

## EARNINGS MANAGEMENT AND STOCK MARKET RETURNS

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### ABSTRACT

*This paper investigates the variability of real business activities in the form of discretionary expenditures (accounts receivable, selling, general and administrative expenses, and net change in accruals), and the firm's stock price performance in relation to the frequency of meeting or beating analysts' earnings forecast. In addition, the study investigated the relationship between the firm's stock price performance, and the variability of these financial statement accounts. The objective was to examine if these selected financial statement of accounts could be used by management to manipulate earnings in order to meet and/or beat analysts' earnings forecasts so as to enhance the firm's stock performance. The study found that there is a significant difference between the variance of SG&A, NCA and stock returns of the firms that meet and/or beat the analysts' forecast and those that do not. It was also found that there is a significant difference in stock returns based on meeting and/or beating the analysts' estimate.*

**Keywords:** Market returns, Analysts forecast, Jones model, Accruals, Accounts receivable, Inventory.

**JEL Classification:** G10, G32, L67, M41.

### Contribution/ Originality

This study adds to the literature by demonstrating another avenue for earnings management that does not rely on the Jones' model. It also shows how the variance of financial statement accounts can be used to detect earnings management. Finally, this paper shows that the change in stock price as a result of earnings announcement is temporary.

## 1. INTRODUCTION

This paper investigates the variability of real business activities in the form of discretionary expenditures (accounts receivable, selling, general and administrative expenses, and net change in accruals), and the firm's stock price performance in relation to the frequency of meeting or beating analysts' earnings forecast.

Generally Accepted Accounting Principles (GAAP) allows management to use judgment in the estimation of certain economic activities such as the depreciation of long lived assets, (straight line or accelerated method) and inventory valuation (LIFO, FIFO or weighted average)

in the determination of the cost of goods sold (Matsuura, 2008). GAAP also allows management to exercise judgment in assessing working capital in association with cost allocation and revenue; in essence, accruals are used to create true/fair financial statements through the allocation of revenues and costs to their appropriate period (Hettihewa and Wright, 2010).

During corporate's earnings announcement season, the financial news is filled with the effect of firms meeting, beating or missing the financial analysts' forecast of the reporting period's earnings report. Shareholders of firms that exceed the analysts' consensus estimates seem to be rewarded with higher stock prices, while firms that miss the estimates see their stock price take a significant decline. The use of analysts' forecast as a metric for a firm's performance is of concern. As stated by Athanasakou *et al.* (2009), meeting analyst expectations is a fundamental earnings target; and that stock market reacts to negative earnings surprises, and that the market rewards those managers with positive earnings surprise. How can the analysts who are external to the firm, be in a position to determine what a firm's future period earnings should be? The ability of analysts to accurately predict (based on the market's strong reaction to deviation from their forecast) the firm's earnings seem to be preposterous.

The period earnings is a result of changes in many variables that affect the price of the firm's products, the mix of the firm's product, the costs of the firm's inputs, all of which can be as unpredictable as the firm's utility bill for the period. This uncertainty notwithstanding, several firms consistently meet and/or beat the analysts' consensus estimates. The key word here is consensus, meaning that the number is the average of the forecasts of the analysts that follow the firm. The use of the term average entails a variance. Statistically, it is easier to forecast an average of observations than to forecast what the observation will be at a point in time, yet analysts and the financial markets react very strongly to small deviations from this estimate.

This situation creates a very strong incentive for management to manipulate the numbers to arrive at a result that will increase the firm's stock price and invariably the executive's performance based compensation. These incentives according to Koh *et al.* (2008) have led to "some managers to continue to view meeting/beating analyst expectation as important"; and provide managers strong incentives to walk down analyst earnings forecast in order to increase their chances of hitting final forecast (Athanasakou *et al.*, 2009).

A cursory look at the literature revealed that a significant amount of research has been devoted to studying this specific situation under the heading of earnings management (Healy and Wahlen, 1999; Aflatooni and Nikbakht, 2010; Chi *et al.*, 2011; Dechow *et al.*, 2011; Fazeli and Rasouli, 2011; Lee and Swenson, 2011; Tahir *et al.*, 2011). However, the literature also revealed that the studies relied on a statistical estimation of the independent variable used in testing for evidence of earnings management. This raised the issue of both construct validity and reliability. Are the estimated residual accruals (considered to be the portion of the firm's accrual that are subject to manipulation by management) the variables used by management to manipulate earnings? Are the expected accruals the true non-discretionary accruals as the models assume?

These questions led us to consider an alternative measure of independent explanatory variables that are not subject to estimation errors or problems, the variance. This is the essence of the research, to investigate the role of variance in the detection of incidence of possible earnings management and its effect on stock returns.

The role of financial statements in a market economy cannot be over emphasized. Management conveys information about the firm to its owners and other interested constituents using financial statements. This function takes on an added significance in a publicly owned corporation where the separation of ownership and control makes it the only avenue through which owners and investors can get a glimpse of the operations of the firm. "Agency theory suggests that earnings management may occur when managers have the incentive to promote their own self-interest by compromising shareholders interest" as the result of information asymmetry (Chen *et al.*, 2010). The agency problem related to the corporate form of business resulted from owners seeking ways to "align the interest of managers with those of the firm's shareholders." The most widely accepted goal of management is the maximization of shareholder wealth as reflected in the value of the firm. The stock price has become the primary objective measure of how successful management is in achieving this goal.

The stock price is determined in the financial markets by investors and other market participants who rely on the information contained in the financial statements to assess the value and risk of the expected cash flows to stockholders. Management provides the financial statements; investors use the information to determine the value of the firm, and shareholders use the value of the firm to determine the compensation for management. There lies the incentive for earnings management. The rationale is the belief that firms that consistently beat or meet analysts' forecast are rewarded with high stock prices. Since stock price is supposed to be an unbiased measure of the value of the firm, increase in its value thus implies increase in the wealth of the shareholders. Consequently, managers whose performances are tied to shareholder wealth creation are rewarded with such performance incentive based measures like stock options. The other dimension of the earnings management objective is the reduction in the cost of capital. This permits the firms to raise additional capital either in the form of equity or debt at a lower cost. Lower cost of capital reduces the hurdle rate for capital projects, which leads to a more profitable investment pool and high growth, and higher future earnings, and the cycle continues.

Consequently, the objective of this paper is to investigate the relationship between stock price performance and the variance of selected financial statement accounts that are amenable to manipulation by firms. It is hypothesized that the variance of these selected financial statement accounts of firms that consistently meet or beat analysts' earnings estimates, will be significantly different from firms that do not, and that if this practice is successful, it will be reflected in the stock price returns. This study differs from previous studies on earnings management by relying on the variance rather than differences in the level of financial statement accounts as the explanatory variable. Secondly, it avoids the problem of accurate estimation of the components of

financial statement accounts that are subject to manipulation: the non-discretionary accruals. Lastly, it estimates an empirical model that relates the variance of the relevant financial statement accounts to the stock market performance of the firms stocks and the frequency of meeting or beating the analysts' earnings forecast.

The paper is organized as follows. Section II gives a brief review of literature dealing with earnings management as relevant to this study. Section III addresses the methodology; section IV presents data analysis and results; and section V presents discussion, conclusions, and recommendations.

## 2. LITERATURE REVIEW

There has been numerous research on earnings management that examines how managers manipulate certain financial statement accounts such as accruals and, or real economic activities for their own self-interest (Roychowdhury, 2006; Cohen and Zarowin, 2010; Ibrahim *et al.*, 2011). Earning is an item of the income statement that can be manipulated. Earnings is a product of cash flows and accruals so it can be managed through means such as accruals, changes in capital structure, and changing accounting methods as stated by Jones (1991). Jones uses total accruals in the study of earnings management by firms in the import business. These firms can benefit from import relief and thus will attempt to decrease earnings during import relief investigations by the United States International Trade Commission (ITC). One unique aspect of the study is that it used the discretionary component of total accrual instead of the discretionary aspect of single accrual. Jones focused more specifically on discretionary accruals, and noted "discretionary accruals are used as a measure of managers' earnings manipulations" (Jones, 1991). This study gave birth to the standard Jones model by decomposing accrual into discretionary and non-discretionary components. The decomposition was based on what Jones described as normal total accruals based on the expectations of the levels of accruals that should be consistent with "changes in economic conditions" (p. 223). Based on this model, one concludes that firms in the import business have more "income-decreasing accruals on the year ITC completed its investigation than would otherwise be expected" (Jones, 1991).

Dechow *et al.* (1995) extended the Jones model to what is now known as the modified Jones model by adjusting change in sales for the change in receivables.

Islam *et al.* (2011) use the extended Jones model to study the incidence of earnings management among 142 listed firms drawn from the Dhaka Stock Exchange. The extended Jones model uses "current period expenses, trade accounts payable at year-end, depreciation expense, and retirement benefits expense" in addition to total assets, current period revenues, balance of trade accounts receivable at year-end, and gross property, plant and equipment at year-end employed by the modified Jones model, to determine existence of earnings management. They conclude that their model has a higher R-squared than the original modified Jones model (8.9 percent compared to 83.8 percent for their extended model).

Stubben (2010) examined revenue and accrual models in their ability to detect both simulated and actual earnings management. He finds that revenue models are less biased than accrual models, and that revenue models are better specified and more powerful in comparison to the accrual model. He also found that the revenue model is more likely to detect a combination of revenue and expense manipulation.

Fazeli and Rasouli (2011) investigated real earnings management as relates to the emerging market using (Tehran Stock Exchange). Their study examined cash flow from operations, production costs, and discretionary expenses firms listed in Tehran Stock Exchange from 2002 – 2007, as the avenue to prevent negative earnings for the year. Fazeli and Rasouli research was based on Roychowdhury (2006) who made strong case for real activities manipulation by management. Roychowdhury developed an empirical method to detect real activities earnings management by examining cash flow from operations, production costs and discretionary expenses; noting that these variables will capture the actions of managers as regarding the effect of real operations better than accruals. Both studies show that firms try to avoid losses by engaging in overproduction as to lower the cost goods sold, to improve profit margins firms will reduce their discretionary expenditures, and another means used by firms is offering price discounts to temporarily increase sales (Roychowdhury, 2006; Cohen and Zarowin, 2010; Fazeli and Rasouli, 2011). The results of Fazelli and Rasouli are plagued by the use of the error term from a regression model as a measure of earnings management. Moreover, classification into whether a firm managed earnings or not was based on whether or not the firm reported small positive earnings.

Pae and Quinn (2011) investigate whether firms that issue new bonds engage in earnings management, they find that these firms increase their accruals before issuing bonds, and then decrease the accruals after the issuance year. Cohen *et al.* (2010) examine whether managers engage in real earnings management to meet quarterly financial reporting benchmarks. Their study uses advertising expenditures as the instrument of real earnings management. They find that managers of the sample firms reduce advertising spending to avoid losses and earnings decrease. On the contrary, they also find that mature firms tend to increase advertising to meet earnings benchmarks.

Ali shah *et al.* (2009) studied the impact of corporate governance on earnings management, and whether the assertion that the credibility of financial statement information is related to features of corporate governance. Their results indicated a strong positive relationship between quality of corporate governance and earnings management proxy variables.

Hashemi and Rabiee (2011b) examined the role of corporate governance in real earnings management. Their study used Board size and the number or percentage of independent directors as a measure of the role of corporate governance. There results indicate the following:

- Board size and board independences are both negatively correlated with abnormal cash flow from operation.

- Both Board size and board independence are negatively correlated with abnormal discretionary expenses.
- Board size is negatively correlated with production operating expenses, whereas Board independence is not significantly related to production operating expense.

Laux and Laux (2009) in their analysis of board of directors setting of CEOs' incentive pay and overseeing financial reporting and their effects on the level of earnings management noted that "increase in CEO equity incentives does not necessarily increase earnings management" due to the fact that directors redouble their oversight effort relating to the change in CEO incentives. The Directors' oversight increase with an increase in stock based CEO compensation to curb the level of earnings management. Cornett *et al.* (2008) examine the effect of "governance structure and incentive based compensation influence on firm performance when measured performance is adjusted for the impact of earnings management" Using discretionary accruals Cornett et al. find that "institutional ownership of shares, investor representation on the board of directors, and the presence of independent outside directors on the board, all combine to reduce the use of discretionary accruals" (p. 357). Eckles *et al.* (2011) in their study of the role of board structure and executive compensation on firms' earnings management in the property-liability insurance industry found that managers who get a large percentage of their compensation from bonus payments and restricted stocks are more likely to engage in earnings management

Athanasakou *et al.* (2009) examined whether UK managers are more likely to engage in earnings forecast guidance to meet earnings benchmarks. The same study also reported on the decreased use of accruals to meet earnings forecast. On the other hand, Callen *et al.* (2008) investigated companies with string of losses and/or negative cash flows in order to obtain evidence of sales management, which is used as a valuation metric for firms with a string of losses. They find that managers of these firms engage in accounts receivable management as a means to increase their market capitalization.

Matsumoto (2002) examined the relationship between firm characteristics and the probability of having positive abnormal accruals and forecasts that are lower than expected. Matsumoto identified the following firm characteristics: "(1) higher transient institutional ownership, (2) greater reliance on implicit claims with their stakeholders; and (3) greater value relevance of earnings" (p. 484). Matsumoto's study shows that:

- Firms with higher transient institutional ownership are more likely, and firms with consistent pattern of prior losses are less likely, to both manage earnings upward, and guide forecasts downward
- Firms that rely more on implicit claims with stakeholders, and firms in industries in which earnings are more value-relevant, appear to guide forecasts downward but not manage earnings upward

Athanasakou *et al.* (2009) examined whether UK firms engage in accruals management, classification shifting or earnings forecast guidance to meet analysts' expectations. They find no evidence of a positive relation between income-increasing abnormal working capital accruals and the probability of meeting analysts' forecasts.

McNichols and Stubben (2008) examined whether firms manipulating their reported financial results make suboptimal investment decisions. The findings of their study were consistent with the hypothesis that in the period of overstated earnings, misreporting firms over-invest in the fixed assets of the firm.

McInnis (2010) used the variance (standard deviation) of cash flow from operations and net income in his study of the effect of earnings smoothness, average returns and implied cost of capital. . Based on an analysis of average stock returns over a 30-year period of 682,435 firm-month observations for 6,076 unique firms, McInnis concluded that there is no relationship between average stock returns and the measure of earnings smoothness.

Ambrose and Bian (2010) investigated whether information derived from stock price volatility influences managers' incentives to engage in earnings management. They defined stock price informativeness as "the amount of information about future earnings contained in current stock prices, across suspected earnings management firms and non-earnings management firms." Their results suggested that stock price "informativeness" is not always different between firms that are suspected of earnings management and the non-earnings management firms; this is in confirmation with the efficient market hypothesis. Fathi *et al.* (2011) studied the effect of earnings management on stock liquidity of companies listed on Tehran stock exchange, they showed that higher earnings management firms attract lower stock liquidity. Thus, firms that manage their earnings are more difficult to trade hence dealers must extra a premium to maintain a market for the firm's stock. This provides a preliminary indication that investors in Tehran may not be fooled by earnings manipulations.

Athanasakou *et al.* (2009), stated that meeting analyst expectations is a fundamental earnings target; and that stock market reacts to negative earnings surprises, and in the process the market rewards those managers with positive earnings surprise.

A majority of the studies on earnings management have relied exclusively on the Jones model either the modified or the extended version. The common feature of these studies is that they estimate an expected level of accrual either in total or for specific accounts and from there extracts the error term as a measure of earnings management. Others have used real earnings management that focused on the production and expense side of the earnings equation. The present study differs from previous studies in several ways:

- It uses the variances of selected financial statement accounts that are subject to manipulation as the explanatory variable.
- It looks at the market response over the study period to the performance of the firm and tries to examine if earnings management is rewarded.

- It attempts to estimate a model that looks at the effect of the variance of these accounts on the firm's average return.
- Finally, it focuses on a single industry so that differences in industry practices do not contaminate the results.

### 3. METHODOLOGY

This study employs a different approach by using directly measurable variables to investigate earnings management. [McInnis \(2010\)](#) used the variance (standard deviation) of cash flow from operations and net income in his study of the effect of earnings smoothness, average returns, and implied cost of capital. Instead of the levels of the accounting data that are suspect for earnings management, my research focuses on the variance of these variables normalized with either revenue or total assets depending on whether the variable is an income statement or balance sheet account.

The analysis of data for this study was a two-step process corresponding to the two quantitative research methods; analysis of variance (ANOVA), and regression analysis.

[Libby et al. \(2006\)](#), used ANOVA to examine the form of management's earnings guidance on analysts' earnings forecasts. [Bhundia \(2012\)](#) use both ANOVA and regression analysis to investigate and compare firm's free cash flow with an emphasis on earnings management. [Chen et al. \(2010\)](#) use regression to test the relation between the investment opportunity set and earnings management. [McNichols and Stubben \(2008\)](#), used regression analysis to examine the investment decisions of firms sued for improper accounting, firms under investigation for earnings management, and firms that restated their earnings. [Cornett et al. \(2008\)](#) used regression to examine earnings management, and also how financial performance relates to the same set of variables, with and without adjustment for earnings management; and [Sun \(2011\)](#) also used regression analysis to examine earnings management determinants of misstatements. Thus, the following hypothesis was written in the null form and the ANOVA analysis, and regression analysis was used to test these hypotheses.

#### 3.1. Hypotheses

The ANOVA analysis was used to test the following hypotheses:

H<sub>10</sub>: There is no significant difference in the means of the variance of the selected financial statement accounts (Accounts Receivable, Selling, General and Administrative expenses, Net change in accruals) and the stock market performance of the firms

This test was performed for each of the selected financial statement accounts that are identified as possible suspects for manipulation and hence earnings management.

The regression analysis tested the following hypothesis:

H<sub>20</sub>: There is no significant relationship between the variance of the selected financial statement accounts (Accounts Receivable, Selling, General and Administrative expenses, Net change in accruals) and the stock market performance of the firms.

The data in this study was analyzed as noted earlier in a two-step process corresponding to the two quantitative research methods as follows:

1. Analysis of Variance was used in the first phase. The firms were ranked based on the frequency in which they meet and/or beat analysts' forecasts. The sample was divided into quartiles and an analysis of variance (ANOVA) between the characteristics of the top and bottom quartiles is performed to investigate the difference, if any, in the means of the variables.
2. Regression Analysis was used in the second phase. A cross-sectional regression analysis was used to estimate the effect of these variables on the stock price performance as well as the frequency of meeting or beating analysts' forecasts.

The data was analyzed using SPSS statistical software for a multivariate regression analysis:

$$A. \quad y = \alpha_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \varepsilon \quad (1)$$

where:

- A.  $y$  is stock performance
- B.  $x_1$  is variance of the accounts receivable (AR)
- C.  $x_2$  is variance of the selling, general and administrative expense (SG&A)
- D.  $x_3$  is variance of the net change in accruals (NCA)
- E.  $\alpha$  = intercept term
- F.  $\beta$  = estimation coefficients
- G.  $\varepsilon$  = estimation error term

The analysis of variance research method was used to examine if there are differences in the means of two samples, whereas regression analysis examined the explanatory power of the independent variables on the dependent variable. Regression analysis is used when the data is continuous and numeric, while analysis of variance is used when the dependent variable is a nominal or ordinal data and the independent variables are continuous.

### 3.2. Data Collection

This study utilized secondary data to investigate the difference in the variance of selected financial statement data of firms that meet and/or beat analysts forecast and those that do not. It also investigated the role of the effect of these variables as an earnings management tools in testing the markets response to earnings management. Instead of the levels of the accounting data that are suspect for earnings management, this study focused on the variance of these variables normalized with either revenue or total assets depending on whether the variable is an

income statement or balance sheet account. Following the example of [McInnis \(2010\)](#); [Burgstahler and Eames \(2003\)](#); [Callen et al. \(2008\)](#); and [McNichols and Stubben \(2008\)](#), the study used quarterly data from the COMPUSTAT Industrial database from 2000 to 2011. To obtain data on analysts' earnings forecast and the matching quarterly data, Zacks' Investment Research database was used consistent with [Burgstahler and Eames \(2003\)](#) and [Matsumoto \(2002\)](#). The stock return was taken from the Center for Research in Security Prices (CRSP) database. This database was employed by [Koh et al. \(2008\)](#). The sample for this study was firms that are in the consumer goods sector, cyclical and non-cyclical, listed on the NYSE, NASDAQ and AMEX stock exchanges. The final sample size of 169 firms consisted of firms with market capitalization between \$6.99 million and \$460.06 billion. Restricting the study to the consumer sector does not affect the structure of the study; rather it reduces the number of categorical variables needed to represent each sector. The major advantage is a reduction of noise that could be introduced by differences in industry practices, structure and norms that may not be fully addressed by the classification variable. The study focused on the variance of the following variables: accounts receivables (AR), selling, general, and administrative expenses (SG&A), and net change in accruals (NCA). AR and NCA were normalized with total assets while SG&A is normalized with net sales. The study used quarterly data from the COMPUSTAT Industrial database from 2000 to 2011. The stock returns were taken from the Center for Research in Security Prices (CRSP) database. To obtain data on analysts' earnings forecast and the matching quarterly data, Zacks' Investment Research database was used.

## 4. RESULTS

### 4.1. Hypothesis one Findings

Hypothesis ( $H_{10}$ ): There is no significant difference in the means of the variance of the selected financial statement accounts (Accounts Receivable, Selling, General and Administrative expenses, Net change in accruals) based on the stock market performance of the firms.

In this section the analyses for  $H_{10}$  (tables 1a through 1d) are presented. The variables were divided in to quartiles based on the stock market performance of the firms. Using excel data statistical tool an ANOVA was performed to test whether there is a significant difference in the variance of the financial statement accounts based on the stock market return of the firms.

**Table-1a.** Comparison of the Account Receivable and the stock market performance of the firms

Groups	Count	Sum	Average	Variance		
ARtq	42	1.4049	0.0335	0.0003		
ARbq	42	1.5514	0.0369	0.0005		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.0003	1	0.0003	0.6748	0.4138	3.9574
Within Groups	0.0310	82	0.0004			
Total	0.0313	83				

The results of the ANOVA test presented in Table 2a shows an F-value of 0.6748, a critical F-value of 3.9574 and P-value = .4138. Therefore, it was not possible to reject the null and conclude that there is no significant difference between the variance of the accounts receivables based on the stock market performance.

**Table-1b.** Comparison of Selling General and Administrative expenses and the stock market performance of the firms

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>		
SGAtq	42	1.5806	0.0376	0.0016		
SGAbq	42	2.8446	0.0677	0.0094		
<b>ANOVA</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0.0190	1	0.0190	3.4632	0.0663	3.9574
Within Groups	0.4503	82	0.0055			
Total	0.4694	83				

Table 1b presents a comparison of the variance of SG&A and the stock market performance of the firms. With an F-value of 3.4632, critical F-value of 3.9574 and a P-value = .0663, I fail to reject the null and conclude that there is no significant difference in the variance of the SG&A based on the stock market performance at the 5 percent level of significance.

**Table-1c.** Comparison of Net Changes in Accrual and the stock performance of firms

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>		
NCAbq	42	11.4203	0.2719	0.0215		
NCAtq	2	8.7901	0.2093	0.0161		
<b>ANOVA</b>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	.0824	1	.0824	4.3807	0.0394	3.9574
Within Groups	1.5416	82	0.0188			
Total	1.6239	83				

Table 1c shows the results of the ANOVA test on whether there is a significant difference in the variance of NCA based on the stock market performance of the firms. With an F-value of 4.3807, critical F-value of 3.9675 and P-value = .0394 I reject the null and conclude that there is a significant difference in the variance of NCA and stock market performance of the firms.

**Table-1d.** Comparison of the Frequency of meeting or beating (M/B) analysts forecast and stock market performance of the firms

Groups	Count	Sum	Average	Variance		
Freqtq	42	25.5100	0.6074	0.0379		
Freqbq	42	21.5833	0.5139	0.0374		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.1836	1	0.1836	4.8787	0.0300	3.9574
Within Groups	3.0852	82	0.0376			
Total	3.2688	83				

Table 1d presents the ANOVA test results on the difference between the frequency of meeting and beating the analysts' earnings forecast and stock market performance of the firms. The test results show an F-value = 4.8787, critical F-value of 3.9574 and P-value = .0300. Therefore the null hypothesis is rejected and it is concluded that there is a significant difference in the stock market performance and the frequency of meeting or beating the analysts' earnings forecast.

A major requirement of the ANOVA methodology is that the variable under consideration is normally distributed. To investigate the validity of the normality assumption, the descriptive statistics for each of the variables was obtained. The results are presented in Table 2. The relevant measures of normality used are the skewness and kurtosis statistic. A value of these statistics significantly different from zero is evidence that the variable is not normally distributed. From Table 2, the frequency of meeting or beating analysts' estimate and the growth rate in the stock price, with a skewness of 0.201 and -0.148 respectively and a kurtosis of -0.476 and 0.566, respectively suggest that these variables are normally distributed. However, the variances of AR, SG&A and NCA have very high values of both the Skewness and Kurtosis statistic, a clear indication of the non-normality of the distribution of these variables.

**Table-2.** Descriptive Statistics of Variables

		Selling Accounts	General Administrative	& Net Changes	inFrequency of	M/B
		Receivable	Expenses	Accrual	Analysts forecast	Growth Rate
N	Valid	169	169	169	169	169
	Missing	57	57	57	57	57
Mean		.033296	.042485	.215496	.551785	.021240
Median		.027800	.030300	.186900	.562500	.017700
Mode		.0167 <sup>a</sup>	.0086 <sup>a</sup>	.1746 <sup>a</sup>	.3125	.0078 <sup>a</sup>
Std. Deviation		.0215684	.0572199	.1242422	.2044111	.0795729
Variance		.000	.003	.015	.042	.006
Skewness		2.067	5.846	1.568	.201	-.148
Std. Error of Skewness		of .187	.187	.187	.187	.187
Kurtosis		7.781	44.704	3.133	-.476	.566
Std. Error of Kurtosis		.371	.371	.371	.371	.371

*a. Multiple modes exist. The smallest value is shown*

The non-normality of the AR, SG&A and NCA variables raises questions about the validity of the ANOVA results. Consequently, we employed the non-parametric test, the “Mann-Whitney U-Test, to whether there is a difference in the means of these variables based on the frequency of meeting or beating the analysts’ forecast as well as the stock market performance of the firms. The Mann-Whitney U-test is appropriate for comparing means when the variables are not normally distributed (Smith, 2009). The results of the analysis are presented in Table 3.

The null hypothesis states that there is no significant difference in the means of the variables based on the grouping criteria. The null is rejected if the critical Z-score is less than the absolute value of the test Z-score. The results reject the null for the AR (Z-score -2.155) variable at the 5% level of significance (Z-score -1.96). Thus, there is a significant difference in the variance of the accounts receivable based on the frequency of meeting and or beating analysts/ earnings forecast. However, the test failed to reject the null for the SG&A and NCA variables with Z-scores of 0.0217 and 0.5398, respectively.

In Panel B of Table 4, the test results based on the stock market performance rankings fails to reject the null (Z-score 0.03325). This leads to the conclusion that there is no significant difference in the means of the AR based on stock market performance. However, the results reject the null for the SG&A and NCA variables with Z-scores of 2.4745 and 2.1549, respectively, at the 5% level of significances. The Mann-Whitney U-tests shows that whereas the AR variance varies with the frequency of meeting or beating the analysts’ earnings forecast, the SG&A and NCA variables do not exhibit such tendency. On the other hand, the variances of SG&A and NCA vary significantly with the stock price performance while the AR variance did not. In addition, the Mann-Whitney U-test seemed to agree with the ANOVA results with regards to the AR while it produced mixed results for SG&A and NCA in comparison.

**Table-3.** Results of the Mann-Whitney U-Test

Panel A: Frequency to Meet/Beat Analyst Forecast					
	$W_1$	$\mu$	$\sigma$	$U_1$	Z
AR	2120	924.5	115.78	675	-2.1549**
SG&A	1868	924.5	115.78	927	0.0217
NCA	1808	924.5	115.78	987	0.5398
Panel B: The Stock Market Performance					
	$W_1$	$\mu$	$\sigma$	$U_1$	Z
AR	1832	924.5	115.78	963	0.3325
SG&A	1584	924.5	115.78	1211	2.4745**
NCA	1621	924.5	115.78	1174	2.1549**
<i>Critical Z-score at alpha = .01 is 2.576; @ alpha = .05 is 1.96 and @ alpha = .10 is 1.645</i>					

#### 4.2. Regression Analysis

The second phase of my research used ordinary least squares (OLS) regression analysis to estimate the effect of the selected variables on the stock price performance as well as the frequency of meeting or beating analysts’ forecasts;

H<sub>20</sub>: There is no significant relationship between the variance of the selected financial statement accounts (Accounts Receivable, Selling, General and Administrative expenses, Net change in accruals) and the stock market performance of the firms.

The equations to be estimates are as follows:

$$A. \quad y = \alpha_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \varepsilon \quad (1)$$

Where:

- A. y is the stock market returns for the firms
- B. x<sub>1</sub> is the variance of the accounts receivable (ARV)
- C. x<sub>2</sub> is the variance of the SG&A (SGAV)
- D. x<sub>3</sub> is the variance of NCA (NCAV)

Excel statistical tools were used to perform the regression analysis to evaluate the level of relationship between the variance AR, SGA and NCA variable and the frequency of meeting or beating analysts' consensus forecast.

### 4.3. Hypothesis Two Findings

There is no significant relationship between the variance of the selected financial Statement accounts (Accounts Receivable, Selling, General and Administrative expenses, Net change in accruals), and the stock market performance of the firms.

$$H_{20}: \beta_1 = \beta_2 = \beta_3 = 0$$

Table-4.

Regression Statistics		Adjusted Standard Observation						
R	R <sup>2</sup>	R <sup>2</sup>	Error	s				
Returns	0.2483	0.0617	0.0446	0.0778	169			
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	3	0.0656	0.0219	3.6144	0.0145			
Residual	165	0.9982	0.0060					
Total	168	1.0637						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95%</i>	<i>Upper 9%</i>
Intercept	0.0536	0.0134	3.9950	.0001	0.0271	0.0802	0.0271	0.0802
ARV	-0.0611	0.3007	-0.2031	.8393	-0.6549	0.5327	-0.6549	0.5327
SGAV	-0.1610	0.1159	-1.3896	.1665	-0.3899	0.0678	-0.3899	0.0678
NCAV	-0.1092	0.0549	-1.9904	.0482	-0.2175	-0.0009	-0.2175	-0.0009

The test for H<sub>20</sub> is presented in table 4. The results of the OLS regression analysis show that the model explained 4.46% of the cross-sectional variation of the stock market returns of the firms in the sample with an F-statistic of 3.6144 and a significance of 0.0145. The model also indicates that the coefficients of the explanatory variables are negative with only NCAV having a significant p-value of 0.0482.

Table-5. Return vs. Frequency

Regression Statistics	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Standard Error	Observations			
	0.1660	0.0276	0.0217	0.0787	169			
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	0.0293	0.0293	4.7318	0.0310			
Residual	167	1.0344	0.0062					
Total	168	1.0637						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-0.0144	0.0175	-0.8250	0.4106	-0.0489	0.0201	-0.0489	0.0201
Frequency	0.0646	0.0297	2.1753	0.0310	0.0060	0.1233	0.0060	0.1233

Table 5 presents the result of the OLS regression estimation of the relationship between stock market performance and the frequency of meeting or beating analysts' earnings estimate. The model shows a positive relationship between the two variables with an F-statistic of 4.7318 that is significant at 0.031 level. It also indicates that the frequency variable explained 2.17% of the cross-sectional variation in the stock market returns of the firms. The coefficient of the frequency variable was estimated at 0.0646 with a t-value of 2.175 and a p-value of 0.031.

The result of the analysis of the regression residuals (not included, but can be supplied upon request) indicate that the residuals are normally distributed lending support to the validity of the results.

In summary, the ANOVA test indicates that there is a significant difference between the variance of SG&A and net change in accruals of the firms that meet and/or beat the analysts' forecast and those who do not. The results also show that there is no significant difference in the variance of accounts receivable based on this grouping. In addition, the results also confirm the existence of a significant difference in stock returns based on meeting or beating the analysts' estimate. The existence of the difference in the variables based on either the frequency of meeting or beating the analysts' forecast or the stock market performance is also confirmed by the Mann-Whitney U-test which was conducted to address the normality considerations inherent in ANOVA. The ordinary least squares regression results show that the accounts receivable variable was significant in explaining the frequency of meeting or beating the analysts' forecast. However, the net change in accruals variable was significant in explaining the variation in the firm's stock returns.

## 5. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

### 5.1. Discussion

Previous studies on the frequency of meeting or beating the analysts' earnings forecast have relied on the extraction of the discretionary components of the independent variable based on a form of the Jones model (Dechow *et al.*, 1995; Stubben, 2010; Lee and Swenson, 2011). In this

study, the variance of the independent variable was used to avoid the estimation error inherent in estimating the discretionary components.

The result of the analysis is in agreement with previous studies that identified accounts receivable as a possible tool for earnings management (Roychowdhury, 2006; Cohen *et al.*, 2010; Cohen and Zarowin, 2010; Fazeli and Rasouli, 2011). The results show no significant difference in the frequency of meeting or beating analysts' estimates when the stock price performance was used in ranking the firms. This has significant implication on the effectiveness of earnings management. It indicates that the market is not fooled and that the short-term effects of earnings management do not affect the long-run performance of firms.

Although the variance of selling, general and administrative expenses, and the variance of net change in accruals did not differ significantly based on the frequency of meeting or beating analysts' earnings estimates, there was a significant difference when the rankings was based on the stock price performance. The validity of the results of the analysis of variance (ANOVA) tests depends on distribution of the variables. It requires that the variables be normally distributed. Since some of the variables were non-normal, the Mann-Whitely U test was used to validate the findings of the ANOVA. This non-parametric test confirmed the results of the analysis of variance.

This study lends support to the observed market reaction to the stock price of firms when they beat analysts' forecast. The significant difference in the means of the frequency based on stock return rankings provides evidence to the importance of meeting and/or beating the analysts' forecast

The other aspect of the study is the ordinary least squares regression analysis. As with the ANOVA results, only the accounts receivable variable was significant in explaining the variation in the frequency of meeting and/or beating analysts' forecast. The regression results for the stock returns show an inverse relationship between net change in accruals and the stock performance. Thus, the higher the variance of the NCA variable the lower the stock price performance for the firm. This finding is consistent with the markets perception of risk as variability. Variability in NCA introduces variability in the firm's cash flow from operations which do not bode well for the firm's ability to meet its cash obligations.

## 5.2. Conclusions

This study lends support to the positive market response to incidence of the firm beating analysts forecast. However, although the market responds favorably to better than expected earnings, the long-term impact in explaining the difference in returns is just slightly more than two percent of the difference in returns. In other words, the mere fact of meeting and/or beating analysts' forecast does not explain the long-term market valuation of the firm's prospects.

### 5.3. Limitations and Delimitations

As with all empirical studies, the validity of this study rests on the sample of firms and the time period. The availability of significant variability difference in the chosen/selected financial statement accounts will greatly affect the results of this study. Earnings management is considered both unethical and a violation of securities law. As a result, firms who engage in earnings management will go to considerable length to cover their tracks. Thus, this study is an attempt to uncover earnings management tools if and where they exist. Most previous studies relied on correlation between the variables. This is true also of this study.

### 5.4. Recommendations on Future Research

This study focused exclusively on the consumer goods industry; therefore, the results may not be applicable to other industries. Further study is needed to explore this phenomenon in other sectors.

This study's focus was on a specific time period and only three financial statement accounts were used. Further study may investigate other time periods as well as expand the number of accounts used. The research question is whether this is unique to the ten years return as well as whether it is unique to the consumer goods industry.

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