Principles-Based versus Rules-Based Accounting Standards and

Extreme Cases of Earnings Management

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Abstract: In this study, I investigate whether characteristics that are commonly claimed to indicate whether a standard is principles-based or rules-based are associated with the dollar magnitude of earnings management, the probability of being penalized for earnings management, and the penalty assessed to firms that manage earnings. To address these questions, I develop an instrument that measures the extent to which a standard contains rules-based characteristics. I identify earnings management firms as those firms that restate earnings due to fraud or whose restatement is investigated by the SEC. Finally, I determine whether the SEC penalized earnings management firms by issuing an enforcement action. I find that the SEC is less likely to issue an enforcement action when a firm violates a standard that has more rules-based characteristics. If executives realize they are less likely to be penalized for a rules-based violation, then I expect executives to manage the dollar amount of earnings more when standards contain rules-based characteristics. Consistent with this notion, I find the dollar magnitude of earnings management is greater when an executive violates a standard that has more rules-based characteristics.

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1 Introduction

In this study, I investigate whether rules-based characteristics are associated with the dollar amount executives manage earnings, the likelihood of being penalized for earnings management, and the penalty assessed to firms that manage earnings.[1] The implications of shifting away from standards that contain rules-based characteristics are a concern for U.S. standard setters. In fact, the Sarbanes-Oxley Act required the Securities Exchange Commission (SEC) to conduct a study investigating the implications of shifting away from standards containing rules-based characteristics to principles-based standards.[2] In the SEC study (2003), the SEC staff "recommends that those involved in the standard-setting process more consistently develop standards on a principles-based or objectives-oriented basis" because standards that have rules-based characteristics "often provide a vehicle for circumventing the intention of the standard." SEC Chairman, Christopher Cox, reiterated this focus in a 2006 congressional hearing. He indicates that the SEC is encouraging the FASB to "develop new standards more consistent with a principles-based, objectives-oriented system." This paper provides empirical evidence about some of the potential implications of shifting away from standards that contain rules-based characteristics.

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[1] I use Healy and Wahlen's (1999) definition of earnings management. Healy and Wahlen (1999) define earnings management as follows.
> "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers."

[2] Schipper (2003) indicates that U.S. GAAP is based on principles. She indicates that certain characteristics (scope exceptions, treatment exceptions, and implementation guidance) create the perception that U.S. GAAP is rules-based. I am interested in capturing the degree to which these characteristics vary from standard to standard and how this variation influences earnings management. Therefore, although U.S. GAAP is based on principles, the extent to which standards contain these characteristics and the effects of these characteristics on earnings management remains an empirical question.

The evidence provided by this study will help inform investors, companies, the FASB, and the SEC of potential implications of shifting away from standards containing rules-based characteristics on earnings management. This evidence seems particularly relevant since the effect of rules-based characteristics on earnings management is not clear. Carnahan (2007) indicates that standards containing rules-based characteristics foster a "'check the box mentality' where the emphasis on black-letter compliance has encouraged companies to actively engineer their way around the standards." Furthermore, the SEC (2003) contends that standards containing rules-based characteristics "not only constitute a guideline to fraud, but a ready-made set of defenses, providing management and accountants with the colorable claim that they followed the rules, even while they may have intended to mislead." Alternatively, the FASB (2002) indicates that principles-based standards require executives to "apply professional judgment" to determine the appropriate way to record a business transaction. Robert Herz (2003), FASB Chairman, indicates, "some point to recent events in the U.S. as evidence that preparers and auditors cannot be trusted to properly exercise professional judgment with objectivity and courage." Overall, it is not clear that executives will manage earnings less in a principles-based environment than in a rules-based environment. Hence, this study provides timely evidence on the matter.

This paper adds to the prior earnings management literature by documenting whether the extent to which a standard contains rules-based characteristics is associated with the dollar magnitude of earnings management, the probability of being penalized for earnings management, and the expected penalty levied upon firms that manage earnings. Overall, the evidence provided in this study furthers our understanding of the factors that influence executives' decision to manage earnings.

Finally, this paper also proposes a new rules-based continuum measure that documents the extent to which a standard contains rules-based characteristics. This measure can be used to investigate many research questions in the future. For example, one could investigate (i) whether the probability and size of a lawsuit differ when a firm violates a standard containing many rules-based characteristics, (ii) whether and why U.S. standards have become more rules-based over time, and (iii) whether the presence of a "true and fair override" caveat influences the application of standards that contain rules-based characteristics.[3]

There is no agreed upon definition of rules-based standards. However, prior literature and regulators describe rules-based standards as follows. Schipper (2003) indicates that "U.S. GAAP is based on a recognizable set of principles derived from the FASB's Conceptual Framework, but nonetheless contains elements that cause some commentators to conclude that U.S. accounting is 'rules-based.'" The SEC (2003) describes rules-based standards in terms of three "elements:" (1) voluminously detailed implementation guidance, (2) numerous exceptions, and (3) numerous bright-line tests. Nelson (2003) indicates that rules-based standards contain "relatively more elaborate rules."

The above discussion suggests that certain characteristics make standards more rules-based, or at least appear to be more rules-based. However, providing a clear definition that identifies rules-based standards is fraught with difficulty because standards do not fit neatly into two mutually exclusive categories-- one category that is rules-based and another category that is principles-based. Rather, standards lie along a continuum where the extremes of this continuum are standards that contain very few rules and standards that contain many rules. In addition, the "optimal" structure of a standard may vary based upon the underlying complexity of a

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[3] A "true and fair override" caveat permits departure from the standard's requirements when complying with the standard would result in a "misleading" presentation of the financial statements.

transaction. One example of a standard that prescribes how to account for a complex underlying transaction is FAS 133 (derivatives). Schipper (2003) indicates that a principles-based derivative standard would "require all financial instruments to be measured at fair value." Schipper (2003) also notes that after stating the intent of the standard, regulators must decide "how much additional explanation should be provided? How many terms should be defined, and at what level of detail? How much prescriptive explanation about how to apply the standard, such as numerical examples, should be included?" These issues are particularly salient when it is difficult to measure the fair value of a financial instrument. Furthermore, defining what constitutes a "financial instrument" is not an easy task. Therefore, a standard that prescribes how to account for a complex transaction, such as derivatives, may require more detail than a standard that prescribes how to account for a simple transaction. Finally, the task of identifying rules-based standards or defining the "optimal" standard is further complicated by the desire to preserve relevance and reliability, while maintaining comparability. Hence, I do not attempt to provide a normative definition of the "optimal structure of a standard," but rather approach the issue from an empirical perspective.

Consistent with Nelson (2003), I discuss the structure of standards "in terms of being more or less rules-based" where standards lie along a continuum. At the extremes of this continuum are standards that contain no rules-based characteristics and standards that contain many rules-based characteristics. I use several sources including the SEC, the FASB, the Big Four Accounting Firms, and prior literature (Schipper 2003, Nelson 2003, Bartov et al. 2003) to identify the characteristics of rules-based standards; which include: (1) bright-line thresholds, (2) scope and legacy exceptions, (3) large volumes of implementation guidance, and (4) a high level of detail. I then develop a rules-based continuum instrument that measures the extent to which a

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standard contains these characteristics, and label a standard that contains more characteristics as being relatively more rules-based.

Next, I obtain a sample of restatements from the Audit Analytics database. My sample period begins in 1995 and extends through 2006. I classify a firm as an earnings management firm if it restates earnings because of fraudulent behavior or if its restatement is investigated by the SEC.[4] This procedure provides me with a sample of earnings management firms.[5] I then read the company's restatement filings (i.e. 10-KA, 10-QA, and 8-K) to identify the GAAP standards violated and the income statement impact associated with each GAAP violation. My final sample includes 209 usable earnings management firms. I use these data to explore whether there is an association between the dollar magnitude of earnings management and the structure of the standard (i.e. the extent to which a standard contains rules-based characteristics) violated, holding incentives to manage earnings constant. I also use these data to investigate whether the likelihood receiving an SEC enforcement action is associated with the structure of the standard violated. Finally, I document whether there is an association between the magnitude of the SEC fine and the structure of the standard violated.

I find a positive association between rules-based characteristics and the dollar magnitude of earnings management. I argue that this is because the expected cost of managing earnings is lower in a rules-based environment. Two factors that influence the expected cost of earnings management are the probability of being penalized for earnings management and the expected penalty for managing earnings. The expected cost of earnings management will be lower when

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[4] Audit Analytics contains a dummy variable that indicates whether firms disclose that their restatement was investigated by the SEC or whether fraud led to the restatement. I use these indicator variables to identify restatements due to fraud or investigated by the SEC.

[5] I acknowledge that my sample likely contains extreme earnings management firms. However, I chose this sample to avoid the presence of technical violations in my sample. Hence, I am relatively confident that the executives in my sample managed earnings. In addition, I am able to identify the standard violated for the firms in my sample.

both the probability of being penalized and the penalty for managing earnings are smaller. Therefore, I expect the probability of being penalized for earnings management and the penalty associated with earnings management to be lower when an executive violates a standard containing rules-based characteristics. I find the likelihood of being penalized for earnings management is indeed lower when a firm violates a standard containing more rules-based characteristics. However, I find no association between the structure of the standard violated and the fine imposed on executives who manage earnings.

Currently, the SEC is emphasizing the importance of developing more principles-based standards. My findings suggest that a shift away from standards that contain many rules-based characteristics may potentially decrease the dollar magnitude of earnings management. Figure 1 (discussed later) also suggests that U.S. GAAP contains more rules-based characteristics than it did in the past. The SEC may want to consider the reasons for this shift and the other potential implications this may have on companies and their stakeholders.

The remainder of the paper is outlined as follows. I develop my hypotheses in Section 2. In Section 3, I develop the rules-based continuum instrument that measures the extent to which a standard contains rules-based characteristics. I outline my research design in Section 4 and discuss my sample selection in Section 5. Section 6 discusses my results and Section 7 concludes.

2   Hypothesis Development

Although prior literature (e.g. Beatty and Weber 2006, Marquardt and Wiedman 2005, Riedl 2004, Nelson et al. 2002, Imoff and Thomas 1988) indicates earnings management occurs in both a principles-based environment and rules-based environment, it is not apparent that less earnings management will occur in a principles-based environment. To determine if there is a

difference in the magnitude of earnings management in a principles-based versus a rules-based environment, it is important to examine the factors that executives consider when deciding to manage earnings. Executives will maximize their utility from earnings management by setting the marginal benefit of managing earnings equal to the marginal cost of managing earnings. Similar to Erlich and Posner (1974), I contend that the probability of being penalized for earnings management and the penalty imposed on executives who manage earnings are factors that influence executives' estimate of the expected cost of earnings management. In this paper, I discuss how the structure of a standard is related to these factors and, in turn, is related to the expected cost of earnings management. If the cost of earnings management differs in these environments, then I also expect magnitude of earnings management to differ.

In the following paragraphs, I describe how the structure of a standard could influence (i) the likelihood of being penalized for earnings management, (ii) the penalty imposed on executives who manage earnings, and (iii) the dollar magnitude of earnings management. In particular, I posit three arguments for a negative association between rules-based standards and the probability of being penalized for earnings management.

First, executives are less likely to be penalized for transaction structuring within GAAP, which some contend is facilitated by rules-based characteristics (e.g. SEC 2003; Jopson 2006; Kroeker 2007). This allegation stems from the fact that rules-based standards often contain bright-line thresholds, which clearly delineate between two methods of accounting for a transaction. Executives with incentives to manage earnings will determine a desired outcome and structure the transaction to ensure that they are able to account for the transaction in a manner that benefits the firm or themselves. In a law literature review, Kaplow (1999) indicates that increased advanced specificity "might be problematic because parties will better be able to

evade legal norms." Hence, if rules-based characteristics do facilitate earnings management via within GAAP transaction structuring, then one could contend that the probability of receiving an SEC enforcement action is lower when standards contain rules-based characteristics.

Second, if complex standards with voluminous implementation guidance and a high level of detail are not understood by auditors, then auditors will be less likely to detect earnings management and the probability of being penalized for violating complex standards with these characteristics will be lower. One factor that may influence whether auditors are privy to the requirements of a standard is the cost of becoming informed. The costs of becoming informed include the cost of hiring experts to train auditors and the time required to train auditors. These costs are higher when standards are detailed and contain large volumes of implementation guidance. In addition, auditors may find it difficult to learn and retain knowledge of complex standards. Sir David Tweedie (2007), Chairman of the IASB, indicates that standards "frequently baffle many accountants so much so that few audit partners can complete an audit without relying on the advice of experts within the firm." If accountants don't understand complex standards with rules-based characteristics, then they will be less likely to detect violations. In turn, executives will be less likely to be penalized for violating complex standards with rules-based characteristics.

Third, if the SEC does not believe that an executive tried to mislead investors, then the SEC is less likely to penalize the executive. In the SEC's 2007 Annual Report, the SEC indicates that one of their aims is to "halt misconduct, sanction wrongdoers effectively, and, where possible, return funds to harmed investors." In instances where executives violate complex standards with rules-based characteristics, they can claim they did not intend to mislead investors and contend that the violation was simply due to a misunderstanding of the standard. If

the SEC believes executives who violate complex standards with rules-based characteristics do not intend to mislead investors, then the executives who violate complex standards with rules-based characteristics are less likely to be penalized by the SEC.

The above three points suggest that executives are less likely to be penalized for managing earnings when a standard contains more rules-based characteristics. Therefore, my first hypothesis is as follows.

> *H1a: The probability of being penalized for earnings management is negatively associated with the extent to which the standard violated contains rules-based characteristics.*

On the other hand, a case can also be made that executives who violate standards with rules-based characteristics are more likely to be penalized for earnings management. As noted above, rules-based standards generally contain bright-line thresholds that allow enforcement agencies to clearly determine whether a firm violated a standard. For example, FAS 13 outlines four thresholds that, if met, require leased assets to be recorded on the balance sheet. An enforcement agency would simply need to consult the thresholds to determine whether the firm violated the standard. Due to the fact that this objective evidence can be used against an executive, one could argue executives will assess a high likelihood of being penalized for violating a standard that contains bright-line thresholds.

One could also argue that enforcement costs are higher when standards do not contain rules-based characteristics, leading to a lower probability of enforcement. For example, a principles-based standard containing no rules-based characteristics could require a company to capitalize all its investments that will produce "probable future benefits." In order to determine if the company violated the standard, the SEC would need to define "probable future benefits," determine whether the investment had "probable future benefits," and justify their decision.

Robert Herz (2003), FASB Chairman, indicates "it simply may be harder to properly enforce a principles-based system . . . this process takes more time than the (already considerable) time required to decide if a given registrant followed a clearly written rule." The SEC has limited resources; therefore, increased enforcement cost will decrease the number of investigations that can be conducted. If enforcement costs are higher in an environment devoid of rules-based characteristics, then the number of investigations and the likelihood of an SEC enforcement action will decrease.

Based on these arguments, one could contend that the probability of an enforcement action is greater (smaller) when the standard violated contains (does not contain) rules-based characteristics. Hence, the following competing hypothesis results.

> *H1b: The probability of being penalized for earnings management is positively associated with the extent to which the standard violated contains rules-based characteristics.*

Executives also consider the penalty for earnings management when deciding whether or not to manage earnings. In the following paragraphs, I hypothesize two reasons why the penalty for managing earnings will be smaller when an executive violates rules-based standards.

First, within GAAP transaction structuring in a rules-based environment will be associated with smaller penalties. As noted above, one characteristic of rules-based standards is bright-line thresholds. In addition, the above discussion indicates that some (e.g. SEC 2003; Jopson 2006; James Kroeker 2007) contend bright-line thresholds facilitate transaction structuring within GAAP. Because this is not a violation of GAAP, executives are not expected to be penalized for this behavior. Hence, if rules-based characteristics facilitate transaction structuring within GAAP, then penalties levied upon earnings management firms will be smaller when standards contain rules-based characteristics.

Second, increased enforcement costs are likely associated with larger penalties. As noted above, principles-based standards do not provide objective evidence, making it difficult and more costly to enforce standards. Becker (1968) contends that higher enforcement costs should be positively associated with the "optimal" penalty. Hence, if standards devoid of rules-based characteristics are more costly to enforce, then Becker (1968) suggests the penalty levied upon firms will be higher when standards are devoid of rules-based characteristics. Furthermore, if the cost of enforcement is high and the SEC has limited resources, then the SEC will focus its resources on instances where the harm to investors is greatest. Karpoff et al. (2007a) provides evidence that indicates penalties levied upon executives who commit fraud are positively associated with the harm imposed on investors. Therefore, if the SEC only pursues egregious cases of earnings management when standards are devoid of rules-based characteristics, then one could argue that penalties will be greater when standards are devoid of rules-based characteristics.

In summary, these arguments suggest that the penalty for earnings management will be smaller (greater) when an executive violates a standard containing (not containing) rules-based characteristics.[6] Therefore, my second hypothesis is as follows.

> *H2a: The penalty for managing earnings will be negatively associated with the extent to which the standard violated contains rules-based characteristics.*

On the other hand, one could contend that the penalty levied upon firms that manage earnings will be larger when an executive violates a standard containing rules-based characteristics. As noted above, an executive can intentionally violate a complex standard containing large volumes of implementation guidance and a high level of detail, and claim they

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[6] I recognize that the probability of an enforcement action may be negatively associated with the penalty imposed on executives. Although I do not explicitly discuss this, I recognize this could influence the association between the structure of the standard violated and the penalty imposed by the SEC.

did not intend to mislead investors, but rather misunderstood the complex standard. If the SEC

does not perceive the violation to be intentional, then the probability of being caught and

receiving an SEC fine may be lower. According to Becker (1968), the "optimal" penalty

assessed to firms will be larger when the probability of being caught and penalized is lower. If

complex standards with rules-based characteristics are less likely to be detected and penalized,

then Becker (1968) predicts that the SEC fine assessed to firms that violate standards containing

rules-based characteristics will be large, resulting in the following competing hypothesis results.

> *H2b: The penalty for managing earnings will be positively associated with the extent to which the standard violated contains rules-based characteristics.*

The above arguments provide reasons why the probability of being penalized and the

penalty assessed to executives who manage earnings likely differ depending upon the structure

of the standard violated. These factors likely influence executives' expected cost of earnings

management. Assuming executives weigh the costs and benefits of earnings management before

deciding whether and how much to manage earnings, the dollar magnitude of earnings

management is likely associated with the structure of the standard violated. If the extent to

which a standard contains rules-based characteristics is associated with a high probability of an

enforcement action and large SEC fines, then the expected cost of earnings management would

be large. As a result, executives would manage earnings less and the dollar magnitude of

earnings management would be smaller. Hence, the following hypothesis predicts a negative

association between standards with rules-based characteristics and the dollar magnitude of

earnings management.

> *H3a: The dollar magnitude of earnings management will be negatively associated with the extent to which a standard contains rules-based characteristics.*

However, if standards containing many rules-based characteristics are associated with a lower probability of an enforcement action and smaller SEC fines, then the expected cost of earnings management will be small. Hence, rules-based characteristics would be positively associated with the dollar magnitude of earnings management, leading to the following competing hypothesis.

> *H3b: The dollar magnitude of earnings management will be positively associated with the extent to which a standard contains rules-based characteristics.*

3 Rules-Based Continuum Measure

In this section, I discuss my measure of the extent to which a standard contains rules-based characteristics. I use my measure to identify the extent to which APB Opinions, ARBs, Statement of Financial Accounting Standards, Statement of Financial Accounting Concepts, and SAB 101 contain rules-based characteristics. A major concern that surfaces is whether U.S. GAAP contains any principles-based standards. The SEC (2003) contends U.S. GAAP contains several principles-based standards; in fact, the SEC identifies several principles-based standards including: (1) ARB 43_4 (inventory pricing), (2) FAS 34 (capitalization of interest costs), (3) FAS 52 (foreign currency translation), and (4) FAS 121 (impairment of long-lived assets). Consistent with prior research (Nelson 2003; Schipper 2003; Bartov et al. 2003), I contend that U.S. standards lie along a continuum where the extremes of this continuum are standards that contain no rules-based characteristics and standards that contain many rules-based characteristics. I expect there is enough variation in U.S. GAAP to create a measure that captures the extent to which a standard contains rules-based characteristics.

I use several sources to determine the characteristics of rules-based standards. First, I rely on a report issued by the SEC on July 25, 2003. The SEC issued this report in response to Section 108 of the Sarbanes-Oxley Act of 2002, which required the SEC to conduct a study

investigating the following items: (1) the extent to which U.S. GAAP is principles-based, (2) the

length of time required to move to a principles-based financial reporting system, (3) the method

by which a principles-based system can be implemented, and (4) the economic implications of

shifting to a principles-based system. This report explicitly outlines the characteristics of

standards the SEC considers to be rules-based standards. Second, I use a report entitled "A

Vision From the CEOs of the International Audit Networks" to identify additional rules-based

characteristics.[7] This report discusses the need to shift to principles-based standards and the

characteristics of rules-based standards that limit the understandability of financial statements.

Third, I utilize a hearing held by the U.S. House of Representatives Financial Services

Committee (2006), which featured testimony from the PCAOB, the SEC, the FASB, and the

AICPA. This hearing discussed the need to move "away from the retrospective, rules-based

reporting." Finally, I rely on a FASB (2002) report that discusses the characteristics of rules-

based standards in the U.S. and responses to this report by entities such as KPMG, PwC, Deloitte

and Touche, Ernst & Young, and IBM. Each of the above sources is either an authoritative

expert on standard setting or is highly involved in the standard-setting process. Therefore, I use

these sources to determine what characteristics of rules-based standards to include in my

measure. In the following paragraphs, I discuss each of the characteristics I include in my

measure.

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[7] This report was written by the CEOs of the following accounting firms: (1) PricewaterhouseCoopers, (2) Deloitte and Touche, (3) Ernst and Young, (4) KPMG, (5) Grant Thorton, and (6) BDO Seidman.

3.1   Bright-line thresholds

The FASB (2002), KPMG (2002), and SEC (2003) indicate that bright-line thresholds are a characteristic of rules-based standards.[8] The authoritative literature on lease accounting provides an excellent example of bright-line thresholds. When classifying a lease as either capital or operating, preparers of financial statements must determine whether the lease meets one of the four bright-line thresholds. If the lease meets any one of these thresholds, then the lease is classified as a capital lease, otherwise it is classified and accounted for as an operating lease. I define a bright-line threshold as a test that includes a numeric threshold which delineates between two alternative accounting treatments. I identify bright-line thresholds by searching each standard for the following key words: (1) criteri*, (2) condition*, (3) provision*, (4) require*, and (5) percent*. I then read the paragraph surrounding these key words to identify bright-line thresholds. I count the number of numeric bright-line thresholds in each standard to obtain the total number of bright-line thresholds in each standard.

3.2   Scope and legacy exceptions

Deloitte and Touche (2002), Ernst & Young (2002), the FASB (2002), KPMG (2002), PricewaterhouseCoopers (2002), the SEC (2003), and the House of Financial Services Committee (2006) identify scope and legacy exceptions as a characteristic of rules-based standards.[9] Accounting for Derivative Instruments and Hedging Activities (FAS 133) is a good example of a standard that contains several scope exceptions. The SEC (2003) notes that FAS

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[8] I investigate violations of GAAP standards. Therefore, one could contend that bright-line thresholds should not be included in my measure because it seems unlikely that an executive would violate a bright-line threshold. Although violations of bright-line thresholds may be unlikely, I argue that some executives will violate bright-line thresholds. For example, some individuals drive 65 mph when the speed limit is 60 mph. This example illustrates that some individuals violate bright-line thresholds. Individuals may violate bright-line thresholds because they believe they will not be caught. Alternatively, the benefit of violating a bright-line threshold may exceed the cost for some individuals; hence, these individuals will choose to violate bright-line thresholds. Therefore, I include bright-line thresholds in my rules-based continuum measure.

[9] The SEC (2003) contends that scope and legacy exceptions make standards more rules-based because scope and legacy exceptions often lead to "inconsistent accounting among companies for similar transactions."

133 contains nine scope exceptions. In addition, a standard may have legacy exceptions, which

exempt certain industries from complying with the standard. I search each standard for the

following key words: (1) not subject, (2) not consider*, (3) exclusion*, (4) exempt*, (5) except*,

(6) scope, and (7) does not apply. I then read the paragraphs surrounding these words to identify

scope and legacy exceptions. I count the number of scope and legacy exceptions in each

standard to determine the total number of exceptions in each standard.

3.3   Large volumes of implementation guidance

The SEC (2003), FASB (2002), IBM (2002), and PwC (2002) report that another

thumbprint of rules-based standards is large volumes of implementation guidance. On the other

hand, these reports also indicate that principles-based standards should contain some

implementation guidance.[10] Accordingly, I focus on standards that have large volumes of

implementation guidance, which I operationalize as follows. First, I count the number of

"interpretive pronouncements" documents that relate to each standard.[11] Next, I sort the

standards by the number of "interpretive pronouncements." Finally, I classify standards in the

top "interpretive pronouncement" decile as standards with large volumes of implementation

guidance.[12]

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[10] Nelson and Clor-Proell (2006) find that implementation guidance can be used by managers as a justification to increase income or lower expenses. They conclude that regulators can encourage conservatism by providing examples that disallow (allow) revenue (expense) recognition.

[11] In the summary of each standard, the SEC identifies the "interpretive pronouncements" that relate to each standard. "Interpretive pronouncements" are generally issued by the FASB or AICPA (e.g. EITFs, SOPs, or DIGs).

[12] In response to instances of earnings management, the SEC may issue additional implementation guidance, add more detail, or add bright-line thresholds to make it more difficult for executives to manage earnings. Hence, regulators' response to earnings management may make standards more rules-based. However, H3a and H3b suggest that rules-based characteristics are associated with the dollar amount executives manage earnings. Therefore, it may be difficult to ascertain whether rules-based characteristics influence the magnitude of earnings management or whether regulators' response to earnings management makes standards more rules-based. I attempt to differentiate between these two explanations by making the following research design decisions. First, I measure RBC as of the first year of the manipulation period (i.e. the first year the executive managed earnings) because regulators are unaware of the firm's earnings management at this point in time. Hence, regulators' ex-post responses to the firm's violation are not reflected in my measure. Second, I look at a relatively short time period where many of my observations are clustered between the years 2000 and 2004. As a result, most standards did not

3.4   High level of detail

In the SEC report (2003), the SEC identifies a high level of detail as another characteristic of rules-based accounting standards. Similar to standards with large volumes of implementation guidance, I identify standards that contain a high level of detail by performing the following procedure: (i) I count the number of words in each standard; (ii) I rank the standards by the total number of words in each standard; and (iii) I classify those standards in the upper detail decile as "high level of detail" standards.

3.5   Rules-based continuum score

I use two proxies that measure the extent to which a standard contains rules-based characteristics. I discuss these two rules-based continuum measures in the following paragraphs.

My first measure, RBC1, is obtained by performing the following steps. First, I document which standards have bright-line thresholds, exceptions, large volumes of implementation guidance (as defined above), and a high level of detail (as defined above). I add one point to RBC1 when the characteristic is found in the standard (e.g. one point is added if the standard has at least one scope or legacy exception). The maximum value of the RBC1 is four and the minimum value is zero. This measure equally weights each criterion and places equal weight on standards with high and low values of each characteristic.

I define the characteristic values of my second measure, RBC2, as follows.

1.   Bright-line Exceptions--The total number of bright line exceptions.

2.   Scope and Legacy Exceptions--The total number of scope and legacy exceptions.

3.   Implementation Guidance--The total number of "interpretive pronouncement" documents.

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change during my sample period. Hence, the rules-based continuum score of those standards is not influenced by regulators' reactions to earnings management.

4. Detail--The total number of words in each standard.

The below equation outlines how RBC2 is calculated.

$$RBC2_{jt} = \sum_{i=1}^{4} \frac{Value_{ijt} - \overline{Value_i}}{\sigma_{Value_i}}$$

First, I calculate the value of characteristic i for standard j at year t ($Value_{ijt}$). Second, I compute the average value of characteristic i across all standards ($\overline{Value_i}$). Third, I calculate the standard deviation of characteristic i across all standards (σ_{Value_i}). Fourth, I subtract $\overline{Value_i}$ from $Value_{ijt}$. Fifth, I divide the difference between $Value_{ijt}$ and $\overline{Value_i}$ by σ_{Value_i}, providing me with a characteristic score for standard j at time t. The characteristic score is a measure of how extreme the value of characteristic i for standard j at time t is, relative to the characteristic i value of other standards. I repeat this process for each characteristic of standard j at time t. Finally, I sum the characteristic scores of standard j at time t to obtain an overall measure of the extent to which the standard contains rules-based characteristics. RBC2 differs from RBC1 in that it gives greater weight to standards that have extreme characteristic values relative to other standards.

Table 1 provides the median rules-based continuum score for select standards. This table illustrates the extent to which these standards contain rules-based characteristics. The higher the RBC1 or RBC2 score the more rules-based characteristics the standard contains. As noted above, the SEC identified several principles-based standards in its 2003 report. I document the median RBC score of several of these standards including ARB 43_4 (inventory pricing), FAS 34 (capitalization of interest costs), FAS 52 (foreign currency translation), and FAS 121 (impairment of long-lived assets). Consistent with the SEC, I find that these standards contain fewer rules-based characteristics. For example, the RBC1 (RBC2) score for ARB 43_4 is 0 (-1.58), indicating that ARB 43_4 contains relatively few rules-based characteristics. However,

the SEC also identifies FAS 141 (business combinations), FAS 142 (goodwill), and FAS 144 (impairment of long-lived assets) as principles-based standards. The RBC1 score for FAS 141, FAS 142, and FAS 144 is three, indicating that these standards contain relatively more rules-based characteristics than the above-mentioned standards. Even though these standards have no bright-line thresholds, the RBC score for these standards is higher because of the number of "interpretive pronouncement" documents and the level of detail in these standards. Finally, the SEC identifies FAS 13 (leases), FAS 66 (gain/loss on the sale of real-estate), FAS 87 (pension accounting), FAS 109 (Income Taxes), FAS 123 (stock compensation), FAS 133 (derivatives), and FAS 140 (transfers and servicing of financial assets) as rules-based standards. My measure also identifies these standards as rules-based (i.e. standards containing relatively more rules-based characteristics).

Figure 1 displays the average RBC1 and RBC2 score by year. The yearly average RBC score is calculated using all standards that are applicable to companies for that particular year. For example, the effective date for FAS 121 was December 15, 1995. In addition, FAS 121 was superseded on December 15, 2001. Therefore, FAS 121 was included in the calculation of the RBC mean from 1995 to 2001. This figure indicates that both RBC1 and RBC2 have steadily increased over time, which suggests that U.S. GAAP now contains more rules-based characteristics than it did in the past.

There are several potential reasons why U.S. GAAP contains more rules-based characteristics. First, Dye (2002) indicates that, in the presence of "classification manipulation" (i.e. earnings management), there will be a divergence from the official standard to a "shadow standard" that is less effective at capturing the true economics of the underlying transaction. Dye (2002) indicates that regulators can either change the official standard, which keeps the "shadow

standard" constant, or keep the official standard constant, which leads to a change in the "shadow standard." Hence, regulators may add new rules to a standard in an attempt to curb "classification manipulation," which will lead to an increase in the structure of a standard over time. Second, one could argue that executives obtain refuge from the litigation by showing that they comply with the letter of the law. Schipper (2003) indicates that one potential effect of increased implementation guidance is "reduced incidence of litigation over allegedly defective accounting." If companies lobby for additional rules to reduce the incidence of litigation, then this may lead to an increase in the structure of a standard over time. Finally, one could argue that businesses have become more complex over time leading to an increase in the complexity of standards.

4 Data and Sample Selection

Panel A of Table 2 details my sample selection process. I obtained a sample of 7,180 firm restatements from the Audit Analytics database. I use this restatement sample to identify potential earnings management firms. However, not all firms that restate earnings have managed earnings. Therefore, I only classify a firm as an earnings management firm when the firm discloses that the restatement was investigated by the SEC or when the firm discloses that fraud led to the restatement.[13] This provides me with a sample of 511 earnings management firms. I chose this sample because I am reasonably comfortable that I have captured firms that have managed earnings. In addition, I am able to document which standard was violated and the dollar amount of the violation by reading the firm's 10-KA, 10-QA, and/or 8-K.[14] I also require

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[13] An SEC investigation is not the same as an SEC enforcement action. First, the SEC informally/formally investigates the firm. After gathering information, the SEC decides whether or not to issue an enforcement action.
[14] I also considered using other proxies for earnings management such as performance adjusted abnormal accruals (Kothari et al. 2005). However, in samples such as this, it is difficult to determine what standard the firm violated. In addition, I contend that abnormal accrual proxies have greater measurement error than my measure of earnings management.

firms to have the requisite data on Compustat to calculate the control variables I include in my analysis. Finally, I am not able to find information on the standard violated or the amount of the violation for 129 firms. Therefore, my final sample includes 209 firms.

I obtained the SEC enforcement action data from Karpoff, Lee, and Martin's (JFE 2007a, JFQA 2007b,) database. They collected the data from several sources.[15] First, the SEC discloses all enforcement actions that occurred after September 19, 1995 on its web site. Information about the penalties imposed on these firms are obtained from the Department of Justice and through supplemental searches of the Lexis-Nexis' FEDSEC: SECREL library. Finally, additional public information about the enforcement action was obtained through searches performed on EDGAR, Lexis-Nexis' Academic Business News, Legal Research, and General News Categories.

Panel B of Table 2 provides a distribution of my sample by year, where year is defined as the first year of the manipulation period (i.e. the first year the executive allegedly managed earnings). My sample period begins in 1995, but the majority (i.e. approximately 71.3%) of my sample falls in the years 2000 through 2004. This is consistent with the onslaught of corporate misconduct (e.g. Enron, Adelphia, and Worldcom) that was detected during these years.

5 Research Design

In this section of the paper, I discuss the research design I employ to test my three hypotheses regarding the likelihood of being penalized for earnings management, the penalty imposed on executives who manage earnings, and the amount of earnings management.

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[15] I am grateful to Jonathan Karpoff, Gerald S. Martin, and Scott Lee for providing me with data on enforcement actions.

5.1   Likelihood of being penalized for earnings management

H1a and H1b are competing hypotheses that predict a negative (positive) association

between rules-based characteristics and the likelihood of being penalized for managing earnings.

My proxy for the likelihood of being penalized for earnings management is a dummy variable

(EA) that equals one if a firm's restatement resulted in an SEC enforcement action and zero

otherwise.[16] In the following paragraphs, I outline the control variables I include in my analysis

along with the model I use to test hypothesis one.

5.1.1   Resource constraint

The SEC indicates that one of its mandates is to "protect investors." However, the SEC

has limited resources and must decide the most effective way to allocate these resources.[17] One

way the SEC could allocate its resources is to focus its efforts on instances where the potential

harm to investors is greatest. Therefore, the SEC likely employs more resources monitoring

large firms. I include the natural log of the market value of equity (LNMKTVAL) to control for

firm size in my analysis.

5.1.2   Ability to pay

In the SEC's 2007 annual report, the SEC indicates that one of its objectives is to "return

funds to harmed investors." If the SEC is unable to accomplish this objective, then I expect the

SEC to be less likely to pursue an enforcement action.   Therefore, I include free cash flows

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[16] My sample includes firms that disclose that their restatement was investigated by the SEC or was due to fraud.
However, I do not control for the firm's decision to disclose an SEC investigation or fraud. I chose not to control
for the firm's disclosure decision because it is not apparent how the rules-based continuum score of standards
violated by firms that don't disclose is systematically different from the rules-based continuum score of standards
violated by firms that do disclose. Hence, it is unclear how firm's disclosure decision is correlated with the rules-
based classification of standards violated.
[17] I attempt to control for certain factors that likely influence the SEC's decision to issue an enforcement action, but
I do not model the SEC's policing function and recognize that the SEC's policing function is not likely constant over
time.

(FCF) and a bankruptcy proxy (DLST) in my analysis to control for the firm's ability to pay the SEC fine. I expect the SEC to pursue firms that are more able to pay the SEC fine.

5.1.3 Size of harm

The SEC also indicates that one of its aims is to "sanction wrongdoers effectively." However, as noted above, the SEC has limited resources to pursue wrongdoers. Therefore, the SEC likely focuses its efforts on instances where investor losses are most egregious. I include the amount the executive managed earnings scaled by total assets (IS_AMT/TA) as a proxy for the harm imposed on investors in my analysis. If the SEC only pursues cases where investor losses are greatest, then the relation between the likelihood of an enforcement action and investor losses may not be linear. Thus, I include the square of IS_AMT/TA in my analysis. I expect a positive association between the likelihood of an enforcement action and investor losses.

5.1.4 Model 1

I employ a logistic regression where I regress EA (an enforcement action dummy variable defined above) on the RBC measure and the above noted control variables. If after issuing an enforcement action, the SEC adds rules to a standard to mitigate future earnings management, then the association between RBC and the SEC enforcement action dummy variable may reflect the SEC's reaction to earnings management. To avoid this, I measure RBC as of the first year of the manipulation period (i.e. the first year the executive managed earnings) because regulators are unaware of the firm's earnings management at this point in time. Hence, regulators, response or ex-post adjustments to the firm's violation are not reflected in my measure. In the SEC enforcement action analysis, I limit my sample to restatements that began before 2002. I do this to ensure that the SEC has had sufficient time to issue an enforcement action. I chose 2002, because the average number of years between the time the executive began

managing earnings and the time the SEC begins its regulatory enforcement is typically five

years. My data on enforcement actions extends through 2006; hence, I eliminate restatements

that began after 2001 in my tests.[18] Finally, I include year and SIC industry dummy variables to

control for potential confounding time and industry effects that are not captured by my control

variables. I outline this model below.

$$EA_{ij} = \beta_0 + \beta_1 RBC_j + \beta_2 LNMKTVAL_i + \beta_3 FCF_i + \beta_4 DLST_i + \beta_5 IS\_AMT_{ij}/TA_i +$$
$$\beta_6 (IS\_AMT_{ij}/TA_i)^2 + \sum_{d=7}^{12} \beta_d YRDUM_i + \sum_{d=13}^{48} \beta_d SICDUM_i + u_i \qquad (1)$$

where i represents the firm and j represents the GAAP standard violated. All firm-level variables

and the rules-based continuum score (RBC_j) are measured as of the first year of the manipulation

period. A significant positive (negative) coefficient on the rules-based continuum measure,

RBC_j, indicates the more rules-based the violation, the higher (lower) the likelihood of being

penalized.

5.2   The penalty for managing earnings

I develop a model to test H2a (H2b), which predicts that the rules-based the violations

will be negatively (positively) associated with the penalty levied upon executives who manage

earnings. Aside from the extent to which a standard contains rules-based characteristics, which

they do not investigate, Karpoff et al. (2007a) indicate that the penalty for earnings management

varies with several factors. These factors include the size of harm and the firm's ability to pay

("deep pockets"). In the following paragraphs, I discuss how I control for these factors and

outline the model I use to test H2a (H2b).

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[18] My results do not change if I include all observations in the enforcement action analysis.

5.2.1   Size of harm

Becker (1968) contends that the "optimal" penalty should be positively associated with the harm imposed on investors. [19] This is based on the premise that optimal penalties internalize the cost of wrongdoing. Consistent with this notion, Karpoff et al. (2007a) provide evidence that the size of the penalty imposed on executives who managed earnings is positively associated with the harm imposed on investors. Consistent with model 1, I control for the harm imposed on investors by including the amount the executive managed earnings scaled by total assets (IS_AMT/TA) and the square of this amount (IS_AMT/TA)^2 in my analysis. I expect a positive relation between the penalty imposed on executives and investor losses.

5.2.2   Ability to pay

I also include several control variables that proxy for the firm's ability to pay the SEC fine. These variables include firm size (LNMKTVAL), free cash flows (FCF), and a bankruptcy proxy (DLST). Each of these variables attempt to control for whether or not the firm has the ability to pay the SEC fine. Consistent with Karpoff et al. (2007a), I expect a positive association between the firm's ability to pay and the penalty imposed on the firm.

5.2.3   Model 2

I regress the penalty for earnings management on the rules-based continuum measure (RBC1 or RBC2), size of harm variables, ability to pay variables, year dummy variables, and SIC dummy variables. I define the penalty for earnings management (FIRM_FINE) as the total fine imposed by the SEC on the earnings management firm.[20] I then scale FIRM_FINE the by

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[19] Becker (1968) also indicates that the "optimal" penalty is negatively associated with the probability of being caught and having to pay a penalty. I do not include a proxy for the probability of being caught and having to pay a penalty in model 2. However, I do perform a sensitivity analysis where I include the predicted probability of an enforcement action in model 2 and rerun the SEC fine analysis. My results are unchanged by this alternative specification. Please see section 6.4 for further detail regarding this sensitivity analysis.
[20] Not all SEC enforcement actions result in a firm fine (FIRM_FINE).

restated total assets as of the first year of the manipulation period (Firm_FINE/TA). Consistent with the enforcement action analysis, I limit the number of observations in the SEC fine analysis to years before 2001 and measure RBC as of the first year of the manipulation period. These steps ensure that the SEC has had time to fine the company and that the RBC measure is not affected by ex-post adjustments. The model is as follows:

$$\text{FIRM FINE}_{ij}/\text{TA}_i = \delta_0 + \delta_1 \text{RBC}_j + \delta_2 \text{LNMKTVAL}_i + \delta_3 \text{FCF}_i + \delta_4 \text{DLST}_i +$$
$$\delta_5 \text{IS\_AMT}_{ij}/\text{TA}_i + \delta_6 (\text{IS\_AMT}_{ij}/\text{TA}_i)^2 + \sum_{d=7}^{12} \delta_d \text{YRDUM}_i + \sum_{d=13}^{48} \delta_d \text{SICDUM}_i + u_i \quad (2)$$

where i represents the firm and j represents the GAAP standard violated. All firm-level variables and the rules-based continuum score (RBC_j) are measured as of the first year of the manipulation period. A significant positive (negative) coefficient on RBC1_i (RBC2_i) indicates that rules-based standards are associated with larger (smaller) penalties.

5.3   Earnings management

H3a (H3b) predicts that the extent to which a standard contains rules-based characteristics is negatively (positively) associated with the dollar magnitude of earnings management. In order to test these hypotheses, I control for the economic determinants of earnings management. Bowen et al. (2007) provide a summary of the prior earnings management literature and identify several economic determinants of earnings management. In my model, I include many of the economic determinants identified by Bowen et al (2007). First, I include leverage (LEVERAGE) to control for a firm's incentive to avoid debt covenant violations. However, I also expect banks to closely monitor firms with high leverage. Accordingly, increased monitoring will decrease executives' opportunity to manage. Therefore, I have no prediction regarding the sign of leverage. I also control for the firm's growth opportunities by including the book-to-market ratio (GROWTH) in my model. Skinner and

Sloan (1999) find that the market severely penalizes growth firms that miss earnings targets. Therefore, I expect high growth firms (i.e. firms with a low book-to-market ratio) to manage earnings more. Third, I control for the demand for external financing by including free cash flows (FCF) in my analysis. I expect firms with high free cash flows to have smaller incentives to manage earnings. Finally, I control for political cost incentives by including the natural log of the market value of equity (LNMKTVAL) in my analysis. I expect large firms with high political costs to manage earnings less.

Including the above-mentioned economic determinants of earnings management in my model controls for other factors, aside from the structure of a standard, which might be associated with earnings management. I obtain the income statement adjustment related to *each* GAAP violation from the company's SEC filings (10-K, 10-Q, or 8-K). I multiply this amount by negative one to obtain the dollar amount the executive overstated (understated) net income during the manipulation period. I scale this amount by restated total assets (IS_AMT/TA), as of the first year of the manipulation period, to obtain a measure for how large the dollar magnitude of earnings management is relative to the size of the company. I regress IS_AMT/TA on a proxy for the structure of the standard (*j*) violated (RBC1 or RBC2) measured as of the first year of the manipulation period, economic determinants of earnings management, year dummy variables, and SIC dummy variables. I outline my model below.

$$\text{IS\_AMT}_{ij}/\text{TA}_i = \alpha_0 + \alpha_1 \text{RBC}_j + \alpha_2 \text{LEVERAGE}_i + \alpha_3 \text{GROWTH}_i + \alpha_4 \text{FCF}_i +$$
$$\alpha_5 \text{LNMKTVAL}_i + \sum_{d=6}^{16} \alpha_d \text{YRDUM}_i + \sum_{d=17}^{58} \alpha_d \text{SICDUM}_i + u_i \qquad (3)$$

where *i* represents the firm and *j* represents the GAAP standard violated. All firm-level variables and the rules-based continuum score (RBC$_j$) are measured as of the first year of the manipulation period. A significant positive (negative) coefficient on RBC indicates that the dollar magnitude

of earnings management is greater (smaller) when a firm violates a standard containing rules-based characteristics.

6   Empirical Results

Table 3 provides descriptive statistics for the variables used in my analyses. Panel A of Table 3 shows that the median GAAP violation (IS_AMT) overstates earnings by $2.59 million.[21] In addition, my earnings management proxies (IS_AMT and IS_AMT/TA) are highly skewed to the right. The mean earnings management amount is approximately 27.4 percent of total assets while the median earnings management amount is approximately 0.5 percent of total assets. To ensure that the skewness of these variables does not affect my results, I winzorize all independent and dependent variables by setting all variables that lie below the 1st percentile (above the 99th percentile) to the 1st (99th) percentile value. I also rerun my analyses using the natural log of earnings management scaled by total assets (LN(IS_AMT/TA)). Untabulated results are robust to this alternative specification.[22] The median RBC1 (RBC2) score is 3 (3.34). This indicates that there are many rules-based violations in my sample. However, the distribution also indicates that I capture principles-based standards (e.g. the first quartile of RBC1 is zero and the first quartile of RBC2 is below -.26). In an untabulated analysis, I compute the average size, leverage, and book-to-market ratio of firms on Compustat during my sample period. The average firm in my sample is larger, less levered, and has a lower book-to-market ratio than the average firm in the Compustat universe. In addition, approximately eight percent of the firms in my sample are delisted from their stock exchange in the years following

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[21] The number of observations is greater than 209 for IS_AMT, IS_AMT/TA, LN(IS_AMT/TA), RBC1, RBC2, EA, FIRM_FINE, and FIRM_FINE/TA because each firm restatement can have multiple GAAP violations. These variables are specific to the GAAP standard violated. Hence, my sample includes 390 GAAP standard violations. In addition, the number of observations is less than 390 for EA, FIRM_FINE, and FIRM_FINE/TA because I exclude observations from years after 2001 to ensure that the SEC has had time to issue an enforcement action for the GAAP violation. Therefore, of the 390 GAAP violations in my sample, 253 GAAP violations occurred from 1995 through 2001.

[22] See section 6.4 "Sensitivity Analyses" for further detail about this and other sensitivity analyses.

their restatement. Approximately 39.9 percent of GAAP violations in my sample result in an SEC enforcement action.

Panel B of Table 3 provides Pearson correlations among my dependent and independent variables. This table illustrates a significant positive univariate correlation between rules-based characteristics (RBC1 or RBC2) and earnings management (IS_AMT/TA). This suggests that violations standards containing rules-based characteristics are associated with larger magnitudes of earnings management. Panel B of Table 3 displays a significant negative association between RBC1 or RBC2 and the enforcement action dummy (EA). Panel B of Table 3 also displays a significant negative association between RBC1 or RBC2 and the amount of the SEC fine. These associations imply that executives are less likely to be penalized and the penalty is smaller when executives violate a standard containing rules-based characteristics. Finally, I observe a significant positive association between free cash flows, size (LNMKTVAL), and the enforcement action dummy. This implies that the SEC targets larger firms with greater free cash flows. In the following paragraphs, I provide the results from the multivariate tests of these relationships.

6.1   The effect of the structure of a standard on the likelihood of an enforcement action

First, I explore whether the extent to which a standard contains rules-based characteristics is associated with the likelihood that an earnings management firm receives an enforcement action. The dependent variable in Table 4 is a dummy variable that equals one if the earnings management resulted in an enforcement action and is equal to zero otherwise. I employ a logistic regression where I regress the enforcement action dummy variable (EA) on my rules-based continuum score (RBC1 or RBC2), investor harm variables (IS_AMT/TA and $(\text{IS\_AMT/TA})^2$), ability to pay variables (FCF and DLST), and the natural log of market value. In this analysis, I limit my sample to GAAP violations that began before 2002 to ensure the SEC

has had time to issue an enforcement action. Hence, of the 390 GAAP violations in my sample, this analysis includes 224 GAAP violations. Columns 1 (2) discuss results associated with RBC1 (RBC2). In column 1, consistent with my expectations, I find that the likelihood of an enforcement action increases with firm size (χ^2 = 3.97 [p-value = .046]) and free cash flows (χ^2 = 2.90 [p-value = .089]). This indicates that the SEC focuses its efforts on large firms and firms that have greater free cash flow. I also find a significant negative association between the extent to which a standard contains rules-based characteristics (RBC1 (χ^2 = 5.69 [p-value = .017]) and RBC2 (χ^2 = 5.73 [p-value = .017])) and the likelihood of an enforcement action. This finding supports H1a, indicating the more rules-based the standard violated, the lower the likelihood of an enforcement action. In an untabulated calculation, I calculate the change in the implied probability of an enforcement action at different values of RBC1 (RBC2). Holding all continuous variables at their mean and all dummy variables at zero, the implied probability of an enforcement action when RBC1 (RBC2) is equal to the 25th percentile value is 13.42 % (4.68 %). However, the implied probability of an enforcement action when RBC1 (RBC2) is equal to the 75th percentile value, holding other variables unchanged, is 4.05 % (0.21 %). Thus, the change from the 25th percentile RBC1 (RBC2) value to the 75th percentile value results in a 9.37 % (4.47 %) decrease in the implied probability of an enforcement action. Overall, the results indicate that executives are less likely to be penalized by the SEC when they violate standards containing rules-based characteristics. In addition, the change in the implied probability of an SEC enforcement action at different values of RBC appears to be substantial.

6.2 The effect of the structure of a standard on the penalty imposed on executives who manage earnings

Next, I explore the association between the penalty imposed on executives who manage earnings and the structure of the standard violated. Consistent with the enforcement action

analysis, I limit my sample in this analysis to GAAP violations that began before 2002 to ensure

the SEC has had time to fine the earnings management firm. Therefore, of the 390 GAAP

violations in my sample, this analysis includes 224 GAAP violations. In Table 5, I find some

evidence that the SEC fine is greater for large firms (t = 1.72, 1.64). In addition, I find that the

SEC issues smaller penalties to firms that delist (DLST) from their exchange after the

restatement (t = -2.84, -2.88). I use DLST as a proxy for bankruptcy and interpret this as

indicating the SEC levies smaller penalties on firms that are less able to pay the SEC fine. This

result is consistent with Karpoff et al. (2007a). However, I find no evidence of a relationship

between rules-based standards and the penalty imposed on executives who managed earnings.

This non-result may be due to several factors. First, I focus on monetary penalties levied by the

SEC, but there are also non-monetary penalties, such as jail time, that I do not capture in my

analysis. Furthermore, I do not capture the non-regulatory penalties such as derivative and class

action lawsuits. Therefore, my results either indicate that there is no relationship between the

structure of a standard and the penalty imposed on firms or that I do not capture the full penalty

imposed on firms that manage earnings.

6.3   The effect of the structure of a standard on the amount of earnings management

Finally, I explore the association between the structure of a standard and the amount of

earnings management. I regress the magnitude of earnings management (i.e. the amount

executives overstated earnings during the manipulation period) scaled by total assets

(IS_AMT/TA) on the rules-based continuum (RBC) score, the economic determinants of

earnings management, year dummy variables, and SIC industry dummy variables.[23] This

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[23] The earnings management amount is specific to the standard (*j*) violated and does not equal the cumulative
restatement amount when multiple GAAP violations occur.

analysis incorporates all GAAP violations containing the requisite data for the above control

variables, resulting in a sample of 334 GAAP violations.

In Table 6, I find a positive association between the rules-based continuum scores (RBC1

(t = 2.19) and RBC2 (t = 2.39)) and the dollar amount of earnings management. This finding

supports H3b, indicating the more rule-based the standard violated, the greater the magnitude of

earnings management. In an untabulated calculation, I determine the marginal effect of an

increase in the value of RBC1 (RBC2) from its 25th percentile value to its 75th percentile value.

This increase in the value of RBC1 (RBC2) is associated with a 0.30 % (0.18 %) increase in the

dollar amount of earnings management relative to total assets. My results also suggest that large

firms (t = -2.42, -2.38) and firms with higher free cash flows (t = -5.07, -4.55) manage the dollar

amount of earnings less. Finally, I providence evidence that firms with high leverage (t = -3.14,

-3.35) manage the dollar amount of earnings less. This result may be mechanically driven by the

fact that I scale debt and IS_AMT by total assets. However, I perform a sensitivity analysis

(untabulated) where I scale IS_AMT by the firm's market value of equity and my results are

unchanged.   Therefore, my results do not appear to be driven by the scalar I chose. Overall, I

provide evidence that the more rules-based the violation the greater the dollar magnitude of

earnings management.

6.4   *Sensitivity analyses*

As noted in the hypothesis development section, executives likely consider the

probability of being penalized and the expected penalty for earnings management when deciding

whether and how much to manage earnings. This suggests that the amount executives manage

earnings, the probability of being penalized, and the penalty for managing earnings should be

modeled in a simultaneous regression framework. Therefore, in untabulated analyses, I employ a

two-stage least squares approach to control for the potential simultaneity of this decision. First, I obtain predicted values for EA and FIRM_FINE/TA by regressing EA and FIRM_FINE/TA on all the exogenous independent variables (all variables in Models 1 and 2 except IS_AMT/TA and $(IS\_AMT/TA)^2$). I then include predicted EA and FIRM_FINE/TA variables as additional independent variables in Model 3. I rerun the earnings management regression (i.e. Model 3) and my results are not changed. I also employ a SUR model where I run Models 1, 2, and 3 simultaneously and my results are unchanged.

An additional concern that arises is whether my results are driven by extreme observations or by the scale I chose. This is a concern because of the skewness of IS_AMT/TA. To ensure that this skewness does not affect my results I use the natural log of IS_AMT/TA as the dependent variable in Model 3. Using the natural log of IS_AMT/TA as my dependent variable does not change my results. I also scale IS_AMT by the market value of equity (measured as of the first year of the manipulation period) and lagged total assets (measured as of the year before the first year of the manipulation period). My results are unchanged when I use these alternative scales. Finally, I scale IS_AMT by the lagged market value of equity (measured as of the year before the first year of the manipulation period). Using this scale results in a 20 percent decrease in my sample due to the fact that the lagged market value of equity is missing for many observations. In spite of this, RBC2 is significant and positive with a t-statistic of 1.96, and RBC1 is positive, but not significant.

In addition to numeric bright line thresholds, I count the number of non-numeric bright line thresholds. An example of a non-numeric bright-line threshold is the bargain purchase option in FAS 13. I recalculate my RBC measures (RBC1 and RBC2) using the total number of numeric and non-numeric bright line thresholds. I then rerun my analyses (untabulated) using

these refined RBC measures and my results are unchanged. I chose not to include these non-numeric thresholds in my main analyses because identifying non-numeric thresholds involves some subjective judgments whereas identifying numeric thresholds is more objective.

Finally, it is important to note that the distribution of SEC fines is truncated at zero. Therefore, the coefficient estimates produced by OLS are biased. In an untabulated analysis, I rerun the SEC fine analysis using a Heckman two stage model. The first stage models the SEC's decision to issue an enforcement action. In the second stage, I modify model 2 by including the predicted value of an enforcement action as an additional independent variable and rerun the SEC fine analysis. My conclusions are unchanged by this alternative specification.

7   Conclusion

This study provides the following contributions. First, I provide empirical evidence about some potential effects of shifting away from standards containing rules-based characteristics. Specifically, I provide evidence on whether the extent to which a standard contains rules-based characteristics is associated with the dollar amount executives manage earnings.   Second, I develop a rules-based continuum instrument that measures the extent to which a standard contains rules-based characteristics. Finally, I add to the earnings management literature by documenting whether the extent to which a standard contains rules-based characteristics is associated with the likelihood of an SEC enforcement action and the penalty imposed by the SEC, which executives likely consider when deciding whether to manage earnings.

I find that the SEC is less likely to issue an enforcement action when the executive violates a standard containing rules-based characteristics. However, I find no evidence that the structure of a standard is associated with the size of the SEC fine. If executives realize that the

likelihood of receiving an SEC enforcement action is lower when the violating a standard containing rules-based characteristics, then I expect the dollar magnitude of earnings management to be greater in a rules-based environment. Consistent with this expectation, my findings suggest that the more rules-based characteristics a standard contains the greater the dollar magnitude of earnings management.

This study has at least three limitations. First, I only investigate restatements that result in an SEC investigation or are due to fraud. Therefore, my sample likely captures extreme cases of earnings management. Thus, my results may not apply to more subtle cases of earnings management. Second, I only investigate cases where earnings management was alleged or detected. Therefore, my results may not apply to instances where earnings management is not detected. Third, I only investigate penalties imposed by the SEC. I recognize that there are many other penalties executives could receive for managing earnings including career concerns, non-regulatory penalties, and non-monetary penalties. Therefore, my conclusions about the association between the likelihood of being penalized and the penalty received cannot be readily generalized to the other above noted penalties.

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Table 1

Median Rules-Based Continuum Score (RBC1 or RBC2) for Select Standards

Standard		Description	RBC1	RBC2
arb	43_4	Inventory Pricing	0	-1.58
fas	34	Capitalization of Interest Costs	0	-0.50
fas	5	Contingent Liabilities	0	-0.43
apb	29	Nonmonetary Transactions	1	0.09
fas	52	Foreign Currency Translation	1	0.76
fas	2	Reseach and Development	1	1.19
fas	150	Instruments with Characteristics of Liabilities and Equity	1	1.34
fas	121	Impairment of Long-Lived Assets (predecessor to FAS 144)	1	2.77
apb	18	Investments in Common Stock	2	1.10
fas	123r	Stock Compensation	2	6.71
fas	142	Goodwill	3	3.22
apb	16	Business Combinations (predecessor to FAS 141)	3	3.65
fas	141	Business Combinations	3	3.74
fas	144	Impairment of Long-Lived Assets	3	6.61
fas	133	Derivatives	3	33.84
fas	87	Pensions	4	3.01
fas	140	Transfers and Servicing of Financial Assets	4	6.34
fas	123	Stock Compensation (predecessor to FAS 123r)	4	7.07
fas	109	Income Taxes	4	7.47
fas	66	Sales of Real Estate	4	8.48
fas	13	Leases	4	15.69

RBC =   The rules-based continuum score (RBC) measures the extent to which a standard contains rules-based characteristics. The higher the RBC the more rules-based characteristics the standard contains. RBC1 identifies whether the standard contains bright-line thresholds, scope and legacy exceptions, excessive implementation guidance, and excessive detail. RBC2 is similar, but also reflects the extent to which the standard contains the above-mentioned characteristics. Section 3 details how RBC1 and RBC2 are calculated.

Table 2
Sample Selection

Panel A: Sample Selection of Earnings Management Firms

Description	n
Audit Analytics Restatements	7,180
Less: Restatements Not Due to Fraud or Investigated by the SEC	(6,669)
Earnings Management Firms	511
Less: Firms With No Gvkey	(173)
Less: Firms With Insufficient Restatement Disclosure	(129)
Final Sample	*209*

Panel B: Sample Distribution

Year	Number of Observations	Percentage of Total Sample
1995	2	1.0%
1996	1	0.5%
1997	11	5.3%
1998	12	5.7%
1999	15	7.2%
2000	32	15.3%
2001	35	16.7%
2002	23	11.0%
2003	22	10.5%
2004	37	17.7%
2005	14	6.7%
2006	5	2.4%
	209	100.0%

Table 3
Descriptive Statistics

Panel A: Distributions of Continuous Variables

Variable	n*	Mean	Standard Deviation	First Quartile	Median	Third Quartile
IS_AMT	390	119.65	651.86	0.32	2.59	20.00
IS_AMT/TA	380	27.4%	130.5%	0.1%	0.5%	3.4%
LN(IS_AMT/TA)	380	0.76	0.27	0.69	0.70	0.71
RBC1	390	2.29	1.54	0.00	3.00	3.00
RBC2	390	6.04	8.98	(0.26)	3.34	7.36
EA	253	39.9%	49.1%	0.0%	0.0%	100.0%
FIRM_FINE	253	129.33	460.37	0.00	0.00	0.00
FIRM_FINE/TA	253	0.2%	0.8%	0.0%	0.0%	0.0%
ASSETS	202	16,122	73,685	37	309	1,940
LEVERAGE	200	0.22	0.25	0.01	0.15	0.34
GROWTH	201	0.72	0.76	0.34	0.65	0.92
FCF	187	(0.17)	0.62	(0.07)	0.03	0.08
MKTVAL	193	6,071	22,808	44	247	2,401
LNMKTVAL	193	5.71	2.68	3.82	5.51	7.78
DLST	209	8.6%	28.1%	0.0%	0.0%	0.0%

* The number of observations is greater than 209 for IS_AMT, IS_AMT/TA, LN(IS_AMT/TA), RBC1, RBC2, EA, FIRM_FINE, and FIRM_FINE/TA because each firm restatement can have multiple GAAP violations. These variables are specific to the GAAP standard violated. Hence, my sample includes 390 GAAP standard violations. In addition, the number of observations is less than 390 for EA, FIRM_FINE, and FIRM_FINE/TA because I exclude observations from years after 2001 to ensure that the SEC has had time to issue an enforcement action for the GAAP violation. Hence, of the 390 GAAP violations in my sample, 253 GAAP violations occurred from 1995 through 2001.

IS_AMT = The dollar amount executives overstated (understated) net income during the manipulation period. The earnings management amount is specific to the standard (j) violated and does not equal the cumulative restatement amount when multiple GAAP violations occur.

IS_AMT/TA = The dollar amount executives overstated (understated) net income during the manipulation period divided by restated total assets (data6), measured as of the first year of the manipulation period (i.e. the first year the executive managed earnings). The earnings management amount is specific to the standard (j) violated and does not equal the cumulative restatement amount when multiple GAAP violations occur.

LN(IS_AMT/TA) = The natural log of two plus IS_AMT/TA before it was winzorized.

RBC = The rules-based continuum score for the standard (j) violated by the firm. The rules-based continuum score is calculated as of the first year of the manipulation period. Please refer to section 3 for further details on how RBC1 and RBC2 are calculated.

ASSETS = Total assets (data6).

LEVERAGE = Long-term debt divided by total assets (data9/data6).

GROWTH = The book value of assets (data6) divided by the market value of assets ((data24*data25 + data181).

FCF = The three year average free cash flow (operating cash flows (data308) - preferred dividends (data19) - common dividends)/total assets (data6).

MKTVAL = The market value of equity (data24*data25).

LNMKTVAL = The natural log of the market value of equity (data24*data25).

DLST = Delist is equal to one if the firm was liquidated or was dropped from their current exchange after the restatement and is equal to zero otherwise.

EA = A dummy variable that is equal to one if the firm's restatement led to an enforcement action and is equal to zero otherwise.

FIRM FINE = The total fine imposed by the SEC on earnings management firms.

FIRM FINE/TA = The total fine imposed by the SEC on earnings management firms divided by total assets (data6).

Table 3 (cont.)
Descriptive Statistics

Panel B: Pearson Correlations Among Earnings Management, Enfocement Action, RBC, and Control Variables (p-values are in brackets)

	IS_AMT/TA	EA	FIRM_FINE/TA	RBC1	RBC2	LEVERAGE	GROWTH	FCF	LNMKTVAL	DLST
IS_AMT/TA										
EA	-0.13									
	(0.04)									
FIRM_FINE/TA	-0.04	0.37								
	(0.5)	(<0.01)								
RBC1	0.11	-0.12	-0.11							
	(0.04)	(0.06)	(0.08)							
RBC2	0.25	-0.15	-0.12	0.50						
	(<0.01)	(0.01)	(0.06)	(<0.01)						
LEVERAGE	-0.10	0.06	-0.16	-0.01	0.06					
	(0.04)	(0.38)	(0.01)	(0.86)	(0.24)					
GROWTH	-0.03	0.06	-0.14	-0.06	-0.09	-0.08				
	(0.59)	(0.38)	(0.03)	(0.26)	(0.08)	(0.12)				
FCF	-0.31	0.20	0.10	0.03	-0.19	-0.10	0.09			
	(<0.01)	(<0.01)	(0.13)	(0.59)	(<0.01)	(0.07)	(0.10)			
LNMKTVAL	-0.23	0.33	0.24	-0.05	-0.16	0.08	-0.05	0.40		
	(<0.01)	(<0.01)	(<0.01)	(0.37)	(<0.01)	(0.11)	(0.33)	(<0.01)		
DLST	-0.06	0.07	-0.10	-0.05	-0.03	0.00	0.06	0.01	-0.14	
	(0.23)	(0.27)	(0.11)	(0.33)	(0.55)	(0.93)	(0.21)	(0.84)	(0.01)	

Table 4
Logistic Regression Results for the Effect of the Rules-Based Characteristics on the Likelihood of an SEC Enforcement Action

Model: $EA_{ij} = \beta_0 + \beta_1 RBC_j + \beta_2 LNMKTVAL_i + \beta_3 FCF_i + \beta_4 DLST_i + \beta_5 IS\_AMT_{ij}/TA_i + \beta_6(IS\_AMT_{ij}/TA_i)2 + u_i$ (1)

Wald Chi-Squared statistics are in parentheses. SIC and year dummies are not shown to conserve space. All variables that lie below (above) the 1st (99th) percentiles are winzorized.

	Rules-Based Continuum Measure	
Variable Name	RBC1	RBC2
	(1)	(2)
Intercept	-3.44	-4.53
	(0.00)	(0.00)
RBC	-0.43	-0.10
	(5.69) **	(5.73) **
FCF	7.16	8.19
	(2.90) *	(3.78) *
LNMKTVAL	0.33	0.33
	(3.97) **	(3.60) *
DLST	1.83	1.92
	(1.72)	(1.70)
IS_AMT/TA	-7.38	-7.22
	(2.36)	(2.27)
$(IS\_AMT/TA)^2$	0.62	0.54
	(0.02)	(0.02)
SIC Dummies	Included	Included
Year Dummies	Included	Included
N	224	224

*(**)[***] significant at the 0.10 (0.05) [0.01] level (two-tailed). All firm level variables and the rules-based continuum score (RBC_j) are measured as of the first year of the manipulation period.

EA = A dummy variable that is equal to one if the firm's restatement led to an enforcement action and is equal to zero otherwise.

RBC = The rules-based continuum score for the standard (j) violated by the firm. The rules-based continuum score is calculated as of the first year of the manipulation period. Please refer to section 3 for further details on how RBC1 and RBC2 are calculated.

FCF = The three year average free cash flow (operating cash flows (data308) - preferred dividends (data19) - common dividends)/total assets (data6).

LNMKTVAL = The natural log of the market value of equity (data24*data25).

DLST = Delist is equal to one if the firm was liquidated or was dropped from their current exchange after the restatement and is equal to zero otherwise.

IS_AMT/TA = The dollar amount executives overstated (understated) net income during the manipulation period divided by restated total assets (data6), measured as of the first year of the manipulation period (i.e. the first year the executive managed earnings). The earnings management amount is specific to the standard (j) violated and does not equal the cumulative restatement amount when multiple GAAP violations occur.

$(IS\_AMT/TA)^2$ = IS_AMT/TA squared.

Table 5
Regression Results for the Effect of the Rules-Based Characteristics on the Penalty Imposed on Executives who Managed Earnings

Model: $\text{FIRM FINE}_{ij}/\text{TA}_i = \delta_0 + \delta_1\text{RBC}_j + \delta_2\text{LNMKTVAL}_i + \delta_3\text{FCF}_i + \delta_4\text{DLST}_i + \delta_5\text{IS\_AMT}_{ij}/\text{TA}_i$
$+ \delta_6(\text{IS\_AMT}_{ij}/\text{TA}_i)2 + u_i$ (2)

T-statistics are in parentheses. SIC and year dummies are not shown to conserve space. All variables that lie below (above) the 1st (99th) percentiles are winzorized.

Variable Name	Rules-Based Continuum Measure	
	RBC1	RBC2
	(1)	(2)
Intercept	0.00	0.00
	(-0.32)	(-0.42)
RBC	0.00	0.00
	(-0.90)	(-0.51)
FCF	0.00	0.00
	(0.68)	(0.78)
LNMKTVAL	0.00	0.00
	(1.72) *	(1.64)
DLST	-0.01	-0.01
	(-2.84) ***	(-2.88) ***
IS_AMT/TA	0.00	0.00
	(0.59)	(0.64)
$(\text{IS\_AMT/TA})^2$	0.00	0.00
	(-0.47)	(-0.52)
SIC Dummies	Included	Included
Year Dummies	Included	Included
N	224	224
R^2	27.15%	26.91%

*(**)[***] significant at the 0.10 (0.05) [0.01] level (two-tailed). All firm level variables and the rules-based continuum score (RBC_i) are measured as of the first year of the manipulation period.

FIRM FINE/TA = The total fine imposed by the SEC on earnings management firms divided by total assets (data6).

RBC = The rules-based continuum score for the standard (j) violated by the firm. The rules-based continuum score is calculated as of the first year of the manipulation period. Please refer to section 3 for further details on how RBC1 and RBC2 are calculated.

FCF = The three year average free cash flow (operating cash flows (data308) - preferred dividends (data19) - common dividends)/total assets (data6).

LNMKTVAL = The natural log of the market value of equity (data24*data25).

DLST = Delist is equal to one if the firm was liquidated or was dropped from their current exchange after the restatement and is equal to zero otherwise.

IS_AMT/TA = The dollar amount executives overstated (understated) net income during the manipulation period divided by restated total assets (data6), measured as of the first year of the manipulation period (i.e. the first year the executive managed earnings). The earnings management amount is specific to the standard (j) violated and does not equal the cumulative restatement amount when multiple GAAP violations occur.

$(\text{IS\_AMT/TA})^2$ = IS_AMT/TA squared.

Table 6
Regression Results for the Effect of Rules-Based Characteristics on the Magnitude of Earnings Management

Model: $IS\_AMTA_{ij}/TA_i = \alpha_0 + \alpha_1 RBC_j + \alpha_2 LEVERAGE_i + \alpha_3 GROWTH_i + \alpha_4 FCF_i + \alpha_5 LNMKTVAL_i + u_i$ (3)

T-statistics are in parentheses. SIC and year dummies are not shown to conserve space. All variables that lie below (above) the 1st (99th) percentiles are winzorized.

Variable Name	Rules-Based Continuum Measure	
	RBC1	RBC2
	(1)	(2)
Intercept	3.12	3.39
	(2.19) **	(2.39) **
RBC	0.10	0.02
	(2.24) **	(2.84) ***
LEVERAGE	-1.11	-1.19
	(-3.14) ***	(-3.35) ***
GROWTH	-0.17	-0.16
	(-0.65)	(-0.6)
FCF	-0.82	-0.73
	(-5.07) ***	(-4.55) ***
LNMKTVAL	-0.09	-0.09
	(-2.42) **	(-2.38) **
SIC Dummies	Included	Included
Year Dummies	Included	Included
N	334	334
R^2	17.98%	18.87%

*(**)[***] significant at the 0.10 (0.05) [0.01] level (two-tailed). All firm level variables and the rules-based continuum score (RBC_i) are measured as of the first year of the manipulation period.

IS_AMT/TA = The dollar amount executives overstated (understated) net income during the manipulation period divided by restated total assets (data6), measured as of the first year of the manipulation period (i.e. the first year the executive managed earnings). The earnings management amount is specific to the standard (j) violated and does not equal the cumulative restatement amount when multiple GAAP violations occur.

RBC = The rules-based continuum score for the standard (j) violated by the firm. The rules-based continuum score is calculated as of the first year of the manipulation period. Please refer to section 3 for further details on how RBC1 and RBC2 are calculated.

LEVERAGE = Long-term debt divided by total assets (data9/data6).

GROWTH = The book value of assets (data6) divided by the market value of assets ((data24*data25) + data181).

FCF = The three year average free cash flow (operating cash flows (data308) - preferred dividends (data19) - common dividends)/total assets (data6).

LNMKTVAL = The natural log of the market value of equity (data24*data25).

Figure 1
Rules-Based Characteristics Over Time
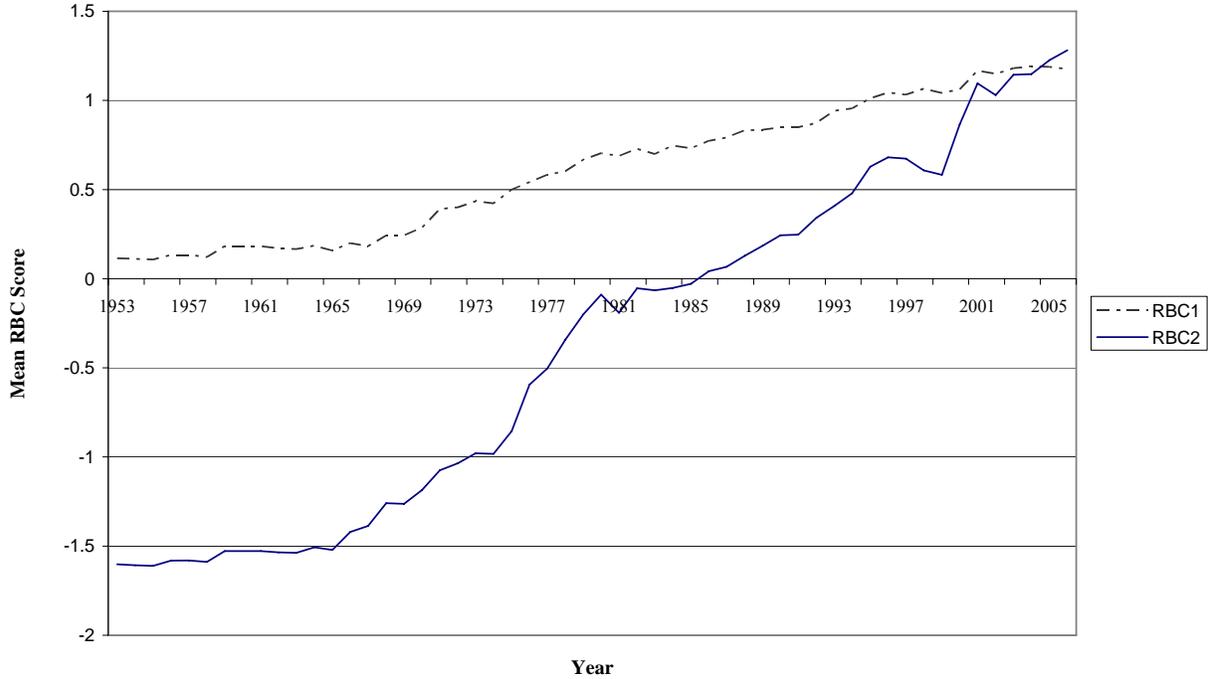
RBC   =   This figure displays the average rules-based continuum score (RBC1 or RBC2) by year. The RBC1 (RBC2) score measures the extent to which a standard contains rules-based characteristics. The yearly average RBC1 (RBC2) score is calculated using all standards that are applicable to companies for that particular year. The higher the RBC1 (RBC2) score the more rules-based characteristics the standard contains. Section 3 details how the rules-based continuum measures are calculated.