Critical Accounting Policy Disclosures*

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Abstract

To increase investor awareness of the sensitivity of financial statements to the methods, assumptions, and estimates underlying their preparation, the Securities and Exchange Commission asks firms to include disclosures about *critical accounting policies* in their 10 - Ks. Using a large sample of CAP disclosures from SEC filers, we provide evidence on the extent to which CAP disclosures correlate with existing financial statement information, provide new information, correlate with measures of accounting quality, and corroborate theories of voluntary disclosure. We also consider the interaction among disclosures, and find support for disclosure decisions following a portfolio rather than an account by account approach.

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1 Introduction

Following a series of widely publicized reporting problems and restatements, the Securities and Exchange Commission took several actions to modify and modernize financial reporting and disclosure. Citing the emphasis placed on reported numbers, like earnings per share, the SEC issued a statement addressing the selection and disclosure of critical accounting policies and practices by public companies (Securities and Exchange Commission 2002). The SEC believed that there was a need for greater awareness of the sensitivity of financial statements to the methods, assumptions, and estimates underlying their preparation. In this release, the SEC stated that "investors may lose confidence in a company's management and financial statements if sudden changes in its financial condition and results occur, but were not preceded by disclosures about the susceptibility of reported amounts to change." The SEC followed up the cautionary statement with a proposed rule in May 2002 (Securities and Exchange Commission 2002). The proposed rule defines a critical accounting policy more precisely and mandates a separately captioned section within Management's Discussion and Analysis (MD&A) devoted to a description of these policies. Following the proposal, firms began including a section on critical accounting policies in their annual report. The (voluntary) disclosures firms make within the critical accounting policy sections provide us with the basis for analyzing several questions.

First, what types of disclosures do firms make and are they consistent with existing information? Using electronic 10 - K filings, we find that firms select an average of 6 to 7 policies as critical, with the most commonly cited 5 policies covering about half of the total disclosures. We find that the magnitude and variance of an account balance is positively associated with the probability of critical policy disclosure and that firms that designate working capital accounts (i.e., accounts receivable and/or inventory) as critical have lower

accrual quality than firms that do not. When accounts are classified as critical but are *not* large in magnitude or historical variance, they tend to increase on one of these dimensions in the post-disclosure period. This suggests a *predictive* quality to CAP disclosures. Two commonly cited rationales for voluntary disclosure are litigation risk and capital market needs. We find that firms facing higher *ex ante* litigation risk and planning to engage in financing are more likely to provide CAP disclosure.

Second, is there evidence that firms behave strategically, considering the impact of designating accounts as critical? Levine (2004) argues that firms face a tension in their critical accounting disclosures. On one hand, critical accounting disclosures may qualify for safe harbor protection in the event of unfavorable subsequent realizations. If so, this protection may reduce exposure to litigation and penalties for managers required to certify their financial statements. On the other hand, rational investors rely less on accounts that are designated as critical, reducing the ability of firms to communicate good news within the financial statements. We provide evidence that firms consider accounts jointly in the critical policy designation – the correlation between accounts is related to disclosure decisions, and the overall number of critical policies is increasing in litigation risk and future financing plans.

Our final research question examines whether critical accounting policy disclosures are incrementally informative. Chief Accountant Robert Herdman stated "I'd like to challenge... you to capitalize on the flexibility in the rules and avoid discussions that are boilerplate and simply translate the financial statements from numbers into words (Herdman 2001)." To test incremental informativeness, we look at the market's reaction to the information contained in the critical disclosures. More specifically, we compare the weight on earnings in a regression of price on earnings and book value for firms with critical accounting policies before and after the SEC proposal. We find that the weight on earnings for firms with

more critical accounting policies than expected is relatively higher in the pre-regulation period. That is, after investors are made aware of the judgment and estimates required in their computation, investors place a lower (higher) weight on earnings information for firms with more (fewer) critical accounting policies than expected than for firms whose number of CAPs meets expectations. We also compare the market reaction on the earnings announcement date with the market reaction on the 10 - K disclosure date in the first year of implementation. Investors are more likely to "reverse" or react in the opposite direction at the 10 - K filing date relative to the earnings announcement date (i.e., weight earnings less) for firms that surprise the market with more critical policies than expected, and more likely to confirm their reaction for firms with fewer critical policies than expected.

Our study makes three contributions. First, we provide an early analysis of a relatively new accounting disclosure practice. We are aware of two other papers that examine critical accounting policy disclosures. Paprocki and Stone (2004) and Cho, Park, and Warfield (2004) (CPW) both focus on the quality of critical accounting policy disclosures. The former suggests a link between information asymmetry and the quality of CAP disclosures while the latter finds a relation between accrual quality and quality of CAP disclosures. CPW look at variation within critical disclosures conditional on disclosing, whereas we look at variation in the decision to disclose or not. Therefore, we test whether an account has lower accounting quality if it is disclosed as critical (as opposed to not), where Cho, et. al. (2004) would consider firms with more detailed disclosure to have higher quality than firms with less detailed disclosures. Second, since critical accounting policy disclosures are at the discretion of management, our paper investigates CAPs vis-à-vis several forces linked to voluntary disclosures. Specifically, we provide evidence that CAPs are related to litigation costs and expected capital markets transactions. Last, our paper contributes to the long literature that examines the effectiveness and impact of regulatory changes. Recent

examples that focus on changes in disclosure rules include Nelson (1996) (fair value of financial instruments), Rajgopal (1999) (market risk disclosures), and Butler, Kraft, and Weiss (2007) (disclosure frequency).

The analysis in this paper is significant for regulators, particularly when different regulating bodies participate in rule making (here, Congress and the SEC). Referring to Section 302 of The Sarbanes-Oxley Act of 2002, which requires CEO certification of financial statements, Paul Sarbanes stated "[the Act] strengthens corporate responsibility, requiring CEOs and CFOs to be personally responsible for the accuracy of their company's financial reports." A common objection to the certification requirement is that terms such as *certification* and *accuracy* imply a much higher level of assurance than can reasonably be applied to financial information. If CEOs are concerned about the accuracy of their numbers, does the critical accounting policy regulation give them a *get out of jail free* card? Can CEOs avoid litigation by appealing to the safe harbor protection afforded to MD&A, arguing that investors were warned about the estimates involved in the computation of financial reports, despite the certification?[1] By describing firms' critical policy disclosures, we take the first step toward evaluating possibly conflicting regulatory efforts.

We organize the remainder of the paper as follows. Section 2 outlines the institutional background and develops the hypotheses. Sample selection criteria and a description of the data are given in section 3. We lay out the research design and report results in section 4. Section 5 contains concluding remarks.

[1]The SEC states "MD&A is the ideal location for providing disclosures regarding these critical accounting policies. The types of judgments that are required by a critical accounting policy are of the variety that may underlie why past performance may not be indicative of future results. In addition, the safe harbor provisions afforded to qualifying MD&A disclosures allow management to provide investors with its views about future events, which, after all, forms the basis for making the underlying estimates."

2 Disclosure of Critical Accounting Policies

2.1 Institutional Background

In a speech to the Financial Executives Institute given on January 24, 2002, Robert Herdman, former chief accountant of the SEC said:

> A critical accounting policy is one that is both very important to the portrayal of the company's financial condition and results, and requires management's most difficult, subjective or complex judgments. Typically, the circumstances that make these judgments difficult, subjective and/or complex have to do with the need to make estimates about the effect of matters that are inherently uncertain. As the number of variables and assumptions affecting the possible future resolution of the uncertainties increase, those judgments become even more subjective and complex. And, as the time period increases over which the uncertainties will be resolved, as you and I both know those estimates will likely change in a greater number of periods, potentially adding volatility to published results.

The proposed rule, issued in May 2002, defines a critical accounting policy (CAP) as a policy in which both of the following are true: (i) the accounting estimate requires assumptions about matters that were highly uncertain at the time the accounting estimate was made and (ii) different estimates that reasonably could have been used or changes in those estimates that are likely to occur from period to period would have a material impact on the presentation of financial condition or results of operations. The disclosure would involve three elements: the information needed for a basic understanding of the estimates, information needed for an understanding of the sensitivity of the results to the estimates, and a discussion of whether management and the audit committee discussed the development, selection and disclosure of the critical estimates. The rule was criticized for being too broad, for requiring information that would not be useful to investors, and for excessiveness to

the point of obscuring rather than revealing.[2] There were significant objections to the definition of a 'critical policy' and to the requirement that firms provide a detailed sensitivity analysis. For example, Jay Hartig of the AICPA writes "disclosure of the impact of a single assumption change could be confusing (and perhaps misleading). An attempt to quantify and explain all of the possible combinations and permutations associated with a change (or multiple changes) would be complex and increasingly speculative. This type of disclosure is essentially projection information as to which the SEC has historically insisted, and rightly so, upon a rigorous analysis prior to public disclosure."

The traditional rule setting process was interrupted by regulatory action taken by the US Congress (i.e., the Sarbanes Oxley Act) after a series of corporate and reporting failures. To date, no final draft has been written, but firms are advised to comply with the cautionary statement and the proposed rule. Interpretation differs significantly across firms – actual disclosures range from none to many, and from boilerplate and vague to descriptive and fairly detailed. Although the potential benefits to information on the degree of subjectivity (reliability) of estimates in financial statements may seem obvious, it is possible that the proposed regulation will not result in realized useful disclosures. This paper will address several critical accounting policy disclosure questions. Are critical accounting disclosures consistent with financial statement information? Are critical accounting disclosures incrementally informative? That is, to what extent do the disclosures provide information that is not available in existing financial reports? Do existing measures of accounting quality correlate with these disclosures? Do actual disclosure decisions empirically support some of the recently proposed theoretical models of disclosure? What can we infer about the costs and benefits (underlying inputs to the disclosure models) of including a critical accounting policy disclosure in their MD&A?

[2] See http://www.sec.gov/rules/proposed/s71602/sullivancromwell.htm.

Beaver (1991) writes "[b]ecause a key feature of future events is that they are multi-dimensional in nature, information is lost by attempting to describe the entire distribution in terms of a single number, except in a few special cases… A single number creates the appearance of certainty when it does not exist." The goal of critical accounting policies is to better describe the multidimensionality of the (single) numbers included in financial statements. For CAP disclosures to be informative, they cannot be meaningless boilerplate. They may either highlight (bring investor attention to) information already in the financial statements or provide new information. Our hypotheses address both of these potential roles of critical accounting policies.

2.2 Hypothesis Development

"MD&A is the ideal location for providing disclosures regarding these critical accounting policies…the safe harbor provisions afforded to qualifying MD&A disclosures allow management to provide investors with its views about future events, which, after all, forms the basis for making the underlying estimates" (Robert Herdman, former chief accountant of the SEC). This comment suggests that if policies are disclosed as critical, the related accounts could qualify for safe harbor protection in the event of a subsequent realization that differs significantly from the reported amount. A recent court ruling, dismissing a class action suit against Centene Corporation supports this argument – although the plaintiffs argue that careful monitoring of medical costs implies that Centene must have known about higher costs, defendants successfully pointed to numerous statements, including mentions in the critical accounting policy section, warning that numbers were estimates only and earnings could be affected if the estimates were inaccurate.

The cost of utilizing the safe harbor protection is that when a policy is disclosed as critical, investors rely less on the report and more on their prior assessment of the firm. Specif-

ically, critical amounts are inherently less certain and rational investors update by placing a relatively lower weight on amounts with high variance. Also, because the amounts may qualify for greater (safe harbor) protection, the barrier to manipulation of these numbers is lower, which could result in more deliberate misstatement in accounts associated with critical accounting policies. This tradeoff between protection, on the one hand, and loss of ability to convince investors of good news, on the other, provides the motivations for our hypotheses.

We first examine critical accounting policies pertaining to identifiable balance sheet accounts (Accounts Receivable or Valuation of Goodwill, for example). Consider two firms, one that discloses *Valuation of Goodwill* as a critical policy, another that does not. The most obvious explanations for the difference in disclosure are that either (i) the non-disclosing firm has immaterial amounts of Goodwill or (ii) the non-disclosing firm has material amounts of Goodwill, but little uncertainty regarding the underlying assumptions and estimates supporting the balance sheet valuation.

While the size or variability of an account is likely to play a significant role in its determination as critical, it is unlikely to fully explain disclosure decisions. How should we interpret two firms, in the same industry, with the same level of materiality of account that make different disclosure decisions? Why would a firm, for whom revenue recognition is very significant, fail to disclose the account as critical and a firm for whom accounts receivable is relatively unimportant disclose the account as critical? How should we interpret disclosure decisions when there may be no related account on the financial statements (e.g., contingencies)? One possibility is that disclosures are uninformative (boilerplate). Another possibility is that a disclosure that is inconsistent with the present conditions may provide information about the firm's future. A firm with an account balance that is currently low might disclose if it expects the account balance to increase in the years to come. Similarly, a

firm with an account balance that is currently high may decide not to disclose if the account is expected to lose prominence in subsequent periods. This leads to the first hypothesis.

> ***Hypothesis 1a****: If a firm unexpectedly discloses an accounting policy as critical, the related account is more likely to have high post-disclosure magnitude and/or variance.*
>
> ***Hypothesis 1b****: If a firm unexpectedly does not disclose an accounting policy as critical, the related account is more likely to have low post-disclosure magnitude and/or variance.*

The critical designation is informative about the future if those firms that designate, despite industry practices and/or current levels that are low, have high mean or variance in the subsequent period. Similarly, the critical designation is informative about the future if those firms that do not designate, despite industry practices and/or current levels that are high, have low mean or variance in subsequent period.

Our next hypothesis considers further motives for critical accounting policy disclosures.[3] The literature linking disclosures to litigation typically holds as a maintained assumption that lawsuits are triggered when investors are surprised.[4] In a recent paper, Field, Lowry, and Shu (2005) (FLS) try to settle the debate whether disclosures lead to or prevent litigation. They show that firms with higher litigation risk are more likely to disclose early to preempt potential lawsuits. Rather than disclosing a single period realization, critical accounting policies reveal information about distributions (or more broadly, underlying firm type). With warnings about the significant estimates and judgement (i.e., CAP disclosure),

[3]While other theories exist to explain voluntary disclosure, most are specific to single news events rather than underlying characteristics, making them a poor fit for our disclosure setting.

[4]See for example, Skinner (1994) and Francis, Philbrick, and Schipper (1994).

investors will be less surprised if realizations differ from initial reports. Hypothesis 2a states formally the link between litigation costs and CAP disclosures.

CAPs are likely to reduce the information asymmetry between firms and investors. S7-16-02 specifically states "these [critical] accounting policies are least understood by investors and [with their disclosure] investors would be in a better position to assess the quality of, and potential variability of, a company's earnings." If investors do not fully understand the distributions from which realizations are drawn, the firm will incur an information premium as well as the standard risk premium. Although all managers are likely to care about the cost of capital, those who anticipate making capital market transactions in the near term may be more likely to use disclosures to reduce their information premium. Thus, we hypothesize that CAP disclosures are more likely for firms that seek external financing.

> ***Hypothesis 2a****: Firms that disclose a policy as critical have higher litigation risk than firms that do not disclose the policy as critical.*
>
> ***Hypothesis 2b****: Firms that disclose a policy as critical are more likely to raise capital in the post-disclosure period than firms that do not disclose the policy as critical.*

Our third hypothesis seeks to provide evidence on the "portfolio" of disclosures. In particular, we evaluate whether firms consider accounts jointly when deciding whether or not to designate them as critical. For example, even if the realizations of accounts receivable and inventory individually fall within acceptable bounds, a realization of *total* current assets below a certain threshold may trigger restatement or significant adjustments leading to litigation costs. In deciding whether to protect (i.e., invoke safe harbor provisions on) one or both of these accounts by designating them as critical, then, the firm must consider their

covariance as well as their individual variances.[5] On the flip side, firms may wish to reduce the number of critical accounting policies; the SEC states, "[i]nvestors, however, will not benefit from a lengthy discussion of a multitude of accounting estimates in which the truly critical ones are obscured." Firms may be able to reduce the policies they designate if the accounts have low (particularly negative) covariance.

> ***Hypothesis 3****: The higher the covariance between related accounts, the more likely they are classified as critical.*

An alternate explanation for hypothesis 3 is that accounts with high covariance are similar – if one is genuinely critical, so is the other. This alternate explanation, however, cannot guide predictions on zero versus one disclosure; in contrast, the portfolio explanation would suggest that holding the variances equal, when the covariance is higher between accounts, one account is more likely to be designated as critical. Additionally, the alternate hypothesis suggests a U-shaped relation between covariance and the number of critical policies (as high positive or high negative correlation would suggest both share a need for estimates) whereas the portfolio explanation suggests monotonicity of critical policies in covariance. As before, disclosures on Accounts Receivable and Inventory are used to test Hypothesis 4. Because we use COMPUSTAT for all of the non-text-based (i.e., numerical) data, there is insufficient data to consider other accounts that are added on the financial statements,

[5]Let $\hat{Y}_1$ and $\hat{Y}_2$, be the true values of two accounts that are not yet realized. The accounting system measures the accounts and reports Y_1 and Y_2, respectively. True total assets ($\widehat{TA}$) is the sum of the two true values; reported total assets is the sum of the two reported values. Suppose (i) *ex post* errors of a certain magnitude trigger restatement or significant adjustments which lead to litigation costs and (ii) disclosing an accounting as critical relieves the firm of some of these litigation costs as judgments will be less severe if the firm has preannounced the uncertainty in the estimate. The (*ex ante*) variance of true total assets ($\widehat{TA}$) is the variance of the individual assets plus twice the covariance between the assets. If firms are required to restate/correct when errors exceed a threshold level, even if Y_1 and Y_2 are individually within the acceptable bounds of error, the sum may exceed the threshold due to the covariance between the two. If the firm uses CAP disclosure to protect Y_1, it would only be responsible for cases when Y_2 alone exceeds its threshold.

although in theory the hypothesis pertains to these as well.

Our next hypothesis addresses whether the information in critical accounting disclosures provides incremental information. An extensive literature exists on the economic determinants of earnings multiples. Here, we investigate whether the *reliability* of accounting information (proxied by critical accounting designation) is related to the magnitude of the coefficients on earnings and book value. Suppose that prior to required CAP disclosure, investors could not adequately differentiate between reported earnings that were more reliable (i.e., not subject to critical accounting policies) and less reliable. The firms with less reliable earnings are then pooled with firms with more reliable earnings, and investors use an average earnings multiple. Consequently, the firms with less reliable accounting have higher than deserved multiples, while the firms with more reliable earnings would have a lower than deserved earnings multiple. If the disclosure of critical policies allows investors to differentiate (separate) along reliability, then subsequent to the disclosure requirement, we would expect the low reliability firms to have a decrease in their earnings multiple and the high reliability firms to have an increase in their earnings multiple. We also test for incremental informativeness using an event study, where we compare the market reaction around the first 10 - K filing that includes critical accounting policies with the market reaction to the earnings announcement immediately prior. If the information contained in the critical policy section is new, the market can separate firm types on the 10 - K filing date that it could not on the earnings announcement date; the unexpected number of critical policies will be related to the market reversal (i.e., returns) around the filing date. Specifically, firms with many critical policies will be more likely to experience a reversal of the reaction to earnings and firms with fewer critical policies are more likely to have a response consistent with the initial reaction.

Hypothesis 4a*: Pre-disclosure earnings multiples are higher (lower) than*

post-disclosure earnings multiples for firms that disclose more (fewer) critical accounting policies than expected.

Hypothesis 4b*: Firms with more critical policies than expected are more likely to have 10-K filing date returns that reverse earnings announcement date returns. Firms with fewer critical policies than expected are more likely to have 10-K filing date returns that confirm earnings announcement date returns.*

3 Sample Selection and Data

3.1 Creating the Dataset

We describe in detail the procedure for collecting and coding the data. Since this is the first large scale study of critical accounting policies, we provide several examples that illustrate both standard and non-standard disclosures, and provide rationale for our design choices.

The initial sample, collected in February of 2005, contains the (then) most recent, complete electronic 10-K (filed on Edgar) for all SEC registrants, or a starting sample of 5,983 firms.[6] We use a computerized information retrieval process to find and code the data. Information retrieval processes extract information from text using a list of preestablished keywords. To determine these keywords, we manually read several hundred critical accounting policy disclosures to determine commonalities across disclosures. We identify 25 accounting estimates (e.g., allowance for doubtful accounts or valuation of long-lived assets) and the key words which would pick up a related policy disclosure.[7] By combining

[6]Typically, the most recent 10-K filing as of February 2005 is a 2004 filing relating to a fiscal year of 2003.

[7]Of course there may be some redundancies in that impairment tests apply to both tangible and intangible assets.

expertise with computer aided search, we have the benefit of our knowledge of accounting standards and policies crossed with an objective and replicable coding approach. The resulting data set is large and more representative of the population than any data set we could collect by individually reading each disclosure, and less susceptible to judgment biases. Fully computerized text mining, which looks for patterns and trends in text, may have the advantage of correctly classifying some disclosures with less standard terminology (fewer Type II errors), but will suffer from increasing the number of policies incorrectly grouped together based on common language that is unrelated to the specific accounting standard (more Type I errors). For example, consider the following disclosures, both containing the terms *temporary* and *changes*:

> **DISCLOSURE #1**
> The Company regularly reviews its deferred tax assets for recoverability and establishes a valuation allowance based on historical taxable income, projected future taxable income, the expected timing of the reversals of existing *temporary* differences and the implementation of tax-planning strategies. If the Company is unable to generate sufficient future taxable income in certain tax jurisdictions, or if there is a material *change* in the actual effective tax rates or time period within which the underlying temporary differences become taxable or deductible, the Company could be required to increase its valuation allowance... [emphasis added]

> **DISCLOSURE #2**
> We make judgments about the recoverability of goodwill, purchased intangible assets and other long-lived assets whenever events or *changes* in circumstances indicate an other-than-*temporary* impairment in the remaining value of the assets recorded on our balance sheet. To judge the fair value of long-lived assets, we make various assumptions about the value of the business that the asset relates to and typically estimate future cash flows to be generated by the asset or, in the case of goodwill, the enterprise. ... [emphasis added]

Since temporary changes are cited in these and many other critical disclosures, this represents an instance where specific accounting knowledge refines the data coding process.

Specifically, we begin the computer-aided search by matching on a section within the Management Discussion and Analysis Section labeled "Critical Accounting Policies" or "Critical Accounting Estimates." There are 4,937 firms with critical accounting policy sections which are extracted and written to a file.[8] We code the critical accounting policy sections, using the taxonomy of disclosure categories and key words in the Appendix; rarely will we capture all related disclosures with a single set of key words. For example, consider the two excerpts below from disclosures related to the valuation of accounts receivable.

> **DISCLOSURE #1**
> Allowance for Doubtful Accounts. The Company evaluates the collectibility of accounts receivable based on numerous factors, including past transaction history with particular customers and their creditworthiness. Initially, the Company estimates an allowance for doubtful accounts as a percentage of net sales based on historical bad debt experience.

> **DISCLOSURE #2**
> Valuation of Receivables. We are subject to tenant defaults and bankruptcies at our office and retail properties that could affect the collection of outstanding receivables. In order to mitigate these risks, we perform credit review and analysis on all commercial tenants and significant leases before they are executed. We evaluate the collectibility of outstanding receivables and record allowances as appropriate.

A search on the string *allowance for doubtful accounts,* would identify disclosure #1, but not #2. For that reason, we extend the search to include the terms *valuation of receivables, accounts receivable, bad debt expense* and others. If the search process finds the key words associated with a specific policy (and/or account), we assign a one (i.e., the policy

[8]We conduct all of our analyses using the firms with critical sections. We may be systematically excluding firms that are not complying with the rules or firms that genuinely believe they do not have critical policies (i.e., they have an electronic 10-K, but no critical section). The latter is less likely, because firms can (and some do) include a critical accounting policy section and state "we do not have any critical policies." If non-compliance firms are systematically more (or less) likely to have particular policies be critical, excluding them would bias against finding differences in the firms we do include.

is critical) to an indicator for that policy; otherwise we assign a zero (i.e., the policy is not critical). We do not believe that coding errors (due to omissions in our key word lists or inclusions of unrelated disclosures) would be systematic and such errors will only reduce the likelihood that we find differences across groups of disclosers and non-disclosers.[9]

3.2 Descriptive Statistics

Table 1 provides descriptive statistics on the critical disclosures in our sample. We code for 25 possible critical policies; of those, the most common disclosures are revenue recognition, the valuation of receivables, marketable securities, inventory, long lived assets and intangible assets, leases, contingencies and income taxes. The median firm discloses 6 (of the 25 policies on which we search) as critical. The distribution around 6 disclosures appears fairly symmetric (but is, of course, censored below at zero).

Whether policies related to valuing current assets/liabilities or non-current assets/liabilities would be more likely to be disclosed is not clear. In favor of more disclosure for current accounts, the reversal of an estimation error is likely to take place sooner and cannot be spread over time. To protect against immediate surprises, firms might be more sensitive about current asset valuation. In favor of more disclosure for non-current accounts, there is likely to be more uncertainty, more judgment and more estimation required in determining their value. Table 1 suggests that both concerns affect disclosure decisions. That is, receivables and marketable securities have high frequencies of disclosure, but so do long term assets (impairments), contingencies and taxes. Critical policies related to valuation of accounts relate to the balance sheet *and* the income statement; failure to impair an asset sufficiently both affects the carrying value and overstates income in the impairment period.

[9] In our coding process, we classify a firm as a discloser or not. There may be different degrees of disclosure quality, but that is not the focus of this analysis.

The Securities and Exchange Commission (2002) proposal states that "[w]hile the number of critical accounting estimates will vary by company, we would expect... the vast majority of companies to have somewhere in the range of three to five critical accounting estimates. Investors, however, will not benefit from a lengthy discussion of a multitude of accounting estimates in which the truly critical ones are obscured." Panel B of Table 1 suggests that the number of CAP disclosures is higher than the SEC's expectations – the median number of critical policies is 6 and the mean is 6.46. It is possible that ambiguity in the proposal leads to increased disclosure to avoid the perception of non-compliance. Another possibility is that firms are trying to obscure the significant critical estimates in lengthy CAP sections, confirming the SEC's concerns. Finally, firms might take advantage of CAP disclosures to gain protection (to counterbalance the impact of CEO certification, for example) for potential inaccuracies in their financial statements.

Some accounting policies, like software capitalization and oil and gas accounting, apply only to a particular industry or industries. Other more general standards apply to all firms, but the uncertainty and judgment required in the application of the standard are industry specific. To evaluate the differential disclosure policies across industries, we provide disclosure frequencies by NAICS 2 digit code (for industries with at least 30 observations) in Table 2.[10] The by-industry analysis also gives us confidence in the coding process. The critical issue most disclosed by (the heavily regulated) utilities industry is regulatory accounting; the only industry which has a significant number oil and gas disclosures is the mining industry. Retailers tend to disclose inventory valuation while wholesalers disclose

[10]Most empirical analyses have utilized SIC classification codes. We use the new North American Industry Classification System (NAICS), which is an updated and preferred classification system. Specifically, the NAICS includes industries that did not exist when the SIC was developed (e.g., semiconductor, cellular/wireless telecommunications, internet publishing) and uses a production-oriented rather than an output-oriented approach to classify firms. The NAICS has 20 two-digit sectors (compared to 11 SIC sectors) but there is no mapping between the codes in the two systems.

valuation of receivables among their critical policies. Most industries include contingencies in their top 3 critical policies. Special purpose entities are disclosed most often in the construction (23) and finance and insurance (52) industries.[11]

In addition to disclosing critical accounting policies, Rule S7-16-02 proposes to require companies to present quantitative information about changes in its overall financial performance and, to the extent material, line items in the financial statements that would result if changes relating to a critical accounting estimate were assumed to occur. Few firms in our sample provide quantitative sensitivity analysis. Union Pacific Corporation provides a (rare) example of quantitative sensitivity disclosure:

> Various methods are used to estimate useful lives for each group of depreciable property. Due to the capital intensive nature of the business and the large base of depreciable assets, variances to those estimates could have a material effect on our Consolidated Financial Statements. If the estimated useful lives of all depreciable assets were increased by one year, annual depreciation expense would decrease by $36 million. If the estimated useful lives of all assets to be depreciated were decreased by one year, annual depreciation expense would increase by $39 million.

In the subsample (14% of our total sample) that mentions sensitivity, it is typically in a broad disclosure that suggests results might be materially affected if estimates are different from realizations or if alternate assumptions were adopted. For example, Pharmaceutical Formulations, Inc. writes:

> All such valuation methodologies, including the determination of subsequent amortization periods, involve significant judgments and estimates. Different assumptions and subsequent actual events could yield materially different results.

To decrease the possibility that controversial issues are hidden within the flexibility of GAAP, S7-16-02 proposes to require that firms disclose whether or not management

[11] Banks complained the most vocally about FIN 46, the interpretation on consolidating variable interest entities.

discussed with the audit committee the critical accounting estimates and their disclosure. In our sample, less than 10% of firms with critical accounting policy disclosures mention whether the CAPs have been discussed with the audit committee. Those that disclose use the same (or very similar) language as the examples provided in the proposed rule. For example, Trans Lux Corp. writes "Senior management has discussed the development and selection of these accounting estimates and the related disclosures with the audit committee of the Board of Directors." While we cannot provide conclusive evidence that firms *do not* discuss their critical policies with the audit committee based on the small fraction of firms that reveal they do, it does suggest that firms are complying more with the requirements to disclose the policies themselves than with the additional requirement to disclose whether the policies have been discussed with the audit committee.

In Table 3, we provide information about the relation between the total number of critical policy disclosures and firm characteristics that proxy for firm size, growth and complexity. Firms with many critical policies tend to be larger (e.g., the natural logarithm of assets, sales, and the market value of equity are increasing in number of policies), have more business and geographic segments, have greater institutional holding and higher analyst following. Although significant, the highest correlations are relatively low (20-25%), suggesting that firm complexity is not the only factor driving the variation in number of critical policies.

Panel A of Table 4 provides evidence on the relation between financial statement information and CAP disclosures.[12] Firms which disclose critical accounting policies related

[12]The table presents the cross sectional means of the individual firms' account balances and variance of the account balances for firms with a critical policy section. Where possible, we use a three-year account balance mean (from 2000-2002) and 10-year account balance variance (1993-2002); if the firm has fewer observations, we use as many as we have to compute the mean and variance. Specifications using different time aggregations of data or including firms with an electronic 10-K but no critical accounting policy section (i.e., all CAPs are coded with a zero) yield similar results.

to receivables, intangibles, inventory, and property and equipment have larger related accounts (as a percentage of total assets) on average.[13] For example, firms which disclose the valuation of receivables as a critical policy have, on average, 18.2% of their total assets invested in receivables, compared to 10.8% of assets invested in receivables for non-disclosers.[14] For pensions and deferred taxes, COMPUSTAT data on the related accounts is sparse. Consequently, we compare the expected return on pension plan assets for disclosers and non-disclosers. The higher the expected ROA, the higher the demands that are placed on the performance of those assets, and thus the greater the need for protection should results disappoint. Consistent with this, the expected return on assets is significantly higher (8.8% vs. 6.8%) in the subset of firms that classify pension accounting as a critical policy. For deferred taxes, we use a simple dummy variable where DTA=1 if there is a net deferred tax asset and zero if there is a net deferred tax liability. The subset of firms that discloses deferred taxes as critical is more likely to have a deferred tax asset (i.e., requiring a valuation allowance) than a deferred tax liability (0.015 instead of 0.013). With the exception of leases, accounts that are designated as critical generally have higher historical variance. The variance in receivables/total assets is 0.007 for critical disclosers and 0.004 for non-disclosers.[15] If disclosures are sticky, and a single observation is less likely to drive the general decision to disclose a policy as critical, we would expect a link between past data and critical policy designations.[16]

[13]Using alternative scaling variables does not change the nature of the results. We also conduct the analysis on an industry by industry basis, Means exhibit similar differences for disclosers and non-disclosers within industries.

[14]To insure that our conclusions are not driven by a small subset of firms without balances in the relevant accounts, we repeat the analyses with firms for which the observations are strictly positive.

[15]Since our sample is created from the critical accounting policy section, even if the firm does not disclose receivables, it will have other critical accounting disclosures.

[16]We do some additional analyses to determine whether the critical disclosure decision is related to the

The nature of accrual accounting requires the incorporation of future events into current financial reports. "Accruals can be viewed as a form of forecast about the future based on current and past events, and accrual accounting can be viewed as a cost-effective way of conveying expectations about future benefits or sacrifices" (Beaver 1991). Because the underlying distributions differ across firms, forecast errors, which are a necessary part of accrual accounting, will also differ across firms. To the extent that forecasting errors are more substantial when the accounting policy is critical, we would expect a link between expected accrual quality and disclosure of CAPs. Dechow and Dichev (2002) (hereafter DD) demonstrate the use of residuals from firm specific regressions of changes in working capital (ΔWC) on past, current and future operating cash flows (CFO) as a measure of accrual quality. Following their approach, we can compare the accrual quality of firms that disclose working capital as critical from those that do not. Whether the underlying process is genuinely difficult to determine without significant estimates and judgment or the account is used for earnings management, we would expect managers to seek critical accounting policy protection.

Table 5 presents descriptive statistics on the link between disclosure and accrual quality using the Dechow and Dichev (2002) model which captures the extent to which working capital accruals (WC) map into operating cash flow realizations (CFO). Their regression specification is

$$\Delta WC_t = b_0 + b_1 CFO_{t-1} + b_2 CFO_t + b_3 CFO_{t+1} + \varepsilon_t,$$

empirical distribution of the account balance. The findings there are generally weak. While the distribution of account balances is less positively skewed for firms that disclose the policy as critical, the empirical frequency with which account balances fall two standard deviations below their mean (using 2003 data) is not reliably lower for firms that disclose the policy as critical. We would expect the opposite if firms seek to protect (from litigation) extreme negative realizations.

and the metric for accrual quality is the inverse of the standard deviation of the residual of the regression. Higher values of the standard deviation indicate lower quality accruals because less of the variation in current accruals is explained by lagged, contemporaneous, and lead operating cash flow realizations.

We separate the firms into three groups, those that disclose neither inventory nor accounts receivable as critical ($NUMCAPS = 0$), one of the two as critical ($NUMCAPS = 1$), or both as critical.[17] The set of firms with neither critical disclosure have higher quality accruals (0.035) than firms which disclose both as critical (0.047). Flipping the tests (in Panel B), the firms with the highest accrual quality have a lower average number of critical disclosures (0.69) than the firms with the lowest accrual quality (1.14).[18] While the results are not strictly monotonic across the quintiles, quintiles 4 and 5, which represent the lowest accrual quality, have statistically significantly more critical disclosures on average than quintiles 1 and 2.[19]

[17] This is not indicative of the total number of critical policies, but rather focuses only on disclosures related to working capital accounts.

[18] At first blush, our findings might appear to contradict the conclusions of the Cho, et. al. (2004), who report that accrual quality relates positively to the quality of CAP disclosures. The analyses are different, however. Cho, et. al. (2004) rank the quality of CAPs for disclosing firms only, and then relate these quality rankings to accrual quality, whereas we compare the accrual quality of firms that disclose to the accrual quality of firms that do not. Our results for the firms without any critical disclosures (which Cho, et. al. (2004) would consider the lowest quality disclosers, based on a complete lack of disclosure) do have the lowest quality accruals. The Cho, et. al. (2004) results, then, are potentially consistent with ours.

[19] To ensure that our results are not simply picking up the relation between quality and industry, we exclude two industries which are overrepresented in two of the ARINV groups. Specifically, 59% (32%) of firms with ARINV=2 (=0) have an NAICS 2 digit code of 33 (52). The qualitative findings are unchanged when we exclude these two industries. Also, the correlations between accrual quality and the variance of accounts receivable and variance of inventory, respectively, are 0.28 and 0.10, both significantly positive but not high enough to suggest that the findings here are equivalent to those presented in table 4.

4 Tests and Results

Table 2 suggests that firms within an industry are likely to have (some) similar critical disclosures. Panel B of Table 4 presents the percentiles of the 3-year mean for each account balance variable. Although higher mean balances *are* associated with greater disclosure on average (Panel A), there are many firms with high account balances that do not disclose and firms with low account balances that do. For example, the top 10% of firms that *do not* disclose revenue recognition as critical have account balances that are larger than the balances of 75% of the firms that do disclose revenue recognition as critical. Similarly, the account balance of the bottom 10% of firms that disclose revenue recognition as critical have balances lower than the balances in over 50% of the firms that do not disclose revenue recognition as critical.

When industry practices, or historical means and variances do not seem to explain the current disclosure, we investigate whether properties of the *future* balances relate to current disclosure. To test Hypothesis 1, we first sort firms based on the magnitude and variability of the related account balance and then rank the industries on disclosure frequency for the policy. Then, we assess expected disclosure based on the historical mean and variance rank and the industry rank. That is, a firm is expected to disclose a policy as critical if either (i) its historical mean and variance of the related account are above the median or (ii) it is in an industry in which disclosure is common (top 5 of 23 industries). Similarly, a firm is not expected to disclose a policy as critical if either (i) its historical mean and variance of the related account are below the median or (ii) it is in an industry in which disclosure is uncommon (bottom 5 of 23 industries).[20]

Consider first the subsample with low historical mean and variance and uncommon

[20] Alternate specifications, using both firms above the 75th or below the 25th percentile are possible, but the subsamples become quite small.

industry practice. We test for differences in the probability that either the mean or variance will experience a relative increase in the post-disclosure period across those that disclose and those that do not. To do this, we rank the 3-year mean and 5-year variance of the account balances in the period 2002-2006. We assign a value of $BPOST_i = 1$ if either the mean or variance is in the *top* half of the distribution in the post-disclosure period. Panel A of Table 6 shows the percentage of firms with $BPOST_i = 1$ across the different disclosure decisions. In all cases but one, the mean or variance of the account balance is more likely to experience a relative increase (i.e., is in the top 50th percentile in the post disclosure period) if the firm disclosed the policy as critical. We can conclude that critical disclosures that are unexpected based on historical account balances are informative about future account balances. To see this in detail, consider the fourth column related to inventory in Panel A, Table 6. Given all firms in the subsample have historically low inventory and inventory variance, the firms that disclose inventory as critical are much more likely than those that do not (47.2% vs 8.2%) to have the magnitude and/or variance of the inventory experience relative increases in the subsequent period.

A symmetric analysis is done for the subsample of firms that is expected to disclose based on historical levels of their account balances and industry practices. We assign a value of $TPOST_i = 1$ if either the mean or variance is in the *bottom* half of the distribution in the post-disclosure period. Panel B of Table 6 shows that firms that do not disclose, despite high mean and variances in the recent past or membership in an industry likely to disclose are more likely to fall out of the top half in the post-disclosure period, although fewer differences are statistically significant. Again using the inventory column, 20.1% of the firms that did not disclose had relative decreases in their account balances (mean or variance) whereas 9.2% of the firms that did disclose experienced relative decreases.

Hypothesis 2 proposes firm characteristics that may contribute to the decision to clas-

sify an accounting policy as critical, beyond industry and account characteristics. To test hypothesis 2, we use individual critical accounting policy disclosures as the dependent variable, with independent variables corresponding to the litigation risk and capital market transactions hypotheses. We control for industry membership and the size and variability of the related accounts wherever possible. HM and HV represent the (**h**istorical) mean and variance calculated in the pre-disclosure period (using as many as 3 and 10 years respectively), and FM and FV are the (**f**uture) mean and variance calculated in the post-disclosure period (using as many as 3 and 5 years respectively). We estimate Equation 1 for each critical policy disclosure. Equation 1 includes industry fixed effects (I_d) and control variables for size (MVE), growth (EP), return on equity (ROE), analyst following (AF), institutional ownership ($INSTIT$), and the number of business and geographic segments ($NBSEG, NGSEG$).

$$\begin{aligned} Pr(CAP_i = 1) \quad = \quad & G\Bigg(\sum_d \alpha_d I_d + \beta_1 PROBLIT_i + \beta_2 FINAVG_i + \beta_3 HM_i + \beta_4 HV_i \\ & + \beta_5 FM_i + \beta_6 FV_i + \beta_7 MVE_i + \beta_8 EP_i + \beta_9 ROE_i \\ & + \beta_{10} AF_i + \beta_{11} INSTIT_i + \beta_{12} NBSEG_i + \beta_{13} NGSEG_i\Bigg) \end{aligned} \tag{1}$$

$CAP_i = 1$ if firm i discloses the policy under analysis as critical and zero otherwise, and $G(\cdot)$ is the normal cumulative distribution function. If the particular policy cannot be directly traced to a financial statement account, HM, HV, FM and FV are omitted. Examples of policies without traceable accounts include contingencies, where obligations are often deemed "inestimable" and warranties, in which liability or expense accounts are not disaggregated from other line items. $PROBLIT$ is a measure of the probability of litigation, estimated with a model whose explanatory variables include performance, volatility, lever-

age and financing measures.[21]

If a firm issues debt or equity in year t then $FINANCING_t$ is set to 1; if no debt or equity is issued in t, $FINANCING_t$=0. $FINAVG$ is then the firm's average financing activities over the three year period 2003-2005 (or $\frac{1}{3}\sum_{t=2003}^{2005} FINANCING_t$) to get a measure of the intensity of future financing. The higher the score, the more frequently the firm seeks financing in the post-disclosure period and the greater the expected disclosure. Although the litigation probability model uses financing, it is measured in the pre-disclosure period, in contrast to the variable $FINAVG$ which is measured in the post disclosure period.

Estimates of Equation 1 are in Table 7 where critical policies with traceable financial statement balances are in Panel A and critical policies without traceable balances are in Panel B.[22] Using table 7, a firm that discloses accounts receivable as critical has higher average litigation risk ($\beta_1 = 1.72$; positive and significant) and, on average, seeks financing more often in the post-disclosure period ($\beta_2 = 0.69$, positive and significant), as predicted by Hypothesis 2. Overall, the estimates provide strong evidence for Hypotheses 2a and

[21]The model is similar to that in Johnson, Kasznik, and Nelson (2001) and Field, et. al. (2005). Details of the variable construction and the model's estimation are presented in Appendix A.We also use a second measure of litigation, *LITFACTOR*, which is the principal component of three litigation risk measures, *SUED*, *HILIT* and *RESTATE*, each described below. Motivated by Rogers and Van Buskirk (2006) *SUED* is an indicator variable which is set to 1 if the firm has actually been sued. Following Francis, Schipper and Vincent (1994), *HILIT* is an indicator set equal to 1 if the firm is a member of an industry with a high incidence of litigation. Finally, *RESTATE* is an indicator equal to 1 if the firm is in an industry with a high incidence of restatement. Using the GAO restatement dataset, the industries with the highest percentage of firms restating (between 2.5% and 3%) are NAICS codes 44 (Retail Trade), 49 (Delivery and Warehousing),54 (Professional, Scientific, and Technical Services), 56 (Administrative and Support and Waste Management and Remediation Services), and 61 (Educational Services). Untabulated results are qualitatively similar. We use a common factor, rather than the individual measures because of the limitations of each indicator. First, Rogers and Van Buskirk (2006) do not find increased disclosure for firms that have had disclosure related litigation, reducing the probability that *SUED* captures disclosure incentives. Whether the industries used in Francis, Schipper and Vincent (1994) are currently perceived to be among the highest litigation industries is unclear, raising questions about *HILIT*. Finally, because of the low number of restatements relative to the population, a single restatement may significantly affect the percentage of firms in the industry restating, making *RESTATE* non-representative.

[22]Coefficient estimates on the control variables are untabulated.

somewhat weaker evidence for 2b. The coefficient β_1 is positive and significant for almost all (12 of 14) critical policies, after controlling for industry effects and account means and variances. On the other hand, while β_2 is directionally consistent with hypothesis 2b, it is significant in only 5 of 14 cases. We note that *PROBLIT* and *FINAVG* are significantly correlated; the coefficient on *FINAVG* is positive and significant for nearly all critical policies when *PROBLIT* is excluded from Equation 1 and χ^2 tests of joint significance indicate that both variables together have explanatory power.

Figure 1 links firms' *overall* disclosure practices to litigation risk and future financing. Using the total number of critical policies as a proxy for disclosure quality, it shows that the number of critical policy disclosures is increasing in litigation risk and financing plans.[23]

After controlling for the industry and current magnitude and variability of accounts, evidence from Hypothesis 1 suggests that critical classifications are related to future account characteristics and firm specific characteristics. We test whether the interaction between accounts is another factor in determining which accounts to classify as critical. Hypothesis 3 addresses the joint disclosure decision when accounts interact additively. Based on the common critical disclosures (Table 1), we can use inventory and accounts receivable (as they are summed in the calculation of current assets) for a balance sheet version of the model. An income statement model is difficult (or impossible) to test because there are rarely individual identifiable line items on the income statement related to CAPs. Many of the critical disclosures directly related to the income statement pertain to expenses such as sales rebates and returns that typically are aggregated with other expenses on the income statement. Other critical disclosures pertain to hypothetical costs such as contingencies or impairments.

[23]For significance tests, we run an ordered logistic model with *NUMCAPS* as the dependent variable, and *PROBLIT* and *FINAVG* and the dependent variables; both coefficients are positive and significant (*p*-values ¡ 0.001).

Controlling for the other factors related to disclosure already identified, we estimate a model in which the covariance between accounts relates to the number of critical accounting policies (Hypothesis 3, also called the "joint designation hypothesis"). We define *DARINV* as the disclosure decision with respect to accounts receivable and inventory, where *DARINV* takes on a value of zero if neither is disclosed, and a value of 1 if receivables and/or inventory is disclosed.[24] *DARINV* is then the dependent variable in the probit model described by equation 2

$$\begin{aligned} DARINV_i &= G\left(\sum_d \alpha_d I_{i,d} + \beta_1 COV_i + \beta_2 HMAR_i + \beta_3 HMINV_i + \beta_4 HVAR_i + \beta_5 HVINV_i \right. \\ &\quad \left. + \beta_6 FMAR_i + \beta_7 FMINV_i + \beta_8 FVAR_i + \beta_9 FVINV_i\right) \end{aligned} \tag{2}$$

where $G(\cdot)$ is the c.d.f. of the normal distribution, *HMAR* (*HMINV*) is the historical mean of Accounts Receivable (Inventory), $FMAR$ ($FMINV$) are the future means of the same, *HVAR* (*HVINV*) is the historical variance of Accounts Receivable (Inventory), and *COV* is the covariance between receivables and inventory. An industry specific coefficient is included, where I_d is equal to 1 if the firm is in industry d and zero otherwise. We present the parameter estimates of equation 2 in Panel A of Table 8, under Model (1a). The positive and significant coefficient on β_1 (17.97, *p-value*=0.01) offers some evidence of the role that the *interaction* between accounts plays in the disclosure decision. Model (1b) adds to equation 2 additional control variables. The estimate on covariance is 27.97, still positive and significant.

An alternative explanation for the relation between the covariance of accounts and their critical designation is that if an account is genuinely critical and another account covaries

[24]Designating at least one of the two accounts would presumably preclude the possibility that a low realization of current assets would trigger investor action.

with it significantly, it too is more likely to be critical. While we cannot entirely rule out this possibility, we note the differences in predictions of these two models, and perform tests to distinguish which seems more descriptive. If covariance simply indicates similarity in criticality of accounts, then large covariances (whether positive or negative) would lead both accounts to be designated as critical. In contrast, under the joint designation hypothesis, large negative covariances lead to lower total variance, and therefore fewer critical policies are predicted the more negative the covariance. Model (2) of Table 8 is estimated for the subsample of firms with negative covariance only; the parameter estimate on covariance (*COV*) is 83.43, positive and significant. Under the competing theory that covariance itself suggests a similarity in required estimates and judgement, there would be no expected difference in the covariance of groups of firms that disclose zero versus one critical accounting estimate. Panel B of Table 8 shows the group means of *COV* for firms that designate 0, 1 and 2 CAPs. The mean is monotonically increasing and the difference between zero and one is significant.

Hypothesis 4 is designed to investigate whether CAPs provide new information. First, we estimate an "expected" number of critical accounting policies for each firm. Equation 3 presents a simple model which includes industry fixed effects, proxies for size (the log of the market value of equity, *MVE*), growth (book to market, *BTM*), performance (return on equity, *ROE*) and risk (frequency of negative earnings in the pre-disclosure period, *NEGEPS*).

$$NUMCAPS_i = \sum_d \alpha_d I_{i,d} + \beta_1 MVE_i + \beta_2 BTM_i + \beta_3 ROE_i + \beta_4 NEGEPS_i \qquad (3)$$

The R^2 of the model is 88.69%. The industries with the highest number of expected critical policies are information (51), manufacturing (including metal, paper, electronics, and vehi-

cles) (33) and warehousing (49). The industries with the fewest expected critical accounting policies are real estate (53), arts, entertainment, and recreation (71), and transportation (48). Coefficient estimates are provided in Table 9. The coefficients on MVE and BTM are both positive and significant (0.48 and 0.45); the coefficients on ROE and $NEGEPS$ are both negative and significant (-0.03 and -0.45). Although we might expect firms with negative earnings to be riskier, we observe a negative coefficient on $NEGEPS$. This is consistent with a decision to disclose policies as critical only when financial reporting has not already revealed their risk. We also estimate a model of critical policies using control variables suggested by our earlier analyses. Data requirements for the additional explanatory variables leads to a significant (75%) reduction in our sample size.[25] Given the high explanatory power of equation 3 and loss of observations due to data availability, we utilize the parsimonious model throughout the remainder of the paper to predict $NUMCAPS$.

Using the estimated coefficients we get an expected disclosure, and define $UNEXP$ as the difference between actual and predicted CAPs. We classify firms into groups based on their disclosure surprise. Firms with more critical policies than expected ($UNEXP > 1.5$) are classified as high surprise firms ($HIGH$) and firms fewer CAPs than predicted ($UNEXP < -1.5$) are low surprise firms (LOW). Firms within one disclosure of the expected number make up the no surprise group (NO). For these tests, we are left with 993 firms classified as LOW, 1650 classified as NO and 964 classified as $HIGH$.

For Hypothesis 4a, we estimate the regressions described by equations 4 and 5 below, where coefficients vary for the six possible combinations: pre- and post-disclosure, and high, low and no surprise.

$$P_{it} = \alpha + \beta_1 EPS_{it} + \beta_2 BV_{it} + \beta_3 GROWTH_{it} \quad (4)$$

[25] For completeness, the coefficient estimates of both models are presented in Table 9.

$$P_{it} = \alpha + b_1 OPINC_{it} + b_2 NOPINC_{it} + b_3 CURASS_{it} + b_4 LTASS_{it} + b_5 CURLIAB_{it} + b_6 LTLIAB_{it} + b_7 GROWTH_{it} \quad (5)$$

Equation 4, estimates simple earnings (*EPS*) and book value (*BV*) multiples. The pre-CAP period is 1996-2000 and the post CAP period is 2003-2006 (see Figure 2). Our hypothesis predicts that the earnings multiple (β_1) will be lower in the post-disclosure period than it was in the pre-disclosure period for the high surprise firms, and higher in the post-disclosure period than in the pre-disclosure period for the low surprise firms. Francis and Schipper (1999) find an upward trend in the explanatory power of book value and earnings for market values. To control for such trends in the data, we test the difference in differences of the coefficients, using the no surprise group as the benchmark. We estimate Equation 4 with controls for growth ($\Delta Sales$).[26] Equation 5 allows for differences in the operating and non-operating components of earnings as well as the asset (*CURASS*=current assets, *LTASS*=long-term assets) and liabilities (*CURLIAB*=current liabilities, *LTLIAB*=long-term liabilities) components of book value. Because non-operating income is likely to be harder to estimate, we predict that the high surprise firms will experience a relatively larger decline in their non-operating earnings multiple whereas the low surprise firms will experience a relatively larger increase from the pre- to post-disclosure period.

Table 10 presents the results on changes in coefficients for the variables of interest. Firms with more disclosures than expected (*HIGH*), have a decrease in their valuation multiple on earnings of 0.24 (from 3.19 in the pre-disclosure period to 2.95 in the post-disclosure period). In contrast, the benchmark increase in the period is 0.39 (the no-surprise group has an earnings multiple of 3.48 in the pre-disclosure period and 3.87 in

[26] We report the results using the change in sales, but also estimate the model using lagged book to price (*BP*) and lagged earnings to price (*EP*). Results are unchanged.

the post-disclosure period). This suggests that the market values earnings of firms with a high surprise at a relatively lower multiple in the post-disclosure period than it does firms with no surprise (or a difference in differences of 0.63, which is statistically significant, *p*-value=0.00). Our hypothesis also predicts that the valuation multiple on the group of firms with fewer than expected disclosures should increase relative to the benchmark. While there is an increase from the pre- to post- disclosure period (from 3.60 to 4.36, or 0.76), it is not statistically significantly larger than the increase of 0.39 in the no surprise group (*p*-value=0.13). One possible explanation for the lack of significance is that fewer than expected disclosures may be interpreted as either firms with (i) genuinely less risk or (ii) weak/inadequate disclosure practices. To the extent both types are pooled together, it may prevent us from finding the expected valuation reward (i.e., relative multiple increase) for the group with fewer disclosures than expected. While the multiple on earnings decreases for the high surprise group relative to the no surprise group, the multiple on book value increases (0.87 to 1.20 vs. 0.80 to 1.03). Analogously, the multiple on book value decreases for the low surprise group relative to the no surprise group (0.79 to 0.86 vs. 0.80 to 1.03).

Turning to the disaggregated model, the overall decrease in the earnings multiple for the high surprise firms can be attributed to a relatively larger decrease on the *non-operating* income multiple (from 1.15 to 0.29 for high surprise firms as compared to a decrease from 0.70 to 0.49 for low surprise firms). There is an increase on the non-operating earnings multiple for low surprise firms (0.23 to 0.54) compared to the decrease for the no surprise group. The difference, however, is not significant. This is consistent with non-operating income generally requiring estimates that are the least reliable. The post-disclosure period is characterized by an *operating* income multiple increase for all firms.

While our findings seem to confirm Hypothesis 4a, the model may not be well specified. In the pre-disclosure and post-disclosure periods, the coefficient on book value is signif-

icantly different from 1 (with a single exception). Consequently, we seek additional evidence that there is "incremental" value to CAP disclosures. Specifically, we test whether, on average, the sign and magnitude of the three-day 10-K filing period returns, relative to the three day earnings announcement returns, are related to the critical policy *news*. If the information contained in the CAP disclosure is new, investors will use it to update their beliefs about level of uncertainty in the estimates underlying the financial statements. All else equal, investors should dampen their reaction to the financial information for firms that disclose more CAPs than expected, leading to a larger reversal of the price change that occurred at the earnings announcement date. We include Li's (2008) change in risk sentiment metric (ΔRS) as a control variable to ensure that reactions cannot be attributed to other disclosures in the 10-K. The risk sentiment is the frequency of risk related words in the MD&A section, and the change in risk sentiment is the difference in risk related words from one year to the next. Li (2008) shows that *changes* in risk sentiment are generally associated with *future* realizations, rather than risk *per se*. The basic model we estimate is

$$R_i^{FD} = \alpha + \beta_1 SIGN(R^{EA})_i + \beta_2 |R_i^{EA}| + \beta_3 \Delta RS_i \quad (6)$$

where $SIGN(R^{EA})$ is the sign and $|R^{EA}|$ is the unsigned magnitude of earnings announcement date returns. The regression is pooled, with coefficients of Equation 6 varying across surprise. As before a firm has a high (low) [no] surprise if its actual number of critical policies exceeds (is fewer than) [is within 1 of] its predicted number. Hypothesis 4b predicts reversals of the initial earnings announcement reaction (and thus a negative coefficient on β_1) for firms with more CAPs than expected ($HIGH$=1) and a confirmation of the reaction (a positive coefficient on β_1) for firms with fewer CAPs than expected. The results

are presented in Table 11.[27] The results from the estimation of Equation 6 are consistent with the predictions and the F-values of the model are significant at the 0.05 level. For firms with more CAPs than expected, $\beta_1 = -0.12$ (p-value=0.25), for firms with no surprise, $\beta_1 = 0.08$ (p-value=0.10) and for firms with fewer CAPs than expected, $\beta_1 = 0.24$ (p-value=0.03). Although the coefficients are not individually significant for the *HIGH* and *NO* surprise groups, an F-test rejects the equality of the coefficients across these two groups. The coefficients on change in risk sentiment are insignificant for the groups with high and low surprises. This is also consistent with Li (2008) which finds that the market does not seem to react to the information (about the future) contained in the change in risk sentiment. The significance for the no surprise groups suggests a possible substitution effect between CAPs and other risk discussions. When the number of critical policies is not unexpected, but the firm provides additional risk discussions, filing returns will be associated with this alternative risk disclosure. These tests provide evidence that the market reacts on the filing date to information contained in the critical accounting policy section.

In summary, we find that critical policy disclosures are generally consistent with existing financial information, but also provide new information, particularly when there are more disclosures than expected. Managers seem to be mindful of the general information interests of the firm and the overall disclosure strategy when determining CAP disclosures.

5 Conclusion

The main contribution of our paper is that we construct the first large database of critical accounting policy disclosures and provide both descriptive statistics and analysis of the forces

[27] We also include in Table 11 estimates for models which include analyst forecasts and institutional holding as control variables. The sample size is (approximately) halved and the coefficients are qualitatively similar).

that drive the decision to designate an accounting policy as critical. We identify 25 different critical policies, the most common of which are marketable securities, asset impairment, and revenue recognition. As part of the regulatory process, the SEC asks for comments on its proposals before creating a final rule. Typically, there is insufficient information on which to base conclusions, and the written comments reflect opinion or conjecture. In this case, because of the initial cautionary advice, and the long lag between proposal and final rule, we can provide direct evidence on the questions raised in the proposal. For example, the proposal asks: "How many accounting estimates would a company typically identify as critical accounting estimates under the proposed definition?" The firms in our sample disclose between 0 and 17 critical accounting policies, with a median of 6.

The SEC seeks comments on whether the definition is "appropriately designed to identify the accounting estimates that require management to use significant judgment or that are the most uncertain." The incidence of a balance sheet account being designated as critical is positively related both to its relative size and its variability. We interpret the former as the materiality of the account and the latter as its inherent uncertainty. Additionally, the likelihood that firms designate accounts receivable and/or inventory as critical is positively related to the firms' Dechow and Dichev (2002) measure of accrual quality. Our analysis shows that the decision to disclose a policy as critical is associated with the current and future magnitude and variance of the account, and after controlling for these and industry membership, the firm's litigation risk and future financing plans.

The covariance between accounts receivable and inventory is also positively related to the incidence of their disclosure, suggesting that the number of critical policies depends on the interrelatedness of accounts. That is, our evidence suggests that firms are sensitive to the realization of aggregations of accounts, and not just individual realizations. As far as we know, this more "strategic" aspect of critical policy disclosures has not been a concern

of the SEC but our results suggest that it must be recognized and addressed.

The SEC asks: "Would additional information elicited by the proposals would be useful to investors and other users of company disclosure?" We provide evidence that the market places a lower weight on earnings for firms with many CAPs in comparison with the weights that existed prior to the SEC recommendation to disclose CAPs. We argue that this lower weighting is consistent with CAPs providing incremental information to investors about the uncertainty underlying the realization of earnings. Additionally, we find that the market seems to react to critical accounting policy news. When the number of policies is greater than expected, returns around the filing date are more likely to reverse (i.e., be in the opposite direction of) returns around the earnings announcement immediately prior. When the number of policies is fewer than expected, returns around the filing date confirm (i.e., are in the same direction as) the earnings announcement date returns.

Taken together, our results provide quantitative responses to the inquiries made in the SEC proposal, as well as insights into the use of the critical accounting policy section as a means of (i) providing information and (ii) providing safe harbor protection for information.

Appendix

We estimate the *ex ante* litigation risk of the firm using Equation 7

$$\begin{aligned} Pr(litigation_i = 1) \;=\; & G(\alpha + \beta_1 MVE_i + \beta_2 Beta_i + \beta_3 Return_i + \beta_4 Skewness + \\ & \beta_5 Turnover_i + \beta_6 Leverage_i + \beta_7 Financing_i), \end{aligned} \tag{7}$$

where $litigation$=1 if the Securities Class Action Clearinghouse listed the firm as a defendant in a class action lawsuit in either 2001 or 2002 and zero otherwise. The model is estimated with 187 "sued" firms and 2,570 firms that were not involved in a suit. MVE is the market value of equity, determined on the first day of 2001, *Beta* is the slope coefficient from a model regressing daily returns on the equal weighted market index in the calendar year 2001, *Skewness* is the skewness of daily raw returns in calendar year 2001, *Turnover* is $[1-(1-Turn)^{252}]$ where $Turn$ is the average of daily trading volume divided by shares outstanding and 252 is the number of trading days in 2001, *Leverage* is measured as Debt/Equity at the beginning of 2001, and $Financing$ is a dummy variable equal to 1 if the firm issued debt or equity in 2001-2002. Parameter estimates are in Table 12.

Table 13 presents the classification scheme for coding critical accounting policy disclosures.

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Table 1: Descriptive Statistics

Panel A: Disclosure Decisions, by Disclosure

Critical Policy	# Disclosing	% Disclosing
Accounts Receivable (RECEIVE)	2,508	50.80%
Asset Impairment (IMPAIR)	2,867	58.07%
Asset Retirement Obligations (RETIRE)	268	5.42%
Compensation (COMP)	1,459	29.55%
Consolidation (CONSOL)	294	5.95%
Contingencies (CONTING)	3,254	65.91%
Contractual arrangements (CONTRACT)	182	3.68%
Depreciation of Long-Lived Assets (DEPREC)	1179	23.88%
Hedging (HEDGE)	673	13.63%
Intangible Assets (INTANG)	2,659	53.85%
Inventory (INVENT)	1,381	27.97%
Leasing (LEASE)	1,529	30.97%
Loss Reserves (LOSSRES)	1,223	24.77%
Marketable Securities (MKTSEC)	3,313	67.10%
Oil and Gas (OAG)	169	3.42%
Pension and Post Retirement Benefits (PENSION)	857	17.35%
Regulatory Accounting (REGULATE)	658	13.32%
Restructuring (RESTRUCT)	361	7.31%
Revenue Recognition (REVREC)	2,727	55.23%
Sales Returns and Rebates (RETREB)	570	11.54%
Software (SOFTWARE)	271	5.48%
Special Purpose Entities (SPE)	42	0.85%
Taxes (TAXES)	2,722	55.13%
Warranties (WARRANT)	733	14.84%

This table presents descriptive statistics for all firms with (i) a machine readable, electronic 10-K filing and (ii) a critical accounting policy section. N=4,937

Panel B: Disclosure Decisions, by Number of Disclosures

TOTAL CAPS (of 25)	# Firms	TOTAL CAPS (of 25)	# Firms
0	1,090/44†	9	473
1	160	10	326
2	230	11	192
3	362	12	122
4	504	13	57
5	529	14	18
6	680	15	11
7	665	16	2
8	560	17	2

† Of the 1090 firms with 0 disclosures, 44 have an identifiable CAP section in their 10-K.
Including firms with no CAP section: Median = 6; Mean =5.33; Total sample size: 5,984.
Excluding firms with no CAP section: Median = 6; Mean =6.46; Total sample size: 4,937.

Table 2: Top 3 Critical Disclosures, by Industry

NAICS	INDUSTRY TITLE	AVG # CAPs	MOST FREQUENTLY DISCLOSED 1st	2nd	3rd
21	Mining	7.47	MKTSEC	DEPREC	TAXES
	N=118		0.75	0.75	0.69
22	Utilities	7.73	REGULAT	MKTSEC	PENSION
	N=105		0.88	0.82	0.77
23	Construction	6.33	CONTING	MKTSEC	REVREC
	N=48		0.79	0.75	0.71
31	Manufacturing	6.78	RECEIVE	TAXES	CONTING
	N=135		0.72	0.70	0.67
32	Manufacturing	6.21	MKTSEC	CONTING	REVREC
	N=447		0.66	0.65	0.65
33	Manufacturing	7.74	REVREC	CONTING	RECEIVE
	N=988		0.74	0.74	0.74
42	Wholesale Trade	7.20	RECEIVE	CONTING	INTANG
	N=142		0.82	0.72	0.72
44	Retail Trade	6.73	CONTING	IMPAIR	MKTSEC
	N=108		0.80	0.75	0.62
45	Retail Trade	6.65	CONTING	INVENT	IMPAIR
	N=75		0.73	0.68	0.67
48	Transportation	6.46	CONTING	IMPAIR	MKTSEC
	N=89		0.85	0.67	0.64
51	Information	7.61	REVREC	MKTSEC	INTANG
	N=470		0.85	0.80	0.77
52	Finance/Insurance	4.84	MKTSEC	LOSSRES	CONTING
	N=570		0.71	0.63	0.53
53	Real Estate/Leasing	5.70	MKTSEC	CONTING	REVREC
	N=76		0.67	0.66	0.55
54	Professional/Scientific	6.84	REVREC	MKTSEC	RECEIVE
	N=214		0.90	0.72	0.72
56	Administrative/Support	6.92	CONTING	INTANG	RECEIVE
	N=100		0.76	0.76	0.75
62	Health Care	6.45	RECEIVE	CONTING	INTANG
	N=85		0.85	0.76	0.75
72	Accommodations/Food Services	6.25	IMPAIR	CONTING	MKTSEC
	N=85		0.89	0.81	0.68

Industry titles based on 2-digit NAICS code. Table includes industries in sample with at least 30 members. Values show percent of firms within the industry reporting the policy as critical.

Table 3: Critical Accounting Policies and Firm Characteristics

Variable	Number of Critical Accounting Policies						
	1-2	3-4	5-6	7-8	9-10	$\geq$11	ρ
ln(Assets)	5.11	5.13	5.46	5.68	6.07	6.45	0.20
ln(Sales)	3.92	4.23	4.94	5.33	5.72	6.17	0.30
ln(MVE)	4.32	4.58	4.98	5.35	5.83	6.35	0.26
Book to Market (BTM)	0.86	0.82	0.82	0.80	0.74	0.62	-0.06
Net Income	16.30	20.30	35.82	44.08	46.60	63.85	0.07
LT Debt/Total Assets	0.18	0.16	0.20	0.21	0.19	0.20	0.04
Return on Equity (ROE)	-0.10	-0.13	-0.06	-0.06	-0.02	0.03	0.07
Price/Earnings	5.18	4.34	9.15	10.76	12.15	12.96	0.07
Business Segments	1.64	1.85	2.03	2.18	2.36	2.61	0.16
Geographic Segments	1.38	1.78	2.17	2.51	2.86	3.25	0.26
Analyst Following	1.81	1.95	2.75	3.44	4.16	5.01	0.17
Insiders	20.65	20.87	19.24	17.95	15.44	13.71	-0.11
Institutional Holding	47.77	53.46	63.25	66.73	71.76	76.18	0.23

Values in this table are the means, by number of critical policies, of size related variables. The first three size variables are the natural logarithm of assets, sales and the market value of equity. BTM is the accounting book value of equity divided by the market value of equity, ROE is measured as net income divided by total shareholders' equity. Analyst following is the 4-quarter average number of analysts' following the firm in 2001. Insiders and institutions are the percentage of the firm held by each type of market participant, respectively. Correlations of the size variable with the number of critical policies are given in the last column.

Table 4: Balance Sheet Account Magnitudes and Variability

Panel A: Difference in Account Means and Variances: Disclosure vs. Non-Disclosure

CAP; [*Variable*]	*CRIT*	*MEAN*	*VARIANCE*	*CAP*; [*Variable*]	*CRIT*	*MEAN*	*VARIANCE*
ACCTS REC;	0	0.108	0.004	DEPRECIATION;	0	0.227	0.007
$[REC/TA]$	1	0.182	0.007	$[PPE/TA]$	1	0.415	0.010
N = 1350:2131	Diff (0-1)	(0.00)	(0.00)	N = 2613:735	Diff (0-1)	(0.00)	(0.00)
INTANGIBLES;	0	0.033	0.003	INVENTORY;	0	0.057	0.002
$[INT/TA]$	1	0.171	0.011	$[INV/TA]$	1	0.200	0.004
N = 1515:2045	Diff (0-1)	(0.00)	(0.00)	N = 2628:1271	Diff (0-1)	(0.00)	(0.00)
LEASES;	0	0.145	1.400	MKT SECURITIES;	0	0.338	0.016
$[Lease/LTD]$	1	0.179	0.144	$[MKTSEC/TA]$	1	0.349	0.015
N = 2109:974	Diff (0-1)	(0.05)	(0.16)	N = 1110:2211	Diff (0-1)	(0.12)	(0.22)
PENSION;	0	6.814	0.686	REVENUE REC;	0	0.135	0.003
$[ExpROA]$	1	8.825	0.325	$[REC/TA]$	1	0.169	0.007
N = 400:610	Diff (0-1)	(0.00)	(0.02)	N = 1119:2227	Diff (0-1)	(0.00)	(0.00)
TAXES ;	0	0.013	0.000				
$[DTA = 0]$	1	0.015	0.000				
N = 1595:2364	Diff (0-1)	(0.02)	(0.29)				

Variable Definitions: *CAP*= Critical Accounting Policy, *Variable*= Account linked to *CAP*; *CRIT*= 1 if critical; 0 otherwise; *REC*= Accounts Receivable; *TA*= Total Assets; *PPE* = Net Property Plant and Equipment; *INT*= Intangibles; *INV*= Inventory; *LTD*= Long term debt; *DTA*=0 if deferred tax asset and 1 otherwise; *Lease*= Lease Obligations; *ExpROA*= Expected return on plan assets; *MKTSEC*= Marketable Securities. Numbers presented are the group means of the individual firm 3-year means (*MEAN*) measured over the period 1999-2001 and 10-year variance (*VARIANCE*) measured over the period 1992-2001. Values in parentheses are p-values for differences in means. Number of observations in each subgroup given as 0:1 below the variable definition.

Panel B: Percentiles of 3-Year Means and 10-Year Variances

		MEAN					VARIANCE				
		10%	25%	50%	75%	90%	10%	25%	50%	75%	90%
ACCTS REC	0	0.008	0.029	0.076	0.158	0.243	0.000	0.000	0.001	0.003	0.010
	1	0.044	0.090	0.165	0.244	0.341	0.000	0.001	0.002	0.007	0.017
DEPRECIATION	0	0.041	0.080	0.161	0.315	0.532	0.000	0.001	0.002	0.007	0.017
	1	0.088	0.185	0.381	0.642	0.803	0.000	0.001	0.003	0.011	0.023
INTANGIBLES	0	0.000	0.000	0.000	0.023	0.101	0.000	0.000	0.000	0.001	0.006
	1	0.003	0.036	0.119	0.257	0.422	0.000	0.000	0.003	0.011	0.031
INVENTORY	0	0.000	0.000	0.006	0.057	0.187	0.000	0.000	0.000	0.001	0.004
	1	0.043	0.097	0.171	0.277	0.394	0.000	0.001	0.002	0.005	0.011
LEASES	0	0.000	0.000	0.000	0.052	0.685	0.000	0.000	0.000	0.017	0.200
	1	0.000	0.000	0.000	0.107	0.713	0.000	0.000	0.000	0.068	0.228
MKT SECURITIES	0	0.025	0.070	0.262	0.577	0.813	0.001	0.003	0.013	0.035	0.067
	1	0.034	0.093	0.278	0.617	0.838	0.001	0.004	0.014	0.038	0.071
PENSION	0	0.000	6.967	8.000	9.000	9.500	0.000	0.000	0.000	0.125	0.443
	1	8.000	8.500	9.000	9.500	10.000	0.000	0.000	0.058	0.215	0.516
REVENUE REC	0	0.015	0.046	0.108	0.188	0.284	0.000	0.000	0.001	0.002	0.007
	1	0.028	0.071	0.149	0.235	0.333	0.000	0.001	0.002	0.008	0.018
TAXES	0	0.000	0.000	0.000	0.009	0.046	0.000	0.000	0.000	0.000	0.000
	1	0.000	0.000	0.000	0.016	0.050	0.000	0.000	0.000	0.000	0.001

This table examines the distribution of the variables (defined in Panel A) linked to critical policies. Values in the table are the 10, 25, 50, 75, and 90th percentiles for the 3-year historical mean and 10-year historical variance.

Table 5: Accrual Quality and CAP Disclosure Tests

Panel A: Receivable and Inventory Disclosures and Accrual Quality

NCAPS	Average *sresid*	Std.dev *sresid*	$\lvert\Delta WC_t\rvert$	N
0	0.035	0.032	0.047	732
1	0.040	0.031	0.055	967
2	0.047	0.032	0.063	775
Diff	0-1	1-2	0-2	
	-0.005	-0.006	-0.011	
	(-3.05)	(-4.25)	(-6.74)	

Panel B: Accrual Quality Quintiles and CAP Disclosures

Quintile	*sresid*	$\lvert\Delta WC_t\rvert$	%*AR*	%*INV*	*AR* + *INV*	*N*
1	0.011	0.025	0.482	0.206	0.688	494
2	0.020	0.037	0.590	0.408	0.998	495
3	0.031	0.047	0.632	0.461	1.093	495
4	0.048	0.065	0.687	0.479	1.166	495
5	0.094	0.100	0.671	0.471	1.141	495
Diff	1-4	1-5	2-4	2-5		
	-0.477	-0.453	-0.168	-0.143		
	(-10.14)	(-9.53)	(-3.44)	(-2.91)		

This table links critical accounting disclosures to the Dechow-Dichev measure of accrual quality. The variable *sresid* takes the standard deviation of the residuals from a regression of the changes in working capital (ΔWC) on lag, current and lead cash flows. $NCAPS = 0$ ($NCAPS = 1$) (($NCAPS = 2$)) if neither (one) ((both)) receivables and/or inventory is critical; %*AR* and %*INV* are the percentage of firms disclosing as critical receivables and inventory, respectively; $AR + INV$ sums these two percentages. Panel A ranks the firms on number of critical policies and compares *sresid* across the (three) groups. Panel B ranks the firms into quartiles based on *sresid* and compares the number of critical policies across the groups. T-statistics for differences in group means in parentheses.

Table 6: Subsequent Mean and Variances of Account Balances

Panel A: Low historical mean AND variance: No Disclosure Expected

	CRIT	RECEIVE	DEPREC	INTANG	INVENT	LEASES	PENSION	REVREC	MKTSEC
BPOST	0	0.202	0.288	0.118	0.082	0.666	0.042	0.155	0.251
	1	0.286	0.281	0.445	0.472	0.708	0.573	0.248	0.213
	p-value	(0.00)	(0.88)	(0.00)	(0.00)	(0.10)	(0.00)	(0.00)	(0.09)

Panel B: High historical mean AND variance: Disclosure Expected

	CRIT	RECEIVE	DEPREC	INTANG	INVENT	LEASES	PENSION	REVREC	MKTSEC
TPOST	0	0.279	0.351	0.820	0.201	0.388	0.523	0.344	0.477
	1	0.311	0.299	0.340	0.092	0.330	0.353	0.296	0.500
	p-value	(0.35)	(0.15)	(0.00)	(0.00)	(0.04)	(0.05)	(0.17)	(0.46)

This table presents results on the **future** mean and variance of account balances for firms across CAP disclosures. Panel A is the subsample of firms with **both** mean **and** variance in the pre-disclosure period in the bottom half of the distribution or membership in an industry in which disclosure is common (5 industries with highest percentage of firms disclosing). $BPOST = 1$ if subsequent (post-disclosure) mean **or** variance in the top half, otherwise $BPOST = 0$. Panel B is the subsample of firms with **both** mean **and** variance in the pre-disclosure period in the top half of the distribution or membership in an industry in which disclosure is uncommon (5 industries with lowest percentage of firms disclosing). $TPOST = 1$ if subsequent (post-disclosure) mean **or** variance in the bottom half, otherwise $TPOST = 0$. Values in parentheses provide *p*-values on difference in means.

Table 7: Probit Analysis of CAPs for Voluntary Disclosure Drivers

Panel A: CAPs *With* Traceable Financial Statement Accounts

	RECEIVE	DEPREC	INTANG	INVENT	LEASES
PROBLIT	1.72	-0.34	2.87	2.12	3.14
	(0.00)	(0.60)	(0.00)	(0.00)	(0.00)
FINAVG	0.69	0.08	0.49	0.71	0.16
	(0.00)	(0.75)	(0.05)	(0.01)	(0.65)
χ^2	21.74***	0.33	29.67***	22.25***	25.20***

	MKTSEC	PENSION	REVREC	TAXES
PROBLIT	3.26	-0.33	3.90	1.72
	(0.00)	(0.85)	(0.00)	(0.00)
FINAVG	0.22	0.49	0.59	0.38
	(0.36)	(0.21)	(0.01)	(0.07)
χ^2	31.36***	1.59	54.07***	15.98***

Panel B: CAPs *Without* Traceable Financial Statement Accounts

	CONTING	WARRANT	RESTRUCT	RETREB	IMPAIR
PROBLIT	1.50	2.19	4.59	2.52	2.04
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
FINAVG	0.19	-0.10	0.52	0.25	0.66
	(0.37)	(0.75)	(0.28)	(0.43)	(0.00)
χ^2	10.46***	12.28***	63.26***	17.97***	30.12***

Variable definitions: $CAP_{i,n} = 0$ if firm i does not disclose policy n as critical and $CAP_{i,n} = 1$ if firm i discloses policy n as critical; $PROBLIT_i$ is firm i's estimated litigation probability; $FINAVG_i$ is firm i's financing activity over the period 2003-2005. The unreported coefficients on industry and control variables HM, HV, FM and FV (historical and future means and variances) are consistent with earlier findings. Numbers in parentheses are *p-values* for significance of coefficients. χ^2-values represent the joint significance of $PROBLIT$ and $FINAVG$; *** denotes significance at the 0.01 level.

Table 8: Disclosure Decisions and Account Covariances

Panel A: Regression of *DARINV* on *COV* and controls

	MODEL 1a: All firms (N=3688)		MODEL 1b: All firms (N=1355)		MODEL 2: $COVAR < 0$ (N=422)	
Variable	Coeff	*p*-value	Coeff	*p*-value	Coeff	*p*-value
COV	17.97	0.01	27.97	0.03	83.43	0.02
HMAR	0.58	0.23	2.32	0.02	3.81	0.05
HMINV	-0.01	0.99	1.79	0.11	3.40	0.12
HVAR	4.94	0.10	0.11	0.99	27.30	0.04
HVINV	4.58	0.14	3.47	0.66	4.91	0.76
FMAR	-0.39	0.44	-2.00	0.06	-3.63	0.08
FMINV	1.24	0.04	-0.88	0.46	-2.19	0.32
FVAR	-1.93	0.57	9.44	0.35	1.46	0.92
FVINV	-0.99	0.83	-7.81	0.64	0.40	0.99
PROBLIT			2.19	0.00	2.83	0.05
FINAVG			0.45	0.10	0.46	0.37
INSTIT			0.00	0.25	0.00	0.61
AF			-0.03	0.00	-0.05	0.00
BUSSEG			-0.05	0.05	0.01	0.90
GEOGSEG			0.02	0.48	-0.04	0.34

Panel B: *COV* by Critical Policies

SUM	*COV*	Difference	T-stat	*p*-value
0	-1.57E-04	0-1	-3.32	0.00
1	4.49E-04	0-2	-8.96	0.00
2	1.49E-03	1-2	-6.30	0.00

This table presents the results of a logistic model of CAP disclosure on the covariance between accounts (and other controls). $DARINV = 1$ if either accounts receivable or inventory are critical and zero otherwise. *COV* is the covariance between Accounts Receivable and Inventory over the period 1993-2001; *HMAR* (*FMAR*) and *HMINV* (*FMINV*) are the historical (future) mean of Accounts Receivable and Inventory, respectively; *HVAR* (*FVAR*) and *HVINV* (*FVINV*) are the historical (future) variance of Accounts Receivable and Inventory, respectively; *PROBLIT* is the *ex ante* litigation probability; *FINAVG* is the number of years the firm seeks financing in the post-disclosure; *INSTIT* is the percentage of institutional holding; *NBSEG* and *NGSEG* are the number of business and geographic segments; *AF* is the number of analysts following the firm. $SUM = RECEIVE + INVENT$ where $SUM = 2$ if both receivables and inventory are critical, $SUM = 1$ if either but not both is critical and $SUM = 0$ if neither is critical.

Table 9: Predictive Model of Number of Critical Accounting Policies

Variable	Model 1	Model 2
MVE	0.477***	0.261***
BTM	0.446***	0.113
ROE	-0.034***	-0.085
NEGE	-0.446***	0.091
PROBLIT		3.921***
INSTIT		0.002
AF		-0.036**
BUSSEG		0.220***
GEOGSEG		0.159***
ACCQUAL		-0.033
RS		-1.792
RS/Size		0.010
Adj. R^2	88.69%	90.78%

This table estimates a predictive model of critical accounting policies. *MVE* is the natural logarithm of the market value of common equity (calculated as share price at fiscal year end divided by shares outstanding); *BTM* is the book value of equity divided by the market value of equity; *ROE* is the return on equity; *NEGEPS* is the average number of times the firm has negative earnings in the pre-regulation period (1986-2000); *PROBLIT* is the estimated litigation probability; *INSTIT* is the percent of the firm held by institutional investors; *AF* is the average number of analysts' following the firm in 2001, *BUSSEG* and *GEOGSEG* are the number of business and geographic segments; *ACCQUAL* is the Dechow-Dichev measure of accrual quality, measured over the period 1986-2000; *RS* and *RS*/*Size* are the total number of risk related words (risk sentiment), and the number of risk related words scaled by firm size, for the 2000 10-K filing.

Table 10: Earnings and Book Value Multiples: Pre- and Post- Disclosure

MODEL 1: $P_{it} = \alpha + \beta_1 EPS_{it} + \beta_2 BV_{it} + \beta_3 GROWTH_{it}$

	LOW		NO		HIGH		Diff in Diff	
	PRE	POST	PRE	POST	PRE	POST	LOW-NO	NO-HIGH
EPS	3.60	4.36	3.48	3.87	3.19	2.95	0.37	0.63
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.13)	(0.00)
BV	0.79	0.86	0.80	1.03	0.87	1.20	-0.16	-0.11
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)
Δ*Sales*	2.14	1.33	2.61	1.97	3.12	1.07	-0.16	1.40
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.76)	(0.02)
Firm/year obs	3845	2475	6621	4273	3927	2515		

MODEL 2: $P_{it} = \alpha + b_1 OPINC_{it} + b_2 NOPINC_{it} + b_3 CURASS_{it} + b_4 LTASS_{it} + b_5 CURLIAB_{it} + b_6 LTLIAB_{it} + b_7 GROWTH_{it}$

	LOW		NO		HIGH		Diff in Diff	
	PRE	POST	PRE	POST	PRE	POST	LOW-NO	NO-HIGH
OPINC	3.86	4.31	3.56	4.75	3.69	4.78	-0.75	0.11
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.68)
NOPINC	0.23	0.54	0.70	0.49	1.15	0.29	0.51	0.65
	(0.24)	(0.02)	(0.00)	(0.00)	(0.00)	(0.09)	(0.16)	(0.00)
CURASS	0.57	0.74	0.73	0.80	0.83	0.92	-0.10	0.03
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.20)	(0.68)
LTASS	0.85	0.81	0.94	0.97	0.90	0.97	0.08	0.04
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.44)	(0.10)
CURLIAB	-0.76	-0.69	-0.86	-0.89	-0.92	-1.14	-0.09	-0.19
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.59)
LTLIAB	-1.09	-0.95	-1.12	-1.15	-1.01	-1.10	-0.17	-0.06
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.09)	(0.48)
Δ*Sales*	2.16	1.69	2.74	1.93	3.68	1.10	0.34	1.76
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.53)	(0.00)

This table presents the estimates of an OLS stacked regression, with coefficients varying across periods **and** surprise. Pre-disclosure period is 1996-2000; post disclosure period is 2003-2006. $HIGH(LOW)[NO]$ are firms with 2 more (2 fewer) [within 1] CAP(s) of the predicted amount determined by Equation 3; *EPS* is earnings per share excluding extraordinary items; *OPINC* is per share operating income, *NOPINC* is non-operating income or $EPS - OPINC$; *BV* is common equity per share; $CURASS(CURLIAB)$ and $LTASS(LTLIAB)$ disaggregate assets (liabilities) into their current and non-current portions; *GROWTH* is measured as the percentage change in sales. Overall model $R^2 = 84.68\%$ (aggregated) and $R^2 = 84.67\%$ (disaggregated). Values in parentheses are *p*-values for significance.

Table 11: Incremental Information: Reactions around 10-K Filing Dates

MODEL : $R^{FD} = \alpha + \beta_1 SIGN(R^{EA}) + \beta_2 |R^{EA}| + \beta_3 \Delta RS + \beta_4 AF + \beta_5 INSTIT$

Variables	Predicted Sign	MODEL 1	MODEL 2	MODEL 3
Num Obs.		2365	1855	1348
$HIGH$		0.059	0.059	0.168
NO		-0.114	-0.237***	-0.159
LOW		-0.203***	-0.177*	-0.075
$SIGN(R^{EA})_{HIGH}$	-	**-0.122**	**-0.117**	**-0.09**
$SIGN(R^{EA})_{NO}$	?	**0.080**	**0.144***	**0.199****
$SIGN(R^{EA})_{LOW}$	+	**0.240*****	**0.279*****	**0.271****
$\|R^{EA}\|_{HIGH}$		-0.036	-0.025	-0.041
$\|R^{EA}\|_{NO}$		0.005	-0.017	-0.012
$\|R^{EA}\|_{LOW}$		-0.008	-0.003	0.014
ΔRS_{HIGH}			0.106	0.112
ΔRS_{NO}			0.291***	0.383***
ΔRS_{LOW}			-0.139	-0.280**
AF_{HIGH}			-0.013	-0.018*
AF_{NO}			0.019***	0.017**
AF_{LOW}			-0.016**	-0.014
$INSTIT_{HIGH}$				-0.000
$INSTIT_{NO}$				-0.002
$INSTIT_{LOW}$				-0.002
p-value: $\beta_1^{HIGH} = \beta_1^{NO}$		0.05	0.06	0.09
R^2		1.64%	2.35%	3.11%

This table examines whether CAP surprises, garnered on the 10-K filing date, alters the initial reaction to earnings news (measured on the earnings announcement date). We estimate a stacked regression allowing coefficients to vary across three levels of CAP surprise; $HIGH(LOW)$ surprise is defined as having at least 1 more (fewer) critical policy than expected (using the model given in equation 3). A firm is classified as having NO surprise if the number of critical policies is within one of the predicted number. $R^{FD}(R^{EA})$ measures three day returns around the filing (earnings announcement) date; ΔRS is the change in risk sentiment; AF is the analyst following in 2001; $INSTIT$ is the percentage of the firm held by institutional investors. $^{***},^{**},^{*}$ denote significance at the 0.01, 0.05, and 0.10 levels respectively.

Figure 1: Critical Policies and Voluntary Disclosure Theories

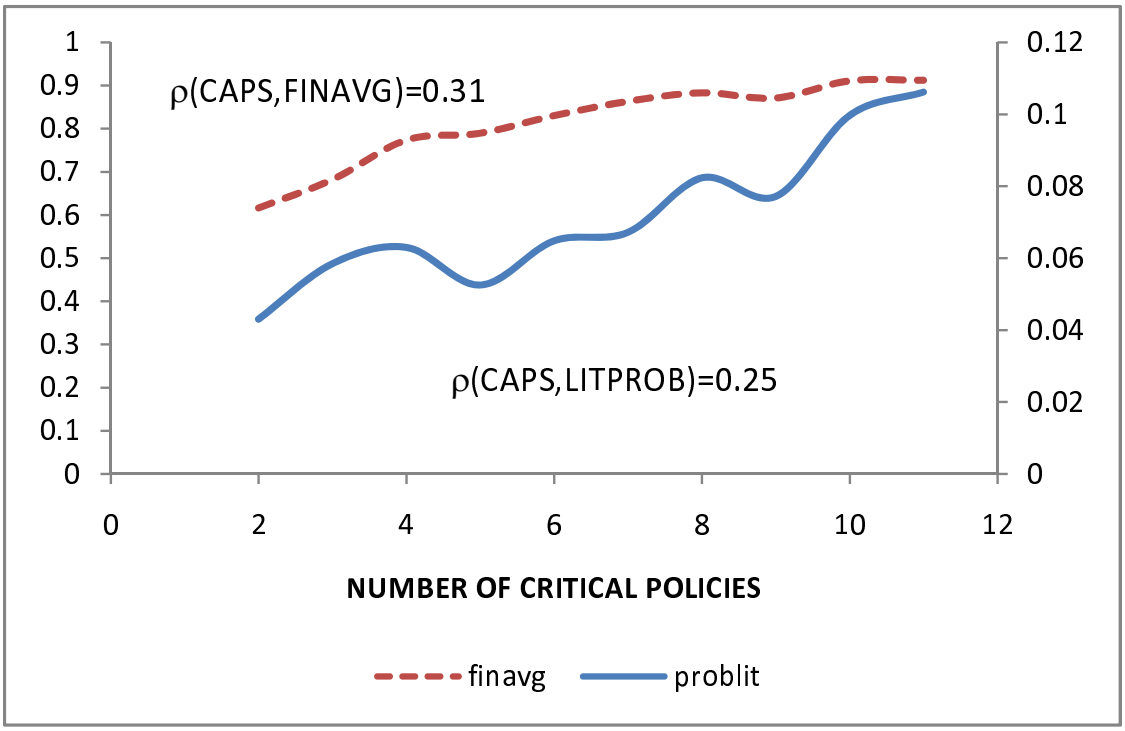
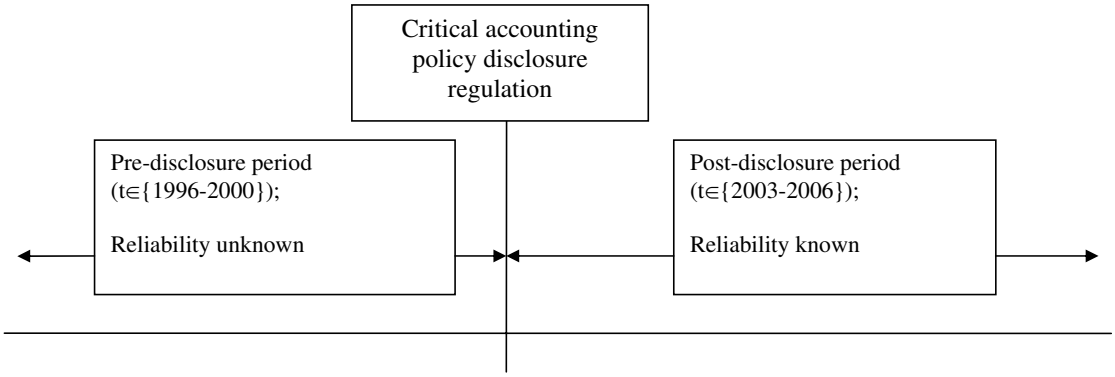


Figure 2: Estimation Periods and Valuation Multiples



$P_t = \alpha + \beta_1 EPS_t + \beta_2 BV_t + \beta_3 GROWTH$

where the coefficients vary across disclosure period $i \in \{pre, post\}$ and $j \in \{more\ than\ expected, fewer\ than\ expected, as\ expected\}$

Table 12: Probit Estimation of *Ex Ante* Litigation Risk ($N = 2702$)

$$Pr(Litigation_i = 1) = G(\alpha + \beta_1 MVE_i + \beta_2 Beta_i + \beta_3 Return_i + \beta_4 Skewness + \beta_5 Turnover_i + \beta_6 Leverage_i + \beta_7 Financing_i)$$

	Coefficient Estimates	*p-value*
Intercept	-3.1906	(0.00)
MVE	3.47E-08	(0.00)
Beta	0.2857	(0.00)
Return	0.0401	(0.65)
Skewness	0.1237	(0.05)
Turnover	1.0751	(0.00)
Leverage	0.0179	(0.75)
Financing	0.6071	(0.01)

Variable definitions: *Litigation*=1 if the Securities Class Action Clearinghouse listed the firm as a defendant in a class action lawsuit in either 2001 or 2002 and zero otherwise. The model is estimated with 187 "sued" firms and 2570 firms that were not involved in a suit. *MVE* is the market value of equity, determined on the first day of 2001, *Beta* is the slope coefficient from a model regressing daily returns on the equal weighted market index in the calendar year 2001, *Skewness* is the skewness of daily raw returns in calendar year 2001, *Turnover* is $[1-(1-Turn)^{252}]$ where *Turn* is the average of daily trading volume divided by shares outstanding and 252 is the number of trading days in 2001, *Leverage* is measured as Debt/Equity at the beginning of 2001, and *Financing* is a dummy variable equal to 1 if the firm issued debt or equity in 2001-2002.

Table 13: Disclosure Key Words and Classifications

Allocation across Bundle	Hedging
Contracts with multiple elements	Accounting for Derivative Instruments
Purchase price allocation	Derivative instruments
Compensation	Hedging Activities
Employee stock options	Interest rate swap
Executive compensation	Risk Management Activities
Stock based compensation	Impairment
Variable compensation	Asset Impairment
Consolidation	Asset Impairment Determinations
Consolidation	Asset Impairments
Contingencies	Impairment of Assets
Claims	Long-Lived Asset Impairments
Commitments	Recoverability of long-lived assets
Contingencies	Intangible Assets
Contingent Liabilities	Brand names
Environmental	Goodwill
Environmental Reserves	Impairment of goodwill
Estimates from counsel	Intangible Assets
Legal Contingencies	Recoverability of goodwill
Legal proceedings	Trade names
Litigation	Trademarks
Litigation contingencies	Valuation of Intangible Assets
Contracts	Inventory
Contractual agreements	Inventories
Contractual commitments	Inventory
Financial guarantees	Inventory Costing
Deferred Taxes	Inventory Obsolescence
Deferred Tax Assets	Inventory Reserve
Deferred Tax Liabilities	Inventory Valuation
Deferred Taxes	Obsolete Inventory
Income Taxes	Surplus inventory
Tax Valuation Allowances	Investments
Depreciation	Fair Value Accounting
Amortization	Forward
Depletion	Futures contracts
Depreciable Lives of Plant and Equipment	Marketable securities
Depreciation	Spot
Valuation of long-lived assets	Valuation of positions
Fresh Start Accounting	Leases
Fresh start accounting	Equipment on or Available for Lease
Fresh start reporting	Lease
	lease operating expenses
	Valuation of Purchased Leases and Contracts

- Long term revenue contracts
  - Installment
  - Percentage of Completion
- Loss Reserves
  - Allowance for credit losses
  - Allowance for loan losses
  - Loss adjustment expenses
  - Reserves for losses
- O&G Accounting
  - Full Cost
  - Oil and Gas Reserve Estimate
  - Successful Efforts
- Post Retirement/Pension
  - Accrued pension cost
  - Employee benefit plans
  - Pension
  - Pension and Post-Employment Benefits
  - Pension costs
  - Post Retirement
  - Post-Employment
  - Post-Retirement
- Rebates
  - Cash rebates
  - Promotional allowance
  - Sales Rebates
- Receivables
  - Accounts receivable
  - Allowance For Collection Losses
  - Allowance for Doubtful Accounts
  - Allowance for Receivables
  - Allowance for Uncollectible Accounts
  - Bad Debt
  - Bad Debt Expense
  - Bad Debt Risk
  - Collectibility
  - Pool of receivables
- Regulation
  - Rate regulation
  - Regulatory accounting
- Restructuring
  - Restructuring Allowance
  - Restructuring Charges
- Retirement
  - Asset retirement obligations
- Returns
  - Allowance for returns
  - Returns and Allowances
  - Revenue Reserves
  - Sales Returns
- Revenue Recognition
  - Revenue
  - Revenue Recognition
- Software
  - Capitalized software development costs
  - Software development costs
- SPE, VIE
  - Special purpose entity
  - Variable interest entity
- Warranties
  - Product Warranty
  - Product Warranty Reserves
  - Warranties
  - Warranty Cost