Critical accounting policy and estimate disclosures: Company response to the evolving SEC guidance

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Introduction

During December 2001, as a result of then-recent, well-publicized financial reporting failures, the United States Securities and Exchange Commission (SEC) began a series of initiatives to improve the quality and transparency of public company disclosures included in regulatory filings. One of the initial initiatives focused on expanding the information included within the management's discussion and analysis (MD&A) section of Form 10-K. The SEC suggested that clearly worded narrative and quantitative disclosures of critical accounting policies[3] could increase investor understanding of the financial information and allow investors to make more informed decisions (SEC, 2001). The SEC also indicated that enhanced disclosures could improve corporate governance, by allowing audit committee members to more effectively discuss and evaluate the methods, estimates, assumptions, and uncertainties used by management. Guidance related to this initiative is included in three documents issued from December 2001 to December 2003:

- Financial Reporting Release 60, Cautionary Advice Regarding Disclosure About Critical Accounting Policies (FR-60) (SEC, 2001);
- A Proposed Rule, Disclosure in Management's Discussion and Analysis about the Application of Critical Accounting Policies (Proposed Rule) (SEC, 2002b); and
- Financial Reporting Release 72, Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations (FR-72) (SEC, 2003b).

During 2003, the SEC Division of Corporation Finance reviewed the 2001 10-Ks of Fortune 500 companies (2003a). As a result of the review, the SEC sent comment letters to more than 350 companies. The SEC noted that more comments pertained to MD&A disclosures than to any other topic. Within the MD&A, the SEC noted that many companies had not adequately complied with the in-tent of FR-60, and that a large number of companies failed to provide any critical accounting policy (CAP) disclosures within 2001 filings. Interested parties may learn little, however, about 2001 CAP disclosures because the SEC pro-vided no other details about their content.

To determine how companies responded to FR-60 and subsequent guidance, we examined the 2001 and 2003 CAP disclosures of a sample of 112 Standard & Poor's Mid-Cap 400 companies. The Mid-Cap 400 companies were selected to compliment the SEC's review of the 2001 filings of Fortune 500 companies, and to provide in-sight into the disclosure patterns of a group of companies that prior research suggests make fewer disclosures than those included in the filings of Fortune 500 companies.

The CAP disclosures included in 2001 filings were in response to the cautionary advice included in FR-60. Within our sampled companies, 80% provided at least one CAP disclosure within a separate section of the MD&A. Within the 2003 filings, 100% of the sampled companies disclosed at least one CAP, and the extent of disclosures specified in FR-60 improved from those made in 2001. We find that the number and extent of disclosures related to FR-72 (SEC, 2003b) increased from 2001 to 2003, but that there was little change in the disclosure of items included only in the Proposed Rule (SEC, 2002b).We also find that the disclosure quality improved from 2001 to 2003.

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[3] In the initial release, the SEC used the term critical accounting policies; later publications used critical accounting estimates. Within this paper we use these terms interchangeably

The results of this study add to the accounting literature by providing insight into the extent to which disclosures change in response to new guidance and continuing emphasis by the SEC. Our study also provides insight into the extent to which disclosures change to conform with guidance included in the proposed rules. In addition, the study provides detailed information and statistical analyses about the CAP subject matter and accounting topics included in company disclosures for 2001 and 2003, information that was not included in the 2003 SEC report. The SEC continues to signal the importance of CAP disclosures. For example, the Commission continues to review the content of CAP disclosures included in the MD&A, and updates its guidance on expected disclosures on a regular basis (for example, see SEC, 2005; SEC, 2006). Most recently, the SEC incorporated CAP and critical accounting estimates into its guidance regarding management's report on internal control when it noted that ‘‘[f]inancial reporting elements that involve . . . critical accounting policies, and related critical accounting estimates generally would be assessed as having a higher misstatement risk" (SEC, 2007c, 35330). In addition, it extended its review of CAP disclosures to the 2005 20-Fs prepared for the first time on the basis of International Financial Reporting Standards (IFRS) (SEC, 2007b),[4] and referred to the need for additional disclosures on revenue recognition in the staff observations resulting from the review of IFRS filings (SEC, 2007a). As such, the results of this study provide insight into the timing and extent to which companies included SEC, mandatory and discretionary disclosures regarding topics and subjects the SEC continues to signal it views as important.

Background and research questions

The SEC has required MD&A as a section of Form 10-K since 1968; the current disclosure framework dates from 1980 (Bagby, Kintzele, & Kintzele, 1988; Dieter & Sandefur,1989; SEC, 2002c). As the SEC reiterated in 2002(c), ‘‘[T]he MD&A requirements are intended to provide, in one section of a filing, material historical and prospective textual disclosure enabling investors and other users to assess the financial condition and results of operations of the registrant's prospects for the future."

Bagby et al. (1988) note that the SEC is empowered by Section 15(c)(4) of the Securities Exchange Act of 1934 to enforce MD&A disclosure requirements. Depending on the extent of noncompliance, registrants may receive a letter of comment, be required to amend their original filing, and/or be referred to the SEC's Division of Enforcement (SEC, 2002c). Supporting the need for these regulatory actions are the numerous research studies and reports that identify the content of the MD&A as useful to financial statement users (see, for example, AICPA, 1994; Clarkson, Kao, & Richardson, 1999; Knutson, 1993; Rogers & Grant,1997).

The SEC continues to refine its MD&A guidance through the use of financial reporting releases, proposed rules, and rules. In this research study we focus on the three releases issued between 2001 and 2003 related to critical accounting policy and estimate disclosures: FR-60, the 2002 Pro-posed Rule, and FR-72.[5] Cole and Jones (2005, p. 14) reviewed the content of these releases and concluded, ‘‘Because of the SEC's recent emphasis on disclosures about critical accounting estimates, information on the sensitivity of accounting estimates to changes in assumptions, which often was not previously available, is now provided on a more consistent basis for public companies." However, the authors provide no data to support their conclusion. The results of our study provide detailed information as to the extent to which companies complied with the SEC's voluntary and required guidance.

[4] See, for example, the comment letter addressed to Astrazeneca dated September 21, 2006 that requests additional information on the Critical Accounting Policies and Estimates included on page 51 of the 2005 Form 20-F.

[5] Disclosures of critical accounting estimates and policies are not specific to the US SEC guidance. International Accounting Standard 1 requires companies preparing their financial statements in accordance with International Financial Reporting Standards disclose their significant accounting estimates and judgments within a section of the significant accounting policy note or in a separate note (IASB, 2007)

The SEC issued FR-60 on December 12, 2001 in response to calls for improved transparency on estimation methods, assumptions and disclosures within the MD&A. FR-60 emphasized and reiterated current SEC disclosure requirements regarding ‘‘risk and uncertainties inherent in significant estimates” (SEC, 2001). The release specifically called for ‘‘public companies to include in their MD&A this year full explanations, in plain English, of their ‘critical accounting policies,’ the judgments and uncertainties affecting the application of those policies, and the likelihood that materially different amounts would be reported under different conditions or using different assumptions” (SEC, 2001).FR-60 did not contain specific guidance about critical account-ing policy disclosures. It did, however, alert companies that additional guidance would be forthcoming.

The importance attached to critical accounting policies in FR-60 was reiterated in the SEC’s January 2002 release in which it announced it planned to propose new rules pertaining to CAPs (SEC, 2002a). Also in January 2002, speeches by both Harvey L. Pitt, then Chairman of the SEC (Pitt, 2002), and Robert Herdman, then Chief Accountant of the SEC (Herdman, 2002), referred to the importance of providing investors with transparent information about critical accounting policies, as well as the need for companies to inform investors of the potential impact of judgments on future financial performance included with-in the financial statements. These multiple references to CAP disclosures should have alerted SEC filers that the SEC viewed the disclosures as critical, and increased the number of companies including such disclosures in their 2001 Form 10-Ks.

In May 2002, the SEC issued the promised new guidance in the form of a proposal to amend MD&A requirements (Proposed Rule) (SEC, 2002b). The Proposed Rule contained detailed guidance on qualitative and quantitative CAP dis-closures.[6] Consistent with the advanced ‘‘warnings” issued by the SEC and its leadership, the Proposed Rule states that disclosures of accounting estimates should include a description of the estimates used, how estimates affect re-ported financial results including affected line items, the changes that could potentially result from the use of different estimates, and whether senior management discussed the development, application and disclosure of estimates with the audit committee. However, the Proposed Rule was not finalized during 2002, as such, its authority for calendar year 2002 filings was (and remains) ambiguous.[7]

During 2003, the SEC (2003a) completed a review of the 2001 10-Ks filed by Fortune 500 companies; one part of the review focused on the adequacy of MD&A CAP disclosures in accordance with the cautionary guidance included in FR-60. In its discussion of CAP disclosures, the SEC reiterated the importance it attached to CAPs.

> ‘‘In December 2001, the Commission released FR-60 and indicated that companies should provide more discus-sion in MD&A about their critical accounting policies. Under an appropriate heading, companies are encour-aged to disclose their most difficult and judgmental estimates, the most important and pervasive account-ing policies they use, and the areas most sensitive to material change from external factors, and to provide a sensitivity analysis to facilitate an investor’s under-standing of the impact on the bottom line (SEC, 2003a).”

As a result of its review of 2001 CAPs, the SEC’s Division of Corporation Finance issued comment letters to specific filers that requested increased CAP disclosures on the 14 accounting topics set forth below (order as listed by the SEC):

revenue recognition; restructuring charges; impairments of long-lived assets; investments and goodwill;

depreciation and amortization expenses; income tax liabilities;
retirement and post retirement liabilities; pension income and expenses; environmental liabilities;
repurchase obligations under repurchase commitments;

stock-based compensation; insurance loss reserves; inventory reserves; and allowance for doubtful accounts

In its review the SEC found that, ‘‘a substantial number of companies did not provide any disclosure and of most that did, the response was not adequate.” Despite the evident importance of the topic to the SEC, this sentence is the only information provided by the SEC about the content of 2001 CAP disclosures.

There are two possible explanations for the SEC’s findings. First, the apparent lack of compliance with FR-60 could be the result of companies truly failing to include any disclosures pertaining to the intent of FR-60, and more specifically failing to include disclosures relative to the four disclosure topics included in the cautionary release. Second, the SEC’s finding that that response was not adequate could reflect the staff’s assessment in light of subsequent announcements, specifically those included in the Proposed Rule. However, the lack of detail included in the SEC’s report of its conclusions does not allow the read-er to determine which explanation is appropriate. The SEC’s lack of detail about its findings prompts our first re-search question.

Research question 1: What degree of non-compliance with the cautionary advice included in FR-60 is present in a sample of 2001 CAP disclosures?

In December 2003, the SEC released more guidance regarding the MD&A in the form of FR-72, effective December 29, 2003 (SEC, 2003b).FR-72 Section V provides guidance on critical accounting estimates. Within this section, the SEC noted that the Proposed Rule remained under consideration, and indicated that companies should include disclosures pertaining to critical accounting estimates where the impact of the estimate and assumption on operating performance or financial condition is material, or where the nature of the assumption and estimate is material. The interpretation provided additional clarification and details on the subject matter of required disclosures about critical accounting estimates,[8] and noted that quantitative information, where available and material should be included (SEC, 2003b). The disclosure subjects included in FR-72 reiterated many items included in the Proposed Rule. As such, guidance for 2003 was more de-tailed and directed than that available in the prior 2 years.

As a result of the SEC’s continued focus on critical accounting policy disclosures during 2002 and 2003, it seems likely that companies would improve their 2003 disclosures as compared with their 2001 disclosures. Im-proved disclosures could occur because companies became more aware of the content of the 2001 cautionary advice and its application by other entities, because of additional guidance contained in both the Proposed Rule and FR-72, and/or as a result of the SEC’s identification of specific accounting topics that should be expanded within CAP dis-closures as a result of its Fortune 500 company review. The result of the various SEC initiatives would likely result in and include more accounting topics and more quantitative subject-matter disclosures than were included in 2001 dis-closures. These expectations lead to the following research questions:

Research question 2A: Did disclosures of subjects called for in FR-60 improve from 2001 to 2003?

Research question 2B: Did 2003 CAP disclosures improve from the 2001 disclosures in those accounting topics identified in the SEC’s 2003 review of 2001 Form 10-K disclosures?

Research question 2C: Did 2003 CAP disclosures improve from the 2001 disclosures in those subjects specific to the Proposed Rule and FR-72?

Research question 3: Did the quality of 2003 CAP disclosures improve over the quality of 2001 disclosures, consistent with the content of the Proposed Rule and FR-72?

[6] This disclosure guidance is in such detail that if printed from the SEC website it takes 85 pages.

[7] The Proposed Rule retains its status as of July 28, 2008.

We define quality in three ways. First, a higher quality disclosure includes more quantitative disclosures as a percentage of total disclosures. This treatment is consistent with prior studies in which quantitative disclosures are considered to provide more information than do solely narrative sentences (Botosan, 1997; Freedman& Wasley, 1990; Hughes, Sander, & Reier, 2000; Ingram & Frazier, 1980; Thompson & Zakaria, 2004; Walden & Schwartz, 1997; Wiseman, 1982). Second, a higher quality disclosure includes more sentences specific to the guidance included in the three releases as opposed to merely general language. Third, greater breadth (the number of subjects and topics disclosed) and greater depth (the number of sentences per disclosed subject and per disclosed topic) indicate a higher quality disclosure.

Sample selection and methodology

To answer the research questions, we analyzed the CAP disclosures of 112 companies included in the Standard & Poor's Mid-Cap 400 index. The Mid-Cap 400 includes mid-sized companies in various industries with market capitalization ranging from $1 billion to $4 billion. Prior research on the disclosure patterns of large and small firms suggests that differences in capital structure and competitiveness result in smaller firms making fewer financial disclosures than do large firms (Buzby, 1975; Salamon & Dhaliwal, 1980; Singhvi & Desai, 1971). In addition, Craighead and Hartwick (1998) found size to be the only economic variable, of the four included in their analysis, significant in the extent of disclosure related to changes in corporate strategy. These results suggest that our review of the Mid-Cap 400 disclosures would result in fewer disclosures than would be found within the larger companies included in the Fortune 500 review con-ducted by the SEC and lower disclosure patterns than would be found had we used a sample of larger companies.

We limited the sample to calendar year-end companies because of the December issue dates of both FR-60 and FR-72. Consistent with prior studies of financial disclosure (e.g., Street, Nichols, & Gray, 2000), we excluded financial institutions and companies with major merger activities. After excluding companies that did not meet our selection criteria we were left with 209 companies. We selected every other company, beginning again for each starting let-ter, resulting in a sample of 112 companies.[9] The MD&As included within the 2001 and 2003 Form 10-Ks for each of the companies were obtained from the SEC's Edgar data-base, and the CAP disclosures for both 2001 and 2003 were extracted from the MD&As. We limited our analysis to the content of the MD&A as FR-60, the Proposed Rule, and FR-72 specifically refer to CAP disclosures as part of the MD&A.

Content analysis of the disclosures was used to collect the data analyzed in this study. Content analysis is frequently used in studies that investigate how companies re-spond to changes in disclosure requirements brought about by new financial accounting standards and releases (Herrmann & Thomas, 2000; Marquardt & Wiedman, 2007; Roulstone, 1999; Street et al., 2000). Most of the company response studies analyzed disclosures for the year directly before and the year directly following the change in disclosure requirements (see also Ahmed, Kilic, & Lobo, 2006; Botosan & Stanford, 2005; Hooks & Moon, 1993). In this study, 2001 CAP disclosures reflect those made prior to a change in disclosure requirements, as they occurred prior to the issuance of the Proposed Rule in 2002. The 2003 disclosures reflect those made after the change, as they were the first disclosures made after the issuance of FR-72.

[9] This sample size is in accord with prior research into disclosure changes as seen in Roulstone (1999) with a sample size of 25, Herrmann and Thomas (2000) with a sample size of 100, and Street et al. (2000), who used a sample size of 160 companies

To fully capture the extent of company compliance with the SEC's guidance for both narrative and quantitative disclosures, we separately identified narrative and quantitative disclosures within the coding scheme and subsequent analysis. In addition, data were collected and analyzed using both the number of companies that made a disclosure and the number of sentences included in the disclosure. Sentence counts were used as the basis of analysis because they are easily identified, not subject to interpretation, and frequently used in prior research (Ingram & Frazier, 1980; Hughes, Anderson, & Golden, 2001; Walden & Schwartz, 1997).

Each sentence was coded as to its subject and accounting topic. The subjects were extracted from the three pieces of SEC CAP guidance (FR-60, Proposed Rule, and FR-72).[10] The subject matter of CAP disclosures occurs within the context of specific accounting topics. We began with the 14 topics that the SEC identified in its 2003 review of 2001 Fortune 500 company disclosures (SEC, 2003a)and added 10 additional topics as required during data collection, resulting in 25 accounting topics. Because companies generally included introductory and closing narrative, we also added a topic for the general description of accounting policies.

The relationship between subjects and topics is illustrated in the following example. If a company disclosed how it formed an estimate for the allowance for bad debts, we noted the subject of the disclosure (estimate methodol-ogy) as well as the topic (accounts receivable/allowance for doubtful accounts), and recorded the number of sentences included in the disclosure.

If a company included a sentence that disclosed information pertinent to two different topics, that sentence is reflected in the count for both topics. Since the sentence counts include sentences that pertain to multiple topics, the total sentence count exceeds the actual number of sentences. Actual sentence counts for all disclosures made in 2001 and 2003 were 2741 and 6783, respectively. How-ever, due to the double counting of some sentences, we report 2826 sentences in 2001 and 7180 sentences in 2003.

Similar to prior studies, two individuals separately coded the companies' 2001 and 2003 critical accounting policy disclosures and met to resolve classification differences. Coding consistency increased with coder experience. After coding 17 companies a high level of consistency between the coders was achieved, with agreement reaching up to 100% for a single company. At this point, the first coder continued to code the remaining 95 company disclosures and the second coder coded a sample of the remaining companies to confirm that the coding remained consistent over the rest of the sample. As a result, one individual coded all 112 company disclosures and the second individual coded 30 companies (27% of the sample).

Findings and discussion

Research question 1

The first research question asked what degree of non-compliance with the cautionary advice included in FR-60 was present in the 2001 CAP disclosures for a sample of companies. This question was prompted by the SEC's vaguely worded finding that a ‘‘substantial number" of the Fortune 500 companies included in its review failed to pro-vide any CAP disclosures for 2001.

[10] The topics included in the three documents are listed in Tables 1 and 4–6.

The results shown in Table 1 summarize the extent to which the companies in our sample complied with the four subject matter disclosures identified in FR-60. The results indicate that the majority of companies included at least one CAP disclosure identifying a critical accounting estimate (79%), describing the methodology used to determine the estimate (76%), and the factors affecting the method or assumption (69%). However, only 44% of the companies identified the underlying assumptions used in the estimate. Since the SEC did not define the ‘‘substantial number” of Fortune 500 companies it determined failed to comply with the FR-60 guidance, it is difficult to make direct comparisons between our results and those of the SEC. However, our analysis suggests that a substantial number of Mid-Cap 400 companies made at least some attempt to comply with the FR-60 guidance, and that only 21% of the sampled companies failed to make any FR-60-related disclosure in 2001.

The information included in Table 1 also provides the mean number of sentences used to disclose each subject matter. A quick sum of the means indicates that the ‘‘aver-age” company devoted approximately 24 sentences to its 2001 CAP disclosures. The greatest number of sentences described the methodology used to determine the estimate, the fewest number of sentences described the underlying assumptions used in the estimate.

Table 1
Extent of company compliance with FR-60 in 2001.

Subject matter listed in FR-60	# of companies disclosing in 2001	% of 112 sampled companies	Mean disclosure sentences per company
Critical accounting estimate identified	88	79	8.00
Methodology used to determine the estimate	85	76	11.26
Underlying assumptions used in the estimate	49	44	1.70
Factors affecting method or assumption	77	69	3.40

Research question 2A

Research question 2A asked if company compliance with the requirements of FR-60 improved from 2001 to 2003. To answer this question, we first analyzed disclosures by the number of companies, and then by the number of sentences included in the disclosure.

Number of companies. The top panel of Table 2 provides information as to the number and percentage of companies disclosing within each of the four subject matters included in FR-60 for 2001 and 2003. The data reveal that in 2003 all 112 sampled companies disclosed at least the methodology used to determine an estimate, and nearly all also identified the critical accounting estimate (99%) and factors affecting the method or assumption (97%). As in 2001, the underlying assumptions used in an estimate were the subject least-of-ten disclosed, however, in 2003 88% of the companies included this information. All companies that identified critical accounting estimates or the methodology used to determine the estimate in 2001 also disclosed in these subjects in 2003; 98% of the companies that disclosed factors affecting the method or assumption also disclosed this information in 2003, but only 79% of the companies that disclosed the assumptions underlying the estimate again disclosed this information in 2003. Combined, these results indicate that overall, compliance with FR-60 guidance im-proved in 2003 compared with 2001. The results also suggest that there is some tendency for companies to reduce their more detailed disclosures over time.

Number of sentences. The two middle panels of Table 2 compare the number of sentences companies used to disclose information pertinent to the four FR-60 subject matters in 2001 and 2003. The top-middle panel compares the number of sentences included in disclosures of the 90 companies that included some disclosure in 2001. We consider this the most conservative analysis because it eliminates the 2001 zero sentence responses of the 22 companies that did not disclose in any subject for 2001. The bottom-middle panel compares the sentences included in the FR-60 subject matter disclosures for all 112 sampled companies. As such, these analyses are richer, but less conservative that those based on 90 companies.

A review of the results using both the 90 and 112 companies indicates that the mean number of sentences used to disclose each of the four subject matters increased from 2001 to 2003, and that the increases are all significant at p = 0.00.[11] Consistent with the expectation that the disclosures would increase from 2001 to 2003, one-tailed p values are reported. These findings indicate that not only did the number of companies making disclosures in the four subject matters increase, but the extent of the disclosures, as measured in the number of sentences per subject matter, also significantly increased from 2001 to 2003.

(table on next page)

Table 2

Changes in FR-60 subject matter disclosures, 2001 compared with 2003.

Subject matter listed in FR-60	# of companies disclosing in 2001	% of 112 sampled companies	# of companies disclosing in 2003	% of 112 sampled companies	% of 2001 disclosing companies disclosing in 2003
Critical accounting estimate identified	88	79	111	99	100
Methodology used to determine the estimate	85	76	112	100	100
Underlying assumptions used in the estimate	49	44	98	88	79
Factors affecting method or assumption	77	69	109	97	98

	Number of sentences included in disclosures											
90 companies that disclosed CAPs in 2001	2001				2003				Paired t-test results			
	Low	High	Mean	Std. Dev.	Low	High	Mean	Std. Dev.	Mean	Std. Dev.	t	1-tailed p
Critical accounting estimate identified	0	31	8.00	5.030	0	54	12.54	7.57	4.54	7.23	5.97	0.00
Methodology used to determine the estimate	0	33	11.26	7.340	4	62	12.73	11.48	11.48	12.10	9.00	0.00
Underlying assumptions used in the estimate	0	10	1.70	2.276	0	20	5.10	4.76	3.40	4.12	7.84	0.00
Factors affecting method or assumption	0	15	3.40	2.886	0	27	7.21	5.02	3.81	4.95	7.30	0.00
	Number of sentences included in disclosures											
112 sampled companies	2001				2003				Paired t-test results			
	Low	High	Mean	Std. Dev.	Low	High	Mean	Std. Dev.	Mean	Std. Dev.	t	1-tailed p
Critical accounting estimate identified	0	31	6.43	5.519	0	54	12.72	8.31	6.30	8.80	7.57	0.00
Methodology used to determine the estimate	0	33	9.04	7.961	3	62	22.26	11.72	13.21	12.68	11.03	0.00
Underlying assumptions used in the estimate	0	10	1.37	2.148	0	20	5.02	4.51	3.65	4.01	9.65	0.00
Factors affecting method or assumption	0	15	2.73	2.925	0	27	7.17	5.17	4.44	5.26	8.93	0.00
	Number of sentences included in 2003 disclosures											
2003 disclosures, 2001 adopters compared with later adopters	2001 adopters (n = 90)				2001 adopters (n = 22)				t-test results (equal variances not assumed)			
	Low	High	Mean	Std. Dev.	Low	High	Mean	Std. Dev.	Mean	df	t	1-tailed p
Critical accounting estimate identified	1	54	12.54	7.575	0	52	13.45	2.34	0.91	26.07	з0.37	з0.36[a]
Methodology used to determine the estimate	4	62	22.73	11.478	3	54	20.32	2.72	2.42	29.84	0.81	0.21[a]
Underlying assumptions used in the estimate	0	20	5.10	4.757	0	12	4.68	0.73	0.42	43.36	0.47	0.32[a]
Factors affecting method or assumption	0	27	7.21	5.043	0	18	7.00	1.24	0.21	29.25	0.16	0.11[a]

[a] Mann–Whitney U tests resulted in significance levels of .443, .168, .496 and .305, respectively.

To determine if the 2003 FR-60-related disclosures of companies that did not disclose in 2001 approximate those made by companies that did disclose in 2001, we compared the 2001 adopters to the later adopters using one-tailed t-tests. The results shown in the bottom panel of Table 2[12] indicate there are no significant differences in the 2003 disclosures of those companies that did and did not disclose in 2001. These results suggest that required disclosures do not improve with annual revision and iteration.

Data pertaining to the number of sentences are sensitive to the 2001 nondisclosures. In the following analysis, we include all 112 companies in the tests focused on the number of companies, and the 90 companies that disclosed in 2001 for those tests focused on the number of sentences. This treatment eliminates the impact of the zero values of the 2001 nondisclosing companies.

Research question 2B

The SEC's 2003 report of its review of 2001 filings pro-vided the first list of accounting topics the SEC believed should be more fully described in CAP disclosures. As such, it seems likely that 2003 CAP disclosures of these topics would be greater than those made for 2001. Table 3 breaks down the content of the four FR-60 subject matter disclosures by the 26 accounting topics. For both 2001 and 2003, a general description of the accounting policies was the most often disclosed (76% and 97% of the companies, respectively). For 2001, accounts receivable/allowance for bad debts and revenue recognition were the next most frequently disclosed (45% and 51% of the companies, respectively). For 2003, six topics were disclosed by 45% or more of the companies: accounts receivable/allowance for doubtful accounts (54%), deferred tax assets/income tax liabilities (61%), long-lived assets (65%), intangibles (65%), pension income and expense (45%), and revenue recognition (66%). Of these six topics, all but pensions were included in the SEC's list. The percentage of companies making disclosures increased from 2001 to 2003 for all but two topics. The results of the paired t-tests of the number of FR-60 subject matters disclosed per company by subject matter indicate that the disclosures significantly increased for all but incentive/promotional costs, marketing, research and development, sales returns and allowances, oil and gas, and contract commitments. Of these topics, only contract commitments was included in the SEC's list.

The results reported in Table 3 indicate that the breadth of the disclosures increased from 2001 to 2003 as more companies added disclosures about accounting topics, and the depth increased as more FR-60 subject matters were addressed within the disclosures. However, the results also indicate that many companies continued to omit disclosures about areas common to most businesses, e.g., accounts receivable/allowance for doubtful accounts, deferred tax assets/income tax liabilities, and revenue recognition, areas included in the SEC's list of accounting topics for which it believed additional disclosures were necessary.

Research question 2c

Between 2001 and 2003, the SEC issued the Proposed Rule and FR-72. As such, 2001 disclosures of the subject matters included in these pronouncements would have been anticipatory and voluntary. 2003 disclosures of subject matters included only in the Proposed Rule would be voluntary, but consistent with published guidance, and those in accordance with FR-72 would be nondiscretionary. Research question 2C focuses on the change from 2001 to 2003 in the disclosure of those subject matters included in the Proposed Rule and FR-72. To determine the extent to which companies disclosed subject matters included in these two later documents, we first analyzed dis-closures by the number of companies, and then by the number of sentences included in the disclosure.

Number of Companies. Table 4 indicates the number of companies making a disclosure within each accounting to-pic and the four subject matters (shown in bold in the table) unique to the Proposed Rule (SEC, 2002b)but not replicated in FR-72. Table 5 is similar, but for subject matters specified in FR-72.

Because the proposed rule was issued in 2002, it was not likely that many companies would make discretionary disclosures in these four subjects in 2001. Results of the data analysis reveal that few companies made discretionary disclosures consistent with these subject matters in 2003 either. The blank cells on the table represent areas in which no company made a disclosure in either year, and the summary shown on the right side of the table indicates that 0–11% of the companies made disclosures in the four subject matters. The only topic included in the Pro-posed Rule that appeared in a majority of the 2003 disclosures is that of a reference to notes or other disclosures. For 2003, 72% of the companies provided specific references, up from 46% in 2001.

Table 5 presents the number of companies disclosing in the various topics in accordance with subject matters included in FR-72 (SEC, 2003b). Many of these subjects were first identified in the Proposed Rule, and then reiterated in the 2003 release (SEC, 2003b). Comparison of Tables 4 and 5 indicates that, in general, more companies included the FR-72 nondiscretionary disclosures than they did discretionary disclosures specific to only the Proposed Rule. However, there are still many Table 5 cells in which no nondiscretionary disclosures occurred in either year, including all cells related to quantitative disclosures explaining the accuracy of past estimates. It is interesting that many companies included at least some coverage of the FR-72 subjects in their 2001 disclosures. For example, within the disclosures related to the impact of an accounting estimate on the financial statements, 38 of the 112 sampled companies disclosed the quantitative impact of an accounting estimate on the financial statements in 2001 and 22 of the companies provided a reference to a specific line in the financial statements. Contrary to the SEC's expectations that additional disclosures about critical accounting estimates would improve discussion with the audit committee, only 1% and 16% of the companies in 2001 and 2003, respectively, disclosed information regarding discussions with the audit committees.

Number of sentences. Table 6 provides information about the number of sentences pertaining to the Proposed Rule (PR) and FR-72 subject matter disclosures for 2001 and 2003. For 2001, companies devoted from zero to 13 sentences to each topic included in the Proposed Rule and/or FR-72. The mean number of sentences ranged from a low of zero (referring to disclosures of why an estimate is reasonably likely to change from period to period, and quantitative disclosures of the accuracy of past estimates) to a high of 1.22 (pertaining to the quantitative sentences dis-closing the impact of accounting estimates on the financial statements). Within the 2003 subject matter disclosures, companies devoted from zero to 26 sentences to each subject, and the means ranged from zero (the quantitative dis-closures of the accuracy of past estimates and reference to specific line items in the financial statements impacted by changes in estimates) to a high of 4.14 (quantitative sentences explaining the impact of the accounting estimate on the financials). The results of the paired t-tests indicate that the mean number of sentences reflect an unambiguous increase in two of the four subjects mentioned only in the Proposed Rule (indication if a different estimate could be used and specific references to notes or other dis-closures), and in all subjects mentioned in FR-72.

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[11] In these and all subsequent comparisons of changes in disclosures from 2001 to 2003, paired t-tests are used in which the 2001 value is subtracted from that of 2003.

[12] Because the sample sizes are not equal, n = 90 and n = 22, respectively, the p-values are computed on the basis that the variances are not equal. We also determined the differences using Mann–Whitney U tests, which are more appropriate given the unequal sample sizes and small number of late adopting companies. However, since the differences between the two groups of companies are similarly insignificant for both tests, we report the details of the t-tests because they are easier to interpret and compare with the results of the paired t-tests.

Table 7 presents the analysis of the number of sentences included in each topic disclosure. For this analysis, subject matter specific to FR-60, the Proposed Rule and FR-72 were included and information about the number of sentences and the paired t-tests of the disclosures of the 90 companies for both 2001 and 2003 are presented. A review of Table 7 indicates that the maximum number of sentences devoted to a specific topic increased from 39 in 2001 to 65 in 2003. For 2003, the greatest numbers of sentences were used to describe significant accounting policies pertaining to pension income and expense (65 sentences), revenue recognition (51), derivatives (41), intangibles (40), and regulatory matters (38).

A review of the results of the paired t-tests indicates that the change in the mean number of sentences per topic ranged from a decrease of $_3$ 0.09 in contract commitments, to an increase of 5.52 in pension income and expense. The p-values indicate that the mean sentences included in the disclosures of 17 of the 25 accounting topics significantly increased, most at the level of $p < 0.01$. In addition, significant increases were observed in 11 of the 14 topics high-lighted in the SEC's review of 2001 CAP disclosures.

In answer to research question 2C, the results in Tables 6 and 7 indicate that companies did respond to the additional guidance, particularly when it was finalized, rather than proposed, by increasing from 2001 to 2003 the number of sentences making a CAP disclosure.

Table 6
Number of sentences included in critical accounting policy subject matter disclosures identified in the Proposed Rule (PR) and FR-72. Sentence information and paired t-test results for the 90 companies that disclosed in both 2001 and 2003.

Source document	Subject matters	2001				2003				Paired t-test results			
		Low	High	Mean	Std. Dev.	Low	High	Mean	Std. Dev.	Mean	Std. Dev.	t	1-tailed p
PR	Indication if different estimates could be used	0	2	0.03	0.235	0	2	0.08	0.308	0.044	0.207	2.035	0.0225
PR	Change to estimates in past 3 years												
PR	Quantitative sentences	0	2	0.07	0.328	0	3	0.19	0.634	0.122	0.615	1.886	0.0315
PR	Qualitative sentences	0	4	0.22	0.761	0	6	0.34	1.191	0.122	1.047	1.107	0.1355
PR	Reasons for the change	0	1	0.01	0.105	0	2	0.07	0.328	0.056	0.313	1.684	0.0480
PR	Reference to specific line in financials	0	1	0.02	0.148	0	0	0.00	0.000	$_3$0.022	0.148	$_3$1.422	0.0790
PR	Segment disclosures	0	13	0.14	1.370	0	1	0.04	0.207	$_3$0.100	1.281	$_3$0.740	0.2300
PR	Specific references to notes or other disclosures	0	6	1.16	1.323	0	11	1.67	2.077	0.511	1.996	2.430	0.0085
PR/FR-72	Disclosure of why an estimate is reasonably likely to change from period to period	0	0	0.00	0.000	0	5	0.11	0.626	0.111	0.626	1.684	0.0480
FR-72	Accuracy of past estimates												
FR-72	Narrative sentences	0	3	0.14	0.572	0	6	0.41	1.037	0.267	0.747	3.389	0.0005
FR-72	Quantitative sentences	0	0	0.00	0.000	0	0	0.00	0.000	na	na	na	na
PR/FR-72	Impact of accounting estimate on financials												
PR/FR-72	Narrative sentences	0	6	0.29	0.915	0	7	0.57	1.170	0.278	1.236	2.131	0.0180
PR/FR-72	Quantitative sentences	0	13	1.22	2.058	0	26	4.14	4.644	2.922	4.769	5.813	0.0000
PR	Reference to specific line in financials	0	6	0.41	0.898	0	6	1.24	1.501	0.822	1.318	6.000	0.0000
PR/FR-72	Quantitative impact from a change in estimate	0	1	0.08	0.269	0	6	0.76	1.486	0.687	1.452	4.428	0.0000
PR	Reference to specific line in financials	0	1	0.01	0.105	0	2	0.17	0.456	0.156	0.447	3.298	0.0005
PR/FR-72	Discussion with audit committee	0	1	0.01	0.105	0	1	0.17	0.375	0.156	0.364	4.049	0.0000

Table 7

The number of sentences included in accounting topic disclosures that were specified in FR-60, the Proposed Rule and/or FR-72. Low, high and mean numbers of sentences included in the responses of the 90 companies disclosing in 2001 and 2003.

Accounting topic	2001				2003				Paired t-tests			
	Low	High	Mean	Std. Dev.	Low	High	Mean	Std. Dev.	Mean	Std. Dev.	t	1-tailed p
Opening/closing boilerplate	0	10	4.49	2.17	0	10	5.12	2.23	0.63	2.26	2.658	0.004
Accounts receivable/allowance for doubtful accounts[a]	0	12	2.17	2.63	0	14	3.44	3.64	1.28	2.86	4.232	0.000[a]
Deferred tax assets/income tax liabilities[a]	0	18	2.23	3.39	0	21	5.44	5.47	3.21	5.08	5.994	0.000[a]
Derivatives	0	17	1.41	3.83	0	41	2.29	6.72	0.88	5.40	1.541	0.064
Depreciation and amortization expense[a]	0	19	0.92	2.75	0	20	1.23	3.65	1.31	2.42	1.217	0.114[a]
Dispositions/acquisitions	0	12	0.63	2.27	0	32	1.61	4.90	0.98	4.98	1.863	0.033
Environmental liabilities[a]	0	13	0.66	2.00	0	17	1.12	3.00	0.47	2.80	1.580	0.059[a]
Litigation	0	14	0.63	2.02	0	10	1.28	2.36	0.64	2.50	2.449	0.008
Long-lived assets[a]	0	17	2.38	3.24	0	36	5.31	7.18	2.93	6.52	4.269	0.000[a]
Incentive/promotional costs	0	8	0.24	1.05	0	26	0.68	2.80	0.43	2.55	1.610	0.056
Insurance[a]	0	14	0.76	2.25	0	15	1.31	3.00	0.56	1.65	3.195	0.001[a]
Intangibles[a]	0	10	2.09	2.88	0	40	6.76	7.70	4.67	7.45	5.944	0.000[a]
Inventory reserves[a]	0	18	1.68	2.93	0	16	2.46	3.69	0.78	2.29	3.226	0.001[a]
Investments[a]	0	15	1.30	3.00	0	32	3.14	6.22	1.84	5.58	3.137	0.001[a]
Marketing	0	11	0.12	1.16	0	9	0.18	1.08	0.06	0.57	0.928	0.178
Pension income and expense	0	39	1.34	5.02	0	65	6.87	12.08	5.52	9.93	5.274	0.000
Regulatory	0	18	0.89	2.70	0	38	1.47	4.82	0.58	2.93	1.871	0.033
Research and development	0	9	0.47	1.59	0	15	0.53	2.25	0.07	1.30	0.488	0.314
Restructuring charges[a]	0	7	0.28	1.11	0	17	1.03	2.92	0.76	2.60	2.759	0.004[a]
Retirement and post retirement liabilities[a]	0	7	0.26	1.07	0	30	3.13	6.66	2.88	6.25	4.367	0.000[a]
Revenue recognition[a]	0	22	4.69	5.94	0	51	7.30	9.29	2.61	7.46	3.322	0.001[a]
Sales returns and allowances	0	9	0.78	1.95	0	17	1.01	2.92	0.23	1.93	1.146	0.128
Stock-based compensation[a]	0	9	0.18	1.20	0	18	0.76	2.44	0.58	1.84	2.986	0.002[a]
Warranties	0	10	0.47	1.52	0	12	1.03	2.47	0.57	1.61	3.329	0.001
Oil & gas accounting[a]	0	14	0.18	1.49	0	16	0.23	1.76	0.06	0.38	1.394	0.084[a]
Contract commitments	0	8	0.20	1.20	0	10	0.11	1.05	$_{3}$0.09	0.89	$_{3}$0.942	0.175

Research question 3

Research question 3 asks if the quality of CAP disclosures improved from 2001 to 2003. To answer this question, we computed seven additional measures and performed additional paired t-tests. As shown in Table 8, the results of these summary measures are significant at the level of $p = 0.00$.

First, we compared the number of sentences included in the disclosures that were specific to the SEC guidance. These sentences, considered to be the value-added sentences, exclude the general descriptions of CAPs and the opening and closing boilerplate. The mean value-added sentences increased from 24.1 in 2001 to 51.6 in 2003, an increase of 27.5 sentences. The second measure of qualitative disclosure is the ratio of the value-added sentences to the total sentences. Results of the paired t-tests reveal that the ratio significantly improved from 72% in 2001 to 79% in 2003.

As noted in the sample selection and methodology section of this paper, quantitative disclosures are often considered to be more informative than narrative disclosures. The next series of comparisons focused on metrics of disclosure quality: the number of sentences containing a quantitative disclosure (measure 3) and the ratio of quantitative sentences to total sentences (measure 4). The measures increased by 3.9 sentences and 4% from 2001 to 2003.

Last, we analyzed changes in quality in terms of the breadth and depth of the disclosures. To represent breadth the fifth metric reports the number of subjects (5a) and the number of topics (5b) included in each company's disclosures. The mean number of subjects increased from 4.4 to 5.9, an increase of 1.5 subjects, and the mean number of accounting topics increased from 4.9 to just less than 7, an increase of approximately 2 topics from 2001 to 2003.[13] The change in the range is also insightful. For example, the maximum number of accounting topics included in a company's disclosure increased from 10 in 2001 to 22 in 2003. The sixth quality measure is another representation of disclosure breadth. It focuses on a count of the number of cells (each defined as the intersection of a subject matter and topic) indicating a disclosure specific to SEC guidance. The mean number of cells increased from 12.4 in 2001 to 22.3 in 2003, an increase of 9.9 cells per company. To assess the depth of the disclosures, we analyzed the number of sentences per subject disclosed (7a) and the number of sentences per topic disclosed (7b). These variables increased by 3.4 and 2.3 sentences, to 8.6 and 7.3 sentences, respectively.

Combined, these results clearly indicate that the quality of companies' disclosures improved from 2001 to 2003, as determined by the number of sentences specific to the SEC guidance, the number of sentences that included a quantitative disclosure, and the breadth and depth of the disclosures.

[13] Holtzman (2007) reports 5.6 as the mean number of 2006 CAP disclosures by 100 of the Fortune 500.

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Qualitativ measure o change disclosur 200 200 Base upo compani disclosin i 200 an
e s f s in es 1 –3 d n the 90 es g n 1 d 2003.

Measure number	Qualitativ e disclosu re measu re	2001 (= 90) Min	Max	Mean	St d. De v .	2003 (= 90) Min	Max	Mean	St d. De v .	Pair ed Mea n	tes ts St d. De v	90 r :) t	valu e (1 -
(1a)	Number f es d n is ic o C guidance		0	4 1222	4 1722	15	8	1 5889	8 9591	7 7	8 7	2	000
(1b)	Number of s d in data s (total sentences)		7	1 5333	6 5728	19	9	4 6556	5 8750	33 2444	5 780	815 00	000
(2)	Ratio f -d g other and g and g boilerplate) to l of s	010	1	0 7208	0 1993	1	1	0 7931	0 0798	0 0723	0 196	5100	001
(3)	Number of s g a e e			2222	7660		3	1000	3633	8	5	8	000
(4)	ve s as a e of total sentences		22	0322	0450		.22	0726	0579	5	7	3	000
(5a)	Number of s d in disclosures			4222	7672			9222	3676	0	7	4	000
(5b)	Number of topics included in s		10	9111	2166		2	9667	6960	0556	523	728	000
(6)	Number of cells included in e, g other and g and	0000	6	2 4000	3118	00325	1	2 2667	1871	8667	434	1 099	000
(7a)	closing Average number of s sentence subjec per t disclosed		1 1	2175	4504		2 4	6423	7376	4248	335	495	000
(7b)	Average number of s per topic d	00	6 .20	3345	0664	33	9 .80	6355	3935	3010	444	339 00	000

Conclusions, limitations and future research

The SEC issued guidance for critical accounting policy and estimate disclosures so that users would be able to access information critical to their understanding of the basis on which the financial statements were prepared. The SEC then reviewed the response to its 2001 cautionary guidance in its analysis of the disclosures made by Fortune 500 companies. As a result of this review, the SEC found that the number of companies disclosing and the content of the disclosures, when made, were inadequate. Through 2007, the SEC continued to indicate that improvements in CAP disclosures were necessary.

To assess the level of compliance with the cautionary guidance included in FR-60 and the two subsequent pieces of CAP guidance issued in 2002 and 2003, we analyzed the 2001 and 2003 CAP disclosures of 112 of the Mid-Cap 400 companies. To adequately capture the nature and extent of the disclosures, we analyzed both the number of companies making a disclosure and the number of sentences used in the disclosure. Disclosures were categorized by subject matter, e.g., the categories of dis-closure included in the SEC guidance, and by accounting topics, e.g., the financial statement line items to which the disclosures pertain.

We find that most of our sampled companies complied with at least some of the cautionary guidance included in FR-60 in their 2001 CAP disclosures. This appears different than what the SEC found in its review of the 2001 disclosures of Fortune 500 firms. These results are intriguing, as prior research found that smaller companies made fewer disclosures than large firms. However, closer examination of the disclosures made by our sampled companies reveals that the 2001 CAP disclosures were limited, and that the ‘‘average” sampled company included only 24 sentences of CAP disclosures in its 2001 MD&A.

Comparisons of the level of compliance with SEC CAP guidance from 2001 to 2003 indicate that the percentage of companies making at least one critical accounting policy disclosure increased from 79% of the sample in 2001 to 100% of the sample in 2003. In 2003, the number of companies making disclosures increased for all four of the sub-jects articulated in FR-60. We find that companies were responsive to subject matters specifically addressed in the Proposed Rule and repeated in FR-72, but few companies were responsive to subject matter included only in the Proposed Rule. These findings indicate that companies made at least some attempt to comply with definitive guidance, but did not respond to discretionary guidance included in the Proposed Rule. These findings are confirmed in the few disclosures specific to the guidance included in the Proposed Rule but not reiterated in FR-72. The lack of response to the Proposed Rule suggests that the Proposed Rule did not engender a response by companies and the continuance of a proposed rule does not seem to be an effective policy setting tool for the SEC.

Further, we find that the number of sentences included within the subject disclosures identified within the three pieces of CAP guidance increased from 2001 and 2003, significant at $p = 0.00$, in all but four subjects. The results also show that companies increased the number of accounting topics included in CAP disclosures. Companies significantly increased the number of sentences used to describe 17 of the 26 (65%) accounting topics included in the study. Of the 14 topics highlighted in the SEC’s review of 2001 CAP disclosures, significant increases occurred in 11 topics (79%), suggesting that companies focused their disclosures on those topics identified by the SEC.

We also find that the quality, breadth and depth of CAP disclosures increased from 2001 to 2003. Companies in-creased the ratio of content-specific sentences to total sentences included in the disclosures, the ratio of sentences including quantitative information to the total sentences, the number of subjects disclosed and the length of the dis-closures, and the number of topics and the length of the to-pic disclosures. Combined, the results of our analyses indicate that by the end of 2003, all companies complied to some extent with the guidance in FR-60, and disclosures consistent with the guidance included in FR-72 significantly increased.

Despite the trend of increased overall compliance, several subject matters specifically mentioned in FR-72 remain under-disclosed. Two subjects were disclosed by fewer than 20% of the sampled companies – discussion with the audit committee and a reference to a specific financial statement line item (when the quantitative impact of the change in an estimate is disclosed). Why an estimate is reasonably likely to change was disclosed by fewer than 10% of the sampled companies. The lack of dis-closure regarding discussions with audit committees is especially problematic as the SEC specifically stated that it believed identification and discussion of the CAPs would improve communications with the audit committee. It is also troublesome that companies discuss the quantitative impact of the changes in an estimate without reference to the affected financial statement line item. The SEC's in-tent when first publishing the cautionary guidance and subsequent guidance was to help users understand the ba-sis on which the financial statements were prepared, reference to specific line items would contribute to this understanding. Providing information as to why an estimate is reasonably likely to change would also enhance readers' understanding of the various assumptions and factors included in various accounting estimates, and allow them to predict changes in these estimates.

We would be remiss not to point out the limitations of the study. Our findings are based on a sample of 112 companies from the Mid-Cap 400. While we designed our study to select a representative sample of Mid-Cap companies, our sample may not be representative of all of the Mid-Cap 400 companies and may not be representative of any other group of companies. Also, coding a narrative is inherently subjective. Although we took many steps to standardize the coding, the complexity and detail of the disclosures could result in different coders evaluating the subject matter of the sentence content in a different manner. The results are also limited by the nature of content analysis itself. Our application of content analysis relies upon the number of companies that made specific CAP disclosures within the MD&A and the number of sentences that were included within the disclosures. The method does not analyze the clarity of the information contained within the dis-closure, nor does it analyze any of the referenced note disclosures or disclosures in other sections of the 10-K.

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