Study on the Influence of Accounting Conservatism on Investment Efficiency—Based on the Perspective of Board Characteristics

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Keywords: Board Characteristics, Accounting Conservatism, Investment Efficiency.

Abstract. This paper uses the data of Chinese a-share listed companies from 2014 to 2017 to empirically test the influence of accounting conservatism on investment efficiency and the influence of board characteristics on the relationship between them. The study finds that accounting conservatism inhibits over-investment and aggravates under-investment; The relationship between accounting conservatism and excessive investment is significantly affected by the dual posts, the number of board meetings and board compensation incentives. The relationship between accounting conservatism and under-investment is significantly affected by the dual posts and board compensation incentive.

Introduction

Investment efficiency is crucial for the survival of enterprises. However, China is in the period of economic transition, and there are problems of information asymmetry and agency conflicts, which lead to over-investment or under-investment of enterprises. Accounting conservatism can effectively reduce the information asymmetry and alleviate the principal-agent conflict. However, existing studies have not considered the impact of different board characteristics on the relationship between accounting conservatism and investment efficiency. The board of directors, as the optimal organization for corporate supervision and control decisions, can affect the accounting conservatism level and the investment efficiency of enterprises by implementing effective supervision and incentives for the management. Therefore, it is necessary to study the influence of board characteristics on the relationship between accounting conservatism and investment efficiency.

Theoretical Analysis and Research Hypothesis

Accounting Conservatism and Investment Efficiency

In terms of over-investment: In order to pursue the maximization of their own interests, managers tend to expand the size of the enterprise, which eventually leads to over-investment. The existence of accounting conservatism requires to timely recognize possible losses, and force managers to timely exit bad projects \cite{1,2}. In terms of under-investment: Accounting conservatism gains and losses are asymmetric, which leads to systematic underestimation of corporate earnings, and reduces external investors' expectations of corporate profitability, and investors are reluctant to invest in companies to avoid risks \cite{3}. Based on this, this paper proposes the following hypotheses:

Hypothesis 1a: Accounting conservatism inhibits over-investment.

Hypothesis 1b: Accounting conservatism exacerbates under-investment.

The Influence of Board Characteristics on Accounting Conservatism and Investment Efficiency

Concurrently as chairman and general manager of the enterprise will decrease the independence of the board of directors, Moreover, the board of directors is easily controlled by the management when making investment decisions and supervising management, which will lead to the low...
efficiency of board of directors' supervision, the board of directors cannot effectively limit management's opportunistic behavior [4], the demand for robustness also reduce accordingly, thus a certain effects on the investment efficiency. Based on this, the hypothesis is put forward:

Hypothesis 2a: Dual posts weaken the inhibiting effect of accounting conservatism on over-investment.
Hypothesis 2b: Dual posts weaken the aggravating effect of accounting conservatism on under-investment.

Each board meeting is held for a short time. In the limited time, it is not all about making decisions on the investment of the enterprise, but most of the time is spent in communicating the daily affairs, which results in low work efficiency. And most of the listed companies in China, the board meeting is just a form, they are usually held to resolve major problems in a company, therefore, the demand for accounting conservatism is less, and then affect the investment efficiency. Based on this, the hypothesis is put forward:

Hypothesis 3a: The number of board meetings weakens the inhibiting effect of accounting conservatism on over-investment.
Hypothesis 3b: The number of board meetings weakens the aggravating effect of accounting conservatism on under-investment.

Board compensation incentive is a crucial incentive factor for board members to work hard actively, which is directly related to the performance of responsibilities of the board of directors. It has a direct impact on the working efficiency. The greater the remuneration, the stronger the willingness of the board of directors to supervise the management, which will avoid managers making investments that are detrimental to maximizing shareholder value. And increase the demand for accounting conservatism, thus affecting the investment efficiency. Based on this, the following hypotheses are proposed:

Hypothesis 4a: Board compensation enhances the inhibiting effect of accounting conservatism on over-investment.
Hypothesis 4b: Board compensation enhances the aggravating effect of accounting conservatism on under-investment.

Research Design

Data Sources

This paper selects the data of Chinese a-share listed companies from 2014 to 2017. The data selection principles are as follows:(1) excluding listed companies in the financial industry;(2) excluding listed companies that have been listed for less than three years;(3) excluding companies with ST and *ST;(4) excluding companies with net assets less than 0 and missing data. The data came from the CSMAR database, and eventually 5900 samples were obtained.

Variable Definition

Explained variable: In this paper, Richardson's (2006) model was used for reference to conduct regression. If the residual of the regression is less than 0, it indicates under-investment(UI), and it is expressed in absolute value. If the residual is>0, it represents over investment (OI).

Explanatory variables: Khan and Watts (2009) accounting conservatism index (CSCORE) model is selected in this paper, which can measure the size of accounting conservatism and is suitable for the purpose of this study. The characteristics of the board of directors include: (1)Dual posts (DUAL), Setting dummy variables, if the chairman is also the general manager, it is 1, otherwise it is 0. (2)number of board meetings (BM) is equal to the number of board meetings held in a year; (3) board compensation (BC) is equal to the natural logarithm of the total compensation of the top three board members.

Controllable variables include: (1)The largest shareholder shareholding ratio(Top1). (2)Salary, which is equal to the natural logarithm of the total compensation of the top three executives of the company; (3)Turnover, which is equal to the ratio of business income and average total assets; (4) Fcf, which is equal to the ratio between the net cash flow generated by business activities and the
Model Design

Building a model (1) to verify the relationship between accounting conservatism and investment efficiency; Model (2) was established to verify the impact of different board characteristics on the relationship between accounting conservatism and investment efficiency of enterprises. N was used to represent the board characteristics in the model, and each variable was separately regression.

\[
OI(\bar{UI}) = \alpha_0 + \alpha_1 \text{CSCORE}_{i,t-1} + \alpha_2 \text{Top1}_{i,t-1} + \alpha_3 \text{Salary}_{i,t-1} + \alpha_4 \text{Turnover}_{i,t-1} \\
+ \alpha_5 \text{Fcf}_{i,t-1} + \sum \text{Year} + \sum \text{Industry} + \varepsilon .
\]

(1)

\[
OI(\bar{UI}) = \beta_0 + \beta_1 N_{i,t-1} + \beta_2 \text{CSCORE}_{i,t-1} + \beta_3 N_{i,t-1} \ast \text{CSCORE}_{i,t-1} + \beta_4 \text{Top1}_{i,t-1} \\
+ \beta_5 \text{Salary}_{i,t-1} + \beta_6 \text{Turnover}_{i,t-1} + \beta_7 \text{Fcf}_{i,t-1} + \sum \text{Year} + \sum \text{Industry} + \varepsilon .
\]

(2)

Empirical Results and Analysis

Descriptive Statistics

According to the descriptive statistical results of each variable, it can be known that: in the final 5900 research samples, the over-investment was 2238 (37.9%), and the under-investment was 3662 (62.1%), which indicates that the under-investment is a large proportion of listed companies. The average value of accounting conservatism is 0.026, indicating that accounting conservatism exists in Chinese listed companies as a whole. The average value of Dual was 0.215, it indicates that enterprises rarely use this approach. The standard deviation of the number of board meetings is 4.216, indicating that there is a big gap between companies. The standard deviation of board compensation is 0.820, which indicates that the board compensation varies greatly.

Regression Analysis

Regression Results of Accounting Conservatism and Investment Efficiency.

Table 1. Regression Analysis of Accounting Conservatism and Investment Efficiency.

<table>
<thead>
<tr>
<th>Variable</th>
<th>OI</th>
<th>UI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (t)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>VIF</td>
</tr>
<tr>
<td>CSCORE</td>
<td>-0.055***</td>
<td>0.70</td>
</tr>
<tr>
<td>Top1</td>
<td>0.000</td>
<td>0.85</td>
</tr>
<tr>
<td>Salary</td>
<td>0.000</td>
<td>0.74</td>
</tr>
<tr>
<td>Turnover</td>
<td>-0.007***</td>
<td>0.73</td>
</tr>
<tr>
<td>Fcf</td>
<td>0.075***</td>
<td>0.83</td>
</tr>
<tr>
<td>Year, Indu</td>
<td>control</td>
<td>control</td>
</tr>
<tr>
<td>N</td>
<td>2238</td>
<td>3662</td>
</tr>
<tr>
<td>Adj.R2</td>
<td>0.109</td>
<td>0.165</td>
</tr>
<tr>
<td>The F value</td>
<td>4.952</td>
<td>31.281</td>
</tr>
</tbody>
</table>

Note: (1) ***, ** and * mean significant at 1%, 5% and 10% respectively.
Table 1 shows that:
For the sample companies with over- investment, the coefficient of CSCORE is -0.055, which is significantly negative at the level of 1%, indicating that accounting conservatism will inhibit over investment, Hypothesis 1a has been verified. For the sample companies with under- investment, the
accounting conservatism is 0.012, which has passed the significance test of 1%, indicating that accounting conservatism aggravates the under-investment, and hypothesis 1b has been verified. There is no multicollinearity in the model.

**Regression Results of Board Characteristics on the Relationship between Accounting Robustness and Investment Efficiency**

Table 2. Regression Results of Board Characteristics, Accounting Robustness and Investment Efficiency.

<table>
<thead>
<tr>
<th>Variable (1)</th>
<th>Over-investment</th>
<th>(2) N=Bm</th>
<th>(3) N=Bc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSCORE</td>
<td>-0.052***</td>
<td>-0.136***</td>
<td>-0.557**</td>
</tr>
<tr>
<td></td>
<td>(-2.89)</td>
<td>(-3.33)</td>
<td>(-2.59)</td>
</tr>
<tr>
<td>N</td>
<td>0.004*</td>
<td>0.001***</td>
<td>0.007***</td>
</tr>
<tr>
<td></td>
<td>(1.41)</td>
<td>(3.03)</td>
<td>(3.02)</td>
</tr>
<tr>
<td>N*CSCORE</td>
<td>0.005*</td>
<td>0.008**</td>
<td>0.035**</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(2.07)</td>
<td>(2.33)</td>
</tr>
<tr>
<td>Panel B</td>
<td>Under-investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSCORE</td>
<td>0.016***</td>
<td>0.024**</td>
<td>-0.189***</td>
</tr>
<tr>
<td></td>
<td>(3.44)</td>
<td>(2.47)</td>
<td>(-3.49)</td>
</tr>
<tr>
<td>N</td>
<td>-0.002**</td>
<td>0.000</td>
<td>0.005*</td>
</tr>
<tr>
<td></td>
<td>(-0.20)</td>
<td>(1.55)</td>
<td>(0.36)</td>
</tr>
<tr>
<td>N*CSCORE</td>
<td>-0.019**</td>
<td>-0.001</td>
<td>0.014***</td>
</tr>
<tr>
<td></td>
<td>(-1.83)</td>
<td>(-1.39)</td>
<td>(3.73)</td>
</tr>
</tbody>
</table>

Note: (1)***, ** and * mean significant at 1%, 5% and 10% respectively. (2) the t value of each variable is in parentheses. Limited by space, controllable variables are not listed.

Table 2 shows that:

For the Dual: The coefficient of Dual*CSCORE in the over-investment group is 0.005, which is significant at the level of 10%, indicating that the Dual posts weaken the relationship between accounting conservatism and over-investment, thus hypothesis 2a is verified. The Dual*CSCORE coefficient of the under-investment group was -0.019, which was significantly negative at the level of 5%, indicating that the Dual weakened the aggravating effect of accounting conservatism on under-investment, thus hypothesis 2b was verified.

For the number of board meetings: the Dt*CSCORE regression coefficient of over-invested companies is 0.008 and significant, which indicates that the number of board meetings weakens the influence of conservatism on over-investment. The under-investment group failed the significance level test, hypothesis 3a was verified, and hypothesis 3b was not verified.

For the board compensation: the Tp*CSCORE coefficient of the over-investment group was 0.035, which was significantly positive at the level of 5%, which indicates that the board compensation weakened the influence of accounting conservatism on over-investment. Hypothesis 4a was not verified. The Tp*CSCORE coefficient of the sample companies with under-investment is significantly positive at the level of 1%, indicating that the stronger the degree of compensation incentive of the board of directors, the stronger the role of accounting conservatism in the aggravation of insufficient investment. Hypothesis 4b was verified.

**Conclusion**

Based on the above regression analysis results, the following conclusions are drawn in this paper:

(1) Accounting conservatism inhibits over-investment, Accounting conservatism aggravates under-investment;

(2) The relationship between accounting conservatism and over-investment will be significantly affected by the dual posts, the number of board meetings and board compensation incentives; The relationship between accounting conservatism and under-investment will be significantly affected by the dual posts and board compensation incentive.
To some extent, these conclusions provide evidence support for the selection of board characteristics suitable for Chinese listed companies, which indirectly improves the investment efficiency of enterprises through accounting conservatism, and provide some guidance for the improvement of investment efficiency of enterprises in practice.

References