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경영학석사 학위논문

Corporate Diversification and Cash Flow Management

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ABSTRACT

Corporate Diversification and Cash Flow Management

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This study examines the existence of possible association between corporate diversification and firm's tendency to inflate reported cash from operations(CFO) in the statement of cash flow. Cash flow management is distinct from earnings management in an aspect that it looks at manager's manipulation of CFO on financial statement by classification and timing, alternative to accruals. Diversification is positively related to abnormal level of CFO, but their statistical significance is slightly mere in the full sample, if no adjustment is done to a specific firm quality. Nevertheless, from the testing of the sub-samples separately distinguished for higher level of financial distress or greater CFO value relevance to firm's stock return, I was able to observe statistically stronger positive relationship between diversification and upward management of CFO.

Keyword: cash from operation(CFO), management, diversification, corporate governance, financial distress, cash flow value relevance

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1. Introduction

Starting from 1990, analysts initiated to provide operating cash flow forecasts along with earnings forecast from financial information service companies. Call, Chen, Tong 2009 have examined whether analyst's earnings forecasts are more accurate when they also issue cash flow forecasts. Their results indicate that analysts become applying a more structured and disciplined approach to forecast earnings when they additionally produce cash flow forecasts. The percentage of US firms in the IBES database with at least one cash flow forecast increased from 4% in 1933 to 54% in 2005. Growing number of analysts and investors are becoming more interested and begun to see the importance of cash from operation (CFO) to predict and assess the real performance of the firm.

CFO and earnings are complementary measure of firm value and some financial advisors argue that CFO is more real than earnings at certain circumstances, for example, at financial crisis. However, there exists rather vague guidance on how to classify and present cash flows in the financial statements since the standard allows some room of discretion for managers. According to Audit Analytics, only 65 restatements (8.7%) had been attributed to errors found in cash flow statements. But these numbers steadily increased to 174 in year 2013, which is the 20% of the total restatement. These statics reveal managers exploit opportunity for adjustment of reporting cash flow items in different categories.

Thus, it may be safe to assume that operating cash flow is a key determinant to assess

firm's true performance and manager's tendency to manipulate CFO has been evidenced in the real practice.

But then what is cash flow management? CFO management imply cases of cash flow misreporting when managers exercise discretion in financial statements and in timing of transaction to inflate reported CFO. Firms generally use classification and timing as implementation tools. Specifically, firms manage CFO by shifting items between the statement of cash flows categories both within and outside the boundaries of GAAP and by timing certain transactions such as delaying payments to suppliers or accelerating collection from customers.

From here my research questions starts as: 1) Do diversified firms have more tendency to manage operating cash flow than the others? 2) Under what circumstances does this relationship seem to be stronger?

Corporate diversification denotes a case when a firm operates different business segments within more than one industries. Diversified firms plays a crucial role in world economy as reported by McKinsey report 2015. McKinsey on Finance 2015 report analyzed stock returns of 4,500 companies around the world and have found that in emerging economies, the most diversified companies created the highest excess return, 3.6%, compared with -2.7 for pure players. According to Bloomberg Quick Take 2017, the largest big5 diversified firms in Korea takes more than 50% value in KOSPI. Thus, studying upon behaviors and different characteristics of diversified firms may be meaningful, contributing to a large stream of existing

literature.

I have gained my research topic from reading through earnings management literature. Earnings management imply a choice by manager of accounting policies or real action that affect earnings so as to achieve specific earnings objective. Earnings management generally refers to adjustment of bottom line income using accruals. Cash flow management is distinct from earnings management in that it looks at presentation of cash flow item in cash flow statement. Nevertheless, they share common characteristic in that they all manipulate accounting items to achieve a certain financial objective. Mehdi et al 2011 insist diversified firms has more earnings management problems than similarly constructed portfolio of standalone firms. According Mehdi 2011, there exist two conflicting theories earnings management in diversified firms.

First, agency conflict hypothesis contend that diversified firms have more complex organization structures, have less transparent operations, and their correct firm value assessment pose difficulties to investors. Diversification may not only motivate managers to manipulate accounting figures but also create favorable conditions to make it difficult to detect earnings management.

Second, earnings volatility hypothesis argues that corporate diversification is expected to result in lower variability of earnings because cash flow produced from the firm's distinct units are less than perfectly correlated. The accruals generated by these cash flow tend to cancel out each other. As a result, it is more difficult for

manager of diversified firms to manage earnings substantially either upward or downward.

It seemed that there exist mixed empirical evidence regarding relationship between diversified firms and earnings management. With consideration of these two conflicting hypotheses in mind, I would like extend research idea to cash flow management and test which hypothesis prevails more in diversified firms.

My paper will be distinguishable from Lee 2012 which evidenced firm's cash flow management behavior by incentives. She found firms inflate reported CFO in response to incentives. The incentives, referred as firm's 4 characteristics are 1) financial distress, 2) long term credit rating near investment grade cutoff, 3) the existence of analyst cash flow forecast and 4) higher associations between stock returns and CFO.

I attempted to see a different perspective of cash flow management by looking at whether firms engage more in cash flow management, when there are given larger opportunities and favorable conditions by diversification corporate strategy.

2. Literature Review

2.1. Earnings Management

There are largely 3 types of earnings management: accruals earnings management (that uses discretionary accruals such as provision for warranty costs), real earnings management (using real variables such as cutting or increasing R&D expense), and classification shifting (opportunistically shifting expense from core expenses to special items).

Earnings management research have been studied upon firm's motives to earnings management, its good or bad consequences in the market and its different adjustment types. I would like to go on by referring to most representative papers which what I have considered most relevant to my research.

Mehdi et al 2011 found an income increasing earnings management for both for diversified and focused firms with statistically significant difference. But this earnings management is more intense in diversified firms than focused firms. On the other hand, when firms are domestic, there is income decreasing earnings management. When firms are multinational, regardless of their industry belongingness, an income increasing earnings management is detected. Geographic and industrial diversification combined can amplify earnings management consistent with agency conflict hypothesis. Earnings management differences between diversified and focused firms are largely due to their dissimilarities in agency problems, risk and investments.

Lim et al 2007 found diversified firms are more aggressive in managing earnings than non-diversified firms. They examined the seasoned equity offering (SEO) setting, where firms are known to have higher incentive to manage income upwards. Their result evidenced that diversified firms exhibited larger amount of abnormal accruals compared to focused firms. Even with adoption other several measure of earnings management, and controlling for factors related to discretionary accruals, their results stayed robust. Moreover, they have found diversified firms with high accruals underperformed than the others in longer period. The result suggest effect of earnings management is rather significant.

According to Farrooqi et al 2014, their analysis indicates that industrial diversification and the combination of industrial and global diversification exacerbate real activities manipulation, whereas global diversification mitigates it. Another argument they make is that as the degree of real earnings management increases, the discount of firm value associated with diversification becomes larger. Their finding supports the idea that real earnings management is value reducing. There is strong negative relation between real activities adjustment and firm value, which leads to suggest that stockholders suffer economic losses from manager's discretion to use real operational actions to manipulate earnings.

Lail et al 2014 deals with classification shifting which is another type of earnings management found among diversification firms. They have evidenced that managers take advantage of vague cost allocation guidance to shift expenses between the

corporate /other segment and core segments. When facing agency conflict problems, their result becomes stronger with expenses being shifted from core segment to other segment. This reallocation decreases the performance of underperforming core segments and hides its true performance by replacing its losses into corporate/other segments.

2.2. Cash Flow Management

The idea that cash flow plays a key role in prediction of future cash flow incrementally along with current earnings and accruals, is widely studied in prior literature. Using an augmented model from Dechow 1998, Lee 2012 has created a model to estimate current normal level of CFO and uses this model to induce unexpected level of CFO, which is used as a measure to detect whether managers exercised discretion to inflate CFO than the expected level. This measures the magnitude of cash flow management among the firms. Lee 2012 hypothesizes that firms manage reported CFO in response to innate incentives. She identified four unique firm's qualities that are associated with stronger incentives to inflate reported CFO: (1) financial distress, (2) credit rating near the investment/non-investment grade cutoff, (3) the existence of analyst cash flow forecasts, and (4) higher associations between stock returns and CFO. Using a set of different tests, she evidenced that firms inflate CFO using classification and timing when incentives to do so are high.

There is another literature that witnesses classification shifting of cash flow for specific financial statement items with paid interest and exploits how the firm behaves

differently in response to the accounting standard changes. Baek et al 2016 examines a firm's classification shifting behavior in the statement of cash flows under the IFRS regime. In particular, they focus on classification shifting in interest payments. Under old GAAP Korea, the firms were required to classify interest payments as operating cash outflow, but the mandatory adoption of IFRS allowed manager to shift this expenses to financing activities. The 13.5% of the sample firms shift interest payments and these firms increase OCF by on average 13.2 million dollars. They also found three groups of incentive variables that affect firm's classification shifting behavior, such as financial health, bank dependence and ownership structure, and evidenced these incentives increase shifting behaviors of the firms.

Gordon et al 2017 dwells upon IFRS and US GAAP difference on classifying interest paid, interest received and dividend received into different categories in the statement of cash flows. IFRS-reporting firms in 13 European countries, they documented firms' cash-flow classification choices vary with about 60% of the sample. Reported OCF under IFRS tend to exceed what would have been reported under US GAAP. They also find firms with greater likelihood of bankruptcy risk, higher leverage, and in a stage of accessing equity market tend to show more different cash flow classifying behaviors.

2.3. Corporate Diversification

There is a stream of literature that study causes of diversification, cost and benefits of diversification and unique characteristics related to multi-segment firms.

Finding the source of diversification, Jensen 1986 argued that manager acting in their self-interests tend to waste free cash flow. They will either use the funds to consume prerequisites or invest in projects that provide inadequate returns to shareholders, one of them being diversification. Amihud and Lev 1981 focuses on risk averse behavior among managers. They have incentive to diversify the firm in a manner to minimize the operating performance of the firm and to a degree that become detrimental to shareholder.

There is dispute whether corporate diversification brings cost or benefit to the firms and there exist various streams of paper addressing to this issue. Stulz(1990) focused on benefit of the diversification and argued that diversified firms by creating a bigger internal capital market decrease possible underinvestment problem. He predicted that multi-segment firms as a whole make more positive net present value investments than their segmented entities would do as separate firms. Another source of research contends that by combining businesses with imperfectly correlated earnings streams, the potential diversification premium is produced. Lewellen (1971) has shown evidence that this coinsurance effect provides diversified firms greater debt capacity than single segment firms of similar size. Diversified firms are predicted to enjoy higher leverage and lower tax payments in comparison with focused firms.

Diversification can create many costs as well. Meyer, Milgrom and Roberts (1992) mentioned of cross subsidization of failing business segments. Failing business are not easy to have value below zero when operated on its own whereas as a part of conglomerates the failing business may continue to have negative value. They predicted that unprofitable lines of business create larger value loss in conglomerates than they would as a standalone firm.

Recently, there is another stream of research that argue that previously evidenced diversification discount is, in fact, due to measurement errors, endogeneity and self-selection problems and the diversification itself may not deteriorate corporate value. For example, Villalonga (2004) argued that the diversification discount is a function of measurement problems in the COMPUSTAT segment database related to aggregation problems and reporting biases. Matsusaka (2001) found that diversification discount is calculated using the wrong benchmark, which often involves an argument that diversification is endogenous.

As I have already mentioned diversified firms related with earnings management, I would like to continue on to hypothesis development.

3. Hypotheses Development

Corporate strategic choices produce conditions that may be either preferable to earnings management (opportunistic behavior, tendency of selective and subjective disclosure) or unfavorable (corporate culture encouraging transparency, integrity). There is a need to compare conditions created by diversification as opposed to stay being focused, and their influence on earnings management. It is largely documented that diversified firms are generally larger than they have more complex organizational design, have less transparent operations and their analysis for investors is often found to be difficult. Furthermore, diversified firms are likely to exhibit agency conflicts and informational asymmetry problems. As mentioned in literature review, some studies have found diversified firms manipulate real actions to adjust bottom line earnings and even use classification shifting of expenses from corporate' core operating segment to other segment to hide its true performance.

Therefore, I expect diversified firms will engage more in cash flow management by using classification and timing, inflating CFO in the financial statements.

H1. The relation between CFO management and corporate diversification is positive.

Earnings and CFO are two complementary measures of firm performance and depending on firm characteristics, they have different implications. Dechow and Ge 2006 document that on average earnings is more useful than CFO in predicting future earnings but firms with large negative accruals, CFO is more useful than earnings.

For firms whose investors place more importance on CFO, CFO is another metric, in addition to earnings, that investors use to evaluate managers. I expect for diversified firms with higher association of stock return and CFO, the CFO management will be stronger. I measure the incremental weight that investor place on CFO (CFO_WEIGHT) as the coefficient on CFO in a regression of contemporaneous stock return on earnings and CFO.

H2. The positive relation between CFO management and corporate diversification is greater for firms with higher association with stock return and CFO

Prior research provides mixed evidence on whether cash flow information is relevant for financially distressed firms. Casey and Bartczak 1985 find that cash flow does not provide incremental information in distinguishing between bankrupt and non-bankrupt firms. More recent studies Graham 2005 document that executives consider cash flow measure more important to external constituents than earnings when the firm is near financial distress.

More recent studies support the importance of cash flow information for distressed firms, are consistent with cash flows being conventional measure in evaluating credit and bankruptcy. Thus, I expect that diversified firms with more financial distress will increase CFO inflating behavior to meet the debt contract requirement or to satisfy market expectation.

H3. The positive relation between CFO management and corporate diversification is greater for firms with higher financial distress

Amihud and Lev 1981 conjectured that the diversification arises from agency problems such as empire building, managerial overconfidence, and executives pursuit of insurance to protect the value of their human capital. Dennies et al 1997 show that firms with higher managerial shareholding are significantly less likely to be diversified that diversification is negatively related to the equity ownership of larger outside block holders. These studies suggest that agency problem partly driven by poor corporate governance account partly for firms' value reducing diversification strategy.

Bekiris and Doukakis 2011 found an inverse relationship between corporate governance and earnings management. Governance provision seem to constrain the tendency of management to adjust earnings leading to higher credibility of financial statement. Thus, governance seem to play a role to constrain opportunity open for cash flow management by corporate diversification. Therefore, I would to like to observe whether corporate governance affects the positive relationship expected to be found between corporate diversification and cash flow management.

H4. The positive relation between CFO management and corporate diversification will still hold after controlling of corporate governance

4. Sample

I have started with firm year observations with available data in Compustat during years of 1988 to 2008. The time period begins in 1988 because of availability of cash from operations data from the statement of cash flow.

Expected CFO was driven by using parameter estimates from firm level estimation of Dechow et al 1988 model over prior ten years. The ten -year estimation period means the first year of in-sample testing begins 1998. Then I have excluded firms in regulated industries (SIC codes 4400 to 5000) and bank and financial institutions (SIC codes 6000 to 6500) because the model for predicting expected CFO is not appropriate for these industries. Firm years without main independent variables or control variables such EARN, MB, ABACC were also dropped from the sample. Since I have also used Compusatat Segment Disclosure data, missing firm years without data from Compustat segment reporting to compose diversification variables were neglected. The elimination of firm year missing data includes those that are related to DISTRESS based on Shumaway 2001 and CFO_WEIGHT based on rolling regression of returns on earnings and cash flow. I have trimmed all financial variables at the extreme 1 percent.

5. Research Design

Following Lee 2012 and Gordon et al 2017, I have improvised a below equation for the testing of hypotheses.

$$UCFO = \beta_0 + \beta_1 DIV + \beta_2 EARN + \beta_3 SIZE + \beta_4 MB + \beta_5 ABACC + \varepsilon_t$$

- Equation (1)

Here dependent variable is UCFO, which is unexpected CFO. This is computed by subtraction of predicted CFO from the actual CFO (oancf).

For every firm year, I have calculated predicted CFO using the parameter estimates from the firm level estimation of the following equation (2) over the prior ten years, applying rolling regression

$$\underline{CFO}_t / TA_{t-1} = \lambda_0 + \lambda_1 (1/TA_{t-1}) + \lambda_2 (\underline{SALE}_t / TA_{t-1}) + \lambda_3 (\Delta \underline{SALE}_t / TA_{t-1}) + \varepsilon_t$$

- Equation (2)

In above equation CFO_t is the cash flow from operations for the period t , TA_{t-1} is the total assets at the end of period $t-1$, $SALE_t$ and $\Delta SALE_t$ are the sale and change in sales during the period t .

Main variable of interest is DIV which is indicator equals to 1 for whether a firm has more than one segment with different SIC codes assigned. This measure looks at industrial diversification which mainly focuses on unrelated diversification. Following Berger & Ofek 1995 and together, I have excluded years in which at least

one segment is classified as being the financial sector and firm years with total sales of less than \$20 million.

As far as any special techniques applied to regression, I have used two way clustered standard error with firm and year clusters. Estimating regression model using panel data poses an econometric issue because the unexpected CFO for each observation is the residual from firm specific regression. Consequently, the residuals for a given firm can be correlated across years for that given firm. In addition the residuals for a given year can be correlated across firms due to macroeconomic factors. Therefore, I adjust the OLS standard errors using two clustering based on Petersen 2009.

I have based on two tailed test for the intercept and the control variables and one tailed test for the hypothesis variable (β_1), which has signed prediction.

I have considered the consequences of missing an effect in the untested direction is negligible. The advantage of adopting the one tailed test is improvement in power to reject null hypothesis if the null hypothesis is truly false. But there is cost to this testing because I will be testing more extensive null hypothesis and my ability to detect unexpected results will be restricted when the null hypothesis is not rejected. Moreover, there lies difficulties in interpreting non rejection of the null hypothesis.

As for the control variables included in the regression, I would like to explain them one by one. DISTRESS is a natural log of probability of bankruptcy measure based on Shumway 2001 in the $t+1$. Shumway score is calculated by $e^a / (1+e^a)$, where $a = -13.303 - 1.982*NI + 3.593*TL - 0.467*SIZE - 1.809 RET + 5.791 SIGMA$. RET is

the firm's past market adjusted return measured as the cumulative monthly stock return of the firm minus value weighed NYSE/AMEX return. SIGMA equals to standard deviation of the residual of regression each stock's month's return in year t-1 on the value weighted AMEX index return for the same year.

CFO_WEIGHT equals to weight on CFO given by λ_2 from the below regression estimated for every firm year over rolling ten- year period.

$$\underline{RETURN}_t = \lambda_0 + \lambda_1 (EARN_t/TA_{t-1}) + \lambda_2 (\underline{CFO}_t/TA_{t-1}) + \varepsilon_t$$

EARN is an income before extraordinary item divided by total assets and SIZE is natural log of total assets. MB tests for growth opportunities of the firms, measure by market value of equity divided by book value of equity. As for abnormal accruals, ABACC is unexpected accruals based on Jones 1991. For consideration of corporate governance structure, I have adopted G-index.

GINDEX is based upon Gompers 2003 and includes 24 provision related to takeover defense and shareholder rights

6. Empirical Results

Table 1 displays descriptive statistics for the variables used in the main analysis, following Lee 2012 paper.

<Insert Table 1 about here>

The mean and median of DISTRESS in the sample are 0.5 % and 0.6 % respectively, consistent with expectation that DISTRESS has positively skewed distribution

The mean of CFO_WEIGHT is 0.769 and the coefficient on earnings has mean of 1.02. Recalling that CFO weight has been derived from rolling regression of CFO and earnings on stock return, it may be assumed that investor place less weight on CFO compared to earnings on average

The mean and median of UCFO is slightly negative and closer to zero which shows general level of UCFO of overall sample firms.

<Insert Table 2 about here>

Table 2 reports the mean and median regression coefficients and adjusted R^2 for estimation of predicted CFO. Consistent with Dechow et al 1998, the estimates on $SALE_t / TA_{t-1}$ and $\Delta SALE_t / TA_{t-1}$ are positive and negative respectively because

earning is a function of the level of sales and accruals is function of the change in sales.

The mean R^2 across firms is 69.4% which is higher than the mean adjusted R^2 of 45 % reported by Rochowdhury 2006 (reported R square in Table2 needs to be replaced by adjusted R square, but I was not capable of finding the codes to extract adjusted r -square from rolling regression. This needs to be improved in future revision process).

Table 3 present mean and median values of firm characteristics and control variables for subsamples of focused and diversified firms.

<Insert Table 3 about here>

SIZE imply the differences of the firms in the stability and predictability of the operations. Diversified firms tend to be slightly larger in size in both mean and median. Level of earnings is delicately larger for diversified firms, comparing the medians

MB addresses the growth opportunities. Focused firms seems to be higher.

The mean and median of UCFO is nominally higher for diversified firms than the focused firms

<Insert Table 4 about here>

Table 4 support hypothesis that firms upward manage reported CFO in response to corporate diversification as more favorable opportunities remain.

The coefficient on DIV is positive but statistically insignificant at 90 % confidence level. This coefficient may be interpreted that UCFO in diversified firms to be 0.004 higher than that of focused firms, on average, holding other independent variables constant. The coefficient on EARN is positive as expected because UCFO is component of EARN. The coefficient on SIZE is generally negative, suggesting that larger firms are less likely to upward manage CFO. The coefficient on MB is generally positive, indicating that firms with high market to book ratio, such as glamour stocks and high growth firms are more likely to upward manage CFO. The coefficient on ABACC is negative, consistent with Roychowdhury 2006 who document negative correlation between abnormal CFO and abnormal accruals.

Table 5 present subsample of firms with higher association of return and CFO.

<Insert Table 5 about here>

Firms with higher link of CFO to firm value may probably exhibit statistically stronger positive relation between diversification and cash flow management

Interaction between DIV and CFO_WEIGHT was shown to be positive and significant ($p < 0.1$) with one tailed test. This imply CFO value relevance increases the propensity of diversified firms to upward manage cash from operation. Signs for other control variables were as predicted and similar to main result in Table 4.

Table 6 present subsample of firms with higher financial distress. Financially distressed firms, as they are more concerned about presentation of CFO, may possibly exhibit stronger positive relation between diversification and UCFO.

<Insert Table 6 about here>

The coefficient on DIV in interaction without regression model is shown to be positive and significant ($p < 0.1$) at 90% confidence level. This suggest financial distress increases the positive association between diversified firms and level of unexpected CFO.

Insignificant effect of diversification on CFO management may be found in more extreme setting of firms such as higher CFO value relevance and increased bankruptcy risk.

Table 7 augments the effect of corporate governance into the existing regression model. When only Gompers G-index is included into the existing regression, the coefficient on DIV is positive but statically insignificant. When DIV is interacted with DISTRESS, its coefficient reveals its significance with the sign as predicted.

This suggests that DISTRESS increases the level of diversified firms to upward manage CFO, even when corporate governance structure is taken into account separately.

The coefficient on G-index alone is positive but statistically insignificant.

<Insert Table 7 about here>

7. Conclusion

This study examines that firms manage reported CFO when facing more appreciative environment such as corporate diversification. I have intended to find whether firms inflate more CFO using classification and timing at times of corporate diversification. I have found under full sample, positive association between diversification and level of unexpected CFO is not yet statistically significant. Nevertheless, under sub-division samples separated for greater financial distress or for higher CFO value relevance, I was able to find diversification effect on CFO management with stronger statistical significance. Furthermore, to control for possible endogeneity concern that poor corporate governance may be driving the cash flow management, instead of firm diversification, I have included g-index in the main regression. Even when a governance variable was included, interaction term of DIV and DISTRESS was found to be positive and significant in a full sample. This implies that diversified firms with higher financial risk, upward manage CFO, being less relevant to their governance structure.

Although, there are many possible limitations in this paper, I would like to go over a few important issues. According to prior literature, firms tend to diversify when there exists ample free cash flow at manager's discretion and they diversify for fulfilling of self-interests or maybe for benefit of business risk dispersion. Therefore, it is possible for firms with more discretionary CFO tend to diversify, which creates an endogeneity problem. Seemingly higher level of CFO may be due to already existing portion of cash flow before diversification. This must be carefully dealt with and examined in further research.

As I have applied one tailed testing for statistical significance for main interest variables, certain restrictions follow. The possible bias created by one tailed testing comes from testing more extensive null hypothesis and the ability to detect unexpected results can be restricted when the null hypothesis is not rejected. Moreover, there lies difficulties in interpreting non rejection of the null hypothesis.

I have composed diversification variable as both geographical expansion and industrial expansion combined. Prior studies on earnings management had specifically divided firm diversification into either geographical and industrial segments to observe their possible distinguishable effects. Division of diversification method, may help to produce more precise results.

This study contributes to the research on manger's incentive to take actions that do not vary bottom line earnings but can affect expectations of stakeholders and other financial statement users via financial statement presentation. The result supports the idea that managers do not treat all categories equally important and they may exercise discretion over where to report certain item when guidance is ambiguous

This paper contributes to overall cash flow management literature where their existence is somewhat sparse yet.

Appendix

UCFO	<p>Unexpected CFO which is computed by subtraction of predicted CFO from the actual CFO (oancf).</p> <p>I calculate predicted CFO using the parameter estimates from the firm level estimation of the following model over the prior ten years:</p> $\underline{CFO}_t / TA_{t-1} = \lambda_0 + \lambda_1 (1/TA_{t-1}) + \lambda_2 (\underline{SALE}_t / TA_{t-1}) + \lambda_3 (\Delta \underline{SALE}_t / TA_{t-1}) + \varepsilon_t$ <p>The model is based on Dechow et al (1998) estimated over a rolling ten-year period.</p> <p>CFO_t = cash flow from operations for the period t TA_{t-1} = total assets at the end of period t-1 SALE_t = sale ΔSALE_t = change in sales during the period t</p>
DIV	<p>Indicator variable which equals to 1 for whether a firm has more than one segment with different SIC codes assigned; otherwise 0. This measure looks at industrial diversification which mainly focuses on unrelated diversification</p>
CFO_WEIGHT	<p>The weight on CFO given by λ₂ from below the regression estimated for every firm year over rolling ten-year period</p> $\underline{RETURN}_t = \lambda_0 + \lambda_1 (\underline{EARN}_t / TA_{t-1}) + \lambda_2 (\underline{CFO}_t / TA_{t-1}) + \varepsilon_t$ <p>RETURN_t = CRSP buy and hold stock return (including dividends) minus the CRSP value-weighted market index (including dividends) over the fiscal year EARN_t / TA_{t-1} = earnings scaled by the beginning of the period total assets CFO_t / TA_{t-1} = cash flow from operations scaled by the beginning of period total assets</p>
DISTRESS	<p>Natural logarithm of probability of bankruptcy measure based on Shumway 2001 in the t+1 (Shumway score).</p> <p>Shumway score is calculated by $e^a / (1+e^a)$, where $a = -13.303 - 1.982*NI + 3.593*TL - 0.467*SIZE - 1.809 RET + 5.791 SIGMA$</p> <p>NI = net income/ total assets TL = total liabilities/ total assets SIZE = natural logarithm of the firm's size in terms of market capitalization relative to the total size of the NYSE and AMEX market</p>

	<p>RET= firm's past market adjusted return measured as the cumulative monthly stock return of the firm minus value weighed NYSE/AMEX return</p> <p>SIGMA = standard deviation of the residual of regression each stock's month's return in year t-1 on the value weighted BYSE/ AMEX index return for the same year</p>
EARN	Income before extraordinary item divided by total assets
SIZE	Natural logarithm of total assets
MB	Market value of equity divided by book value of equity
ABACC	Unexpected accruals based on Jones (1991)
GINDEX	G-index is based upon Gompers 2003 and includes 24 provision related to takeover defense and shareholder rights

8. References

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TABLES

Table 1						
Descriptive Statistic among Variables Used in the Main Regression						
Variable	n	Mean	Std. Dev.	Median	25%	75%
Firm Characteristics						
<i>DISTRESS</i>	29,533	0.587	0.297	0.621	0.330	0.864
<i>CFO_WEIGHT</i>	29,533	0.769	5.575	0.0493	-0.980	2.594
Dependent Variable						
<i>UCFO</i>	29,533	-0.001	0.215	-0.002	-0.002	0.059
Control Variables						
<i>EARN</i>	29,533	-0.0343	0.219	0.029	-0.044	0.070
<i>SIZE</i>	29,533	5.492	1.834	5.419	4.130	6.779
<i>MB</i>	29,533	2.644	3.052	1.869	1.102	3.219
<i>ABACC</i>	29,533	0.041	0.445	1.110	-0.053	0.068

Table 2**Model Parameters for Estimation of Unexpected Cash from Operations**

$$\underline{CFO}_t / TA_{t-1} = \lambda_0 + \lambda_1 (1/TA_{t-1}) + \lambda_2 (\underline{SALE}_t / TA_{t-1}) + \lambda_3 (\Delta \underline{SALE}_t / TA_{t-1}) + \varepsilon_t$$

<u>Parameter</u>		<u>Mean</u>	<u>Median</u>
<i>Intercept</i>		-0.015 **	-0.014 **
<i>1/TA_{t-1}</i>		-12.168 **	-0.702 **
<i>SALE_t/TA_{t-1}</i>		0.097 ***	0.054 ***
<i>(ΔSALE_t/TA_{t-1})</i>		-0.021 ***	0 ***
<i>R²</i>		0.694 ***	0.758 ***

Table 3				
Descriptive Statistic among Variables Used in the Main Regression				
- Comparison of Focused and Diversified firms				
Variables	Sample Means		Sample Medians	
	Focused	Diversified	Focused	Diversified
DISTRESS	0.5858385	0.5950938	0.6208978	0.6235037
CFO_WEIGHT	0.7627486	0.8046596	0.0154765	0.2126984
UCFO	-0.0028610	0.0026791	-0.0032250	-0.000342898
EARN	-0.0195405	-0.0023020	0.0317678	0.0344088
SIZE	5.4929611	5.4954742	5.4117978	5.4618383
MB	2.7072421	2.3260650	1.9090174	1.6842414
ABACC	0.0426293	0.0331670	9.71445	1.804112

Table 4			
Regressions of Unexpected Cash from Operations on Diversified Firms with Opportunity to Upward Manage Reported Cash from Operations			
$UCFO = \beta_0 + \beta_1 DIV + \beta_2 EARN + \beta_3 SIZE + \beta_4 MB + \beta_5 ABACC + \varepsilon_t$			
Variable	Predicted Sign	DIV Only	Including Control Variables
<i>Intercept</i>		-0.002 (-0.35)	0.014 * (1.792)
<i>DIV</i>	+	0.005* (1.428)	0.004 (1.059)
<i>EARN</i>	+		0.068*** (3.023)
<i>SIZE</i>	-		-0.003*** (-2.95)
<i>MB</i>	+		0.001 ** (2.193)
<i>ABACC</i>	-		-0.012 * (-1.74)
Number of observations		29,533	29,533
R-Squared		6.23%	7.2%

Table 5

Regressions of Unexpected Cash from Operations on Diversified Firms with Opportunity to Upward Manage Reported Cash from Operations

- For Sub-Sample of Firms with Higher Association of Return and CFO

$$UCFO = \beta_0 + \beta_1 DIV + \beta_2 CFO_WEIGHT + \beta_3 CFO_WEIGHT * DIV + \beta_4 EARN + \beta_5 SIZE + \beta_6 MB + \beta_7 ABACC + \varepsilon_t \quad (3)$$

Variable	Predicted Sign	DIV and Control Variables	Including Interaction Terms
<i>Intercept</i>		0.01122 (1.024)	0.01443 (1.278)
<i>DIV</i>		0.00201 (0.518)	-0.0108 (-1.076)
<i>CFO_WEIGHT</i>			-0.0005 * (-1.788)
<i>DIV * CFO_WEIGHT</i>	+		0.00206 * (1.322)
<i>EARN</i>	+	0.108 *** (5.564)	0.10846 *** (5.600)
<i>SIZE</i>	-	-0.002 (-1.556)	-0.00222 * (-1.600)
<i>MB</i>	+	0.00016 (0.236)	0.00018360 (0.261)
<i>ABACC</i>	-	-0.006 (-0.937)	-0.00673 (-0.939)
Number of observations		8,864	8,864
R-Squared		6.01%	6.51%

Table 6

Regressions of Unexpected Cash from Operations on Diversified Firms with Opportunity to Upward Manage Reported Cash from Operations

- For Sub-Sample of Firms with Greater Financial Distress

$$UCFO = \beta_0 + \beta_1 DIV + \beta_2 DISTRESS + \beta_3 DIV * DISTRESS + \beta_4 EARN + \beta_5 SIZE + \beta_6 MB + \beta_7 ABACC + \varepsilon_t \quad (4)$$

Variable	Predicted Sign	DIV and Control Variables	Including Interaction Terms
<i>Intercept</i>		-0.007 (-0.563)	-0.005 (-0.418)
<i>DIV</i>	+	0.009 * (1.325)	-0.00359 (-0.490)
<i>DISTRESS</i>			0.001 (0.498)
<i>DIV *DISTRESS</i>	+		-0.008 *** (-2.920)
<i>EARN</i>	+	0.206*** (5.210)	0.206 *** (5.226)
<i>SIZE</i>	-	-0.001 (-1.159)	-0.001 (-1.109)
<i>MB</i>	+	0.002 *** (3.217)	0.002 *** (2.865)
<i>ABACC</i>	-	-0.008 (-1.428)	-0.008 (-1.43)
Number of observations		11,818	11,818
R-Squared		8.54%	8.78%

Table 7

**Regressions of Unexpected Cash from Operations on Diversified Firms with
Opportunity to Upward Manage Reported Cash from Operations**

- Firm's Corporate Governance Structure Considered

$$UCFO = \beta_0 + \beta_1 DIV + \beta_2 EARN + \beta_3 SIZE + \beta_4 MB + \beta_5 ABACC + \beta_6 GINDEX + \varepsilon_t \quad (5)$$

Variable	Predicted Sign	DIV & GINDEX	DIV Interacted with CFO WEIGHT	DIV Interacted with DISTRESS
<i>Intercept</i>		0.027 * (1.77)	0.027 * (1.750)	0.0249 (1.575)
<i>DIV</i>	+	0.002 (0.425)	0.0036 (0.657)	0.017 (1.325)
<i>CFO_WEIGHT</i>			0.0004 (1.353)	
<i>DIV *CFO_WEIGHT</i>	+		-0.0016 *** (-2.143)	
<i>DISTRESS</i>				-0.005 * (-1.811)
<i>DIV* DISTRESS</i>	+			0.014 * (1.357)
<i>EARN</i>	+	0.128 *** (3.291)	0.128 *** (3.300)	0.121 *** (2.960)
<i>SIZE</i>	-	-0.004 *** (-2.962)	-0.0049 *** (-3.025)	-0.005 *** (-3.156)
<i>MB</i>	+	0.00 (0.0056)	0.00004 (0.0541)	-0.0002 (-0.271)
<i>ABACC</i>	-	0.001 (0.440)	0.0016 (0.422)	0.001 (0.339)
<i>GINDEX</i>	+	0.0002 (0.276)	0.0002 (0.304)	0.0003 (0.455)
Number of observations		29,533	29,533	29,533
R-Squared				

국문초록

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본 논문은 기업다각화와 기업의 현금흐름표 상 영업현금흐름 보고를 조정하는 경향과의 관계에 대하여 연구한다. 영업현금흐름 조정은 발생액 변화에 초점을 맞추는 이익조정과는 달리 경영진의 재무제표상의 현금흐름 분류와 보고 시점의 차이를 통하여 실현된다. 본 논문은 기업이 다각화를 통하여 현금흐름 조정에 유리한 환경과 기회를 가질 때 현금흐름 조정에 임하는지에 대하여 분석한다. 기업다각화는 재량적 영업현금흐름과 양의 관계를 가지나 그 통계적 유의미성은 기업 전체를 본 샘플에서는 그 크기가 아직 미미하다. 그러나 기업이 재무적 불건전성이 높은 경우 또는 기업의 영업현금흐름이 주가와 관련성이 상대적으로 높은 경우 다각화와 영업현금흐름 상향조정과의 양의 관계가 더 커지는 것을 관찰할 수 있다. 또한 기업 지배구조의 질을 통제하더라도 기업다각화와 영업현금흐름 조정의 양의 관계간의 유의미성이 지속적으로 나타났다.

주요어: 영업현금흐름, 기업다각화, 현금흐름조정, 재무적 불건전성, 현금흐름 주가 관계, 기업지배구조

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