

# Inquiry: The University of Arkansas Undergraduate Research Journal

---

Volume 7

Article 8

---

Fall 2006

## SEC Enforcement Actions: An Analysis of Economic Determinants of Restatements

Rivka Berman  
*University of Arkansas, Fayetteville*

Follow this and additional works at: <https://scholarworks.uark.edu/inquiry>



Part of the [Accounting Commons](#)

---

### Recommended Citation

Berman, R. (2006). SEC Enforcement Actions: An Analysis of Economic Determinants of Restatements. *Inquiry: The University of Arkansas Undergraduate Research Journal*, 7(1). Retrieved from <https://scholarworks.uark.edu/inquiry/vol7/iss1/8>

This Article is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in *Inquiry: The University of Arkansas Undergraduate Research Journal* by an authorized editor of ScholarWorks@UARK. For more information, please contact [scholar@uark.edu](mailto:scholar@uark.edu).

## SEC ENFORCEMENT ACTIONS: AN ANALYSIS OF ECONOMIC DETERMINANTS OF RESTATEMENTS

By Rivka Berman  
Department of Accounting

Advisor: Dr. Don W. Finn  
Department of Accounting

### Abstract:

*This paper investigates the economic determinants of restatements, focusing on companies that were the object of an SEC Enforcement Action. A sample of 30 restatement firms is matched with 30 non-restatement firms in the same industry and same business and with a similar size as measured by assets. It was found that the use of a Big 5 audit firm reduces the incidence of restatement. More specifically, use of Ernst & Young as a Big 5 audit firm significantly reduces the possibility of restatement. Variables testing debt to equity ratio, proportion of management ownership and proportion of blockholder ownership as determinants of restatement were not significant with this particular sample. Because of the strong increase in the number of restatements in recent years, it is important for a company to reduce the potential probability of restatement of its financial statements. This can be done through the utilization of a Big 5 audit firm.*

### Introduction:

When viewing a set of financial statements, many would assume that the statements truthfully represent financial results for the company and that these results are free from fraudulent information. This conclusion is partially due to the fact that statements are analyzed by investors, analysts, and competitors who use the information contained in financial statements to make decisions about the company. In recent years, it appears that the assumption of truth may not be completely true, judging from accounting scandals that have dominated popular press headlines for several years. We have learned from these scandals that financial statements for many companies contained fraudulent information which was used by analysts and investors to make judgments about the future profitability of those firms. By the time fraudulent information was discovered the information backing their decisions was misleading, many investments had already lost a substantial portion of their previous value.

After a portion of the information in financial statements is determined to be incorrect, the company must correct the information and file a restatement with the Securities and Exchange Commission (SEC). Restatements include financial statements that were subject to changes in GAAP (such as the switch from FIFO to LIFO inventory methods), subsequent events (such as stock splits, mergers, and divestitures), and true fraudulent reporting, in which information is materially misrepresented. When fraudulent actions are suspected, the SEC often conducts an investigation into the matter and may issue an Accounting and Auditing Enforcement Action, often called an Enforcement Action. This document outlines the fraudulent actions, providing background about the company, the amount of restatement, and nature of restatement, and any future actions taken against the company or its management. In essence, an Enforcement Action publicly identifies the company that participated in fraudulent wrongdoing.

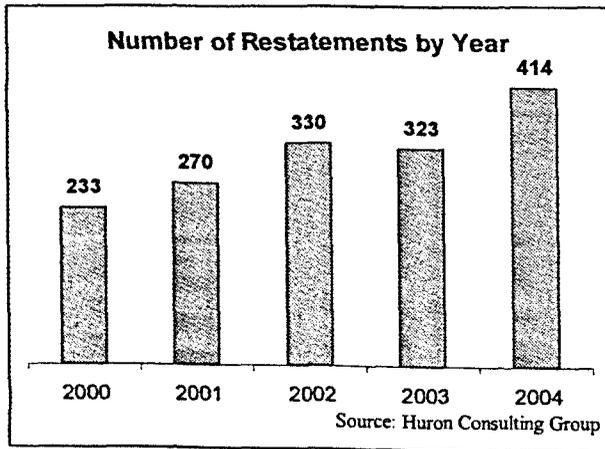
This paper investigates the economic determinants of restatements. It will focus only on companies who have restated earnings and have been the target of an Enforcement Action. This will highlight companies that have had fraudulent actions, rather than other less serious causes of restatements. To discern whether an accounting action is actually an economic determinant of restatement, all restatement firms are matched (a control group) with an equivalent non-restatement firm. The potential economic determinants between restatement and non-restatement companies will be measured using the leverage, proportion of management ownership, and proportion of blockholder ownership.

After analyzing a sample of 30 restatement companies and their matched non-restatement companies, it was determined that those firms audited by Big 5 firms were less likely to produce a restatement. In a second regression analysis, Ernst & Young was found to be the Big 5 firm whose clients were least likely to have a restatement. Variables used to test other hypotheses were not significant in this test possibly because of the limited sample available.

The remainder of the paper will be organized as follows. Section II discusses relevant background information about the occurrence of restatements. Section III reviews previous findings of studies that have discussed restatements. Section IV defines the sample and data collection methods. Section V discusses results of analysis of the relationship between restatement and non-restatement companies, and Section VI provides final conclusions.

**Background Information:**

To understand the importance of restatements, one high profile example is the case of Enron. When Enron’s restatement reduced net income by \$569 million for the years ended December 31, 1999-2000 and the first two quarters of 2001, the restatement was not just a change in numbers for a few accounts (Akhigbe, Kudla, & Madura, 2005). It also brought a series of changes that have had long lasting effects on overall investor confidence. Investors found it difficult to trust the accuracy and reliability of other companies when their Enron stock had lost nearly all of its value in a period of days. If a fraud as significant as that of Enron could occur within the sight of auditors, then investors may begin to wonder about the dependability of information provided by other public companies.



The incidence of restatements has become much more common since the year 2000, with a 22% increase from 2000-2004 according to data collected by the Huron Consulting Group. The data also shows a 28% increase in restatements between 2003 and 2004. Jeff Szafran, managing director of Huron Consulting, suggests that this increase might be attributed to the “unprecedented level of regulatory and audit scrutiny, driven primarily by the Sarbanes-Oxley Act of 2002” (Bryan, Lilien, Ruland, & Sinnett, 2005). Among its many provisions, the act requires CEOs and CFOs to certify the accuracy of financial statements, including a certification of internal controls, establishes an independent audit committee, and provides conditions of auditor independence. Szafran also points out the following conditions regarding the increase in restatements:

Public companies spent significant amounts of time and money to comply with the requirements of Sarbanes-Oxley Section 404, and may have found some mistakes in the process. (This section requires that management attest to responsibility and accuracy of internal controls.)

The Public Company Accounting Oversight Board (PCAOB) began reviewing the audit practices of the major accounting firms.

The SEC budget jumped to almost twice what it was during 2001, and it used that budget to hire more professionals to enforce the law.

The SEC established a new Office of Risk Assessment to look into the practices of certain industries.

Auditors were doing more work, including testing companies’ internal controls. (Bryan et. al., 2005)

It is important to also note that the increase in earnings restatements has spiked within the last six to eight years and still reflects a small percentage of overall filings. A study by the FEI Research Foundation reviewed the incidence of earning restatements with a sample of 1080 restatements between 1977 and 2000. It found that the average number of restatements between 1977 and 2000 was only 49, with a large spike between 1998 and 2000 (Moriarty & Livingston, 2001). More importantly, the study found that the average number of restatements since 1995 represented 0.67% of the average number of reporting companies (Moriarty & Livingston, 2001). This would suggest that, while earnings restatements are significant events in the life of a company, the overall quality of financial statements still remains high.

A 2004 General Accounting Office study supports Szafran’s analysis of conditions that led to an increase in restatements. It says about half of companies found their own mistakes, while external auditors found 2.5% of mistakes and other external parties found 9% of mistakes (Wallace, 2005). Another 4.5% were discovered by the SEC, the type of case that will be analyzed in this paper (Wallace, 2005). This breakdown shows that companies are usually forthcoming when they discover an error and may be the best defense against incorrect accounting practices.

The Huron Consulting report also discloses further trends in restatements. It found that of the 414 restatements in 2004, 253 (61%) restated annual reports, which are audited by external auditors (Bryan et. al., 2005). They also discovered that almost 40% of restated annual reports were multiple year restatements, signaling “flawed accounting policies” and long-standing errors instead of one time errors (Bryan, et. al., 2005).

Overall, the size and number of restatements appears to be increasing even with the negative repercussions experienced by the company following a restatement. Most mistakes that cause

restatements are found by the company itself and are likely to cover multiple years. Even with the overall increase in the numbers of restatements, less than 1% of companies file a restatement in a year, demonstrating the significance of a restatement in the life of a company

### Previous Findings:

The majority of prior literature discusses effects of restatements on the stock market. These studies overwhelmingly conclude that earnings restatements produced negative stock returns. In a sample of firms that restated earnings between 1976 and 1985, William Kinney and Linda McDaniel found that on average stocks earned negative returns between the release of false financial statements and the release of the correction (Kinney & McDaniel, 1989). The amount of negative return was quantified by Palmrose, Richardson, and Scholz. They found that the mean abnormal return from a sample of 403 restatements from 1995-1999 was -9.2% over a two day announcement period (Palmrose, Richardson, & Scholz, 2004). They further concluded that the average stock price change was even larger than -9.2% when restatements included an indication of management fraud, had large material dollar effects, and were initiated by auditors rather than the company itself.

Anderson and Yohn examined whether different causes of a restatement have larger effects on stock price changes. They found a larger negative reaction to revenue recognition restatements than other type of restatements (Anderson and Yohn, 2002). This demonstrates that revenue recognition affects investors' view of "firm value and information asymmetries" more than other types of restatements (Anderson and Yohn, 2002).

Most previous research centered on stock market effects from all types of shareholders. Hribar, Jenkins, and Wang, however, focused on institutional shareholders. This type of shareholder usually represents a blockholder (owns more than 5% of all shares outstanding), a group that will be examined further in this paper. The study provided three key conclusions about institutional shareholders. First, transient institutions, those focused on the short-term, predict earnings restatements one quarter prior to actual restatement, providing evidence that they have an information advantage over regular shareholders (Hribar, Jenkins, and Wang, 2004). This would be an important distinction to draw as this paper examines the relationship between blockholders and restatement companies. Next, the study found that institutional shareholders respond more negatively than other investors to the announcement of a restatement, having different interpretations of both the sign and weight of the restatement (Hribar et al., 2004). Lastly, institutional holders are found to trade earlier than individual investors, who usually trade over a five day window around restatements (Hribar, et al., 2004). Overall, the results of this study illustrate the importance of institutional shareholders to the market as a

whole because this type of shareholder can have an information advantage and is likely to respond sooner and more negatively than the typical shareholder.

Overall, prior research confirms that restatements generally cause the stock price of a firm to decline following a restatement, usually around 9%. Also, institutional shareholders have additional information backing their decisions, allowing them to make decisions earlier and more drastically than the average shareholder.

### Hypothesis Development

This paper is designed to test for the effect of economic determinants of restatements on financial statements. To do this, three groups that would have interest in seeing the best results for the company are examined. These are the debt holders, management, and institutional shareholders or blockholders. It is expected that each of these groups would exercise interest for the company to produce the best financial results possible. For example, debt holders expect a company to act in ways that ensure the future repayment of the debt. Management would seek to ensure continued employment and maximization of stock-based compensation. Blockholders would desire maximum returns on investments and would act in a manner to accomplish this objective. Hypotheses tested are as follows:

$H_1$ : There is a positive relationship between the debt to equity ratio and incidence of restatement.

$H_2$ : There is a positive relationship between the proportion of management ownership and the incidence of restatement.

$H_3$ : There is a positive relationship between the proportion of blockholder ownership and the incidence of restatement.

$H_4$ : There is a negative relationship between use of a Big 5 accounting firm and the incidence of restatement.

### Sample and Data Collection:

The sample used for analysis includes 30 companies that were the object of an SEC Enforcement Action regarding financial statements for the years 1999-2004. This information was obtained from a search of the selected Accounting and Auditing Enforcement Releases available on the SEC website. Each release was analyzed to see that it did include a restatement of quarterly or yearly financial statements (10-Q or 10-K). Releases were also analyzed to determine the quarter or year in which

restatement had the greatest effect on previously stated earnings. This period of time was then matched with a control firm that had not been the object of an Enforcement Action. Restatement and non-restatement companies were matched on three criteria: 1.) has the same North American Industrial Classification System (NAICS) code; 2.) a similar type of business as discussed in the "Business" section of each company's 10-K; 3.) the closest size as measured by total assets for the period restated.

The Compustat North America Industrial Annual and Quarterly databases were used to determine the total assets used to match companies. The databases were also used to pull the short-term debt, long-term debt, and total equity used to compose the Debt to Equity ratio used in analysis.

The proportion of management ownership and the proportion of blockholder ownership also used in analysis of economic determinants were gathered from the Proxy statements available on the SEC website. The Proxy for the period of restatement was used to gain this information. If a manager was also a blockholder, he or she was included in the management percentage and not the blockholder percentage. The blockholder percentage only represents those blockholders that were not included in the management percentage. This eliminates redundancy among the data collected.

For usage in the descriptive statistics section, the auditor at the period of restatement was also collected from the Proxy statement. Also, the Enforcement Releases were analyzed to determine common reasons for restatement which are displayed in the descriptive statistics.

#### *Descriptive Statistics*

Descriptive statistics of the sample of 30 restatement firms and matches are presented in tables 1-4. Table 1 presents the distribution of years represented by the restatements. In this sample, an equal number (11) of restatements concerned the years 2000 and 2001, while fewer restatements concerned later years. This represents the year affected by the restatement rather than the year the restatement was released. Likely, the need for restatements of information in later years has not yet been discovered or has not yet been the subject of an Enforcement Action by the SEC.

Table 2 represents the number of restatements by NAICS code for industry. It shows that nine of the 30 restatements (30%) used in the study came from the manufacturing industry. This includes sub-industry names such as engines and turbines, pharmaceutical preparations, special industry machinery, electric computers, and prefab metal buildings. Companies include Cummins, Inc., Bristol-Myers Squibb Company, DT Industries, Inc., and NCI Building Systems, Inc. Also notable are the six restatements from the information industry. This includes Time Warner, Inc. from motion picture and video tape production,

Gemstar-TV Guide International, Inc. from periodicals, and i2 Technologies, Inc. from prepackaged software.

Table 3 discloses the reasons for restatements found in the Enforcement Action document on the SEC website. Overwhelmingly, 12 of the 30 restatements (40%) involved improperly recognized revenue. This follows previous findings by a study sponsored by the FEI Research Foundation that also found the most prevalent reasons for restatement was revenue recognition followed by cost issues and loan loss provisions. In the sample used in this paper, cost issues (called improperly recorded expenses) and loan loss provisions (called treatment of losses) are also dominant issues.

Table 4 reviews the auditor responsible for the period of restatement for both the restatement firms and non-restatement firms. PricewaterhouseCoopers audited an overall majority of firms and a majority of the restatement firms also. Also notable, Arthur Anderson audited the second most number of firms, as the majority of time covered by the sample was before the firm was disbanded. Ernst & Young was largely more likely to audit a non-restatement firm rather than a restatement firm, while "other" firms were more likely to audit restatement firms. The "other" category includes firms that were not in the Big 5, such as regional and local firms. Even though these firms were more likely to audit a restatement firm rather than a non-restatement firm, most restatement firms had been audited by a Big 5 firm.

#### **Results:**

##### *Univariate Statistics*

Univariate statistics were used to examine the basic variation between restatement and matched (control) companies. Although these differences alone do not provide evidence to support individual hypotheses, they do provide insight into the sample used in this paper

Table 5 presents the overall mean of variables from all causes of restatements and their matched companies. In this sample of 30 restatement companies and 30 matched companies, matched companies exhibited a higher asset to equity ratio, shown as 7.86 for matched companies and 4.46 for restatement companies. This illustrates that companies experiencing a restatement hold a lower amount of assets in relation to their equity, providing a possible explanation of their behavior. Also notable, restatement companies have a 2.6% higher percentage of blockholder ownership than matched companies. This may show that because restatement companies have a higher proportion of stock owned by these institutional shareholders, they may also be susceptible to the pressures from these blockholders. Such a type of owner would be more demanding than an individual stockholder because of the concentrated nature of ownership.

Table 6 presents the mean of only the two most common causes of restatement as previously discussed – improperly

recognized revenue and improperly recorded expenses. Of the firms that have improperly recognized revenue, restatement companies have a higher asset to equity ratio than matched companies. The mean of 2.24 for restatement firms is much lower than the mean of 4.46 from all causes of restatement. Also, assets to equity is higher for matched companies than restatement companies when reviewing the overall mean. Companies with improperly recognized revenues have a considerably higher percentage of blockholder ownership, representing the same situation as the overall mean of all restatements.

This ownership situation is negative when examining only the means of restatement firms and matched firms for improperly recorded expenses. For this situation, matched firms have a higher proportion of blockholder ownership than restatement firms. Restatement firms also have higher assets to equity, current debt to equity, long term debt to equity, and total debt to equity than matched companies. With the possible exception of assets to equity, this would follow conventional knowledge that the pressures of holding debt could lead to possible areas of fraud, therefore restatements

#### *Regression Analysis*

The hypotheses were tested using two different regression models. In each model, restatement versus matched firms was used as the dependent variable, using a dichotomous indicator variable of 1 to indicate a restatement firm or 0 to indicate a matched firm. Other objective variables, such as Big 5 audit firm in Model 1 and individual Big 5 firm or smaller SEC audit firms in Model 2, respectively, were measured by using a 1 to signify use of the particular firm and a 0 to signify use of another firm. Also, the Log of assets was used to eliminate any size bias between firms with different levels of assets.

The models are as follows:

#### Model 1

$$\text{Restatement} = a + b_1(\text{assets}) + b_2(\text{debt/assets}) + b_3(\text{debt/equity}) + b_4(\% \text{ of management ownership}) + b_5(\% \text{ of blockholder ownership}) + b_6(\text{Big 5 audit firm})$$

#### Model 2

$$\text{Restatement} = a + b_1(\text{assets}) + b_2(\text{debt/assets}) + b_3(\text{debt/equity}) + b_4(\% \text{ of management ownership}) + b_5(\% \text{ of blockholder ownership}) + b_6(\text{EY}) + b_7(\text{Arthur Anderson}) + b_8(\text{Deloitte}) + b_9(\text{KPMG}) + b_{10}(\text{PWC})$$

Table 7 illustrates the mean, median, standard deviation, high and low values for each of the variables used in each model. It indicates the wide variation between the high and low values for the particular variable and gives a relative idea of the midpoint of the variable.

Table 8 presents the results of regression tests performed using the two models presented above. Model 1 shows that the

intercept and Big 5 audit firm results are significant at a 10% level. The p-value of the Big 5 audit firm variable can be divided in half to represent a one tailed test rather than a two tailed test. This is applicable because the influence of an audit firm is hypothesized to be positively related to fewer restatements, and thus it is a one-tailed test. In this case, it is that firms who use a Big 5 audit firm would experience fewer restatements, as large audit firms have been shown in previous studies to produce higher quality audit results. In their 1999 paper, Colbert and Murray present several reasons why major audit firms would produce a higher quality audit. These include taking advantage of economies of scale, guarding reputation, and utilization of human capital (Colbert and Murray, 1999).

The Big 5 audit firm variable is also significant because of its representation of the overall population of public companies. Firms who used an auditor other than a Big 5 firm received a "0" value for the Big 5 variable, and the proportion of firms using a non-Big 5 firm (10%) reflects the actual proportion of public firms using non-Big 5 audit firms.

The regression of Model 2 is also presented in Table 8. The intercept and Ernst & Young both produced significant results. At a 10% level in a one tailed test, firms audited by Ernst & Young are less likely (negative coefficient of -0.50) to audit a company that restated financial statements. This would follow the regression analysis of Model 1 that found companies audited by a Big 5 firm are less likely to produce a restatement.

The lack of overall significance in both models may be attributed to the small sample size. It is possible that with a larger sample size, results would be significant. However, an examination of the coefficients (although not significant) may provide some additional insight relative to the overall research question – what are the factors that contribute to restatements?

There is anecdotal information from the coefficients that may help one to interpret how managers might engage in mistatements of financial information. The most important variables are the percentage of management and blockholder ownership. In both models, negative coefficient of management ownership indicates that with increased percentages of management ownership, the probability of restatement decreases. A possible explanation of this is that management would likely want to avoid restatement to protect the value of its ownership in the company. A similar logical argument exists with the percentage of blockholders. Both regression models show that increased blockholder ownership is positively related with the probability of restatement. It is expected that blockholders demand high returns and because of their concentration of ownership, they would have more power than the average shareholder. The debt to assets ratio is also useful. With a positive coefficient of 0.1 and 0.11 in Model 1 and Model 2, respectively, it shows that with an increase in the debt to assets ratio, the probability of restatement increases. This is logical

because as debt increases, companies face increased pressure to produce positive financial performance to maintain credit and market standing. The pressure may cause the company to follow questionable accounting practices that could eventually lead to a restatement when policies are found to be incorrect. This is evidenced by positive coefficients of the debt to assets ratio. The results of assets and debt to equity ratio variables, coefficients of 0.02 and -0.01, respectively, produce a negligible impact on the results of both models, minimizing their importance.

**Conclusion:**

Following the adoption of the Sarbanes-Oxley Act of 2002, the frequency of financial statement restatements has increased because of the increased scrutiny on company internal control practices. Previous literature has discussed the effects of restatements on both the company and investors. It was found that a company is likely to experience a decreased stock price while investors may suffer from a loss in value of their investment.

This paper seeks to find the economic determinants of restatements using a sample of 30 restatement firms derived from companies that have received SEC Enforcement Actions. These firms were matched by industry and asset size with 30 firms that had not restated financial statements. The sample was tested using four hypotheses covering the areas of debt to equity ratio, proportion of management ownership, proportion of blockholder ownership, and the use of a Big 5 accounting firm for auditing.

It was concluded that a negative relationship exists between audit by a Big 5 accounting firm and the incidence of restatement. Further, the use of Ernst & Young as an audit firm significantly decreased the incidence of restatement in this sample. Results for other hypotheses were not significant for this sample, possibly due to the small sample size.

The results were consistent with previous studies that found Big 5 firms, such as Ernst & Young, provided higher quality audits than non Big 5 firms. Also, although not significant, the negative coefficient of management ownership and the positive relationship of blockholder ownership also provide useful information. These groups both act in their own self interest – that of protecting the value of investments and earning higher returns, respectively. Further, the positive coefficient of the debt to assets ratio highlights the pressures that debt can cause for a company.

As Sarbanes Oxley provisions continue to be fully implemented, incidence of restatements will probably continue to remain higher than that of previous years. This will continue to affect both investors and the company itself, as restatements can be the catalyst for a further sequence of effects, such as stock price changes, credit rating revisions, and monetary fines. Research from this paper shows that the use of audit services from a Big 5 firm can mitigate these effects.

**Supplemental Tables:**

**Table 1:**

Years Represented by Restatements	
1999	5
2000	11
2001	11
2002	2
2003	0
2004	1
<b>N</b>	<b>30</b>

**Table 2:**

Industry	
Utilities (22)	1
Construction (23)	1
Manufacturing (31-33)	9
Retail trade (44-45)	3
Information (51)	6
Finance and Insurance (52)	5
Real estate and rental and leasing (53)	2
Professional, scientific, and technical services (54)	3
<b>N</b>	<b>30</b>

**Table 3:**

Reason for Restatement	
Improperly recognized revenue	12
Improperly recorded expenses	7
Treatment of losses	4
Accounts receivable/payable	3
Improperly recorded gain on sale	2
Other	2
<b>N</b>	<b>30</b>

**Table 4:**

	Auditor				Total	
	Restatement co.	%	Match co.	%		%
PWC	8	26.7%	7	23.3%	15	25.0%
Arthur Anderson	6	20.0%	7	23.3%	13	21.7%
EY	4	13.3%	7	23.3%	11	18.3%
KPMG	5	16.7%	3	10.0%	8	13.3%
Deloitte	3	10.0%	4	13.3%	7	11.7%
Other	4	13.3%	2	6.7%	6	10.0%
<b>N</b>	<b>30</b>		<b>30</b>		<b>60</b>	

Source: Proxy statement for period of restatement

**Table 5:**

**Overall Mean of All Causes of Restatement**

	Restatement	Matched Companies
Assets to equity ratio	4.46	7.86
Current debt to equity ratio	0.26	0.58
Long term debt to equity ratio	1.22	3.02
Total debt to equity ratio	1.48	3.61
% of management ownership	17.2%	19.5%
% of blockholder ownership	17.2%	14.6%

Table 6:

## Mean of Most Common Causes of Restatement

	Improperly Recognized Revenue		Improperly Recorded Expenses	
	Restatement	Match	Restatement	Match
	Assets to equity ratio	2.24	2.02	7.09
Current debt to equity ratio	0.05	0.04	0.29	0.16
Long term debt to equity ratio	0.48	0.67	2.99	0.33
Total debt to equity ratio	0.53	0.70	3.29	0.49
% of management ownership	12.9%	16.3%	21.4%	41.0%
% of blockholder ownership	19.1%	4.5%	17.1%	23.1%

Table 7:

## Model 1

Variable	Mean	Median	Std Dev	High	Low
Log Assets	3	3	1.16	6	1
Debt/Assets	0.33	0.18	0.40	2.06	0.00
Debt/Equity	2.55	0.72	9.46	72.19	0.00
% management ownership	18.37%	9.77%	23.21%	100.00%	0.00%
% blockholder ownership	15.90%	10.85%	18.88%	99.50%	0.00%
Big 5 audit firm	1	1	0	1	0

## Model 2

Variable	Mean	Median	Std Dev	High	Low
Log Assets	3	3	1.07	5	1
Debt/Assets	0.33	0.18	0.40	2.06	0.00
Debt/Equity	2.55	0.72	9.46	72.19	0.00
% management ownership	18.37%	9.77%	23.21%	100.00%	0.00%
% blockholder ownership	15.90%	10.85%	18.88%	99.50%	0.00%
EY	0	0	0.39	1	0
Arthur Anderson	0	0	0.42	1	0
Deloitte	0	0	0.32	1	0
KPMG	0	0	0.34	1	0
PWC	0	0	0.44	1	0

Table 8:

## Regression Results

	Coefficient	P value
<b>Model 1</b>		
Intercept	0.74	0.03
Log Assets	0.02	0.75
Debt/Assets	0.1	0.57
Debt/Equity	-0.01	0.19
% management ownership	-0.16	0.61
% blockholder ownership	0.2	0.59
Big 5 audit firm	-0.36	0.17
Number of observations		60
<b>Model 2</b>		
Intercept	0.75	0.03
Log Assets	0.02	0.81
Debt/Assets	0.11	0.54
Debt/Equity	-0.01	0.17
% management ownership	-0.2	0.54
% blockholder ownership	0.22	0.56
EY	-0.5	0.11
Arthur Anderson	-0.39	0.19
Deloitte	-0.4	0.22
KPMG	-0.19	0.55
PWC	0.31	0.29
Number of observations		60

## Works Cited:

- Akhigbe, Aigbe, Kudla, Ronald J., & Madura, Jeff. (2005). Why are some corporate earnings restatement more damaging? *Applied Financial Economics*, 15, 327-336.
- Anderson, Kirsten L., & Yohn, Teri L. (2002). The effect of 10-K

restatements on firm value, information asymmetry, and investors' reliance on earnings. Working paper. Washington, DC: Georgetown University.

Bryan, Stephen, Lilien, Steven B., Ruland, William, & Sinnett, William M. (2005). Undoing the past implications of earnings restatements. *Financial Executive*, 21, 42-44.

Colbert, Gary & Murray, Dennis. (1999). State accountancy regulations, audit firm size, and audit quality: an empirical investigation. *Journal of Regulatory Economics*, 16, 267-285.

Hribar, Paul, Jenkins, Nicole T., & Wang, Juan. (2004). Institutional investors and accounting restatements. Working paper St. Louis: Washington University

Kinney, William R., Jr., & McDaniel, Linda S. (1989). Characteristics of firms correcting previously reported quarterly earnings. *Journal of Accounting and Economics*, 11, 71-93.

Linn, Erik, & Diehl, Kori. (2005). Financial restatement causes, consequences, and corrections. *Strategic Finance*, 87, 34-39.

Moriarty, George B., & Livingston, Philip B. (2001). Quantitative measures of the quality of financial reporting. *Financial Executive*, 17, 53-56.

Palmrose, Zoe-Vonna, Richardson, Vernon J., & Scholz, Susan. (2004). Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics*, 37, 59-89.

Richardson, Scott, Tuna, Irem, & Wu, Min. (2002). Predicting earnings management: the case of earnings restatements. Working paper Philadelphia: University of Pennsylvania.

Wallace, Wanda A. (2005). Auditor changes and restatements. *The CPA Journal*, 75, 30-34.

## Faculty comments:

Dr. Don Finn explains the importance of his student's work in his letter of support for its publication. He said,

Ms. Berman's paper investigates the economic determinants of financial restatements that have been mandated by the Securities and Exchange Commission (SEC). Briefly, the SEC mandates that financial statements be restated when they find anomalies and/or errors (and possibly fraud) in the published information. The paper focused only on companies who have restated earnings and have been the target of an Enforcement Action. The purpose of identifying these companies is because they may have experienced fraudulent actions, rather than other less serious causes of restatements. To discern whether an accounting action is actually an economic determinant of restatement, all restatement firms were matched (a control group) with an equivalent non-restatement firm. The potential economic determinants between restatement and non-restatement companies were measured using the leverage, proportion of management ownership, and proportion of blockholder ownership.

It was determined that those firms audited by Big 5 firms were less likely to produce a restatement. In a second regression analysis, Ernst & Young was found to be the Big 5 firm whose clients were least likely to have a restatement. Thus, it was determined that large public accounting firms who performed audits were more reliable than those firms which are smaller and may not have the resources to properly audit large public companies.