WHEN JUSTICE IS SERVED:
USING DATA ANALYTICS TO EXAMINE HOW FRAUD-BASED LEGAL ACTIONS AFFECT EARNINGS MANAGEMENT

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CONTENTS

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I. INTRODUCTION

How do firms supposedly engaged in earnings management respond to the filing of fraud-based legal actions and to the issuance of fraud-based legal rulings? Do they cease or continue their suspected earnings management activities? Using data analytics, this paper examines the impact of fraud-based legal actions on earnings management.

Corporate governance is the responsibility of an entity to any persons or groups who are affected by the various decisions, policies and operations of that entity.[1] While corporate governance is a significant factor in ensuring the presence of control mechanisms, it sometimes fails to prevent financial malpractice.[2]

Investors' trust in corporate financial reporting has been seriously shaken in recent decades. The corporate accounting scandals involving large well-known companies such as Enron, WorldCom, Xerox, Tyco and a number of lesser known companies – all audited by large accounting firms – suggest serious deficiencies in the accounting standards and corporate governance and regulatory systems designed to guide and monitor the financial information process.[3] Recent examples include Microsoft smoothing its earnings in order to stabilize profits and Coca-Cola overstating its assets by $9 million.[4]

Financial statement fraud occurred more frequently in smaller companies (companies with total assets of less than $100 million) than larger ones. In other findings of the study, computer companies were among those who topped the list of companies involved in financial statement fraud, according to a study done by the Committee of Sponsoring Organizations of the Treadway Commission.[5]

Research confirms the anecdotal evidence that the quality of reported earnings has deteriorated starting in the 1990s. For example, the gap between taxable corporate income and aggregate earnings has been continuously widening throughout the 1990s.[6] Another example would be the gap between corporate profits and earnings reported in the national product and income accounts, which are based on firms' taxable income adjusted for current values of depreciation and inventory. Although part of the gap between corporate profits and earnings may be due to the increasing sophistication of tax planning, earnings manipulation plays a major role.[7] There is evidence indicating that both CFOs and CEOs have idiosyncratic styles in withholding

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[1] Ayu Laksmi & Zulfia.Kamila, *The Effect of Good Corporate Governance and Earnings Management to Corporate Social Responsibility Disclosure*, 22 ACAD. OF ACCT. & FIN. STUD. J. 1–16 (2018).
[2] Malek El Diri, Costas Lambrinoudakis & Mohammad Alhadab, *Corporate Governance and Earnings Management in Concentrated Markets*, 108 J. OF BUS. RES. 291, 291–92 (2020).
[3] Baruch Lev, *Corporate Earnings: Facts and Fiction*, 17 J. OF ECON. PERSP. 27, 27 (Spring 2003).
[4] El Diri, *supra* note 2, at 291.
[5] MARK S. BEASLEY, JOSEPH V. CARCELLO, DANA R. HERMANSON &THE COMMITTEE OF SPONSORING ORGANIZATIONS OF THE TREADWAY COMMISSION, FRAUDULENT FINANCIAL REPORTING: 1987-1997 AN ANALYSIS OF U.S. PUBLIC COMPANIES 17 (1999).
[6] Francois Degeorge, Jayendu Patel & Richard Zeckhauser, *Earnings Management to Exceed Thresholds*, 72 THE J. OF BUS. 1, 29 (1999); Mihir Desai, *The Corporate Profit Base, Tax Sheltering Activity, and the Changing Nature of Employee Compensation*, 1–4 (Nat'l Bureau of Econ. Research, Working Paper No. 8866,2002); Lev, *supra* note 3, at 27.
[7] Baruch Lev & Doron Nissim, *Taxable Income as an Indicator of Earnings Quality* (N.Y. Univ., Working Paper, 2002); Baruch Lev, *Corporate Earnings: Facts and Fiction*, 17 J. OF ECONOMIC PERSP. 27, 27 (Spring 2003).

bad news;[8] apparently, more competent managers tend to be overconfident about future outcomes and therefore more likely to withhold bad news.[9]

Firm-specific data corroborates the use of earnings manipulation or earnings management by corporations. The number of earnings restatements by listed companies, often after admitted irregularities, has tremendously increased in the last several years.[10] In addition, the frequency of firms beating analyst's earnings forecasts increased sharply in the 1990s, suggesting earnings management as a possible cause.[11] Lev and Zarowin[12] provide evidence that the usefulness of reported earnings, cash flows, and equity values has been deteriorating for two decades. Rayman[13] stated a case that accounting is often distorted and inaccurate and called for a revision of the conventional accounting system nearly five decades ago.

Data analytics has been a growing field in the past two decades and, more recently, an emerging field in the legal sector.[14] Analytics can help predict outcomes in court.[15] Legal services providers need to go beyond merely accessing copies of statutes, regulations, interpretive documents and other primary law sources.[16] Client cases include more than substantive law issues and a regulatory question may involve accounting, finance, marketing and other issues.[17] While data analytics are not infallible, they can provide insights that increase the odds of an accurate prediction, enabling lawyers and clients to pursue a more accurate litigation strategy.[18] This paper employs the data analytic technique of linear regression to examine how fraud-based legal actions impact earnings management policies.

II. DEFINITION OF EARNINGS MANAGEMENT

Since earnings management is deemed to be a critical factor affecting the quality of earnings in recent decades, a definition of earnings management is in order. Earnings management is when managers use their judgment in financial reporting and transaction structuring in order to alter their firms' financial reports so as to either mislead some stakeholders (i.e., investors, creditors, employees, regulatory authorities) about the basic economic and financial performance

[8] Jiaxin Liu, Do Executives Have Fixed Effects on Firm-Level Stock Price Crash Risk? (2016) (PhD. dissertation, CUNY) (on file with CUNY Academic Works).
[9] Jeong-Bon Kim & Liandong Zhang, *Accounting Conservatism and Stock Price Crash Risk: Firm-Level Evidence*, 33 CONTEMP. ACCT. RES. 412, 413 (2016).
[10] Min Wu, *Earnings Restatements: A Capital Market Perspective* (N.Y. Univ., Working Paper, 2002).
[11] Russell Lundholm, *Reporting on the Past: A New Approach to Improving Accounting Today*, 13 ACCT. HORIZONS 315, 315 (1999).
[12] Baruch Lev & Paul Zarowin, *The Boundaries of Financial Reporting and How to Extend Them*, 37 J. OF ACCT. RES. 353, 365 (1999).
[13] R. Anthony Rayman, *An Extension of the System of Accounts: The Segregation of Funds and Value*, 7 J. OF ACCT. RES. 53, 54 (1969).
[14] Patrick Flanagan & Michelle H. Dewey, *Where Do We Go from Here? Transformation and Acceleration of Legal Analytics in Practice*, 35 GA. ST. U. L. REV. 1245 (2019).
[15] Marilyn Odendahl, *Big Data Is Predicting Outcomes in Court*, THE IND. LAW. (May 13, 2020), https://www.theindianalawyer.com/articles/big-data-is-predicting-outcomes-in-court.
[16] Kenneth A. Grady, *Mining Legal Data: Collecting and Analyzing 21st Century Gold*, *in* DATA-DRIVEN LAW 11, 18 (Ed Walters ed., 2017).
[17] *Id.* at 19.
[18] Owen Byrd, *Moneyball Legal Analytics Now Online for Commercial Litigators*, COM. L. WORLD, Apr.-June 2017, at 12, 16.

of the firm or to obtain more favorable contractual and/or legal results that depend on accounting numbers.[19]

This definition of earnings management merits discussion. Managers may exercise their judgment in financial reporting in many ways. Their judgment is required in estimating various future economic events such as obligations for pension benefits, losses from asset impairments and bad debts, deferred taxes and salvage values of long-term assets. Managers can choose among many acceptable accounting methods for reporting the same economic transactions, such as the LIFO, FIFO, weighted-average inventory valuation methods or the accelerated or straight-line depreciation methods. Managers can exercise their judgment in working capital management, such as the timing of inventory purchases/shipments, receivable policies and the maintenance of inventory levels, which affects net revenues and cost allocations. Managers can also choose to make or defer expenses such as advertising, maintenance, or research and development.[20] Furthermore, managers can manage earnings in the form of transaction structuring. For example, lease contracts can be structured so that lease obligations are on- or off-balance sheet and equity investments can be structured to require or avoid consolidation.[21]

III. DISCRETIONARY ACCRUALS

One common form of earnings management is the use of discretionary accruals.[22] Under accrual-basis accounting, transactions that change a firm's financial statements are recorded in the same periods in which the events occur. Under the accrual basis, revenues are recognized when earned rather than when the cash is actually received and expenses are recognized when incurred rather than when the cash is paid. On an accrual basis, information presented reveals relationships likely to be important in predicting future results.

Under cash-basis accounting, revenues are recorded only when received in cash and expenses are recorded only when paid in cash. Because cash-basis accounting does not always match earned revenues with expenses, it is not in accordance with Generally Accepted Accounting Principles. Cash basis accounting may be used by individuals and small companies because they usually have few receivables and payables but most companies use accrual-basis accounting.[23] Accruals, in particular, are the non-cash items that determine regular accounting income.[24]

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[19] Paul M. Healy & James M. Wahlen, *A Review of the Earnings Management Literature and Its Implications for Standard Setting*, 13 ACCT. HORIZONS 365, 368 (1999).
[20] *See* Sterling Huang, Sugata Roychowdhury & Ewa Sletten, *Does Litigation Deter or Encourage Real Earnings Management?*, 95 THE ACCT. REV., no. 3, 2020, at 251.
[21] Paul Healy & James M. Wahlen, *A Review of the Earnings Management Literature and its Implications for Standard Setting*, 13 ACCT. HORIZONS 365, 369 (1999); *see generally* François Degeorge, Jayendu Patel and Richard Zeckhauser, *Earnings Management to Exceed Thresholds*, 72 THE J. OF BUS. 1 (1999).
[22] Scott B. Jackson & Marshall K. Pitman, *Auditors and Earnings Management*, THE CPA J. (July 2001) Available at http://archives.cpajournal.com/2001/0700/features/f073801.htm.
[23] Jerry J. Weygandt et al., PRINCIPLES OF FINANCIAL ACCOUNTING 91 (7th ed. 2005).
[24] Gene D'Avolio et al., *Technology, Information Production and Market Efficiency*, HARV. INST. OF ECON. RSCH., Sept. 2001, at 20 (explaining that Net income = Cash Flows + Accruals; Accruals = Δ Current Assets (excluding cash) – Δ Current Liabilities – Depreciation).

By their very nature, accruals require subjective judgments and estimation. Before they are realized, accruals are difficult for auditors to objectively verify.[25] Though determining what component of accruals is discretionary is also difficult, empirical models have been developed to measure discretionary accruals[26]

As an illustration of how discretionary accruals reflect earnings management, consider "channel stuffing." Channel stuffing is the process of "borrowing" sales from future periods by persuading customers to purchase large inventory amounts before these amounts are actually needed. The customers are not expected to pay for these inventory amounts for several months and the retailers possess the right to a full refund for any unsold items; furthermore, the original company pays for the storage of the inventory until it is sold. The sudden surge in accounts receivable may be classified by one or more of the empirical models as an abnormal or discretionary accrual.[27]

The Securities Exchange Commission investigated Sunbeam, Inc., a United States electric home appliance company, for channel stuffing. Industry insiders claimed that Sunbeam's revenues were padded because its chief executive officer at the time, Albert John Dunlap, strong-armed retailers into buying a lot more merchandise than they needed. The retail stores became hopelessly overstocked and unsold inventory piled up in Sunbeam's warehouses. Eventually investors panicked, and Dunlap was fired. Sunbeam was forced to restate its earnings and file for bankruptcy in 2001. Dunlap agreed to pay $15 million to settle a shareholder lawsuit.[28]

IV. THE IMPACT OF FRAUD-BASED LEGAL ACTIONS

After years of engaging in earnings management, suppose a firm is facing a fraud-based lawsuit or regulatory enforcement action and the court or regulatory authority issues a legal ruling. How would this legal ruling impact managerial incentive for discretionary accruals-based earnings management? If the legal ruling is in the firm's favor, would the firm continue its current accruals policy or change it? If the firm does change it, would the change lead to an income-increasing accruals policy or an income-decreasing accruals policy? The same questions can be asked if the legal ruling is against the firm. Furthermore, are there industry factors that determine the way a firm changes its discretionary accrual policy in response to a fraud-based legal ruling, regardless of whether it is favorable or unfavorable? The prior discretionary accrual models and studies do

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[25] Jackson, *supra* note 22.

[26] *See* Jennifer Jones, Earnings Management During Import Relief Investigations, J. OF ACCT. RSCH. 193, 212 (Autumn 1991); Patricia Dechow et al., *Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC*, CONTEMP. ACCT. RSCH., Spring 1996, at 23-24; Sok-Hyon Kang & K. Sivaramakrishnan, *Issues in Testing Earnings Management and an Instrumental Variable Approach*, J. OF ACCT. RSCH. 353, 354 (Autumn 1995); Xavier Garza-Gómez et al., *Discretionary Accrual Models and the Accounting Process* 10-12 (Nagoya City University, Working Paper No. 259, 1999) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=209073; K. V. Peasnell et al., *Detecting Earnings Management Using Cross-Sectional Abnormal Accruals Models*, 30 ACCT. & BUS. RSCH. 318 (2000); Jacob Thomas & Xiao-Jun Zhang, *Identifying Unexpected Accruals: A Comparison of Current Approaches*, 19 J. OF ACCT. & PUB. POL'Y 347 (2000).

[27] D'Avolio, *supra* note 24, at 20-21.

[28] Kelly Greene, *Dunlap Agrees to Pay $15 Million to Settle Lawsuit Filed by Sunbeam Shareholders*, THE WALL ST. J. (Jan. 15, 2002) https://www.wsj.com/articles/SB1011029024354167520.

not directly address these questions or the effects of a lawsuit and subsequent ruling on the magnitude of entity discretionary accruals; rather the prior discretionary accrual studies focus on how economic, contractual, and regulatory conditions affect discretionary accruals.

It can be argued that when faced with a favorable legal ruling, a firm will either: (1) continue to use the same discretionary accruals policy it did before the legal action since a court or regulatory authority found in the firm's favor, thereby "validating" the policy; or (2) change its discretionary accruals policy so as to avoid a fraud-based legal action in the future. Of course, how the firm changes its discretionary accruals policy depends on what type of discretionary accruals the firm was using before the favorable legal ruling was issued. If the firm used income-increasing discretionary accruals before the ruling, it may now use income-decreasing discretionary accruals after the ruling. Following the same logic, if it used income-decreasing discretionary accruals before the ruling, it will use income-increasing discretionary accruals after the ruling.

When faced with an unfavorable legal ruling, it can be reasoned that a firm will try to adopt a more conservative discretionary accrual policy because it does not want to report larger net income that will be used to calculate larger litigation awards or penalties in the future. On the other hand, it can be argued that when faced with an unfavorable legal ruling, a firm will try to report larger net income to provide assurance to its stockholders and creditors that it can easily pay off any litigation awards or penalties it may have to pay and still be profitable.

This study empirically examines how fraud-based legal rulings impact discretionary accruals. It extends extant research on discretionary accruals by providing another possible incentive – a legal incentive – for earnings management besides capital market, contracting and regulatory incentives.

V. HYPOTHESIS DEVELOPMENT

For the purposes of this study, the following hypotheses were formulated to accompany various legal settings and outcomes:

A. *Hypothesis 1: The Impact of a Legal Action Filing*

By the time a legal ruling is issued, a firm is already aware that there is a legal action pending against it; therefore, this firm adjusts its discretionary accrual policy in response to the filing and notice of the legal action. Legal actions are more common against firms that use income-increasing discretionary accruals[29,30]. The decrease in the use of income-increasing discretionary accruals leads to an increase in the transparency of accounting information. This leads to the following hypothesis:

[29] Orie Barron, Jamie Pratt & James Stice, *Misstatement Direction, Litigation Risk, and Planned Audit Investment*, 39 J. OF ACCT. RSCH. 449, 451 (2001).
[30] Mark Bradshaw, Scott Richardson & Richard Sloan, *Do Analysts and Auditors Use Information in Accruals?*, 39 J. OF ACCT. RSCH. 45, 70 (2001).

H1: *When a firm manages its earnings via discretionary accruals, the magnitude of the firm's discretionary accruals decreases in response to the filing of a fraud-based legal action against that firm in the measurement period after the filing when compared to the measurement period preceding the filing.*

B. *Hypothesis 2: The Impact of a Favorable Fraud-based Legal Ruling*

When a firm receives a favorable fraud-based legal ruling from a court or regulatory authority, it is a general indication that the firm has not engaged in any fraudulent accounting practices. A favorable fraud-based legal ruling provides assurance as to the reliability of that firm's financial information. Once a firm has been through the legal process, this firm may not want to be sued again on the basis of providing fraudulent financial or accounting information. Consequently, the firm will reduce the use of discretionary accruals because it has become more risk-adverse from a legal standpoint. This leads to the following hypothesis:

H2: *When a firm manages its earnings via discretionary accruals, the magnitude of this firm's discretionary accruals decreases in response to the issuance of a favorable fraud-based legal ruling in the measurement period after the issuance when compared to the measurement period preceding the issuance.*

C. *Hypothesis 3: The Impact of an Unfavorable Fraud-Based Legal Ruling*

If the firm was using income-increasing discretionary accruals before the issuance of the unfavorable legal ruling, it can be argued that the firm will now reverse this policy and use income-decreasing discretionary accruals after the issuance of the unfavorable legal ruling because it does not want to incur more litigation risk in the future. By the same token, if a firm was using income-decreasing discretionary accruals before the issuance of the unfavorable legal ruling, that firm may now use income-increasing discretionary accruals after the issuance of such a ruling. Basically, an unfavorable fraud-based legal ruling will lead a firm to reverse its discretionary accrual policy because the firm managers may feel that it was this policy that led to that adverse ruling. This leads to the following hypothesis:

H3: *When a firm manages its earnings via discretionary accruals, the magnitude of the firm's discretionary accruals decreases in response to the issuance of an unfavorable fraud-based legal ruling in the measurement period following the issuance when compared to the measurement period preceding the issuance.*

D. *Hypothesis 4: The Impact of a Mixed Fraud-Based Legal Ruling*

Not all legal rulings are entirely favorable or unfavorable to a firm. In some cases, the court or regulatory authority dismisses some of the fraud charges against the firm but maintains others. In other cases, the firm wins on some charges but loses on the other charges. In still other cases, the firm agrees to settle without admitting any guilt or fault. These cases, where there are no clear

and concise favorable or unfavorable legal rulings, are called mixed rulings for the purpose of this study.

How a mixed ruling impacts the discretionary accrual policy of a firm may depend on the terms and conditions that accompany the mixed legal ruling. In some cases, a court or regulatory authority may dismiss certain charges if the defendant company agrees to comply with certain terms. In some settlement cases, the defendant company admits no guilt or fault but agrees to fulfill certain conditions in order to end the case. The nature of these settlement negotiations and agreements may not always be public information, which means that it may not be possible to ascertain why a defendant company's managers changed their discretionary accrual policies in the way that they did after the issuance of a mixed legal ruling; however, it is logical to assume that a defendant company would reduce the magnitude of its discretionary accruals after the issuance of a mixed legal ruling because it does not want to go through the laborious legal and settlement process again. This leads to the following hypothesis:

H4: *When a firm engages in earnings management via discretionary accruals, the magnitude of the firm's discretionary accruals decreases in response to the issuance of a mixed legal ruling in the measurement period following the issuance when compared to the measurement period preceding the issuance.*

E. *Hypothesis 5: The Impact of Industry Factors*

Industry factors affect firm managers' decisions to implement earnings management via discretionary accruals. Firms in a particular industry adjust discretionary accruals based on their relative earnings performance, which is defined against industry. Furthermore, firm-industry earnings correlation and relative announcement timing, along with industry-defined relative earnings performance, are significant factors affecting individual firms' discretionary accrual decisions.[31]

Some industries may have more incentives than others to manage earnings via discretionary accruals. Certain industries, such as the pharmaceutical, airline, and motor carrier industries, are either the subjects of stringent government regulations or the recipients of certain government benefits when compared with other industries; therefore, they may use discretionary accrual policies in order to avoid the consequences of tight government regulations or to reap the rewards of generous government benefits.[32] In particular, it has been claimed that the value relevance of accounting information provided by firms in the high-technology, knowledge-

[31] Myung Park & Byung Rob, *The Effect of Firm-Industry Earnings Correlation and Announcement Timing on Firms' Accrual Decisions*, 36 BRIT. ACCT. REV. 269-89 (2004).

[32] Kurt Wojdat, Politically Motivated Accounting Choice and Financial Indicators of Political Risk: The Pharmaceutical Industry (Apr. 30, 1999) (unpublished Ph.D. dissertation, St. Univ. of N.Y. at Buffalo); Joseph Legoria, Political Costs, Health Care Reform and Earnings Management in the Pharmaceutical Industry (May, 1997) (unpublished Ph.D. dissertation, Univ. of Ark.); Lydia Rosencrants, Conflicting Incentives for Earnings Management in Regulated Companies: A Study of the United States Airline Industry (1999) (unpublished Ph.D. dissertation, Mich. St. Univ.); Kevin Sachs, Accounting and Deregulation: The Case of Motor Carriers (Mar. 5, 1999) (unpublished Ph.D. dissertation, St. Univ. of N.Y. at Buffalo).

intensive, service-oriented industry has declined over time.[33] Furthermore, Healy and Wahlen (1999)[34] have pointed out that the banking, insurance and utility industries deal with regulation that is specifically tied to accounting numbers. This leads to the following hypothesis:

H5: *When a firm engages in earnings management via discretionary accruals there is an industry-differential impact on the magnitude of discretionary accruals in response to the issuance of a fraud-based legal ruling in the measurement period following the issuance when compared to the measurement period preceding the issuance.*

VI. RESEARCH DESIGN

This study extends existing literature and develops an empirical model that emphasizes and explains how firm managers adjust their discretionary accrual policies in response to the issuance of a fraud-based legal ruling.

A. *Sample Selection*

A sample of 183 firms facing fraud-based financial reporting legal rulings was selected by searching the Commerce Clearinghouse Federal Securities Law Reports for the years 1982 to 2007. A 25-year period was selected to obtain more trend information. Since legal actions can take years and are sometimes settled out of court, obtaining cases after 2007 that included both lawsuits and rulings was limited. Accounting data needed to estimate accruals[35] for these 183 firms was obtained from the COMPUSTAT Industrial Quarterly database. Of these 183 firms, 106 had to be eliminated from the final sample due to missing information in the COMPUSTAT database. Missing information means either that the company was not listed at all in the COMPUSTAT database or was listed but had either large gaps of missing accounting variables or no accounting variables at all. If a particular firm had less than 20 observations for each predictor variable,[36] or had 20 or more sporadic observations, then the firm was eliminated from the final sample.

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[33] Robert Elliot & Peter Jacobsen, *U.S. Accounting: A National Emergency*, 172J. OF ACCT. 54 (1991); Edmund L. Jenkins, *An Information Highway in Need of Capital Improvements*, 177 J. OF ACCT. 77 (1994); Mark Sever and Ronald Boisclaire, *Financial Reporting in the 1990s*, 170 J. OF ACCT. 36-41 (1990); K. Ramesh and R. Thiagarajan, *Inter-Temporal Decline in Earnings Response Coefficients* (Northwestern Univ.Working Paper, Paper No. #, 1995); Raymond Chiang & P. C. Venkatesh, *Insider Holdings and Perceptions of Information Asymmetry: A Note*, 43 THE J. OF FIN. 1041, 1046 (1988); Baruch Lev & Paul Zarowin, *The Boundaries of Financial Reporting and How to Extend Them*, 37 J. OF ACCT. RSCH. 353, 361 (1999); Jennifer Francis & Katherine Schipper, *Have Financial Statements Lost Their Relevance?*, 37 J. OF ACCT. RSCH. 319 (1999); Stephen Brown, Kin Lo & Thomas Lys, *Use of R^2 in Accounting Research: Measuring Changes in Value Relevance Over the Last Four Decades*, 28 J. OF ACCT. AND ECON. 83 (1999); Alex Dontoh, Suresh Radhakrishnan &Joshua Ronen, *The Declining Value Relevance of Accounting Information and Non-Information-Based Trading: An Empirical Analysis*, 21 CONTEMP. ACCT. RSCH.795 (2004).

[34] Paul M. Healy & James M. Wahlen, *A Review of the Earnings Management Literature and its Implications for Standard Setting*, 13 ACCT. HORIZONS 365, 380 (1999).

[35] William G. Heninger, *The Association Between Auditor Litigation and Abnormal Accruals,* 76 THE ACCT. REV. 111 (2001).

[36] JOSEPH F. HAIR, JR., ET AL., MULTIVARIATE DATA ANALYSIS 258 (7th ed. 1998).

The sample selections by type of legal ruling and industry category are presented in **Tables 1 and 2**, respectively. Note that in **Table 2**, the industries with the largest and second largest number of fraud-based legal rulings in the sample happen to be the science/technology and brokerage/investment/financial services industries, respectively. These outcomes are consistent with those of the Treadway Commission's financial statement fraud study,[37] which found that computer companies (considered part of the science/technology industry) and financial service providers topped the list of companies involved in financial statement fraud.

Table 1: Sample Selection by Type of Legal Ruling

Type of Legal Ruling	Number of Companies
Favorable	27
Unfavorable	42
Mixed	8
TOTAL	**77**

Table 2: Sample Selection by Industry Category

Industry Category	Number of Companies
Retail/Food Service	10
Waste Management/Environmental Compliance/Sewers, Tunnels, Pipelines	3
Pharmaceuticals	7
Healthcare	5
Brokerage/Investment/Financial Services	14
Science & Technology	20
Aerospace/Airlines	2
Media	6
Vehicles/Transportation	4
Natural Resources (Oil, gas, petroleum production/exploration/mining)	4
Utilities/Power Supply	2
TOTAL	**77**

B. *Measures of Accounting Discretion*

The main proxy for client managers' reporting flexibility will be the income-increasing discretionary accruals estimated using the Modified Jones model because although other models may provide better results in certain manipulation tests, the Modified Jones model is consistently

[37] Committee of Sponsoring Organizations of the Treadway Commission, *Shedding Light on Fraud,* J. OF ACCT. (September 2003).

better overall for measuring discretionary accruals and in detecting earnings management [38] The Modified Jones model estimates discretionary accruals (**DISCRETIONARY_ACCRUALS**) as the prediction error from firm-specific ordinary least square regressions:

(1) $TOTAL\_ACCRUALS_{it} = A_0 + A_1(\Delta REV_{it} - \Delta REC_{it}) + A_2(PPE_{it}) + \varepsilon_{it}$

where:

$TOTAL\_ACCRUALS_{it}$ = Δ Current $assets_t$ – Δ $Cash_t$ – Δ Current $liabilities_t$ +

Δ Current portion of long-term debt – Depreciation and amortization expense;

A_0 = the intercept or an item of the regression equation indicating the criterion score when all the predictor variables are zero;[39]

ΔREV_{it} = revenues in year t less revenues in year t-1;

ΔREC_{it} = receivables in year t less receivables in year t-1;

PPE_{it} = gross property, plant and equipment in year t;

ε_{it} = prediction errors;

i = 1…..n firm index; and

t = 1…..T(i) year index for the number of years included in the estimation period for firm i.

DISCRETIONARY_ACCRUALS are the prediction errors (ε_{it}) from applying the Modified Jones model to estimate normal accruals in the year of the legal ruling:

(2) $DISCRETIONARY\_ACCRUALS_{it} = TOTAL\_ACCRUALS_{it} - A_0 + A_1(\Delta REV_{it} - \Delta REC_{it}) + PPE_{it}$

C. *Specification of the Discretionary Accrual Model*

The model in this study investigates the possibility that firm managers change their discretionary accrual policies in response to the issuance of legal rulings. This model specifies control variables that may contribute to changes in discretionary accrual policies that are unrelated

[38] Patricia M. Dechow, Richard G. Sloan & Amy P. Sweeney, *Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC*, CONTEMP. ACCT. RSHC. 1, 19 (1996); Eli Bartov, Ferdinand Gul & Judy Tsui, *Discretionary Accruals Models and Audit Qualifications*, 30 J. OF ACCT. AND ECON. 421, 425 (2001); Alcarria Jaime &Gill de Albornoz Noguer, *Specification and Power of Cross-Sectional Abnormal Working Capital Accruals Models in the Spanish Context*, 13 EUR. ACCT. REV. 73-104 (2004); Ho Young Lee & Vivek Mande, *The Effect of the Private Securities Litigation Reform Act of 1995 on Accounting Discretion of Client Managers of Big 6 and Non-Big 6 Auditors*, 22 AUDITING: A J. OF PRAC. & THEORY 93, 97 (2003); Mary L. Chai & Samuel Tung, *The Effect of Earnings-Announcement Timing on Earnings Management*, 29 J. OF BUS. FIN. & ACCT. 1337, 1341 (2002).

[39] *See* LAURENCE G. GRIMM & PAUL R. YARNOLD, READING AND UNDERSTANDING MULTIVARIATE STATISTICS 137 (1995).

to the issuance of legal rulings. Specifically, coefficients are estimated in the following discretionary accrual regression model:

(3) DiscAccr = A_0 + A_1(FEarnGrowth$_{it}$) + A_2(FGrowth$_{it}$) + A_3(FLeverage$_{it}$) + A_4(FSize$_{it}$) + A_5(LAWSUIT) + A_6(RULING) + ε_{it}

where:

DiscAccr = Dependent variable: **DISCRETIONARY_ACCRUALS** or the prediction errors (ε_{it}) derived in estimating **TOTAL_ACCRUALS** in regression equation **(1)** (the Modified Jones model) above. (Income-increasing discretionary accrual: **DiscAccr** $\geq$ 0; Income-decreasing discretionary accrual: **DiscAccr** < 0);[40]

A_0 = the intercept or an item of the regression equation indicating the criterion score when all the predictor variables are zero;[41]

FEarnGrowth$_{it}$ = Independent control variable: Firm earnings growth measured by the percentage changes in net income. Watts and Zimmerman (1986, 1990)[42] and Defond and Jiambalvo (1993)[43] both have claimed that management compensation, such as bonuses and pay increases tied to earnings growth, may provide firm managers with strong incentives to manage discretionary accruals; therefore, the percentage change in net income is included as a control variable in this model;[44]

FGrowth$_{it}$ = Independent control variable: Firm growth measured by the percentage changes in total assets. Dechow and Skinner (2000)[45] claim that growth firms have capital-market motivations to manipulate earnings in order to meet earnings benchmarks, so the percentage change in total assets is used as a control variable for firm growth;[46]

FLeverage$_{it}$ = Independent control variable: Firm leverage measured by total liabilities/total assets. Since debt contracts employ accounting numbers in deciding whether a debtor has behaved unfavorably, the firm managers of debtor companies may choose accounting methods that

[40] Ho Young Lee and Vivek Mande, *The Effect of the Private Securities Litigation Reform Act of 1995 on Accounting Discretion of Client Managers of Big 6 and Non-Big 6 Auditors*, 22 AUDITING: A J. OF PRACTICE & THEORY 97 (2003).
[41] *Id.* at 102.
[42] Ross L. Watts and Jerold L. Zimmerman, Positive Accounting Theory at 74 (Prentice-Hall) (1986); Ross L. Watts and Jerold L. Zimmerman, *Positive Accounting Theory: A Ten-Year Perspective*, 65 THE ACCT. REV. 131–56 (1990).
[43] Mark L. DeFond and James Jiambalvo, *Factors Related to Auditor-Client Disagreements Over Income-Increasing Accounting Methods*, 9 CONTEMP. ACCT. RES. 415, 425 (1993).
[44] *Id.* at 419.
[45] *See* Patricia Dechow and Douglas J. Skinner, *Earnings Management: Reconciling the Views of Accounting Academics, Practitioners and Regulators*, 14 ACCT. HORIZONS 235, PG (2000).
[46] *Id*. at 243.

minimize debt costs so as not to violate debt contract covenants;[47] therefore, this variable is included to control for the effects of high leverage;[48]

FSize$_{it}$ = Independent control variable: Firm size measured by the log of total assets.

Large firms are more likely to use earnings management to reduce their costs than small firms according to the political cost hypothesis;[49] therefore, the log of total assets is used as a proxy for firm size;[50]

LAWSUIT = Independent categorical variable: Equals -1 in the 12 firm-quarters before the filing of the legal action, 1 in the 12 firm-quarters after the filing, and 0 otherwise;

RULING = Independent categorical variable: Equals -1 in the 12 firm-quarters before the issuance of the legal ruling, 1 in the 12 firm-quarters after the issuance, and 0 otherwise;

ε_{it} = prediction errors;

i = 1…n firm index; and

t = 1…(i) year index for the number of years included in the estimation period for firm i.

LAWSUIT and **RULING** are independent dummy variables used to account for the effect that the filing of a legal action and the issuance of a legal ruling, respectively, have in predicting the dependent variable, discretionary accruals, or DiscAccr. Dummy variables are qualitative variables (e.g., gender, race, religion, wars, lawsuits, legal rulings, etc.) that are quantified by assigning them numerical values such as 1 or 0, 0 indicating the absence of a qualitative factor and 1 indicating the presence of that factor (it is not essential that the dummy variables only take the values of 0 and 1). Dummy variables are also referred to as *binary variables*, *categorical variables*, *dichotomous variables, indicator variables, and qualitative variables*.[51]

The method of assigning the reference group the value of -1 for the dummy variables is termed "effects coding." This differs from the more commonly used method of indicator coding, where the reference group is assigned the value of 0 for the dummy variables. Both forms of dummy variable coding will give the same predictions, coefficients of determination, and regression coefficients for the continuous variables; however, there will be differences in the interpretation of the dummy-variable coefficients.[52]

Effects coding provides an advantage over indicator coding in the interpretation of the dummy-variable coefficients. In effects coding, the dummy-variable coefficients represent

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[47] Clifford W. Smith, Jr. and Jerold B. Warner, *On Financial Contracting: An Analysis of Bond Covenants*, 7 J. OF FIN. ECON. 117, 144 (1979); Richard Leftwich, *Accounting Information in Private Markets: Evidence from Private Lending Agreement*, 58 THE ACCT. REV. 23, 24 (1983); Ross L. Watts and Jerold L. Zimmerman, *Positive Accounting Theory: A Ten-Year Perspective*, 65 THE ACCT. REV. 131, 133 (1990).

[48] Mary L. Chai and Samuel Tung, *The Effect of Earnings-Announcement Timing on Earnings Management*, 29(9) & (10) J. OF BUS. FIN. & ACCT. 1340, 1348 (2002).

[49] Kurt Wojdat, Politically Motivated Accounting Choice and Financial Indicators of Political Risk: The Pharmaceutical Industry, (Apr. 30, 1999) (Ph.D. dissertation, State University of New York at Buffalo) (ProQuest); Doreen Gilfedder and Ciaran O'Hogartaigh, *The Grasshoppers and the Great Cattle: Participation and Non-Participation in the ASB's Standard-Setting Process*, 2 J. OF MGMT. & GOVERNANCE 287, pg. number (1997).

[50] *See* Committee of Sponsoring Organizations of the Treadway Commission, *supra* note 37.

[51] DAMODAR N. GUJARATI, BASIC ECONOMETRICS 77 (2nd ed. 1988).

[52] JOSEPH HAIR, JR. ET AL., MULTIVARIATE DATA ANALYSIS 235 (5th ed.1998).

differences for any group from the mean of all groups, whereas in indicator coding the dummy-variable coefficients represent differences only to the omitted category of the nominal scale.[53] This means that effects coding is a more appropriate method whenever the group variables are to be compared to all other groups rather than to just one reference group.[54]

Effects coding is ideally suited to the analysis in this study because the baseline for comparison can be interpreted as a comprehensive average for all of the years (rather than just the omitted three years or 12 quarters before the filing of the lawsuit or issuance of the legal ruling, as with indicator coding). Under effects coding, the intercept is the grand mean, and the regression coefficients of the dummy variables are such that they specify the deviation of the identified group (i.e., the legal action or legal ruling) from the grand mean or intercept.[55] As a result, an analysis of the impact of a legal action and/or a legal ruling on a firm's discretionary accrual policy over a long period can be done instead of an analysis of the short period immediately before the filing/issuance of the legal action/legal ruling.

The NCSS statistical program generates four variables in the regression equation related to the effects coding of the dummy variables, **LAWSUIT** and **RULING**:

(LAWSUIT = -1) = the period of reference for the **LAWSUIT** dummy variable, which is the 12 firm-quarters before the filing of the legal action;

(LAWSUIT = 0) = the period of interest for the **LAWSUIT** dummy variable, which is the 12 firm-quarters after the filing of the legal action;

(RULING = -1) = the period of reference for the **RULING** dummy variable, which is the 12 firm-quarters before the issuance of the legal ruling; and

(RULING = 0) = the period of interest for the **RULING** dummy variable, which is the 12 firm-quarters after the issuance of the legal ruling.

VII. EMPIRICAL RESULTS

The value of the regression coefficient indicates how much change occurs in the dependent variable (DiscAccr) for a one-unit change in the particular independent variable when the remaining independent variables are held constant. The regression coefficients for the independent variables for the various sample categories are presented in **Table 3**.

A. *The Regression Coefficients*

The regression coefficients for the variables (LAWSUIT = -1) and (LAWSUIT = 0) represent deviations from the intercept (or sample mean for discretionary accruals when all the predictor variables are zero) for the 12 firm-quarters before and after, respectively, the filing of the legal action. The regression coefficients for the variables (RULING = -1) and (RULING = 0)

[53] *Id.*; William J. Dixon & S.M. Gaarder, *Presidential Succession and the Cold War: An Analysis of Soviet-American Relations, 1948-1988*, 54 J. POL. 156, 156–75 (1992).
[54] Dixon & Gaarder, *supra* note 53, at 156–75.
[55] *Id.*

represent deviations from the intercept for the 12 firm-quarters before and after, respectively, the issuance of the legal ruling.

According to **Table 3**, the greatest deviation between the intercept and the (LAWSUIT = -1) variable is among the sample of companies that are in the science and technology industry with a deviation of -5,489.47 percent [(134.3326 – (-2.4925))/(-2.4925%)]. The deviation between the intercept and the (LAWSUIT = 0) variable is -6,367.97 percent [(156.2293 – (-2.4925))/(-2.4925%)], indicating an overall industry increase in the use of income-increasing discretionary accruals by 878.50 percent [(-6,367.97%) – (-5,489.47%)] (compared to the sample mean for discretionary accruals used in the science and technology industry) after the filing of the legal action. In a direct comparison between the variables (LAWSUIT = 0) and (LAWSUIT = -1), the use of income-increasing discretionary accruals increased by 16.30 percent [(156.2293 – 134.3326)/134.3326%] in the 12 firm-quarters after the filing of the lawsuit when compared to the 12 firm-quarters before the filing of the legal action.

Table 3: Regression Coefficients for the Independent Variables

$$DiscAccr = A_0 + A_1(FEarnGrowth_{it}) + A_2(FGrowth_{it}) + A_3(FLeverage_{it}) + A_4(FSize_{it}) + A_5(LAWSUIT) + A_6(RULING)$$

Sample Category	A_0 Intercept	A_1 FEarnGrowth	A_2 FGrowth	A_3 FLeverage	A_4 FSize	A_5 (LAWSUIT = -1)	A_5 (LAWSUIT = 0)	A_6 (RULING = -1)	A_6 (RULING = 0)
All companies	-273.4083	0.0328	15.0375	9.8142	22.9360	176.7795	187.2059	140.6360	39.8986
t-value	*-2.645*	*0.033*	*0.136*	*0.213*	*1.143*	*1.718*	*2.379*	*1.389*	*0.508*
Favorable rulings	-356.8550	-0.0344	-85.6371	21.7957	29.3361	356.4621	225.0149	346.7699	12.9523
t-value	*-2.039*	*-0.021*	*-0.589*	*0.341*	*0.905*	*2.210*	*1.794*	*2.161*	*0.106*
Unfavorable rulings	-281.4777	0.0758	135.1413	16.3508	22.5929	80.7080	192.1265	40.0185	72.1394
t-value	*-1.827*	*0.057*	*0.717*	*0.222*	*0.750*	*0.527*	*1.659*	*0.268*	*0.622*
Mixed rulings	-49.0404	-0.0194	24.5722	-51.6314	2.7165	87.8554	20.9649	90.9502	46.7108
t-value	*-1.004*	*-0.024*	*0.373*	*-0.959*	*0.302*	*1.148*	*0.368*	*1.203*	*0.797*
Retail/food service	25.9540	-0.2177	-4.5095	-12.3492	7.1394	-65.8218	-59.8221	28.0719	16.8055
t-value	*1.347*	*-0.423*	*-0.164*	*-0.677*	*1.556*	*-3.726*	*-4.568*	*1.628*	*1.296*
Waste management	85.5367	1.6249	-21.5787	-166.0287	18.0543	-31.7641	-29.1671	-10.3982	-21.6713
t-value	*1.499*	*0.272*	*-0.224*	*-1.821*	*0.971*	*-0.536*	*-0.642*	*-0.175*	*-0.473*
Pharmaceuticals	-150.0035	0.1871	-1.0648	-39.7318	8.5034	119.9101	85.2534	143.7851	66.5850
t-value	*-2.574*	*0.031*	*-0.027*	*-0.710*	*0.612*	*2.072*	*1.859*	*2.453*	*1.500*
Health care	-70.9538	0.2091	-6.4371	172.4326	6.5858	-5.3304	61.5394	-52.5209	-70.6523
t-value	*-0.902*	*0.194*	*-0.060*	*2.013*	*0.395*	*-0.075*	*1.121*	*-0.740*	*-1.294*
Brokerage/investment	-1,338.7058	0.1087	195.2954	-108.7428	80.6945	807.8754	806.7775	534.7754	526.0587
t-value	*-2.627*	*0.039*	*0.286*	*-0.307*	*0.857*	*1.548*	*1.962*	*1.022*	*1.273*
Science & technology	-2.4925	0.0629	-9.8619	15.3813	11.7132	134.3326	156.2293	131.6102	-249.8072
t-value	*-0.027*	*0.073*	*-0.140*	*0.611*	*0.654*	*1.560*	*2.290*	*1.540*	*-3.765*
Aerospace/airlines	-46.9819	0.9586	-0.1282	77.8240	-17.3394	12.6469	1.7077	33.4602	40.3122
t-value	*-1.911*	*0.628*	*-0.003*	*3.061*	*-2.044*	*0.467*	*0.089*	*1.314*	*2.085*
Media	-104.6009	-0.2373	41.5709	213.4780	-32.5735	118.2540	47.8812	25.6184	11.1106
t-value	*-2.409*	*-0.781*	*0.876*	*4.974*	*-3.307*	*3.603*	*1.931*	*0.775*	*0.431*
Vehicles/transportation	-8.4148	-0.0083	10.9570	2.7041	0.1007	8.8095	8.6954	-12.6761	0.8923
t-value	*-2.441*	*-0.081*	*1.575*	*1.717*	*0.129*	*2.682*	*3.871*	*-4.666*	*0.428*
Natural resources	36.9567	1.1129	75.1580	-96.2370	17.4102	-320.4834	-111.8918	236.0789	55.8625
t-value	*0.611*	*0.633*	*0.550*	*-1.574*	*1.696*	*-5.048*	*-2.736*	*4.341*	*1.302*
Utilities/power supply	-22.7668	-16.7454	112.5409	38.2768	13.6383	-71.9264	-40.8041	8.0597	23.1075
t-value	*-0.232*	*-1.257*	*0.822*	*0.441*	*0.476*	*-0.581*	*-0.463*	*0.065*	*0.263*

The second greatest deviation between the intercept and the (LAWSUIT = -1) variable appears in the natural resources industry with a deviation of -967.19 percent [((-320.4834) – 36.9567)/36.9567%]. The deviation between the intercept and the (LAWSUIT = 0) variable is -402.76 percent [((-111.8918) – 36.9567)/(36.9567%)], indicating an overall industry decrease in the use of income-decreasing discretionary accruals by 564.43 percent [(-402.76%) – (-967.19%)] (compared to the sample mean for discretionary accruals used in the natural resources industry) after the filing of the legal action. In a direct comparison between the variables (LAWSUIT = 0) and (LAWSUIT = -1), the use of income-decreasing discretionary accruals decreased by 65.08% [((-111.8918) – (-320.4834))/(-320.4834%)] in the 12 firm-quarters after the filing of the legal action when compared to the 12 firm-quarters before the filing of the legal action.

B. *Hypothesis 1 Contradicted*

As noted in **Table 4**, the sample categories in which the use of discretionary accruals increased after the filing of the legal action are: (1) all companies; (2) companies with unfavorable rulings; (3) health care companies; and (4) science and technology companies.

Table 4: Use of Discretionary Accruals Increased After Legal Action Filed

Category	Percent Increase
All companies	164.66%
Companies with unfavorable rulings	128.67%
Health care companies	92.49%
Science & technology companies	878.50%

In the remaining 11 sample categories, the use of discretionary accruals decreased after the filing of the legal action. These results contradict Hypothesis 1, which postulates that the magnitude of a firm's discretionary accruals decreases in response to the filing of a fraud-based legal action against that firm.

C. *Hypothesis 2 Supported*

Of the categories based on type of legal ruling, companies that received favorable rulings had the second largest percentage deviation between the (RULING = -1) variable and the intercept with -197.17 percent [(346.7699 – (-356.855))/(-356.855%)]; however, these companies had the third largest percentage deviation between the (RULING = 0) variable and the intercept with -103.63 percent [(12.9523 – (-356.855)/(-356.855%)]. The favorable ruling companies decreased the use of income-increasing discretionary accruals by 96.26 percent [(12.9523 – 346.7699)/346.7699%] in a direct comparison of the (RULING = -1) and (RULING = 0) variables. This result supports Hypothesis 2, which postulates that the magnitude of a firm's discretionary accruals decreases in response to the issuance of a favorable fraud-based legal ruling.

D. *Hypothesis 3 Contradicted*

As noted in **Table 5**, companies with unfavorable rulings had the third largest deviation among the categories based on the type of legal ruling between the (RULING = -1) variable and the intercept, with a percentage deviation of -114.22 percent [(40.0185 – (-281.4777))/(-281.4777%)]. The companies with unfavorable rulings had the second largest deviation between the (RULING = 0) variable and the intercept with a percentage deviation of -125.63 percent [(72.1394 – (-281.4777))/(-281.4777%)]. In a direct comparison of the (RULING = -1) and (RULING = 0) variables, it appears that companies with unfavorable rulings increased the use of income-increasing discretionary accruals by 80.27% [(72.1394 – 40.0185)/40.0185%] in the period after the issuance of the unfavorable legal ruling when compared to the period before the issuance of that ruling. This result contradicts Hypothesis 3, which postulates that the magnitude of a firm's discretionary accruals decreases in response to the issuance of an unfavorable fraud-based legal ruling.

Table 5: Use of Discretionary Accruals Increased After Ruling Issued

Category	Percent Increase
Companies with unfavorable rulings	114.20%
Science & technology companies	5,380.25%
Natural resources companies	538.80%

E. *Hypothesis 4 Supported*

When it comes to the type of legal ruling (i.e., favorable, unfavorable and mixed), the greatest deviation between the (RULING = -1) and the intercept appears in the sample of companies that received mixed rulings with a deviation of -285.46 percent [(90.9502 – (-49.0404))/(-49.0404%)]. The deviation between the intercept and the (RULING = 0) variable for companies with mixed rulings is -195.25 percent [(46.7108 – (-49.0404))/(-49.0404%)], indicating a decrease in the use of income-increasing discretionary accruals by mixed ruling companies of 90.21 percent [(-195.25%) – (-285.46%)] (compared to the sample mean of -49.0404 for discretionary accruals used by the mixed ruling companies). In a direct comparison of the (RULING = -1) and (RULING = 0) variables, the use of income-increasing discretionary accruals by companies with mixed rulings decreased by 48.64% [(46.7108 – 90.9502)/90.9502%] in the 12 firm-quarters after the issuance of the mixed ruling when compared to the 12 firm-quarters before the issuance of the mixed ruling. This supports Hypothesis 4, which postulates that the magnitude of the firm's discretionary accruals decreases in response to the issuance of a mixed fraud-based legal ruling.

Among the sample of companies categorized by industry type, the greatest deviation between the (RULING = -1) and the intercept once again appears in the sample of companies that are in the science and technology industry with a deviation of -5,380.25 percent [(131.6102 – (-2.4925))/(-2.4925%)]. The deviation between the intercept and the (RULING = 0) variable is 9,922.36 percent [((-249.8072) – (-2.4925))/(-2.4925%)] indicating an overall industry switch from the use of income-increasing discretionary accruals to the use of income-decreasing

discretionary accruals, or a change of 15,302.61 percent [9,922.36% - (-5,380.25%)] (compared to the sample mean for discretionary accruals used in the science and technology industry), after the issuance of the legal ruling. In a direct comparison of the (RULING = -1) and (RULING = 0) variables, it also appears that the science and technology industry used income-increasing discretionary accruals before the issuance of the legal ruling and then switched to income-decreasing discretionary accruals after such issuance, resulting in a change of -289.81 percent [((-249.8072) – 131.6102)/131.6102%].

The companies in the natural resources industry have the second greatest deviation between the (RULING = -1) variable and the intercept, with a deviation of 538.80 percent [(236.0789 – 36.9567)/36.9567%] (compared to the sample mean for discretionary accruals used in the natural resources industry). The deviation between the (RULING = 0) and the intercept for the natural resources industry is 51.16 percent [(55.8625 – 36.9567)/36.9567%]. When directly comparing the (RULING = -1) and (RULING = 0) variables with each other, it appears that the use of income-increasing discretionary accruals decreased by 76.34% [(55.8625 – 236.0789)/236.0789%] after the issuance of the legal ruling.

F. *Hypothesis 5 Supported*

Upon examination of the industry categories as presented in **Table 3**, it appears that four industries increased their use of discretionary accruals, while five industries decreased their use of discretionary accruals. The remaining two industries either switched from income-increasing discretionary accruals to income-decreasing discretionary accruals (i.e., the science and technology industry) or vice versa (i.e., the vehicles/transportation industry). These results support Hypothesis 5, which postulates that the magnitude of a firm's discretionary accruals depends upon industry factors in response to the issuance of a fraud-based legal ruling.

VIII. NULL HYPOTHESIS CONCLUSIONS: REGRESSION COEFFICIENTS

To test a hypothesis regarding a regression coefficient, the following equation is used:

$$t_{n-p-1} = b_k/S(b_k)$$

where p = number of independent variables in the regression equation;
$S(b_k)$ = standard error of the regression coefficient b_k

In order to determine whether one of the independent variables (such as FEarnGrowth, LAWSUIT, or RULING) has a significant effect on discretionary accruals, the null and alternative hypotheses would be:[56]

$$H_0: \text{beta} = 0$$
$$H_1: \text{beta} \neq 0$$

If the null hypothesis, H_0, is rejected then the conclusion is that there is a significant relationship between the independent variable and discretionary accruals. The test of significance

[56] MARK L. BERENSON & DAVID M. LEVINE, BASIC BUSINESS STATISTICS 121 (4th ed. 1989).

for a particular regression coefficient is a test for the significance of adding a particular variable into the multiple regression model given that the other variables have been included. The null hypothesis conclusions for each regression coefficient tested at the five percent level of significance are presented in **Table 6**. A "Yes" means that the null hypothesis is rejected and that there is a significant relationship between that independent variable and discretionary accruals. A "No" means that the null hypothesis is accepted and that there is no significant relationship between that independent variable and discretionary accruals.

According to the results presented in **Table 6**, there does not appear to be that many significant relationships between the control variables (FEarnGrowth, FGrowth, FLeverage, and FSize) and discretionary accruals at the five percent level of significance. It appears that there is no significant relationship at all between the FEarnGrowth and FGrowth variables and discretionary accruals at the five percent level of significance. As for the FLeverage and FSize variables, some significant relationships exist for these variables in the health care (only for the FLeverage variable), aerospace/airlines, and media industries at the five percent level of significance.

It seems that at the five percent level of significance, the categorical variables [(LAWSUIT = -1), (LAWSUIT = 0), (RULING = -1), and (RULING = 0)] have more significant relationships with discretionary accruals than the control variables do, according to **Table 6**. In particular, the LAWSUIT variables have more of a significant relationship with discretionary accruals than the RULING variables do. It also appears that the (LAWSUIT = -1) and the (RULING = -1) have more significant relationships with discretionary accruals than the (LAWSUIT = 0) and the (RULING = 0) variables do, respectively.

Table 6: Null Hypothesis Conclusion Concerning the Regression Coefficients (5%)

$$DiscAccr = A_0 + A_1(FEarnGrowth_{it}) + A_2(FGrowth_{it}) + A_3(FLeverage_{it}) + A_4(FSize_{it}) + A_5(LAWSUIT) + A_6(RULING)$$

Reject Null Hypothesis (H_0): beta (β_j) = 0 at 5%?

Sample Category	A_0 Intercept	A_1 FEarnGrowth	A_2 FGrowth	A_3 FLeverage	A_4 FSize	A_5 (LAWSUIT = -1)	A_5 (LAWSUIT = 0)	A_6 (RULING = -1)	A_6 (RULING = 0)
All companies	Yes	No	No	No	No	No	Yes	No	No
Favorable rulings	Yes	No	No	No	No	Yes	No	Yes	No
Unfavorable rulings	No	No	No	No	No	No	No	No	No
Mixed rulings	No	No	No	No	No	No	No	No	No
Retail/food service	No	No	No	No	No	Yes	Yes	No	No
Waste management	No	No	No	No	No	No	No	No	No
Pharmaceuticals	Yes	No	No	No	No	Yes	No	Yes	No
Health care	No	No	No	Yes	No	No	No	No	No
Brokerage/investment	Yes	No	No	No	No	No	Yes	No	No
Science & technology	No	No	No	No	No	No	Yes	No	Yes
Aerospace/airlines	No	No	No	Yes	Yes	No	No	No	Yes
Media	Yes	No	No	Yes	Yes	Yes	No	No	No
Vehicles/transportation	Yes	No	No	No	No	Yes	Yes	Yes	No
Natural resources	No	No	No	No	No	Yes	Yes	Yes	No
Utilities/power supply	No	No	No	No	No	No	No	No	No

IX. DISCUSSION

A. *Analysis of Results*

The results of this study indicate that the magnitude of a firm's discretionary accruals: (1) increases in response to the filing of a fraud-based legal action; (2) decreases in response to the issuance of a favorable fraud-based legal ruling; (3) increases in response to the issuance of an unfavorable fraud-based legal ruling; (4) decreases in response to the issuance of a mixed fraud-based legal ruling; and (5) increases, decreases, and/or changes from the income-increasing type to the income-decreasing type and vice versa depending upon industry factors in response to the issuance of a fraud-based legal ruling.

These results warrant further discussion. It is expected that a firm would decrease the magnitude of its discretionary accruals after the filing of a fraud-based legal action against that firm because the firm will now try to reverse the discretionary accrual policy that may have led to this legal action. To this extent, it is logical to assume that a firm will cease its alleged fraudulent financial reporting after receiving an unfavorable ruling in a fraud-based legal action or at least diminish it to some extent thereby resulting in a decrease in discretionary accrual magnitude.

What seems less plausible are the findings that a firm would increase the magnitude of its discretionary accruals after the filing of a legal action and increase it after the issuance of an unfavorable legal ruling. If a fraud-based legal action is initiated against a firm it is logical to assume that the firm would decrease the magnitude of its discretionary accruals since its accounting policies would now be under the scrutiny of a court or judicial authority. Furthermore, if that court or other judicial authority has found against the firm in a fraud-based legal action, it can be logically assumed that the firm would see this legal loss as a reason to decrease the magnitude of its discretionary accruals out of fear that another legal action would be initiated against that firm for continuing to engage in deceptive accounting practices.

There are plausible explanations for these somewhat surprising results. The control variables of firm leverage and firm size do show statistically significant relationships with discretionary accruals. It is quite possible that the amount of debt a firm has incurred and the size of the firm may affect the way a firm reacts to the issuance of a legal ruling.

Debt contracts often use accounting numbers to decide whether a debtor firm has behaved unfavorably;[57] therefore, a highly-leveraged firm that has received an unfavorable fraud-based legal ruling may have no choice but to continue the discretionary accrual policy that appeases its creditors if that firm wants to continue its operations.

By the same token, a large firm that has received an unfavorable fraud-based legal ruling may have no choice but to continue to use the discretionary accrual policy that reduces its political visibility. According to the political cost hypothesis,[58] a large firm's reported earnings increase its

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[57] *See* Clifford Smith & Jerold Warner, *On Financial Contracting: An Analysis of Bond Covenants*, 7 J. FIN. ECON. 117, 125–26 (1979); Richard Leftwich, *Accounting Information in Private Markets: Evidence from Private Lending Agreement*, 58 ACCT. REV. 23, 26 (1983); Ross Watts & Jerold Zimmerman, *Positive Accounting Theory: A Ten-Year Perspective*, 65 ACCT. REV. 131, 132–33 (1990).

[58] *See* Kurt Wojdat, Politically Motivated Accounting Choice and Financial Indicators of Political Risk: The Pharmaceutical Industry (1999) (Doctoral Dissertation, State University of New York at Buffalo) (ProQuest); Robert Hagerman and Mark Zmijewski, *Some Economic Determinants of Accounting Policy Choice*, J. OF ACCT. & ECON. 141–61 (1979); Richard Bowen, John Lacey and Eric Noreen, *Determinants of the Decision by Firms to*

political visibility, which increases that firm's bookkeeping costs, regulatory costs, taxes, and wage claims. As a result, a larger firm will use earnings management to reduce its costs[59] even in the face of an unfavorable fraud-based legal ruling.

Thus, it would appear that a larger, high-leveraged firm may choose to increase the magnitude of its discretionary accruals, even in the wake of an unfavorable legal ruling, in order to avoid problems with corporate stakeholders. On the other hand, a smaller, low-leveraged firm may decide to decrease the magnitude of its discretionary accruals in the wake of an unfavorable fraud-based legal ruling simply because it wants to avoid future legal problems and does not have to appease corporate stakeholders in the way a larger, high-leveraged firm does.

Of course, firm leverage and firm size are not the only explanations as to why a firm may increase the magnitude of its discretionary accruals even though it received an unfavorable fraud-based legal ruling. The results of this study indicate that industry factors play a role in the reaction of a firm to a legal ruling. Certain industries showed significant relationships with the issuance of a fraud-based legal ruling more than other industries did in this study. Some industries do have more incentives than other industries to manage earnings through the use of discretionary accrual policies, either because they are the subjects of government regulation that may be tied to accounting numbers,[60] or because particular industries adjust discretionary accrual policies based on industry-defined relative earnings performance.[61]

In one particular industry, firms appeared to have switched from income-increasing discretionary accruals to income-decreasing discretionary accruals after the issuance of fraud-based legal rulings. This indicates that these firms switched from upward earnings management to downward earnings management as a result of these legal rulings, which means that the magnitude of their discretionary accruals did not necessarily improve after the issuance of the legal rulings. Downward earnings management can also reduce the quality of accounting information[62] as much as upward earnings management does because financial statement users are not seeing a true picture of the firm's financial position.

The findings of this study indicate that the filing of fraud-based legal actions and the issuance of fraud-based legal rulings impact discretionary accrual policies; however, this impact may not necessarily increase the reliability of the affected firms' financial statements. Other factors, such as firm size, firm leverage, and industry characteristics also help to determine how firms adjust their discretionary accrual policies so that financial statement reliability is either increased or decreased based on their particular operating needs. This study has found that fraud-

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Capitalize Interest Costs, J. OF ACCT. & ECON. 151–79 (1981); Mark Zmijewski and Robert Hagerman, *An Income Strategy Approach to the Positive Theory of Accounting Standard Setting Choice,* J. OF ACCT. & ECON. 129–49 (1981).

[59] Doreen Gilfedder and Ciaran O'Hogartaigh, *The Grasshoppers and the Great Cattle: An Exploration of Participation in the ASB's Standard-Setting Process*, (Dublin City Univ. Bus. Sch., Working Paper No. 29 (1997), http://www.dcu.ie/dcubs/research.

[60] Susan Moyer, *Capital Adequacy Ratio Regulations and Accounting Choices in Commercial Banks*, 13(2) J. OF ACCT. & ECON. 123–54 (1990); Myron Scholes, G. Peter Wilson and Mark Wolfson, *Tax Planning, Regulatory Capital Planning, and Financial Reporting Strategy for Commercial Banks*, 3 REV. OF FIN. STUD. 625–50 (1990); J. Collins, D. Shackelford and J. Wahlen, *Bank Differences in the Coordination of Regulatory Capital, Earnings and Taxes*, 33(2) J. OF ACCT. RES. 263–91 (1995).

[61] Myung Seok Park and Byung Ro, *The Effect of Firm-Industry Earnings Correlation and Announcement Timing on Firms' Accrual Decisions*, 36 BRIT. ACCT. REV. 269–89 (2004).

[62] Baruch Lev and Paul Zarowin, *The Boundaries of Financial Reporting and How to Extend Them,* 37 J. OF ACCT. RES. 353–385 (1999); Stern Stewart & Co., *Accounting is Broken, Here's How to Fix It*, 5 Eval. (2002).

based legal actions do not generally improve corporate governance – at least with respect to financial reporting activities.

B. *Implications*

In light of this study, independent auditors should more closely examine more closely the discretionary accrual policies of firms that have recently: (1) been served with legal papers; and/or (2) received legal rulings concerning their accounting information and financial reporting. It is true that discretionary accruals are very difficult to audit or verify[63] and independent auditors cannot be expected to gather all of the information and resources necessary to develop statistical discretionary accrual models; however, there are certain field procedures that can be used to determine a firm's discretionary accrual policy to some extent.

The independent auditor can compare the bad debt expense policy before the issuance of a fraud-based legal ruling with the bad debt expense policy after such issuance in order to determine if any significant changes have been made. Specifically, the auditor should examine the Allowance for Bad Debts (or the Allowance for Doubtful Accounts) to see if any changes have been made in estimating bad debts after a legal ruling has been issued. If this allowance account had been understated (income-increasing discretionary accrual) before the issuance of a legal ruling and overstated (income-decreasing discretionary accrual) after such issuance, it could be that the change may have been made in response to the legal ruling.

Another field procedure the independent auditor can use to detect the possible use of discretionary accruals after the issuance of a fraud-based legal ruling is to examine the depreciation account of the firm in question. The auditor should see if there have been any changes in depreciation estimates and/or a switch from one depreciation method to another around the period of the legal ruling issuance. The purchase and/or sale of assets around the time of the issuance of the legal ruling should be examined to see if assets were acquired or disposed of in order to manipulate discretionary accruals with corresponding increases or decreases in depreciation expenses.

The inventory amounts of a firm that has just received a fraud-based legal ruling should be carefully examined by the independent auditor. The auditor should verify the ownership of these inventory amounts by requesting the proper documentation and pay particular attention to inventories that were purchased and sold around the period of the legal action. The relationship of the firm with its retailers should be investigated in order to determine if the firm has been pressuring retailers to purchase more inventory than is needed (channel stuffing) in light of the legal ruling.

The auditor can also find out how employees of a firm that has just received a fraud-based legal ruling feel about the ruling by: (1) interviewing the employees on an informal basis or (2) checking the Internet for any possible employee chat rooms discussing the legal ruling (SAS 99).[64] Any information the employees provide about the legal ruling issued against their employer firm can become part of an audit plan.

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[63] Scott Jackson and Marshall Pitman, *Auditors and Earnings Management*, 2001 THE CPA J. 38–40. Available at http://www.nysscpa.org.

[64] CODIFICATION OF ACCT. STANDARDS & PROCS., Statement on Auditing Standards No. 99 § 603 (AM. INST. OF CERTIFIED PUB. ACCTS. 2002). Statement on Auditing Standards No. 99: Consideration of Fraud in a Financial Statement Audit.

The list of procedures an independent auditor can conduct in order to determine how a firm has adjusted its discretionary accrual policy in response to the issuance of a fraud-based legal ruling is by no means limited to what has been discussed here. The independent auditor does have guidance in the form of accounting and auditing standards issued by various authorities. What the auditor should consider, however, is that the type of legal ruling (i.e., favorable, unfavorable, or mixed) a firm receives may not necessarily mean the end of any discretionary accrual policy. A firm may simply end one policy and begin another, which is why the auditor should take special precautions in dealing with a firm that has been through litigation recently.

C. *Limitations*

While this study has provided valuable implications for accounting research and audit fieldwork, it is subject to certain limitations. First, the sample was not drawn from the full population of United States fraud-based legal actions, but from a group of federal legal cases listed in the Commerce Clearinghouse Federal Securities Law Reports. Although many attorneys, judges, researchers, and others use this federal reporter in their work, it does not include financial reporting fraud cases of firms that are not subject to United States federal securities law.

Second, the final sample in the study was not taken from all of the annual volumes of the Commerce Clearinghouse Federal Securities Law Reports. It only includes companies taken from cases litigated in the years 1982 to 2007 and companies whose financial information was available in the COMPUSTAT database. The process of finding financial reporting fraud cases for companies that have extensive financial information publicly available for the purposes of this study has been difficult.

Lastly, the total sample consists of only seventy-seven companies categorized into eleven industries. A follow-up study with a sample consisting of a larger number of companies representing a wider variety of industries may obtain results different from the results obtained in this study.

D. *Suggestions for Future Research*

This study provides a number of opportunities for further research. First, the results of this study indicate that the filing of a legal action and the issuance of a legal ruling further down the road do have an effect on discretionary accruals, which affects the reliability of financial statements. Another study could consider another variable, namely appeals. Many firms appeal their legal rulings and a study analyzing the period starting with the legal filing, the initial legal ruling, and the legal appeals process may provide insights into how the legal system impacts the reliability of financial statements from the beginning of the litigation to its final resolution.

Second, the study of the legal process should not be limited to United States firms. Fraud-based financial reporting legal actions occur in nations around the world and a comparative study of how firms in different nations adjust their discretionary accrual policies in response to legal rulings would be a benefit to many international stakeholders such as investors, creditors, employees, tax authorities, and many others. Cultural and economic factors could be integrated into the model as control variables to see how they impact discretionary accrual policies along with the legal process.

Third, a study of how other types of legal actions besides fraud-based financial reporting legal actions could be done in order to determine their impact on discretionary accrual policies. A

comparative study of the different types of legal actions could be done to see how each type impacts accounting information; for example, a study comparing the impacts of environmental, wrongful termination, accident-related, discrimination, and financial reporting-related legal actions could be done to determine if any of these types of legal actions impact the reliability of accounting information more than others.

In general, this study provides useful information about the impact of the legal process on earnings management and the reliability of financial statements. In a world characterized by increasing amounts of litigation, an examination of the role litigation plays in the accounting information process is necessary in order to increase the quality of such information. I hope that the findings of this study are a benefit to both academics and practitioners alike and lead to more insightful and interesting research opportunities in the field of law.