

EVALUATION OF MARKET REACTION TO THE USE OF CHANGES IN ESTIMATED
TAX RATES TO MEET OR BEAT ANALYST FORECASTS

By

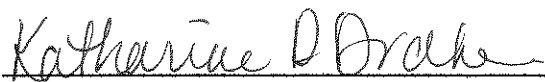
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Abstract

Last chance tax earnings management is a method for companies to use when earnings do not meet analyst forecasts. Companies are also able to plan for future tax manipulation by over estimating tax expense in earlier quarters to accommodate for changes on the annual report. This study examines the market reaction for firms that use tax earnings management in interim quarters to meet analyst forecasts. The market reaction is measured through the use of price reaction and trading volume. Results reflected a negative correlation between the firm's market price and the use of tax earnings management to meet analyst forecasts. Trading volume did not reflect a negative correlation to interim tax earnings management.

I. Introduction

Last chance tax earnings management is a method for companies to use when earnings do not meet analyst forecasts. Companies are also able to plan for future tax manipulation by over estimating tax expense in earlier quarters to accommodate for changes on the annual report. This study examines the use of tax earnings management in interim quarters to meet analyst forecasts.

Prior research has confirmed that there is an evident usage of last chance earnings management (Dhaliwal, Gleason, and Mills (2004)). When management is incentivized to meet or beat analyst forecasts, tax expense is a final opportunity to meet the threshold. Therefore firms are likely to use tax earnings management if accruals or other means of earnings management do not pull their earnings up to analyst forecasts. Sometimes firms plan for the use of tax expense earnings management by creating “slack” in earlier quarters. Quarters two and three effective tax rates (ETR) are biased upwards to create slack for the final annual announcement ETR. The higher tax rate may be a reflection of management’s conservatism while also allowing slack for future quarter tax rates (Comprix, Mills, and Schmidt (2012)). Since the Accounting Principles Board (APB) Opinion No. 28 requires firms to estimate ETRs in interim periods, it is assumed these values should be as accurate as possible based on historical information. The estimated ETR should also signify the values and changes in tax credits, foreign tax rates, percentage depletion, and many others. Management’s use of the entire year to plan for tax earnings management may not be seen favorably in the eyes of shareholders.

Findings from Dhaliwal et al. (2004) document the usage of tax earnings management especially when firms are unable to meet predicted forecasts. However the

use of tax earnings management is not looked favorably upon by the public. In general, prior research has found a market benefit to companies meeting or beating analyst forecasts. However, as the investor population learns more about the strategies firms use to meet or beat forecasts, there is less of a benefit when the firm has engaged in abnormal accruals. Tax expense is very generalizable, which allows for manager flexibility, and allows investors the ability to view the unexpected changes from quarter three to four. Companies are rewarded less when they use tax expense management to meet or beat analyst forecasts (Gleason and Mills (2008)). Although the market reaction is researched for the unusual change in tax expense from quarters three to four, there is no research yet completed for market reaction in terms of management using “slack” to accommodate for tax earnings management.

Market reaction can be measured through the use of price changes as well as trading volume. Research has shown that trading volume persists longer than price reaction (Morse (1981)). Thus, the tool of trading volume has been used to measure the reaction of the market following quarterly announcements. The variable of unexpected earnings showed promising results of trading volume change magnitude and persistence (Bamber (1987)). Therefore, by introducing trading volume as a measure for market reaction on top of the more commonly used price reaction, will verify results with the utilization of both.

This study intends to contribute to the current last change earnings management literature. This study shows the market reaction in quarters two and three when firms use tax expense to meet analyst forecast. The market reaction is measured through price changes as well as trading volume.

II. Background and Hypothesis Development

Earnings management is a well-studied topic for accounting research literature. From early on, Schipper (1989) accurately defined a major necessary condition for earnings management persistence: information asymmetry between management and shareholders. In this case, the information necessary to understand a company's tax expense is not explicitly explained in the quarterly announcement, thus allowing management the opportunity to use tax expense as a means of earnings management. Managers are incentivized to meet or beat analyst forecasts. This often leads to the usage of earnings management to reach the threshold (Dechow and Skinner (2000); Brown and Caylor (2004); McVay, Venky, and Vicki (2006)). In a similar manner, managers are also met with a penalty if the company is unable to meet analysts' forecasts (Skinner and Sloan (2002)). This suggests management's drive to meet or beat predicted numbers, often at all costs. With the accumulating internal and external pressure and lucrative incentives for performance, management may sometimes put aside all morals and use earnings management to reach the company's goals.

One of the tools of earnings management a company may use is the tweaking and manipulation of accruals. However, management may still not meet the analyst forecasts with just the use of accruals manipulation. This leads to the use of tax earnings management. Tax expense is one of the last accounts to close before annual announcements; therefore it is the final list item that can be modified if accruals or other earnings management tools have failed (Dhaliwal et al. (2004)). Last chance earnings management is a tool that generally occurs as an ETR change from quarters three and four to meet forecast numbers. Cook, Huston, and Omer (2008) extends Dhaliwal et al.

(2004) by correlating the findings with the usage of ETRs as tax planning for companies. Similar to findings from Dhaliwal et al. (2004), there is a definite abnormal change in fourth quarter ETRs to meet or beat analyst forecasts.

It has also been suggested that firms make use of prior quarters to create “slack” to enable a decrease in ETRs in the annual report. This is more likely seen in quarters two and three, since quarter one may still be influenced by the prior year’s annual report numbers. Therefore, in quarters two and three, management may report a higher tax rate to show conservatism but also allow for slack in the final quarter (Comprix, Mills, and Schmidt (2012) and Gleason and Mills (2008)) refer to this slack as a “tax cushion” that derives from management’s flexibility in booking and the release of tax loss contingencies. Initial changes in the tax rate are generally more permanent. There is also a transitory quality of initial tax changes, thus, management can set ETRs in a more opportunistic manner in interim periods to make up for any changes in the final quarter (Schmidt (2006)). Firms also use tax biases in earlier quarters to smooth earnings (Blouin and Tuna (2002)). APB Opinion No. 28 requires firms to report estimated annual ETRs. This is, however, quite difficult to accurately measure when the year is only half complete. In addition, the PCAOB does not require auditors to complete intra-period financial reporting audits. Even though there is a loose review of the quarterly earnings, it is not as intensive as the annual report audits.

Earnings management also implies weaker and lower quality numbers. The stock market premium when firms show lower quality earnings through abnormal accruals to meet EPS analyst targets is smaller. The market reward decreases when firms use earnings management techniques such as abnormal accruals. Last chance earnings

management is another technique that is not viewed highly in the eyes of investors. The change from quarter three to four ETRs is easily spotted and noticeable even to newer investors. Gleason and Mills (2008) realized, as investors increasingly understood more earnings management strategies, the pay offs from the use of earnings management decreases considerably. Therefore, the benefit of using tax earnings management to meet or beat analyst forecasts drops even if they do exceed analyst forecasts. Gleason and Mills researched the market reaction (punishment) for the duration of the final quarter ETR changes. However the market reaction for the interim-period usage of tax earnings management has not yet been studied.

There is also the possibility no market reaction will occur during interim-period estimates. The tax expense line item is very complex, not only investors but also analysts are unable to properly decipher it. Analysts are unable to predict accurately or truly understand each factor that must be taken into account for the tax expense (Plumlee (2003)). Therefore, it is possible only certain types of investors may pick up on companies using a “tax cushion” in quarters two and three. Also, since the quarterly estimates are not heavily reviewed, investors may not look at the quarterly estimates as closely for determining their investment rate. Tax earnings management usage may also have been affected by the passing of FIN 48 (Cazier, Rego, Tian, and Wilson (2011)). Although there is the intention of limiting the use of last chance earnings management, Cazier et al. (2011) found that firms still continued managing their tax expense.

There is the possibility of this research not finding any reaction to the usage of tax cushions in earlier quarters. However, this paper suggests, based on prior research and findings, there will be a negative reaction to the use of tax manipulation to meet or beat

analyst's forecasts. Market reaction will also be tested with price fluctuations as well as trading volume. The hypothesis is expressed as follows:

H1: There will be a negative market reaction for firms that use changes in effective tax rate to meet or beat earnings forecasts.

Market reaction measured solely on price reaction may not be entirely accurate. Therefore, with the addition of trading volume as a measure this paper will also show a more accurate finding. It has been proven that trading volume effects persist longer than general price reaction (Morse (1981)). Unexpected earnings have been used as a condition to measure the use of trading volume changes. Bamber (1987) found a considerable change in magnitude and persistence with higher unexpected earnings. The study was able to find a trading volume reaction specifically based on quarterly earnings announcements. However, there is also the possibility the reaction may be reflective of the unusually high tax versus the discovery of the firm using a "tax cushion." This paper suggests that there will be a reaction based on the "tax cushion" specifically with the increasing trader knowledge. On the other hand, firms may utilize quarter two and three ETRs to meet or beat analyst forecast. Therefore, firms may make changes to ETR in accordance with what is reflected by analysts. There is a possibility the fluctuations in tax estimates may lead to punishment in the market. Though this punishment may be based on the ability (or lack of) to forecast in interim quarters. This affects the forecasting abilities of not only management but also investors. Since there will be a negative reaction on the investor side, it is assumed there will be more trading from investors who

recognize the use of interim quarters as a part of earnings management. Thus, the second hypothesis reads:

H2: There will be an increase in market trading volume for firms that use changes in effective tax rate to meet or beat analyst forecasts.

III. Research Design

Following Gleason and Mills (2008), the hypotheses are tested through determining the reaction of the market to a firm meets or beats analyst consensus quarterly forecast by using tax. The abnormal market reaction is measured as the cumulative return from one trading day before to one trading day after each of the quarterly announcement less the return over the same window for the firms in the same CRSP size decile. The data for earnings amounts was pulled from I/B/E/S, with the Forecast amount subtracted, to complete the calculation for forecast errors (AFE). Due to the nature of I/B/E/S, we used the non-split adjusted file to deter the possible misclassification from the split adjustments in I/B/E/S data (Gleason and Mills (2008)). To ensure less distortion of the AFE value, we deflate the value by the price at the end of each quarter.

Based on APB No. 28 requirements, firms should use concurrent estimates of the annual ETR to compute quarterly tax expense and therefore after tax earnings. I expect that the changes of ETR during interim quarters may reflect the true underlying state as estimated by managers using quarterly information updates, however incentive management receives for meeting or beating analyst forecasts may induce certain unintended consequences on managers' discretionary decisions. I test the circumstances

with increased incentive or pressure by limiting sample to firms that report earnings within five cents of the forecast, which is the proxy for earnings target. The expected tax expense during interim quarters is calculated using current quarter pre-tax income and prior quarter ETR. Therefore Q2 EPS with the expected tax expense as

$$Earnings_{ETRq2} = \frac{[Compustat\ Q2\ pre-tax\ income * (1 - ETRQ1)]}{Avg.\ Common\ Shares\ Outstanding}$$

Using this calculation I can determine firms that needed to alter their ETR to meet forecasts, denoted by *Beatwtax*. Both of the following factors must be met to categorize the firm as a company that uses tax to beat earnings forecasts: actual EPS \geq Forecasted amount and Earnings_ETRq2 \geq Forecast. If the actual EPS \geq Forecasted amount and Earnings_ETRq2 $<$ Forecast, then the *Beatwtax* = 1, however if the conditions are not met, the value is set to 0. The factors set were also applied to calculation of expected tax expense in quarter three by substituting the *ETRq2* with *ETRq3* (Gleason and Mills (2008)). Therefore in the above Earnings_{ETRq2} calculation, *Compustat Q2 pre-tax income* should be replaced with *Compustat Q3 pre-tax income* and the *ETRQ1* with *ETRQ2* values.

I follow the regression used by Gleason and Mills (2004) to test the market reaction for interim quarterly tax cushions. The empirical model is as follows:

$$CAR = \beta_0 + \beta_1 Beatwtax + \beta_2 AFE + \beta_3 BM + \beta_4 Size + \beta_5 Momentum + e$$

where

CAR = represents the stock return within the quarterly announcement for the three day period from one day prior and following the quarterly earnings release date

Beatwtax = indicator variable equal to 1, when a firm is engaged in earnings management behavior for quarters two or three, and 0 otherwise

<i>AFE</i>	=earnings reported less forecasted values scaled by share price at the quarter end
<i>BM</i>	=common shareholders book value of equity/ market value of equity at the end of prior year
<i>Size</i>	=the natural log of total assets
<i>Momentum</i>	=cumulative size-adjusted returns over the six-months before the earnings announcement

The variable of interest is *Beatwtax*. The coefficient for *Beatwtax* is expected to be negative if investors discount the use of tax earnings management in interim quarters. The three control variables (*BM*, *Size* and *Momentum*) are generally used for return related capital market studies (Gleason and Mills (2008)). There is an expected negative association with the announcement period returns and control variables *BM* and *Size*. The control variable *BM* allows the comparison of market price and trading volume. To ensure comparability amongst firms of a variety of sizes, I use *Size* as a control variable. Lastly, I use *Momentum* as a control variable to account for unusual news items or information leaks that may affect the announcement returns.

In addition, to measuring the market price reaction to last chance earnings management, I utilize abnormal trading volume as an additional measure of the market's reaction. The following regression is similar to the above *CAR* model:

$$CABVOL = \beta_0 + \beta_1 Beatwtax + \beta_2 AFE + \beta_3 BM + \beta_4 Size + \beta_5 Momentum + e$$

CABVOL =measures the trading volume the 2 days prior and following the announcement date by subtracting the daily percentage of shares traded on the NYSE

The remaining variables in the regression are defined as above in the *CAR* regression.

Sample Selection and Descriptive Statistics

Tests were completed for sampled U.S. index firms between 1987 and 2008. First, financial statement data and industry classification are pulled from Compustat on quarterly and annual basis. The CRSP database was also used to pull related and relevant stock return and market capitalization data for the selected firms and periods tested. Due to the nature of Compustat, I/B/E/S was also used to determine the necessary analyst forecast and actual reported earnings. I/B/E/S automatically excludes extraordinary items, which Compustat does not; therefore I/B/E/S plays a crucial role in the data collected. The number of firms initially totaled 97,496 and 79,920 for Q2 and Q3, respectively. One of the factors used to test more relevant firms is ensuring firms selected have a positive pretax income and positive tax expense. Also, the historical industry codes should not be missing and the stock price must be greater than 5. The exclusions are similar in nature to Comprix et al. (2012) research completed for interim quarter earnings management. I removed 75,215 and 59,061 compustat firms that I could not match to I/B/E/S for Q2 and Q3, respectively. There were a number of firm years removed from the sample, which were unable to match CRSP for the calculation *CAR* and *Momentum* variables. As indicated previously, we only include in our tests that the firms with stronger incentive to use tax as earnings management instrument, specifically, the firms that report actual

earnings within five cents of analysis forecast consensus. Observations at the top and bottom one-percent of all variables are truncated to mitigate the impact of extreme outliers. The final total number of firms in the sample pool is 18,481 for Q2 and 18,056 for Q3.

Descriptive Statistics

Table 1 reports the relevant descriptive statistics for quarters two and three. In Panel A is specific to Q2, the mean for *EtrQ1* decreased slightly to the mean *EtrQ2*. This trend is consistent with the distribution shown in Comprix et al. (2012) that Year-to-Date ETR, on average, decrease each quarter from beginning of the year to the end of the year. The ETR change noted in Panel A from Q1 to Q2 is approximately -0.003 similar to the amount noted in Comprix et al. (2012), which totaled: -0.0013. Panel B is specific to quarter 3. The mean for *EtrQ2* did show a decrease to *EtrQ3* of -0.002. The difference reflects a decrease in mean estimated tax rates for the sampled firms. This is also consistent with the research completed by Gleason and Mills (2008) and Comprix et al. (2012), both of which resulted in an ETR difference of -0.001 and -0.0022, respectively. Thus the change in ETR for interim quarters confirms and solidifies prior research of the use of ETR as a means of earnings management.

For firms within the sample, there were relatively small mean values for the *miss_amount* in both quarters two and three. The amount firms missed analyst forecasts was -0.027 and -0.019 for Q2 and Q3, respectively. The median *miss_amount* for both quarters is -0.014 and -0.011 in Q2 and Q3 respectively. Many of these firms are therefore, beating analyst forecasts by minute amount. The percent of firms that beat

analyst forecasts by less than their change in ETR 15.4% for Q2 and 17.6% for Q3. This stresses the importance of research completed in the field of tax earnings management.

Correlations

Table 2 reports correlation of coefficients defined in Table 1. A majority of the variables are significantly positively correlated. The correlation tables are separated by Panel A that reflects the quarter 2 correlated variables, while Panel B reflects the quarter 3 correlations.

CAR and *CABVOL* correlations were -0.115 and -0.111, respectively. Both of these values were significantly negative. Therefore, it appears that these measures should reflect opposite finding. In quarter two, many of the variables are highly correlated. The correlation coefficient between *CAR* and *AFE* had a positive coefficient of 0.227, with high significance. This means that the stock return is highly related to the forecast error. The stock return variable *CAR* is also significantly correlated to *miss_amount*, however in a negative manner. Therefore, investors consistently react negatively as the *miss_amount* from the use of earnings management increases. There is also a slight significance between the *CAR* and *Beatwtax* with a coefficient of -0.015. This implies the market has a negative reaction to firms that beat the analyst forecasts with the use of tax management. Quarter three has similar correlation coefficients; however the most important correlation coefficient between *CAR* and *Beatwtax* did not reflect significance at all. For both quarters, *CABVOL* did not show any significance with the major *Beatwtax* variable.

IV. Results

Due to the high correlation between specific variables in analysis in Table 2, it was necessary to complete a multivariate analysis to ensure the more accurate variable

correlations. I report these results in Table 3. The findings for *AFE* are consistent with Gleason and Mills (2008) findings. The earnings management behavior variable (*AFE*) has a strongly positive relationship with the abnormal stock return variable (*CAR*). The coefficient variable for the relation in Q2 is 13.181 and Q3 is 12.940. The variables for both quarters reflect the strong positive relationship. However the same is not said for the *CABVOL* relationship with *AFE*. Only Q3 reflects a positive relationship between *CABVOL* and *AFE*.

In terms of the *Beatwtax* variable, I was able to note a significant negative coefficient factor for the *CAR* variable in both QTRs, consistent with H1. The coefficient in Q2 was -0.005 and significant at the 1% level and the coefficient in Q3 was -0.003 significant at the 10% level. Therefore there is indeed a negative reaction shown in the market when firms make changes to ETR to meet or beat analyst forecasts. The negative reaction is more pronounced in quarter two rather than quarter three. The control variables *BM*, *Size*, and *Momentum* have somewhat similar findings as prior research. The data reflected in Table 3 shows significance for *Size* in Q2 and *BM* and *Size* in Q3 for the *CAR* analysis. However only *BM* had significant coefficients for both quarters of the *CABVOL* analysis. Overall, for both Q2 and Q3 as well as for both the *CAR* and *CABVOL* analyses, the momentum control variable has a strong significant coefficient. This significant correlation is consistent with findings in Gleason and Mill's (2008) research for quarter three.

The first hypothesis tested was to determine if there are negative market reactions for firms who use changes in ETR to meet or beat analyst forecasts. This is tested through the *CAR* regression. As noted above, there is significance noted for quarter two and slight

significance noted for quarter three for the *Beatwtax* variable. Therefore, there is a negative correlation between the use of tax to beat analyst forecasts and the market. Thus, the market notices the unusual change in ETR even in the interim periods. The second hypothesis was used to determine if there was a change in trading volume in relation to a firm's use in interim tax earnings management. However there were no significant findings noted for my second hypothesis for firms that use tax to beat analyst forecasts.

V. Conclusion

In previous studies, it was noted that many firms use tax as a means for meeting or beating analyst forecasts as a last option. This was initially researched by Dhaliwal et al. (2004), which proceeded to lead to other major papers within the tax expense earnings management field. Comprix et al. (2012) discovered the use of a "tax cushion" in interim quarters to accommodate for possible tax expense earnings management in the final quarter. I further extend the research to determine if the market notices the change in ETR in interim quarters, and if the market reacts negatively to such changes. In this study I examine a negative relationship between *Beatwtax* and *CAR*, more specifically significant in quarter two and slight significance in quarter three. I also utilize trading volume as a measure to solidify my first hypothesis. However there are no significant findings with the use of trading volume as a measure. This could stem from the fact earnings management is generally more prominent at year-end instead of at interim announcement periods. Management is also less incentivized to engage in major quarterly earnings management. Another limiting factor of my research is due to the fact that tax expense is also not the only earnings management strategy used by certain firms.

Table 1 Sample Descriptive Statistics

Panel A: Variables in Q2						
Variable	N	Mean	StdDev	Lower Quartile	Median	Upper Quartile
CAR	18481	0.003	0.061	-0.026	0.003	0.034
CABVOL	18481	0.012	0.035	-0.005	0.001	0.017
AFE	18481	0.008	0.023	-	0.01	0.02
afedeflated	18481	0	0.001	-	0	0.001
miss_amount	18481	-0.027	0.17	-0.043	-0.014	0.009
Beatwtax	18481	0.154	0.361	-	-	-
EtrQ2	18481	0.352	0.065	0.325	0.365	0.39
EtrQ1	18481	0.356	0.129	0.327	0.366	0.39
BM	18481	0.454	0.27	0.255	0.404	0.598
size	18481	7.051	1.793	5.727	6.86	8.252
mom	18481	0	0.248	-0.14	-0.014	0.122
Panel B: Variables in Q3						
Variable	N	Mean	StdDev	Lower Quartile	Median	Upper Quartile
CAR	18056	0	0.064	-0.03	0.001	0.032
CABVOL	18056	0.012	0.036	-0.006	0.001	0.018
AFE	18056	0.006	0.023	-0.01	0.01	0.02
afedeflated	18056	0	0.001	0	0	0.001
miss_amount	18056	-0.019	0.171	-0.039	-0.011	0.015
Beatwtax	18056	0.176	0.381	-	-	-
EtrQ3	18056	0.351	0.065	0.324	0.365	0.39
EtrQ2	18056	0.353	0.073	0.326	0.365	0.39
BM	18056	0.456	0.272	0.257	0.403	0.6
size	18056	7.092	1.786	5.776	6.899	8.268
mom	18056	-0.007	0.235	-0.144	-0.017	0.119

This table presents descriptive statistics for quarters two and three ETR values that meet or beat analyst forecast. *CAR* = represents the stock return within the quarterly announcement for the three day period one day prior and following the quarterly earnings release date. *CABVOL* = measures the trading volume the 2 days prior and following the announcement date by subtracting the daily percentage of shares traded on the NYSE. *AFE* = forecast errors measured as the earnings from I/B/E/S subtracted by *Forecast*. *afedeflated* = the *AFE* value does not include the effect of deflation, therefore *afedeflated* includes deflation in the calculation of *AFE*. *miss_amount* = is calculated by the taking the I/B/E/S forecast, subtracting pre-tax income*(1 - *Etr*)*I/B/E/S split factor/ common shares to compute basic EPS. *Beatwtax* = identifies whether the firm is engaged in earnings management behavior for current quarter. *EtrQ3/EtrQ2/EtrQ1* = year to date tax accumulated to the documented quarter divided by accumulated pre-tax income. *BM* = control variable, calculated by: financial statement shareholders equity divided by market value of common stock. *size* = uses the natural log of total assets to control for size of firms. *momentum* = cumulative size adjusted returns over the six months before the earnings announcement.

Table 2 Pearson correlation coefficients for dependent and independent variables in pooled sample

Panel A: Q2 Correlations

	car	cabvol	AFE	afedeflated	miss_ amount	Beatwtax	EtrQ2	EtrQ1	BM	size	mom
CAR	1.000	-0.115***	0.227***	0.223***	-0.032***	-0.013*	0.002	0.013	-0.002	-0.018*	-0.030***
CABVOL		1.000	0.046***	0.023**	-0.004	0.014	-0.034***	-0.005	-0.190***	-0.149***	0.109***
AFE			1.000	0.860***	-0.140***	0.075	-0.027	-0.017*	-0.026	0.037***	0.145***
afedeflated				1.000	-0.110***	0.062***	-0.013	-0.009	0.048***	-0.027	0.125***
miss_ amount					1.000	0.250***	0.106***	0.070***	-0.023**	-0.053***	-0.044***
Beatwtax						1.000	0.026***	0.062***	-0.021**	0.086***	-0.026***
EtrQ2							1.000	0.562***	0.031***	-0.156***	0.009
EtrQ1								1.000	0.005	-0.080***	0.007
BM1									1.000	0.121***	0.094***
size										1.000	-0.148***
mom											1.000

Panel B: Q3 Correlations

	car	cabvol	AFE	afedeflated	miss_ amount	Beatwtax	EtrQ3	EtrQ2	BM	size	mom
CAR	1.000	-0.111***	0.221***	0.216***	-0.04***	0.006	0.011	0.005	0.016*	-0.020**	-0.037***
CABVOL		1.000	0.057***	0.041***	-0.006	0.004	-0.038***	-0.034***	-0.200***	-0.145***	0.064***
AFE			1.000	0.866***	-0.137***	0.121***	-0.034***	-0.029	-0.041***	0.017*	0.163***
afedeflated				1.000	-0.109***	0.110***	-0.028	-0.023**	-0.006	-0.015*	0.143***
miss_ amount					1.000	0.242***	0.067***	0.087***	-0.022**	-0.029***	-0.056***
Beatwtax						1.000	0.005	0.049***	-0.013	0.098***	-0.037***
EtrQ3							1.000	0.916***	0.027	-0.155***	-0.035***
EtrQ2								1.000	0.025***	-0.137***	-0.036***
BM1									1.000	0.110***	0.064***
size										1.000	-0.112***
mom											1.000

Significant at *** p < 0.001, ** p < 0.01, * p < 0.05 (two-tailed) levels.

This table presents correlations of variables for quarters two and three. CAR = represents the stock return within the quarterly announcement for the three day period one day prior and following the quarterly earnings release date. $CABVOL$ = measures the trading volume the 2 days prior and following the announcement date by subtracting the daily percentage of shares traded on the NYSE. AFE = forecast errors measured as the earnings from I/B/E/S subtracted by *Forecast*. $afedeflated$ = the AFE value does not include the effect of deflation, therefore $afedeflated$ includes deflation in the calculation of AFE . $miss_amount$ = is calculated by taking the I/B/E/S forecast, subtracting pre-tax income*(1 - Et)*I/B/E/S split factor/ common shares to compute basic EPS. $Beatw/ax$ = identifies whether the firm is engaged in earnings management behavior for current quarter. $EtQ3/EtQ2/EtQ1$ = year to date tax accumulated to the documented quarter divided by accumulated pre-tax income. $size$ = uses the natural log of total assets to control for size of firms. $momentum$ = cumulative size adjusted returns over the six months before the earnings announcement.

Table 3 Multivariate Analysis**Panel A: CAR Analysis**

	Q2		Q3	
	Coefficients	p-value	Coefficients	p-value
Intercept	0.005	0.0805	0.001	0.8349
Beatwtax	-0.005	<0.0001***	-0.003	0.0118*
AFE	13.181	<0.0001***	12.940	<0.0001***
BM	0.000	0.837	0.006	0.0007***
Size	-0.001	0.0038**	-0.001	0.0009***
Momentum	-0.016	<0.0001***	-0.021	<0.0001***

Panel B: CABVOL Analysis

	Q2		Q3	
	Coefficients	p-value	Coefficients	p-value
Intercept	0.011	<0.0001***	0.016	<0.0001***
Beatwtax	0.001	0.1874	0.000	0.8154
AFE	0.118	0.5816	0.681	0.002**
BM	-0.020	<0.0001***	-0.021	<0.0001***
Size	0.000	0.2899	0.000	0.038*
Momentum	0.013	<0.0001***	0.009	<0.0001***

Year Fixed Effects	CAR	CABVOL	CAR	CABVOL
Industry FE	Y	Y	Y	Y
N	18056	18056	18481	18481
R2	0.055	0.134	0.057	0.1417

Significant at *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ (two-tailed) levels.

This table presents the multivariate analysis for variables of quarters two and three. *CAR* = represents the stock return within the quarterly announcement for the three day period one day prior and following the quarterly earnings release date. *CABVOL* = measures the trading volume the 2 days prior and following the announcement date by subtracting the daily percentage of shares traded on the NYSE. *AFE* = forecast errors measured as the earnings from I/B/E/S subtracted by *Forecast*. *Beatwtax* = identifies whether the firm is engaged in earnings management behavior for current quarter. $EtrQ3/EtrQ2/EtrQ1$ = year to date tax accumulated to the documented quarter divided by accumulated pre-tax income. *size* = uses the natural log of total assets to control for size of firms. *momentum* = cumulative size adjusted returns over the six months before the earnings announcement.

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