the coefficient of HERxCFO is significantly negative at the level of 5%, which strongly supports the research hypothesis II in this section that equity concentration can effectively reduce the investment-internal cash flow sensitivity caused by agent conflict.

To sum up, from the empirical findings of this section, it can be seen that although equity concentration in general cannot effectively reduce the investment-internal cash flow sensitivity of listed companies (from the existing literature, it is believed that the factors that lead to investment-internal cash flow sensitivity are the company's financing constraints, agent conflicts, management's irrational behavior, the company's institutional environment and other factors), but equity concentration can effectively reduce the investment-internal cash flow sensitivity caused by agent conflicts, That is to say, moderate equity concentration can ease the agency conflict between shareholders and management, and thus improve the efficiency of capital investment.

6. Conclusion and Suggestions

This paper systematically studies the equity concentration and executive shareholding on the efficiency of capital investment. This paper selects the companies of exchanges from 2004 to 2011 in the Republic of Congo as a research sample. It uses the multilinear regression model for empirical testing, and obtains the following conclusions:

Although equity concentration cannot effectively reduce the investment-internal cash flow sensitivity of Congolese companies in general (from the existing literature, it is believed that the factors that lead to investment-internal cash flow sensitivity include the company's financing constraints, proxy conflict, management's irrational behavior, the company's institutional environment and other factors), but equity concentration can effectively reduce the investment-internal cash flow sensitivity caused by agent conflict, that is, moderate equity concentration can alleviate the proxy conflict between shareholders and management, thereby improving the efficiency of capital investment.

In response to the above empirical conclusions, we make the following recommendations:

First, establish effective executive incentives. Through the effective executive incentive mechanism, the agency conflict between shareholders and management in the republic of Congo companies can be alleviated, so as to reduce the sensitivity of investment-internal cash flow and improve the efficiency of capital investment of companies in Congo.

Second, improve the governance structure of Congolese companies. Both equity concentration and executive shareholding have not effectively reduced the sensitivity of investment-cash flow caused by agent conflict, so the capital investment efficiency of their companies has not reached optimal efficiency due to the existence of agency conflict. Therefore, we should improve the corporate governance structure, strengthen the construction of the board of directors, supervisory board and senior management to ease the agency conflict of listed companies, improve the efficiency of capital investment of companies in the Congo.

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