Effect of Accounting Estimates on Financial Performance of Listed Manufacturing Firms in Nigeria

**Ifeanyichukwu, J. C, Nwaorgu, A. I. Ph.D, Okafor, M. C. Ph.D
and O. A. Eke, Ph.D**
Department of Accounting,
Michael Okpara University of Agriculture,
Umudike, Abia State, Nigeria.
udemeefanga@gmail.com

Abstract
This study empirically investigated the effect of accounting estimates on financial performance of listed manufacturing firms in Nigeria. Since secondary sources of data were employed, this study used ex-post-facto research design. Data for analysis were sourced from consolidated financial statements and annual reports of the sampled listed manufacturing firms for the period 2011 – 2020. The data collected was analyzed using pooled multiple regression. The regression result show there is a very weak relationship between provision for bad debt, provision for employee benefits and profit after tax at 15.9%. Also the R^2 stood at 2.5%. Findings from the test of hypotheses revealed that provision for bad debt has a negative insignificant effect on profit after tax of listed manufacturing firms in Nigeria while, provision for employee benefits has a positive insignificant effect on profit after tax of listed manufacturing firms in Nigeria. In consonance with this study's findings, it is recommended that proper estimates should be made accurately in other to capture the actual bad debt which serves as incurred burden on the firm so as to make adequate plans that will shield such burden against the profit of the firms. Also, Firms should be more focus on their estimates on employees benefits since it can signal as a motivation to the employees. This will enable the firms make policies in regards to their employees and make the right well fare policy in regards the estimates made on employee benefits.

Keywords: Provision For Bad Debt, Provision for Employee Benefits and Profit After Tax

Introduction

Financial reports are generally considered to provide information for evaluating the "financial health" of an entity, which is needed by various users to make economic decisions. They are essentially management reports prepared by management, the purpose of which is to portray the financial status of the entity; in terms of performance, financial position and changes in financial position. Abubakar and Olowe (2019) argued that financial statements are reports showing the financial status and operating results of business entities. In particular, the International Accounting Standards Board's Conceptual Framework for the Preparation and Presentation of Financial Statements assumes that the primary objective of financial reporting is to make available

financial information useful to users of financial statements in making financial decisions. Studies conducted on the determinants of firms' decisions to provide quantitative sensitivity information regarding accounting estimates of "significant" and "highly uncertain" accounts requiring judgment (SEC 2002; SEC 2003). Accounting estimates form a large and growing component of financial statements, so the dividing line between fact and conjecture is largely unknown to investors (Lev, Li & Sougiannis 2010).

Due to the Eron case and the inefficiency of the capital market, investors were led by accounting information based on estimates to misallocate resources, resulting in market failure and loss of investment on the part of shareholders. As a result, the Securities and Exchange Commission worldwide has mandated firms to provide information on quantitative accounting estimates to provide material information that investors can use to make more valuable investment decisions. Authors such as Glendening (2014) lend credence to this when they mention that adequate reporting of accounting estimates informs investors of the reliability of accounting estimates, which increases the value relevance of reported financial data.

Common accounting estimates included in financial reports include defined benefit pension plans, provisions for bad debts, sales estimates, and provisions for employee benefits (Cassell, Dreher & Myers, 2013). Although management bears the ultimate responsibility for financial reporting and the assessment of reserves/estimates, firm stakeholders are concerned about the fidelity of such reported estimates, and therefore the auditor and the audit committee are entrusted with oversight responsibilities to ascertain the true position and reliability of such estimates (Cohen et al.As such estimates are believed to affect the financial performance of firms (Cohen et al 2004), the aim of this study is therefore to investigate the possible effect of accounting estimates on the financial performance of listed firms the effect of accounting estimates on the financial performance of listed manufacturing firms in Nigeria.

Literature Review
Accounting estimates
Past business history may show that some of the accounts receivable balances are not recovered due to unforeseen circumstances. Therefore, as stated by Wood & Sangster (2009), it may be prudent to create an estimate of doubtful debts in addition to other specific estimates. These estimates can be calculated based on past debt collection experience. However, after the revisions of the International Financial Reporting Standards (IFRS), the creation of a general reserve is on the decline. Specifically, International Accounting Standards (IAS) 39 prohibits the creation of general provisions based on past experience due to the subjectivity involved in making such an estimate. Instead, the reporting entity is required to perform an impairment test to determine the recoverability of the receivables and related allowances.

Bawa, Asamoah, and Kissi (2018) note that accurate assessment of the credit risk posed by financial institutions' lending decisions cannot be underestimated. They state that this is clearly demonstrated by the large credit defaults in recent years. Bawa et al., (2018) also noted that credit recording methods are not a new phenomenon. For decades, they have been used to group customers into two categories: good credit and bad credit. Credit customer otherwise a customer with good credit is likely to repay the debt, while a customer with bad credit is unlikely to default.

Proper accounting of bad debts for debtors can be a good measure for solving debt related problems. However, in 2000, any interested business entity must have noticed warning signs regarding debts.

Zhang (2012) verified the consequences of the rapid growth rate of consumer debt and attributed it, among other things, to an aggressive and overly generous lending policy. He called on banks and companies to be cautious in their approach to granting debt. According to Walther (1997), "the massive inflow of foreign capital through the US capital market depressed credit interest rates and contributed to credit expansion by making additional credit facilities available at relatively lower costs." This attracts many borrowers. Therefore, it is worthwhile to consistently pay attention to the effectiveness of the records and monitoring of receivables (debts). Furthermore, Li (2008). found that the recording and verification of outstanding receivables (debts) has received much attention. Banks are encouraged to be efficient in their accounting because it helps them develop default risk; banking authorities can determine the overall strength of the banking system and its ability to handle adverse debt default conditions. The best method for bad debt analysis and recording, so the estimation of debts that are likely to collapse, will depend not only on the data structure, the characteristics of the data, but mainly on the ability of the person dealing with the task to classify the data, and finally the objectives of the classification.

Determinants in estimating the allowance for bad debts

According to generally accepted accounting principles (GAAP), the bad debt estimation method can be estimated in three different ways. The first method is the income statement approach, where the bank or company estimates the percentage of its credit sales that will ultimately prove uncollectible. The second and third methods use the statement of financial position approach (International Financial Reporting Standards Foundation, 2015). Unlike the income statement approach, which only captures costs without taking into account the existing allowance for bad debts, the statement of financial position approach always adjusts the estimated amount as uncollectible based on the amount of bad debt expense. The bad debt amount can be based on the aging of receivables or a forecast of the amount of total receivables that are expected to be bad debt. In most cases, there is always little or no evidence to determine the details of how each individual company arrives at its bad debt estimate. Importantly, the amount should be based on GAAP and also that the amount will involve estimates and subjective judgment.

This study is anchored in signaling theory as presented by Merton, Miller, and Rock (1985). This theory refers to the idea that agents send information to the principal to establish a trusting relationship. Managers have more first-hand information about the firm than the firm's investors, but are always reluctant to provide transparent information to shareholders. So the estimates given by managers can be clouded to be overstated and affect the true financial performance of the firm. Sometimes the reported estimates serve as information that is a suitable signal for the future projection of the company.

Anichebe and Nangih (2021) assessed the effects of accounting estimates on financial reporting misstatements of SMEs in Nigeria. The study used a survey design. They examined the financial statement effects of depreciation estimates, impairment losses, inventory estimates, goodwill

estimates, and estimated useful lives of assets. The findings revealed that incorrect estimates can lead to financial statement misstatements, but they are not the only cause.

Olaoye and Adeniyi (2020) investigated the impact of accounting manipulations on the financial performance of selected listed firms in Nigeria. Specifically, they examined the causes of accounting discretion and also investigated whether accounting manipulations had a material effect on the financial performance of firms in Nigeria. The study adopted a descriptive research design using a survey for data collection. Descriptive statistical tools and ordinary least squares regression were used to analyze the data. The findings revealed that accounting manipulations negatively affect the performance of the sampled corporate firms. The study recommended that stakeholders put in place effective policies and strict penalties for violators to check the incidence of accounting manipulations among Nigerian firms.

Lugovsky and Kuter (2020) examined the influence of accounting rules and accounting estimates and their role in the preparation of fair financial statements in the digital economy in Russia. The study used an exploratory research design and considered the main issues and limitations of the reliable preparation and presentation of reported financial information. The study concluded that the degree or choice of freedom that standard setters give to standard setters has a serious effect on the reporting data they present to users. It also added that the reliability of financial reports is affected by many other factors, including but not limited to accounting choices, depreciation policies, legality of the transaction and changes in accounting estimates.

Abubakar and Olowe (2019) looked at the impact of trade receivables on firm performance of selected listed firms in Nigeria. The population consists of ten (10) firms listed on the Nigerian Stock Exchange between 2012 and 2018 selected using purposive sampling technique. The multiple regression method was used in the study to test the formulated hypotheses. The dimensions for receivables were debt ratio, leverage and revenue growth, while firm performance was measured using return on equity. The result of the analysis showed that the receivables ratio, indebtedness and revenue growth had a positive and significant effect on the company's performance.

Bawa, Asamoah and Kissi (2018) studied the effect of inventory management on firm performance of listed manufacturing companies in Ghana. Using cross-sectional secondary data, the sample was 140 observations per year from 14 manufacturing firms listed on the Ghana Stock Exchange (GSE) over a 10-year period, 2007–2016. The collected data were tested using Pearson correlation and multiple regression analysis. Empirical findings showed that inventory management had no effect on firm performance. The result showed that the independent variable is insignificantly related to the dependent variable for the given period.

Indrayani (2018) investigated the analysis of fixed asset depreciation method on corporate profits in Indonesia. The study used a descriptive research design as well as a descriptive statistics analysis method. The variables for the study were the direct method, the double-dip method, and the profit per year. It was concluded that the depreciation method and policy had a significant effect on the company's profit. Nwaorgu (2017) investigated the impact of accounting estimates on the profitability of listed agricultural firms in Nigeria. Using regression analysis, he found that the

provision for bad debts does not have a significant effect on the profitability of firms, but there is a significant effect of the provision for employee benefits on the profitability of firms.

Methodology
The study adopted an *ex-post facto* research design. The research design was adopted for the reason that there are already audited financial statements of listed agricultural production companies. Specifically, the study is limited to listed manufacturing firms that are in the agricultural sector, this is to allow the study to look at firms that will have a future projection consistent with signaling theory as a result of the federal government's economic diversification plans. The study adopts the model of Nwaorgu (2017). The rationale for adopting the model is based on the fact that both PEB and PBD are validated estimates used by agricultural firms in Nigeria. The study intends to improve the earlier model used by Nwaorgu (2017) as it contained only 28 observations, which is not suitable for ordinary least squares regression (see Gujarati and Sangeetha, 2007). For this, data for agricultural companies is collected from 4 out of 5 listed companies for 10 years (2011 – 2020). This is to enable the study to meet the recommended number of > 30 observations by Gujarati and Sangeetha (2007) as it will present a more robust result than the previous result obtained in the work of Nwaorg (2017). 4 firms (the sample) are selected by judgment as one firm (Ellalakes PLC) does not have complete data for a given time frame.

A multiple regression technique using ordinary least squares (OLS) is used to examine the relationship between dependent and independent variables.

The study is specified as follows;

$$PAT_{ft} = \alpha + \beta_1 PBD_{ft} + \beta_2 PEB_{ft} + U_{ft}$$

Where;

α = Constant

PAT = Profit after tax proxy by log of profit after tax.

PBD = Provision for liabilities/provision for bad debt (Log of total provision for bad debt).

PEB = Provision for employee benefits (Log of total provision for bad debt).

ft = Firm ($_f$) at time ($_t$)

U = Error term used in the model.

$\beta_1 - \beta_2$ = Beta coefficient of the independent variables.

Decision Rule
Accept the null hypothesis if the calculated value is greater than the significant level of 0.05.

Data presentation and analysis

Descriptive Statistics

	N	Minimum	Maximum	Mean		Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error
PROF	40	4.80	7.14	5.9056	.06790	.42941	.000	.374
PBD	40	3.79	6.18	5.1928	.12256	.77511	-.473	.374
PEB	40	3.88	7.00	5.9260	.09777	.61838	-1.007	.374

Valid N (listwise)	40								

The descriptive statistics table above presents the descriptive statistics of all the variables. N represents the number of observations, therefore the number of paired observation for the study is 40.

Profit after tax (PAT) reflects a mean of 5.9056 and a standard deviation of 0.42941, it has a minimum value of 4.80 and a maximum value of 7.14. The Provision for bad debt (PBD) has a mean of 5.1928 with a deviation of 0.77511. PBD also has a minimum and maximum value of 3.79 and 6.18 respectively. The result also reveal that provision for employment benefits (PEB) has a minimum and maximum value of 3.88 and 7.00 respectively and reflects a mean of 5.9260 with a deviation of 0.61838.

The result of the descriptive statistics in respect to the study's variables indicates that all the variables are normalized with Skewness values between -2.00 and +2.00. This indicates the absence of extreme data that are capable of distorting the outcome of the regression result.

Regression of the estimated model summary

To enable the study rely on the outcome of the regression result, further data validity check is done. To do this, the Variance Inflation Factor (VIF), Tolerance level and Durbin Watson statistics is used. The Variance Inflation Factor (VIF) statistics for all the independent variables stood at 1.112 while the tolerance level statistics stood at 0.900. This indicates the absence of multicollinearity problems among the variables under investigation (Kouisoyiannis, 1977: Gujarati and Sangeetha, 2007). Also, the DW statistics result of 1.234 further substantiates the absence of autocorrelation. This shows the appropriateness of fitting of the model of the study with the two independent variables.

Model Summary Table[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.159[a]	.025	-.027	.43523	.025	.481	2	37	.622	1.234

a. Predictors: (Constant), PEB, PBD
b. Dependent Variable: PAT

From the model summary table above, the following information can be distilled;

The R value of 0.159 shows that, there is a very weak relationship between PEB, PBD and PAT at 15.9%. Also the R^2 stood at 0.025. The R^2 otherwise known as the coefficient of determination shows the percentage of the total variation of the dependent variable (PAT) that can be explained by the independent or explanatory variables (PBD and PEB). Thus the R^2 value of 0.025 indicates that 2.5% of the variation in the PAT of listed agricultural firms can be explained by a variation in the independent variables: (PEB and PBD) while the remaining 97.5% (i.e. 100-R^2) could be accounted by other variables not included in this model.

The adjusted R^2 of -0.027 indicates that if other factors are considered for this study, this result will deviate from it by only 0.052 (i.e. 0.025 – -0.027). This result shows that there will be a deviation from the result examined by 5.2%.

The table further shows the significant change of 0.622 with a variation of change at 2.5% indicate that the set of independent variables were as a whole contributing to the variance in the dependent in an insignificant way.

Coefficients table[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	5.442	.723		7.524	.000		
1 PBD	-.042	.095	-.076	-.447	.658	.900	1.112
PEB	.115	.119	.166	.970	.338	.900	1.112

a. Dependent Variable: PAT

The regression result as presented in the coefficient table above to determine the relationship between PBD, PEB and PAT shows that when the independent variables are held stationary; the PAT variable is estimated at 5.442. This simply implies that when all variables are held constant, there will be increase in the *PAT* of listed agricultural firms up to the tune of 5.442 units occasioned by factors not incorporated in this study. Thus, a unit increase in PBD will lead to decrease in the PAT by 7.6% but a unit increase in PEB will lead to increase in PAT by 16.6%.

Hypotheses Testing

Given that the significant level is 0.05 and the calculated value for provision for bad debt (0.658) is greater than the significant level, the study accept the null hypothesis and reject the alternative hypothesis. Thus, provision for bad debt has no significant effect on profit after tax of listed manufacturing firms in Nigeria.

Given that the significant level is 0.05 and the calculated value for provision for employee benefit (0.338) is greater than the significant level, the study accepted the null hypothesis and rejects the alternative hypothesis. Thus, provision for employee benefit has no significant effect on profit after tax of listed manufacturing firms in Nigeria.

Discussion of findings

This study investigated the effect of accounting estimates on the financial performance of listed manufacturing firms in Nigeria. Accounting estimates as an independent variable were measured using provision for liabilities and provision for employee benefits, while profit after tax was used as a proxy for the performance of manufacturing firms in Nigeria using statistical package for social sciences (SPSS), regression analysis was done using variance inflation factor (VIF). The results of the analyzes showed that employee benefits had a positive and significant relationship with the profit after tax in the monitored period, the reserve for bad debts had a negative and statistically insignificant effect on the profit after tax of the selected companies. The implication of this significant relationship is that an increase in accounting estimates will lead to an increase in the performance indicators of the selected manufacturing firms in Nigeria. In the same vein, a decline in variable accounting estimates will result in a narrowing of the performance margin of manufacturing firms in Nigeria. The findings of this study agree with the findings of Nangih (2021)

that there is a significant inverse relationship between accounting estimates and the performance of manufacturing firms in the Nigerian economy.

Conclusion and recommendations

Accounting estimates are important components of financial statements. The quality of any firm's financial reports and the true financial state is significantly affects management's attitude towards the use or abuse of accounting estimate. Accounting estimates have been found as tools in the hands of management to manipulate performance results, report false profits, conceal financial leakages and pursue benefits based targets. However, the abuse of accounting estimates results in performance falsification that could cost government tax revenues, job losses by employees and eventual corporate failures which might adversely hurt the interest of all stakeholders. Non-compliance with relevant IFRSs in the determination of the values of financial statement items that lack precise measurement, disclosures failures and out right abuse of management judgments in value determination lie at the root of most corporate failures in Nigeria. In this study;

i. provision for bad debt has a negative insignificant effect on profit after tax of listed manufacturing firms in Nigeria.
ii. provision for employee benefits has a positive insignificant effect on profit after tax of listed manufacturing firms in Nigeria.

Therefore, management should ensure that adequate and sufficient disclosures of recognition and measurement criteria of accounting estimates, management judgment and approximations are in line with the provisions of the applicable IFRSs in order to gain investors' confidence and secure potential investment opportunities that will further increase performance. This is because proper estimates will help to capture the actual bad debt which serves as incurred burden on the firm so as to make adequate plans that will shield such burden against the profit of the firms.

There is the need to emphasize that boards and management of corporate entities establish and enforce policies on estimating the values of financial statement items of uncertain valuation, strictly in line with IFRS requirements and sanction personnel that abuse accounting estimates in pursuit of self-gain. Further, Firms should focus more on their estimates on employees benefits since it can signal as a motivation to the employees. This will enable the firms make policies in regards to their employees and make the right well fare policy in regards the estimates made on employee benefits.

References

Abubakar, Y. & Olowe, G.J. (2019). Accounts receivable management and financial performance of selected quoted firms in Nigeria. *International Journal of Research and Scientific Innovation (IJRSI),* VI (IV), 141-145.

Anichebe A.S. & Nangih, E. (2021). Accounting estimates and material misstatements in financial reports in Nigeria. *Journal of Accounting and Financial Management*, 7 (3), 51-62

Bawa, S., Asamoah, G.E & Kissi, E. (2018). Impact of inventory management on firm performance: a case study of listed manufacturing firms in Ghana. *International Journal of Finance and Accounting,* 7(4), 83-96

Belsoi, V., Gathii, J. & Ragama, P. (2017). Effect of estimation on financial performance of microfinance enterprise in Nakuru Town. *Mara Research Journal of Business and Management,* 2(2), 9-18

Berenson, I. & Levine, M. (1999).*Basic Business Statistics*: Concepts and Application. New Delhi: Prentice Hall of India, Pvt Ltd.

Cassell, C., L. Dreher, and L. Myers. (2013). Reviewing the SEC's review process: 10-K comment letters and the cost of remediation. *The Accounting Review, 1*88 (6): 1875-1908.

Chen, J. V. & F. Li. (2013). Estimating the amount of estimation in accruals. University of Michigan Working Paper.

Cohen, J., Gaynor, L., Krishnamoorthy, G. & Wright, A. (2007). Auditor communications with the audit committee and the board of directors: Policy recommendations and opportunities for future research. *Accounting Horizons,* 21 1(2): 165-187.

Cohen, J., Krishnamoorthy, G. & Wright, A. (2004). The corporate governance mosaic and financial reporting quality. *Journal of Accounting Literature* 23 (1): 87-152.

Dechow, P. M., W. Ge, C. Larson, and R. Sloan. (2011). Predicting material accounting misstatements. *Contemporary Accounting Research* 28 (1): 17–82.

Einhorn, E. (2005). The nature of the interaction between mandatory and voluntary disclosures. *Journal of Accounting Research* 43 (4): 593-621.

Gilson, S. C. (1990). Bankruptcy, boards, banks, and block shareholders. *Journal of Financial Economics* 27 (2): 355-387.

Glendening, M. (2014). The value relevance of critical accounting estimate sensitivity disclosures. Working Paper, University of Missouri.

Gujarati, D.N. & Sangeetha. (2007). *Basic Econometrics,* 4th Ed. New Delhi. Tata McGraw: Hill publisher. Co. Ltd.

Hassan, L., Abdul, C. & Muhammad, A. (2011). Impact of working capital management on the profitability of the firm without compromising the liquidity of the firm. *Asian Economic and Financial Review* 2(8), 966-982.

Indrayani, R. (2018). Analysis use of fixed assets depreciation method on company profits. *The Accounting Journal of BINANIAGA,* 03(01), 59-66

International Financial Reporting Standards Foundation (2015). IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors in A Briefing for Chief Executives, Audit Committees & Boards of Directors

Jensen, M.C. & Meckling, W.H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of financial economics*. 3 (4), 305-360.

Johnson, M., Kasznik, R. & Nelson, K. (2001). The impact of securities litigation reform on the disclosure of Forward-Looking information by high technology firms. *Journal of Accounting Research,* 39(2): 297-327.

Knechel, W. R. (2007). The business risk audit: Origins, obstacles and opportunities. *Accounting, Organizations and Society* 32 (4): 383–408.

Koutsoyiannis A. (2007). *Theory of Econometrics* 2nd ed.: 175th avenue NY palgrave Macmillan.

Krishnan, G. & Visvanathan, G. (2008). Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism. *Contemporary Accounting Research* 25 (3), 827-857.

Lev, B., Li, S. & Sougiannis, T. (2010). The usefulness of accounting estimates for predicting cash flows and earnings. *Review of Accounting Studies* 15 (4): 779-807.

Levine, C. & Smith, J. (2011). Critical accounting policy disclosures. *Journal of Accounting, Auditing and Finance* 26 (1): 39-75.

Li, F. (2008). Annual report readability current earnings and earnings persistence. *Journal of Accounting and Economics* 45 (2): 221-247.

Lugovsky, D. & Kuter, M. (2020). Accounting policies, accounting estimates and its role in the preparation of fair financial statements in digital economy. *Springer Nature Switzerland* 78; 165–176

Merton, H., Miller, H. & Kevin, R. (1985). Dividend policy under asymmetric information. *Journal of Finance,* 40 (September 1985) 1031-51.

Myers, R.H. (1990). *Classical and Modern Regression with Applications*, PWS-Kent Publishing Company, Boston.

Myers S.C. (1984). "The Capital Structure Puzzle" *Journal of Financial*, 39(4) 575-592.

Myers S.C. (1997). Determinants of corporate borrowing. *Journal of Financial Economics,* 5(1)147-175.

Nwaorgu, I. (2017) Effect of accounting estimates on the profitability of listed agricultural firms in Nigeria. *Nigerian Journal of Management Sciences,* 6(2), 197-203.

Olaoye, F.O & Adeniyi, A. (2020). Effect of accounting manipulations on performance of selected listed firms in Nigeria. *American Scientific Research Journal for Engineering, Technology and Sciences,* 63 (1), 158-170

SEC. (2001). *Securities Act Release Nos.: 33-8040; 34-45149; FR-60. Cautionary Advice Regarding Disclosure About Critical Accounting Policies*, December 12, 2001.

SEC. (2011). Transcript for Measurement uncertainty in financial reporting: How much to recognize and how best to communicate it. Inaugural public roundtable for financial reporting series. November 8, 2011.

Skinner, D. & Sloan, R. (2002). Earnings surprises, growth expectations and stock returns or don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies,*7(2), 289–312.

Slovic, P., Finucane, M., Peters, E. & MacGregor, D. (2007). The affect heuristic. *European Journal of Operational Research* 177 (3): 1333-1352.

Sloan, R. (2001). Financial accounting and corporate governance: a discussion. *Journal of Accounting and Economics,* 32(1)335-347.

Walther, B. (1997). Investor sophistication and market earnings expectations. *Journal of Accounting Research* 35 (2): 157-192.

Zhang, A. (2012). Evidence on the trade-off between real activities manipulation and accrual based earnings management. *The Accounting Review* 87(2): 675-703.