Managerial Overconfidence and Real Earnings Management:
Evidence from Korea

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Abstract

This study places a focus on overconfidence as part of managers' cognitive characteristics and examined its impact on real earnings management. On studying companies listed on the Korea Exchange for the period 2000 to 2011, managerial overconfidence was found to be in a negative (+) relation with real earnings management. In other words, overconfident managers did not favor real earnings management. In previous studies, it was revealed that overconfident managers increase earnings to make up for performance deterioration due to their misjudgment. Because most of the Korean firms are family firms that put emphasis on long-term value, they tend to avoid real earnings management while seeking to redeem performance deterioration resulting from their wrong decisions, as it can destroy such value.

Key Words: Managerial Overconfidence, Real Earnings Management, Family Firms

1. Introduction

A manager's personal characteristics play an important role in identifying the situation his/her company is facing and establishing a managerial strategy accordingly (Hambirck and Mason 1984). Managers who have limited information on their firm's external environment make firm-related decisions based on expected future earnings. Therefore, managers' decision-making is inevitably affected by their subjective tendencies (March and Simon 1958; Cyert and March 1963). This study lays emphasis on overconfidence as a cognitive characteristic of managers that affects their decision-making and investigates how this characteristic can impact earnings management.

This study is presented in the following order: Chapter II reviews preceding studies and introduces a research hypothesis, Chapter III selects samples and the study methodology, Chapter IV reports on the results of the empirical study, and Chapter V summarizes this paper and outlines the conclusions and limitations.

2. Literature Review and Hypotheses

2.1 Managerial Overconfidence

Alicke (1985) defined overestimating one's judgment and problem-solving ability relative to others as the "better-than-average effect." For instance, most people think they can perform above average in predicting future earnings or handling given tasks compared to their coworkers, and some of them are certain that their performance will be above average (Weinstein 1980; Svenson 1981). It was noted that CEOs also tend to overrate themselves in general (Brown and Sarma 2007).

In summary, CEO overconfidence is a CEO's characteristic closely related to his/her way of thinking, which can have a direct impact on his/her firm-related decision-making. Past studies have mentioned that managerial overconfidence affects capital expenditure (Malmendier and Tate 2005), mergers and acquisitions (Malmendier and Tate 2008), dividend policies (Cordeiro 2009), financing policies (Malmendier et al. 2011), R&D cost expenditure (Hirshleifer et al. 2012), management earnings forecasts (Hribar and Yang 2013), and conservatism (Ahmed and Duellman 2013).

2.2 Real Earnings Management

In general, there are two ways to manage earnings: accruals-based earnings management, which refers to using accruals added in cash flows, and real earnings management, which refers to adjusting earnings by altering real management activities. Here, real earnings management pertains to a firm performing abnormal operating activities with the purpose of managing its earnings.

Abnormal operating activities can be examined with respect to three aspects: ① sales, ② production, and ③ cost expenditure. In terms of sales, a CEO can give discounts, such as abnormal promotional sales, to increase accruals of the term. In terms of production, a CEO will try to reduce sales cost by decreasing the fixed overhead cost per unit by increasing production. In terms of cost expenditure, because it is directly connected to profit and loss, a CEO will reduce advertisement or R&D costs of the term. Price discounting can lead to a decrease in sales in the next term and long-term damage to brand power. If production is increased compared to sales, it might increase inventory retention cost, putting the inventory at the risk of turning obsolete. A fall in advertising and R&D expenditure might lead to a decrease in the long-term brand power or product development capacity (Roychowdhury 2006).

2.3 Hypothesis Development

It is inevitable for a CEO's decision-making to be affected by his/her way of thinking or how he/she embraces the situation (March and Simon 1958). Brown and Sarma (2007) reported that a vast majority of managers are overconfident about their future performance predictions and work performance. Heaton (2002) claimed that overconfident managers overestimate corporate projects due to a delusion that they have made investment into a positive NPV project instead of a negative one. In fact, the more overconfident a CEO is, the more he/she will overinvest, as he/she tends to overestimate future returns from corporate investment (Malmendier and Tate 2008).

In addition, it was revealed that when managers make overinvestments, they raise reported earnings to avoid the market's strict verification, attract investors, or to offset the decline in profitability caused by overinvestment (Wei and Xie 2005). According to a research by Hsieh et al. (2014) on American firms, overconfident managers were engaged in both accruals-based and real earnings management. Kim (2008) analyzed Korean companies and noted that a CEO's overconfidence is in a positive correlation with accruals-based earnings management.

Meanwhile, while accruals-based earnings management does not have a direct impact on cash flows as it only has a turnaround effect of accruals in books, real earnings management aggravates corporate long-term value as it hinders a firm's efficient resource allocation and increases volatility in expected cash flows (Zang 2007; Cohen and Zarowin 2010). Yet, managers favor real earnings management, because not only it is difficult for a capital market to detect real earnings management (Chen et al. 2010) firsthand, it is also not easily detected in external auditing or by government agencies, thus avoiding sanctions (Graham et al. 2005; Roychowdhury 2006).

Most Korean companies are family companies in which a founder and his/her family are the dominant stakeholders. CEOs at family firms are known to have a long-term investment view compared to CEOs at non-family firms (James 1999; Kwak 2003). In other words, family firm CEOs tend to place emphasis on long-term corporate value and make decisions accordingly. Therefore, it is judged that Korean CEOs do not prefer real earnings management when offsetting loss resulting from their overconfidence as it damages corporate long-term value. Based on this, the hypothesis is set as follows.

[Hypothesis] Managerial overconfidence is in a negative (-) relation with real earnings

management.

3. Sample Selection and Study Methodology

3.1 Sample Selection

In this study, among the companies listed on the Korea Exchange for the period 2000 to 2011, those that satisfied the following conditions were selected as samples:

1) End of December settlement

2) Non-financial business

3) Financial data necessary for research is obtainable from KisValue III

Firms were limited to those that settle their accounts at the end of December to secure the data's time-differential homogeneity. Furthermore, firms involved in financial business were excluded from sampling, because items included in their financial statement are different from that of general companies. Financial data necessary for analysis were extracted from KisValue III, and the top and bottom 1 percent of variables used in the empirical analysis were winsorized. As a result, a total of 5,373 firm-year samples were selected based on the above conditions.

3.2 Measuring Managerial Overconfidence

A direct measurement of managerial overconfidence is difficult due to managers' characteristics that are closely related to their way of thinking. In past studies, parameters such as media praise for a CEO (Hayward and Hambrick 1997) and whether a CEO exercised stock options (Malmendier and Tate 2005; Malmendier and Tate 2008)[1] were used to measure managerial confidence. However, when measuring managerial overconfidence based on media praise for a CEO, there are limitations in identifying his/her individual cognitive characteristics as they are indirectly identified through newspaper articles. Furthermore, in Korea, because only some companies publish their CEO's stock option information, it is not an adequate proxy variable for empirical analysis. Accordingly, in this study, based on the paper by Ahmed and Duellman (2013), managerial confidence was measured based on the size of capital expenditure in comparison with industrial average. Ahmed and Duellman

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[1] Malmendier and Tate (2005) and Malmendier and Tate (2008) mentioned that managers who do not exercise but keep options, even when exercising price<option's intrinsic value, tend to be overconfident.

(2013) claimed that managers who have a large capital expenditure tend to be overconfident. In this study, a value of 1 was assigned when the size of capital expenditure compared to the industrial average was large, and 0 was assigned when it was not; 1 means the manager is highly overconfident. .

3.3 Measuring Real Earnings Management

The amount of real earnings management was measured using the model by Roychowdhury (2006). First, normal operating cash flow, normal discretionary expense, and normal production cost were measured using Equation (1) ~ Equation (3). Then, residuals, or the differences between the actual amount and normal amount, were defined as abnormal cash flow from operation (ACFO), abnormal production cost (APC), and abnormal discretionary expense (ADE). If real earnings management is implemented to report high accounting profit, abnormal cash flow from operation (ACFO) and abnormal discretionary expense (ADE) will be negative (-), whereas abnormal production cost (APC) will be positive (+). In order to make the analysis easier, (-1) was multiplied by abnormal cash flow from operation (ACFO) and abnormal discretionary expense (ADE). Lastly, the integrated measurement value was defined as REM, which was applied to the study model. Accordingly, if a regression coefficient (independent variable) shows a significant negative (-) value for REM (dependent variable), it means real earnings management is decreasing.

$$CFO_t / A_{t-1} = \beta_0 + \beta_1 1 / A_{t-1} + \beta_2 S_t / A_{t-1} + \beta_3 \Delta S_t / A_{t-1} + \varepsilon_t \tag{1}$$

$$DE_t / A_{t-1} = \beta_0 + \beta_1 1 / A_{t-1} + \beta_2 S_{t-1} / A_{t-1} + \varepsilon_t \tag{2}$$

$$PC_t / A_{t-1} = \beta_0 + \beta_1 1 / A_{t-1} + \beta_2 S_t / A_{t-1} + \beta_3 \Delta S_t / A_{t-1} + \beta_4 \Delta S_{t-1} / A_{t-1} + \varepsilon_t \tag{3}$$

$$REM_t = ACFO_t + ADE_t + APC_t$$

Where CFO_t is cash flow from operations, DE_t is the sum of advertising expenses, R&D expenses, and selling, general and administrative expenses, PC_t is the sum of COGS and change in inventory. A_t is the total assets at the end of period t, S_t is the sales during period t and $\Delta S_t = S_t - S_{t-1}$. REM is the amount of real earnings management measured using the model by Roychowdhury (2006).

3.4 Research Model

The more overconfident a CEO is, the more he/she will try to raise reported earnings to offset the profitability decline caused by overinvestment. However, as most Korean firms are family firms, they are not expected to favor real earnings management in light of their long-

term value. Accordingly, in this study, the following regression equation was established to examine the effect of managerial overconfidence on real earnings management. In detail, OVERCONFIDENCE (managerial overconfidence) was set as the independent variable, and real earnings management measurement value (REM) was set as the dependent variable.

$$REM_t = \beta_0 + \beta_1 \, CONFIDENCE_t + \beta_2 \, SIZE_t + \beta_3 \, LEV_t + \beta_4 \, CFO_t + \beta_5 \, MTB_t$$
$$+ \beta_6 \, ROA_t + \Sigma \, Year \, Dummies + \Sigma \, Industry \, Dummies + \varepsilon_t$$

Where REM is the amount of real earnings management measured using the model by Roychowdhury (2006). OVERCONFIDENCE is a dummy variable that takes the value of one for overconfident managers. We include firm size, leverage, cash flow from operations, growth rate, profitability as control variables.

4. Results of the Empirical Analysis

4.1 Descriptive Statistics

  <Table 1> shows the descriptive statistics for the study samples. Managerial overconfidence (OVERCONFIDENCE), the variable of interest in this study, was set as a dummy variable. A score of 1 or 0 was assigned to firms that were classified or not classified as an overinvesting firm, respectively, wherein the capital expenditure was larger than the industrial average. As a result, it was revealed that about 13% of the firms were overinvesting.

Table 1. Descriptive Statistics

Variables	N	Mean	Std. Dev.	Min	Median	Max
REM	5,373	0.002	0.135	-0.489	0.015	0.318
OVERCONFIDENCE	5,373	0.126	0.332	0.000	0.000	1.000
SIZE	5,373	26.154	1.490	23.194	25.933	30.520
LEV	5,373	0.481	0.204	0.093	0.477	1.060
CFO	5,373	0.060	0.103	-0.256	0.054	0.421
MTB	5,373	0.852	0.872	-0.003	0.597	5.036
ROA	5,373	0.024	0.097	-0.472	0.034	0.236

REM is the amount of real earnings management measured using the model by Roychowdhury (2006). OVERCONFIDENCE is a dummy variable that takes the value of one for overconfident managers. SIZE is the natural logarithm of total assets. LEV is short-term plus long-term debt deflated by total assets. CFO is cash flow from operations deflated by total assets. MTB is the ratio of the market value to the book value of total assets. ROA is net income scaled by total assets.

4.2 Multivariate Regression Analysis

On examining correlations between the variables used in this study, managerial overconfidence (OVERCONFIDENCE) was noted to be in a significant negative (-) correlation with the REM variable at a 1% level. However, as it is difficult to achieve valid verification with only a correlation between the two variables, the hypothesis of this study was directly verified through a multivariate regression analysis in light of the impact of other variables.

<Table 2> shows the results of regression analysis conducted with real earnings management measurement value - measured according to Roychowdhury (2006)'s method - as the dependent variable in order to investigate the effects of managerial overconfidence on real earnings management. If most of the Korean CEOs do not favor real earnings management in light of corporate long-term value, as the majority of Korean firms are family firms in accordance with the hypothesis of this study, OVERCONFIDENCE's regression coefficient will have a significant negative (-) value.

According to the analysis results, OVERCONFIDENCE' s regression coefficient was -0.011 and had a significant negative (-) impact on the dependent variable at a 1% level. This indicates that managerial overconfidence and real earnings management is in a negative (-) relation with respect to Korean firms. It is understood that despite enticement for real earnings management, considering it can destroy corporate long-term value and most Korean firms are family firms, overconfident Korean CEOs do not consider it as a good option for raising earnings.

Table 2. Managerial Overconfidence and Real Earnings Management

Variables	Coeff.	T-statistics
OVERCONFIDENCE	-0.011***	-3.59
SIZE	0.007***	7.02
LEV	0.033***	4.02
CFO	-0.826***	-48.42
MTB	-0.022***	-12.47
ROA	0.248***	14.27
Year Dummies	YES	
Industry Dummies	YES	
Observations	5,373	
R2 adjusted	0.3717	

F-statistic   114.49***

Variable definitions: refer to <Table 1>.

Notes: ***, **, and * represent a significance at the 1, 5, and 10 percent levels, respectively.

5. Summary and Conclusion

In this study, the impact of managerial overconfidence on real earnings management was examined. Managers' decision-making cannot be affected by their subjective tendencies (Cyert and March 1963). Some past studies paid attention to the possibility that overconfident CEOs can make decisions against corporate values, and analyzed how managerial overconfidence affects corporate decision-making. Earnings management is also one of the items that need a decision to be made on, and this study tried to extend research in this area by verifying the impact of managerial overconfidence on real earnings management in Korea. It was proved that overconfident managers forecast overly optimistic future returns from corporate projects in progress, and make overinvestment by overestimating the likelihood and impact of favorable developments on their firm's cash flows (Heaton 2002; Malmendier and Tate 2005). In addition, they raise reported earnings to offset the profitability decline caused by overinvestment (Wei and Xie 2005). In this study, the impact of managerial overconfidence on real earnings management was examined in light of Korea where most firms are family firms.

On analyzing the impact of managerial confidence on real earnings management using 5,373 firm-year samples listed on the Korea Exchange for the period 2000 to 2011, it was noted that managerial confidence was in a negative (-) relation with real earnings management measurement value. Based on this result, we can say that managers who are overconfident about corporate future performance may get tempted to raise earnings to offset their wrong decisions. However, because most Korean firms are family firms, they do not consider implementing this idea as their corporate long-term value overrides it.

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