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Earnings Management in South Korea: Using Tax Expenses

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ABSTRACT

We expect that tax expenses will provide a last opportunity to meet an earnings target, and involve the complexity and discretion necessary for information asymmetry to persist. Hence, tax expenses are powerful settings to examine earnings management among a wide range of firms. Considering this background, we hypothesize that changes in tax expenses are related to whether firms miss their reported earnings of the previous year. We also examine the possibility and effectiveness of earnings management through tax expenses depending on the amount to be managed.

Consistent with our hypothesis, we find that firms decrease the fourth quarter effective tax rate (ETR) to meet the previous year's reported earnings. However, tax expenses could be a successful tool to manage earnings, but only when unmanaged earnings are very close to a target. These results provide general evidence that tax expenses are used to manage earnings, and suggest that stricter external audit procedures for tax expenses are required to prevent self-interested discretion by managers on their firm's tax returns.

Keywords: Earnings management; Earnings target; Effective tax rate; Tax expenses

1. Introduction

Recently, as the South Korean stock market has matured, a growing number of investors have begun to rely more on reasonable decision criteria, such as a firm's underlying value. Under these circumstances, most investors are paying assiduous attention to the reported earnings, stock price, and the credit ratings of the firms. In this situation, firms reporting decreased earnings could be at a significant disadvantage such as fall in stock

price, credit ratings downgrade. Thus, there may exist strong incentives for earnings management to avoid an earnings decrease, and those incentives appear to be increasing in the length of a preceding string of earnings increase. Several recent studies, such as Barth et al. (1995), Dechow et al. (2000), Burgstahler et al. (1997), and Song (2004), provide some systematic evidence on the incentives to maintain a consistent earnings increase.

To date, a great deal of research has examined specific accruals to test earnings management, including bad debt expense, loan loss provisions, and depreciation expenses. Furthermore, this research tested earnings management using accounting change, gains or losses from the disposal of tangible assets or investments, and trading with affiliated companies. In general, however, these tools, which companies employ for earnings management, had significant limitations and incurred substantial costs. First

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of all, earnings management using accruals seems to be easily discovered during the course of external audits, which have become more commonplace these days. Accounting changes have critical limitations as the details and the following effects should be publicly noticed through audit reports, and trading with affiliated companies is accompanied by considerable transaction costs.

On the other hand, tax expenses meet a necessary condition for earnings management. In large firms, tax expenses are hard to estimate because they require complicated procedures in collecting relevant and complex information between a fiscal year end and earnings announcement date. Components of total tax expenses, which have complexity and could be used for tax planning, include foreign tax rate planning, tax credits, and export tax incentives. Although managers should gather more complete information before tax returns are filed, the estimates at the earnings announcement date used to be imprecise. Estimating tax expenses also involves substantial discretion because of tax contingencies and valuation allowances. Under these conditions, the complexity of tax expenses computation and the discretion in estimating tax accruals allow information asymmetry to persist between managers and both auditors and shareholders. We assert that the combination of judgment, discretion, information asymmetry, and time pressure should create a situation in which the company can use tax expenses as a useful tool to achieve earnings target. Thus, while there exist many other pre-tax accruals for earnings management, we would like to provide systematic evidence as to whether firms avoid reporting earnings decrease using tax expenses. Specifically, this research was designed to answer the following questions.

First, we examine whether firms manage tax expenses to avoid reporting an earnings decrease. Second, we examine whether the possibility and the effectiveness of earnings management using tax expenses will be changed according to the amount of the gap in missing a target, absent tax expense management. Through this examination, we can provide evidence that tax expenses would be a useful means to manage earnings, especially when unmanaged earnings are very close to a target.

Third, we examine whether managers incorporate imprecise tax returns in computing tax expenses as a means to manage reported earnings and therefore whether losses on prior year error correction will be recorded in the financial statements of the following years as the

result of the earnings management.

We measure earnings management as the difference between the annual effective tax rates (ETR) at year end and the third quarter ETR. Because the third quarter ETR is an annual estimate that already incorporates tax planning anticipated for the fourth quarter, we can reasonably assume that it should be a reasonable proxy for unmanaged ETR¹⁾. Our proxy for earnings absent tax expense management is the earnings the firm would report if it used actual pre-tax earnings and unmanaged ETR (ETR at the third quarter).

We find that firms decrease their annual ETR from the third to the fourth quarter as earnings, absent tax expense management, fall short of the reported earnings in the previous year. Thus, ETR decrease is getting stronger as the length of the preceding string of earnings increases. We obtained evidence that tax expenses can be a useful tool to manage earnings, but only when unmanaged earnings are very close to the target. We also find that managers incorporate imprecise tax returns in computing tax expenses as a means to manage reported earnings, and that the earnings management results in losses on prior year error correction, which are recorded in the financial statements of the following years.

This study contributes to earnings management research by providing additional evidence that reported tax expenses are used to manage earnings. In addition, we can provide useful guidance in interpreting prior period error correction relating to tax expenses. For the policymaker, these results suggest that stricter external audit procedures for tax expenses are required to prevent self-interested discretion by managers on their firms' tax returns.

We organize the paper as follows. Section 2 reviews the existing literature on earnings management and taxes and develops arguments for our hypothesis. Section 3 describes the research design and samples. Section 4 presents descriptive statistics and the results of the empirical tests. Section 5 summarizes the conclusions.

1) IAS (International Accounting Standard) No. 34 describe as follows; An entity shall apply the same accounting policies in its interim financial statements as are applied in its annual financial statements, except for accounting policy changes made after the date of the most recent annual financial statements that are to be reflected in the next annual financial statements. However, the frequency of an entity's reporting (annual, half-yearly, or quarterly) shall not affect the measurement of its annual results. To achieve that objective, measurements for interim reporting purposes shall be made on a year-to-date basis.

II. Background and hypothesis

Prior empirical evidence suggests that investors in listed companies use simple earnings-based benchmarks in evaluating the firms and corporate managers have strong incentives for earnings management to achieve the earning target, such as prior year's reported earnings or analysts' earnings forecast.

Dechow et al. (2000) conclude that managers have strong incentives to beat benchmarks, implying that firms scarcely beating the benchmarks are more likely to engage in earnings management. These benchmarks are losses, earnings decrease, and not meeting the expectations of analysts.

Francis et al. (2003) show that market participants focus on the persistently increasing earnings pattern, rather than other patterns such as beating analyst's forecasts or smoothed earnings. Barth et al. (1995) report that firms with a consistent pattern of earnings increase command higher price-to-earnings multiples, after controlling of earnings levels. Additionally, they find that this premium is larger for a longer series of earnings increases, whereas the premium is eliminated or reduced substantially when the established patterns of earnings increases are broken. Thus, we consider the reported earnings as an "important benchmark of firm valuation," and a managers' incentive to manage reporting earnings to avoid an earnings decrease.

Burgstahler et al. (1997) offer more systematic evidence of earnings management to maintain a consistent increase in earnings. They hypothesize that corporate managers have incentives to avoid reporting losses or declines of earnings and examine the distribution of reported earnings concerning these points. Their findings indicate that there is a higher-than-expected frequency of firms with slightly positive earnings changes (or earnings) and a lower-than-expected frequency of firms with slightly negative earnings changes (earnings). The authors interpret these findings as evidence that some firms use earnings management to avoid reporting an earnings decline (or negative earnings).

Recent studies on earnings management have focused on a number of specific accruals, accounting changes, gains or losses from the disposal of tangible assets or investments, and trading with affiliated companies. However, in general these tools that companies employ for earnings management have significant limitations and

incur substantial costs. We consider tax expenses, as this is the material for a broad set of firms and it contains the necessary discretion that generates information asymmetry between managers and investors or analysts. The complexity of computation for tax expenses and the discretion in estimating tax accruals result in information asymmetry persisting between managers and both auditors and shareholders.

Dhaliwal et al. (2004) provide evidence that firms lower their projected effective tax rates when they miss the analysts' forecast consensus, which is consistent with firms decreasing their tax expenses if non-tax sources of earnings management are insufficient to achieve the target. They also find that firms, which exceed earnings, target an increase of their ETR, but this effect is less significant. Thus, we aver that the combination of judgment, discretion, information asymmetry, and time pressure should create a situation in which a company can use tax expenses as the opportunity to achieve earnings target. Considering this background, we propose the following hypothesis.

Hypothesis: If firms' earnings, absent tax expense management, fall short of the reported earnings of the previous year, then those firms manage reporting earnings using tax expenses to avoid an earnings decrease.

III. Research design and sample

A. Relationship between changes in tax expenses and incentive to manage earnings

We estimate the following model to test our hypothesis that tax expense management could occur in the firms where their earnings miss their reported earnings of the previous year.

$$\text{ETR_Q3_ETR_Q4} = \alpha + \beta_1 \text{Miss_Amount} + \beta_2 \text{ETR_Q3} + \beta_3 \text{EBT_Q3_EBT_Q4} + \sum_{n=4}^7 \beta_n \text{Year}_{2009-2012} + \varepsilon_{it}$$

Where,

- ETR_Q3_ETR_Q4: the third-quarter ETR (ETR_Q3) less the fourth quarter ETR (ETR_Q4)

- Miss_Amount: earnings absent tax expense management [= pre-tax income * (1-ETR Q3)] less prior year's reported earnings
- ETR Q3: the third-quarter ETR
- EBT Q3_EBT Q4: the third-quarter pre-tax income less the fourth-quarter pre-tax income
- Year₂₀₀₉₋₂₀₁₂: year dummy variable

The above regression incorporates our proxy for tax expense management (ETR Q3_ETR Q4) and the difference (Miss_Amount) between the prior year's reported earnings and earnings, absent tax expense management (pre-tax earning adjusted for ETR Q3), as discussed below.

We measure earnings management as the difference between the annual effective tax rates (ETR) at year end and the third quarter ETR. Because the third quarter ETR is an annual estimate that already incorporates tax planning anticipated for the fourth quarter, we assert that it is a reasonable proxy for the unmanaged ETR. Thus, we believe that the attractive feature of the ETR Q3_ETR Q4 design is that it should measure unanticipated changes in ETRs.

To measure the incentive to manage earnings, we assert that firms thus have an incentive if they missed their target earnings based on unmanaged earnings (earnings absent tax expense management). We use the prior year's reported earnings for target earnings. We construct earnings, absent tax expense management, using actual pre-tax earnings less our proxy for unmanaged tax expenses: actual pre-tax earnings times one minus the annual ETR reported at the third quarter. Thus, our measure of a firm's incentive to manage earnings is the earnings absent tax expense management, less prior year's reported earnings (Miss_Amount).

Consistent with our hypothesis, we expect ETR Q3_ETR Q4 to be negatively related to how much the firm missed the prior year's reported earnings (Miss_Amount).

We include the firms' annual ETR at the third quarter (ETR Q3) to control the amount by which the firm could decrease its ETR. This will also pick up any underlying mean reversion (that is, extreme third-quarter ETR becomes more central at year-end). We also include a control for unexpected changes in ETR because of exogenous factors such as unanticipated earnings surprise. Because unanticipated changes in pre-tax earnings will

result in an induced change in the annual ETR, we incorporate the third-quarter pre-tax income less the fourth-quarter pre-tax income (EBT Q3_EBT Q4) for the purpose of the control. Additionally, we consider a control for the year to take into account any macroeconomic effects that caused systematic over- or underestimation of annual ETR.

B. Effect of amount to be managed on tax expense management

We anticipate that the manageable amount using tax expenses will be relatively smaller than other earnings management tools, such as accruals. Thus, the firms that need a small amount to avoid earnings decrease will use tax expenses to manage earnings. To examine the effect of the amount to be managed on the possibility and the effectiveness of tax expense management, we change the basic research design as follows, by adding a dummy variable to measure the amount to be managed to meet target earnings.

$$\begin{aligned} \text{ETR Q3_ETR Q4} = & \alpha + \beta_1 \text{Miss_Amount} + \beta_2 \text{Dummy} \\ & + \beta_3 \text{Miss_Amount*Dummy} + \beta_4 \text{ETR Q3} \\ & + \beta_5 \text{EBT Q3_EBT Q4} + \sum_{n=6}^9 \beta_n \text{Year}_{2009-2012} \\ & + \varepsilon_{it} \end{aligned}$$

Where,

- Dummy: dummy variable that equals 1 if $-0.1 < \text{Miss_Amount} < 0$, and 0 otherwise.
- Other variables are as defined in the basic regression model.

Consistent with our hypothesis, we expect ETR Q3_ETR Q4 to be positively related to the dummy variable to measure the amount to be managed in order to meet the target earnings (Dummy_Miss_Amount).

C. Sampling

To compile our sample, we start with quarterly financial data of listed firms on the Korean Stock Exchange, which is available in the KIS-Value database from 2009 to 2012. We exclude firms in the banking industry and the issues

Table 1. Criteria for selection of the sample.

Selection criteria	Number of observations
1. Listed firms in non-banking industries, for which quarterly financial information is available in KIS-Value Database from 2009 to 2012 (excluding issues for administration).	6,536
2. Observations with omitted financial data and non-December firms.	(1,486)
3. Observations with negative pre-tax income or ETR.	(1,633)
4. Top and bottom 1% of distributions of ETR Q3, ETR Q4, and Miss_Amount.	(167)
Firm-year final selections for the empirical test.	3,250

Table 2. Univariate statistics for sample observations and variable definitions.**Panel A: Description of sample.**

Variables	Mean	Std. Dev.	Min	Median	Max
Total sample: (N=3,250)					
ETR Q3_ETR Q4	0.0008	0.0905	-0.6259	0.0029	1.1371
Miss_Amount	0.0150	0.0557	-0.1353	0.0065	0.4522
ETR Q3	0.2146	0.0939	0.0104	0.2179	1.3506
EBT Q3_EBT Q4	-0.0188	0.0295	-0.3048	-0.0138	0.1627
Tax_Adj	0.0000	0.0000	0	0	0.0047
Sub-group with incentive for earnings management (with (-) Miss_Amount): (N=1,357)					
ETR Q3_ETR Q4	0.0042	0.1059	-0.5931	0.0041	1.1371
Miss_Amount	-0.0275	0.0253	-0.1353	-0.0199	-0.0000
ETR Q3	0.2239	0.1086	0.0124	0.2195	1.3506
EBT Q3_EBT Q4	-0.0109	0.0238	-0.1294	-0.0086	0.1627
Tax_Adj	0.0000	0.0000	0	0	0.0001
Sub-group without incentive for earnings management (with (+) Miss_Amount): (N=1,893)					
ETR Q3_ETR Q4	-0.0015	0.0775	-0.6259	0.0025	0.6796
Miss_Amount	0.0455	0.0514	0.0000	0.0286	0.4522
ETR Q3	0.2079	0.0811	0.0104	0.2169	0.7743
EBT Q3_EBT Q4	-0.0245	0.0317	-0.3048	-0.0190	0.1135
Tax_Adj	0.0000	0.0000	0	0	0.0047

Panel B: Pearson correlation coefficients for regression variables.

Variables	ETR Q3_ETR Q4	Miss_Amount	ETR Q3	EBT Q3_EBT Q4	Tax_Adj
Total sample: (N=3,250)					
ETR Q3_ETR Q4	1				
Miss_Amount	-0.02553	1			
ETR Q3	0.44621***	-0.09962***	1		
EBT Q3_EBT Q4	-0.07948***	-0.31263***	0.04120***	1	
Tax_Adj	-0.00533	0.00459	0.00791	-0.00780	1
Sub-group with incentive for earnings management (with (-) Miss_Amount): (N=1,357)					
ETR Q3_ETR Q4	1				
Miss_Amount	-0.05204**	1			
ETR Q3	0.50850***	0.01440	1		
EBT Q3_EBT Q4	-0.12551***	-0.04051	-0.03432	1	
Tax_Adj	-0.07367***	-0.01073	-0.03723	0.03041	1
Sub-group without incentive for earnings management (with (+) Miss_Amount): (N=1,893)					
ETR Q3_ETR Q4	1				
Miss_Amount	0.01424	1			
ETR Q3	0.36269***	-0.10440***	1		
EBT Q3_EBT Q4	-0.06927***	-0.27406***	0.06528***	1	
Tax_Adj	-0.00504	-0.00963	0.01537	-0.00508	1

a) Variable definitions:

ETR Q3 ETR Q4: the third-quarter ETR (ETR Q3) less the fourth quarter ETR (ETR Q4);

Miss_Amount: earnings absent tax expense management [= pre-tax income * (1-ETR Q3)] less prior year's reported earnings;

ETR Q3: the third-quarter ETR;

EBT Q3 EBT Q4: the third-quarter pre-tax income less the fourth-quarter pre-tax income;

Tax Adj: Prior period error collection reported in following year's financial statements/last year end total asset.

b) All variables are scaled by total market value of stock at the end of last year.

c) ***, **, *: Significant at the 0.01, 0.05, 0.1 levels.

for administration because of heterogeneity. Furthermore, we limit our sample to the firms with positive pre-tax income and positive effective tax rates for a cumulative amount, so that the results could be more easily interpreted. Finally, we delete firm-year observations, which are outliers, in the top and bottom 1% of the distributions of ETR Q3, ETR Q4, and Miss_Amount.

Table 1 shows 3,250 observations that were the final selections, as explained by the aforementioned procedure.

IV. Results

A. Descriptive statistics

Table 2 provides descriptive statistics for the 3,250 firm-year observations and Pearson correlation coefficients between any two of the variables. Descriptive statistics in Table 2 show the data of the total sample in a single group and two sub-groups, as also divided by incentives for earnings management.

The statistics of the sub-group with incentive for earnings management (Panel A) show that the change in ETR from the third quarter to the fourth quarter is significantly positive (mean 0.0042). On the other hand, the third quarter ETR, of the sub-group without incentive for earnings management, is smaller than the fourth quarter ETR (mean -0.0015). It indicates that firms with the incentive to manage tax expenses decrease the fourth quarter ETR to prevent current reported earnings from decreasing more than the previous year.

Panel A also shows that the EBT Q4, of the sub-group

with earnings management incentive, decreases considerably compared with EBT Q3 (mean -0.0109), but the sub-group without incentive does not (mean -0.0245). This means that firms, where pre-tax income in the fourth quarter is smaller than that of the third quarter, have an incentive to manage reported earnings, thereby indicating that these firms will use tax expenses to manage earnings at the end of the fourth quarter as a last chance to meet target earnings.

Panel B shows that the change in ETR (ETR Q3-ETR Q4) is negatively correlated with the amount gap that misses the target, as we hypothesized. It implies that if earnings absent tax expense management fall short of the previous year, firms will reduce tax expenses of the fourth quarter.

B. Regression to test the tax rates changes on earnings management incentives

Table 3 presents the test results, which are mostly consistent with our hypothesis. As predicted, ETR Q3_ETR Q4 is negatively related (coefficient = -0.05312, $t=-1.94$) to the amount of the gap missing the target, which are the previous year's reported earnings (see Table 3). ETR Q3_ETR Q4 is positively and negatively related to the control variables, ETR Q3 and EBT Q3_ETB Q4, respectively, which exactly corresponds to our expectations. Therefore, we conclude that when earnings, absent tax expense management, fall short of the reported earnings from the previous year, firms decrease the annual ETR from the third to the fourth quarter to avoid an earnings decrease.

Table 3 also presents the results from sub-groups, as

Table 3. Regression of change in ETR on incentive to manage tax expenses.

$$\text{ETR Q3_ETR Q4} = \alpha + \beta_1 \text{Miss_Amount} + \beta_2 \text{ETR Q3} + \beta_3 \text{EBT Q3_EBT Q4} + \sum_{n=4}^7 \beta_n \text{Year}_{2009-2012} + \varepsilon_{it}$$

Variables	Pred. sign	Coefficients (t-value)		
		Total sample	Sub-groups divided by incentive for earnings management	
			with (-) Miss_Amount	with (+) Miss_Amount
Miss_Amount	(-)	-0.05312(-1.94)**	-0.28507(-2.91)***	0.01049(0.31)
ETR Q3	(+)	0.42936(28.44)***	0.49247(21.80)***	0.34840(17.02)***
EBT Q3_ETB Q4	(-)	-0.32344(-6.42)***	-0.49268(-4.78)***	-0.22613(-4.18)***
Adjusted R ²		0.2146	0.2762	0.1483
Number of observations		3,250	1,357	1,893

a) Variables are defined in Table 2.

b) ***, **, *: Significant at the 0.01, 0.05, and 0.1 levels, respectively.

c) We divided the sub-groups by incentive for earnings management with (-) Miss_Amount and with (+) Miss_Amount.

divided by incentive for earnings management. We anticipate that the group with (-) Miss_Amount has a much stronger incentive to manage tax expenses to maintain the earning increase, than the group with (+) Miss_Amount. The results show that ETR Q3_ETR Q4 of “the group with (-) Miss_Amount” has a much stronger negative correlation to the Miss_Amount (coefficient = -0.28507) than “the group with (+) Miss_Amount” (coefficient = 0.01049). Moreover, “the group with (+) Miss_Amount” has a positive correlation, which means that firms, with a weak persistency of a previous string of earnings increase, are not willing to manage tax expenses to beat the target.

In summary, firms decrease their annual ETR from the third to the fourth quarter as earnings, absent tax expense management, fall short of the reported earnings in the previous year. The decrease in ETR is getting greater according to the incentive of earnings increase.

C. Test for the effect of the amount to be managed by tax expense management

We predict that the manageable amount of earnings by tax expenses is relatively smaller than other earnings management tools, such as accrual or cash flow management. Thus, firms that succeed in earnings management by tax expenses seem to have a smaller Miss_Amount than firms that fail to decrease their ETR. To test our conjecture, we classify firms, which would have missed last year’s earnings using the estimated annual ETR at the third quarter, into two sub-groups: firms that succeed in tax management and firms that fail. As the next procedure, we compare the two sub-groups to examine whether there is a significant difference in variables of

ETR Q3_ETR Q4 and Miss_Amount. The results are presented in Table 4, as below.

Table 4 presents a t-test that shows that the ETR decrease of the firms is associated with actual earnings beating the target, which are the reported earnings of the previous year. Firms, whose reported earnings beat the previous year’s earnings, have a more significant negative change in ETR than firms whose reported earnings continue to miss the target. This suggests that the decrease in ETR assists in meeting the target.

We anticipate that firms with a relatively large amount to be managed will fail to meet the target because earnings management using tax expenses is only applicable to a small amount under some limits. To understand this, we examine the amount by which they missed the target, absent tax expense management (Miss_Amount). Firms that eventually beat the target only needed to increase earnings by -0.00921 on average, whereas firms that eventually fall short of last year’s reported earnings needed to increase earnings by -0.02850 on average (as can be seen in Table 4). The difference is significant at the 1% level (t-value = -7.81).

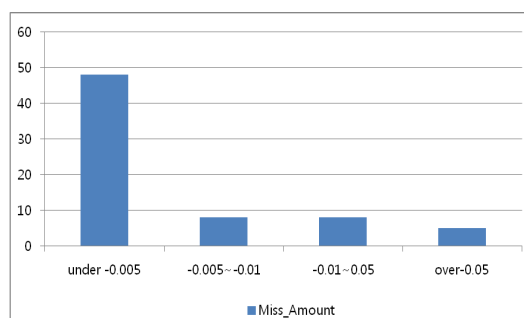


Figure 1. Frequency of Miss_Amount of firms that beat the target.

Table 4. Test of change in ETR by whether firms beat the target earnings.

Whether firms beat the target	N	Mean (ETR Q3_ETR Q4)	Mean (Miss_Amount)
Successful group (Current year \geq Last year)	69	0.09200	-0.00921
Failure group (Current year < Last year)	1,288	-0.00044	-0.02850
t-value		-8.60***	-7.81***

a) Variables are as defined in Table 2.

b) The sample is limited to firms whose earnings absent tax expense management fall short of last year’s.

c) ***, **, *: Significant at the 0.01, 0.05, and 0.1 levels, respectively.

d) We classify firms, who would have missed the last year’s earnings using the estimated annual ETR at the third quarter, into two sub-groups. The “Successful group” consists of firms that succeed in tax management, whereas the “Failure group” consists of firms that fail.

Table 5. Regression of change in ETR on amount to be managed.

$$\text{ETR Q3_ETR Q4} = \alpha + \beta_1 \text{Miss_Amount} + \beta_2 \text{Dummy} + \beta_3 \text{Miss_Amount*Dummy} + \beta_4 \text{ETR Q3} + \beta_5 \text{EBT Q3_EBT Q4} + \sum_{n=6}^9 \beta_n \text{Year}_{2009-2012} + \varepsilon_{it}$$

Variables	Pred. sign	Coefficients (t-value)
Miss_Amount	(-)	-0.01358(-0.39)
Dummy	(+)	-0.00312(-0.76)
Miss_Amount*Dummy	(-)	-0.27055(-2.55)***
ETR Q3	(+)	0.43015(28.49)***
EBT Q3_EBT Q4	(-)	-0.31642(-6.27)***
Adjusted R ²		0.2157
Number of observations		3,250

a) Dummy: dummy variable that equals 1 if $-0.1 < \text{Miss_Amount} < 0$, and 0 otherwise.

The other variables are defined in Table 2.

b) ***, **, *: Significant at the 0.01, 0.05, and 0.1 levels, respectively.

Figure 1 shows the frequency of firms that actually beat the target, and most of the firms that beat the target are within -0.1 of the Miss_Amount.

To examine the effect of the amount to be managed on the possibility and the effectiveness of tax expense management, we regress change in ETR from the third to fourth quarter on a dummy variable measuring the amount to be managed to meet the target earnings; and thus expect ETR Q3_ETR Q4 to be negatively related to a dummy variable (Miss_Amount*Dummy). The results are presented in Table 5.

Table 5 shows that the coefficient of the Miss_Amount*Dummy variable is significant at the 1% level (t-value = -2.55). This means that the amount to be managed to meet the target earnings affects change in the ETR from the third to the fourth quarter. Thus, there is systematic evidence for the effect of the amount to be managed on the possibility and the effectiveness of tax expense management. That is, the manageable amount using tax expenses is relatively smaller than other earnings management tools like accruals, and only firms that need a small amount to avoid earnings decrease can use tax expenses to manage earnings.

V. Conclusions

We investigated whether income tax expenses are regularly used to maintain the series of earnings increase.

Tax expenses provide a final opportunity to meet earnings target after the firms have agreed to any pre-tax adjusting entries required by the independent auditors. Tax expenses also contain the complexity and the discretion necessary for the information asymmetry. Thus, tax expenses are a powerful setting to examine earnings management for many firms.

We examined whether firms manage tax expenses to avoid reporting earnings decrease. We found that firms decrease their annual ETR from the third to the fourth quarter as earnings, absent tax management, fall short of the previous year's reported earnings.

We also examined whether the possibility and the effectiveness of the earnings management using tax expenses change with the amount by which firms missed the target. We obtained evidence that tax expenses can be a useful tool to manage earnings, but only when unmanaged earnings are very close to the target.

Our findings contribute to the earnings management research by providing general evidence that reported tax expenses are used to manage earnings to reach benchmarks. These findings are useful to financial statements users and policymakers as tax expense management has not yet been thoroughly documented. For the policymakers, our result suggests that stricter external audit procedures for tax expenses are required to prevent self-interested discretion by managers on their firms' tax returns.

This study has several limitations. While we only focus on the managers' incentive to avoid earnings decrease, tax expense management is applicable to the other earnings management incentives, such as meeting analyst forecasts,

income smoothing, and management compensation.

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