New Empirical Evidence on Accounting Policy Disclosures

The Case of Critical Accounting Policies

Abstract

The growth of communicating accounting policies, estimates and underlying uncertainties has increased continuously over the last years. Since 2001, U.S.-firms are encouraged to disclose their highly uncertain accounting policies with a material impact on the presentation of the financial condition of the firm (‘critical accounting policies’, CAP). In comparison, there exist no similar regulation within the IFRS. Moreover, many outsiders criticize that current disclosures about accounting policies and estimation uncertainties within the IFRS are too unspecific. Due to this lack of disclosure, the aim of the study is to analyze whether and how CAP disclosures could serve as a basis for future discussion by standard setters to improve current disclosure requirements. Based on my findings, I conclude that CAP disclosures would be fruitful and help investors to assess information about accounting policies and estimation uncertainties in the measurement process.

JEL Classifications: M40, M41, M49

Keywords: accounting policies, critical accounting policies, estimation uncertainties, disclosures

INTRODUCTION

The growth of communicating accounting policies and estimates has increased continuously over the last years. On the one hand, many different methods for the valuation of firms' financial statement positions exist. Thus, understanding the measurement accounting principles that guide the values of financial statement positions is indispensable (Flood 2018). On the other hand, various financial positions are affected by unforeseeable and rapid changes in the economic and financial environment leading to uncertainties within the measurement process. Thus, standard setters, auditors, investors, and financial statement preparers have to constantly deal with communicating uncertain business transactions and estimates (Lev *et al.* 2010; Christensen *et al.* 2012; Mayorga and Sidhu 2012; Eilifsen *et al.* 2017; Christensen *et al.* 2014). Financial accounts depend mostly on the accounting environment and accounting system in which a firm operates as well as the accounting strategy of each firm (Palepu *et al.* 2016). Thereby, the choice of the measurement bases and the related uncertainties have a significant effect on the financial presentation of each firm and play a major role in investor's decision-making process. Subsequently, an increasing demand of full transparency on the side of outsiders with respect to general accounting policies, judgements and estimates as well as their future effect on a firms' financial position exists (SEC 2001). Recent evidence on current disclosure practice find nonetheless that companies only provide general descriptions and list their accounting policies for most of the times without providing any further detailed specifications (SEC 2002a; Higgins 2014; Fülbier *et al.* 2017; IASB 2014).

In the first quarter of 2018, the European Union (EU) has initiated a fitness check on public reporting by companies and calls for public consultation regarding the following topics: (1) Do current financial reporting requirements still meet their intended purpose? (2) Whether the burden

and cost stemming from extensive reporting obligations are reasonable and appropriate and (3) if reporting requirements are coherent with one another (European Union 2018; Müller 2018). Evidence from public consultation will be used to verify whether existing reporting requirements achieve their intended purpose and to derive practical implication for future regulations to make public reporting more efficient and effective. Moreover, standard setters and regulators in the EU have recently focused on accounting policy disclosures in their Disclosure Initiative due to its increasing importance (IASB 2017). Some respondents recommended that the Board should provide further guidance that would be helpful for preparers, whereas others suggested to focus on other topics of the Discussion Paper (IASB 2018a). Providing information to capital market participants on accounting policies, estimates and uncertainties in the measurement process of financial statements is indispensable in todays' capital markets. Nevertheless, many outsiders criticize that current disclosures on this topic contain too unspecific and for the most part boilerplate information.

Back in the early 2000s, the Securities and Exchange Commission (SEC) already recognized this problem and initiated a new regulation to improve the quality and transparency of corporate disclosure regarding accounting policies. It proposed disclosure recommendations within Management, Discussion & Analysis (MD&A) to enhance investors' understanding about the uncertainty underlying in their financial statements in the early 2000 (SEC 2001, 2002a, 2002b). Since 2001, companies from the United States (U.S.) are encouraged to disclose their accounting policies requiring "management's most difficult, subjective, or complex judgements, often as a result of the need to make estimates about the effect of matters that are inherently uncertain" (SEC 2001, p. 1) ('*critical accounting policies*', CAP). O'Shaughnessy and Rasthy (2005) find that disclosures

about CAPs are far more robust and comprehensive than related information in the notes. Fülbier *et al.* (2017) find that there is no similar regulation with respect to CAP disclosures within the International Financial Reporting Standards (IFRS) and state that the most comparable regulation are those about estimation uncertainties according to International Accounting Standards (IAS) 1.125. Moreover, the authors identify differences in disclosure requirements between United States Generally Accepted Accounting Principles (U.S.-GAAP)/SEC and IFRS regulations as well as a significant lack in the format and content provided by German public firms.

An increasing complexity in business transactions and the use of fair value measurements has led to a high degree of estimation uncertainties in reported numbers. To this day, it is unclear whether and how investors assess estimates within financial statements and when they contain extreme level of estimation uncertainties. Despite increasing disclosure requirements by international standard setters, investors, shareholders, creditors and other external addressees voice concerns regarding the identification of measurement uncertainties in financial disclosures. Due to the fact that regulators remain concerned about the disclosure of the use and effects of accounting policies and the underlying estimates, more academic research is needed on how such information to financial statement users is communicated (Christensen *et al.* 2014).

My study addresses this issue and is divided into two major parts. In the first part, I present and analyze current disclosure requirements about accounting policies based on IFRS and U.S.-GAAP/SEC regulations. I will focus primarily on the regulation of CAP. This is interesting for two reasons. First, disclosure requirements about accounting policies and uncertainties within the IFRS are very general resulting in significant differences in the disclosure format. Second, the International Accounting Standards Board (IASB) focuses focussing on the location of and which

accounting policies to disclose (IASB 2017). However, informing outsiders with more transparent information about estimation uncertainties would address this issue clearer. Moreover, to my best knowledge, there is no current debate on how to improve disclosures regarding estimation uncertainties. Thus, I focus on CAP disclosures to present a relative non-existent regulation in the EU. This can serve as a basis for future discussions by standard setters on how to improve corporate disclosure with respect to accounting policies and estimation uncertainties. In the second part, I present detailed descriptive statistics about how U.S. firms implement CAP disclosures between 2001 and 2016. Based on my results, practice as well as future research implications will be discussed to illustrate the importance of such disclosures as well as enhance the current knowledge of this topic.

I conclude that focusing on disclosures about estimation uncertainties and possible future effects on firms' financials is more useful than improving disclosures about general accounting policies. CAP disclosures require firms to provide detailed information about uncertainties of the estimates used as well as possible future effects on firms' future financials. Rules according to IFRS are more general and lead to inconsistent disclosures between firms. Thus, investors may spend more effort to identify relevant information. As a result, I suggest to include similar requirements within the IFRS to help investors assessing information about uncertainties in the measurement process. Overall, this may improve the information of financial reports and provide investors more insightful information.

The paper proceeds as follows. In the following section, I focus on the importance of accounting policy in the financial reporting environment and describe IFRS and U.S.-GAAP requirements regarding the disclosure of accounting policies. Then, I briefly review regulation and disclosure

requirements as well as research on CAP disclosures. Afterwards, I conduct an empirical analysis on the company's response to the SEC guidance of CAP disclosures between 2001 and 2016. To enhance the understanding of CAPs in corporate disclosures, I will discuss practical implications followed by future research implications. Finally, a conclusion is drawn.

REGULATORY OF ACCOUNTING POLICY DISCLOSURE

Importance of Accounting Policy Disclosure

The main objective of financial reporting is to provide useful information to potential investors, creditors and other external addresses and help them whether they should provide resources to the firm (IASB 2018b, CF.OB2). Thus, investors are mostly interested in firms' future fundamentals because such decisions depend upon the current and future value of the company (IASB 2018b, CF.OB5-7). However, future cash flows respectively earnings depend upon the future performance of the related assets, liabilities, revenues or expenses. There are many different methods for the valuation of a firm's financial statement positions. Thus, understanding the measurement accounting principles that guide the values of financial statement positions is crucial (Flood 2018). In this context, accounting setters argue that information about accounting policies are relevant information for financial statement analysis and interpretation because the use of distinct accounting policies can have a significant effect on the presentation of financial statements. Subsequently, knowing the methods and accounting principles on which measurements are based on is essential to forecast future financials (Hope 2003, p. 298). If outsiders are uninformed about the accounting policies used in the preparation of financial statements, it might be misleading due to missing information and outsiders face a higher degree of uncertainty in forecasting cash flows and earnings (Hope 2003, p. 298). Therefore, investors' understanding

about the applied accounting policies is decisive when making reasonably economic decision (FASB 2018, ASC 235-10-05-4; Flood 2018). As it is not possible to obtain information about accounting policies through the main financial statements (e.g. balance sheet and/or profit and loss), investors have to assess these information from firm-specific disclosures.

Various financial positions are affected by unforeseeable and rapid changes in the economic and financial environment. Such circumstances lead to uncertainties, judgements and estimates within the measurement process. This might reduce their precision, certainty and purpose to provide useful information. As a result, it is necessary to provide appropriate, clear and available disclosures about the current economic status of a company as well as the likelihood and possibility of future changes (SEC 2001). Moreover, investors may lose confidence in a company's management and financial statement if sudden, unforeseen changes occur. Financial accounts are mainly based on an interplay between the accounting environment, accounting system and accounting strategy of each firm (Palepu *et al.* 2016). The choice of accounting policies and estimates and the related uncertainties play a major role in determining financial positions. Therefore, an increasing demand of full transparency on the side of investors with respect to the future effect of accounting policy choices on a firms' financial account exists (SEC 2001).

The IFRS and U.S.-GAAP provide disclosure rules on accounting policies and the underlying judgements, estimates and uncertainties. These rules and disclosure requirements are described in the following section.

IFRS Regulation

Disclosure requirements with respect to accounting policies within the IFRS are presented in Figure 1.

[Insert Figure 1 around here]

In accordance with IAS 1.112, each company has to disclose the basis of their financial statements and the use of specific accounting policies in the notes. IAS 1.117 – 133 provide guidelines about disclosures that may be relevant to understand information covered therein (Figure 1). According to IAS 1.117, each company should explain their significant accounting policies and measurement bases at the beginning of the note section. This includes, for instance, whether a company uses the cost model or revaluation model in measuring property, plant and equipment or if the costs of inventories are assigned by using the first-in, first-out (FIFO) or weighted average cost method (IAS 2.25). Moreover, when deciding to disclose a particular accounting policy, the management considers whether its disclosure helps investors and outsiders in understanding reported financial positions and performance (IAS 1.119).

There are numerous circumstances where companies exercise judgements and have to make estimates. In this context, IAS 1.122 requires disclosure of judgements the management has to make in applying accounting principles. This is particularly the case in those judgements with a significant effect on financial positions (e.g. transferring all significant risks and rewards of ownership of financial assets that are subject to leases (IAS 1.123 (b)). These disclosures should be included in the significant accounting policy section (IAS 1.122).

Above all, companies must disclose assumptions about the future as well as major sources of estimation uncertainties, which have a significant risk of causing financial adjustments of financial statement position in the next year (IAS 1.125). For instance, in the absence of observable market prices, future-oriented estimates are used to measure the recoverable amount of an asset or the effect of technological obsolescence of inventories, future litigation process or long-term pension obligations (IAS 1.126). Moreover, disclosure in accordance with IAS 1.125 relates to those estimates that "require management's most difficult, subjective or complex judgements" (IAS 1.127). Investors and other outsiders should understand the disclosures about assumptions made by management about future estimates and sources of estimation uncertainties. IAS 1.129 present examples of disclosures types that include, among others, the nature of the assumption or estimation uncertainty, sensitivity analysis, the range of possible outcomes as well as an explanation of changes made in the past.

U.S.-GAAP Regulation

Disclosures of accounting policies in the U.S. are codified within the Accounting Standards Codification (ASC) 235-10-50 ("Notes to Financial Statements – Disclosure") and ASC 275-10-50 ("Risk and Uncertainties – Disclosure"). The related requirements are presented in Figure 1. According to ASC 235, firms should adopt accounting policies that are most appropriate to present fairly a firm's results of operations and financial condition in accordance with the underlying GAAP rules (Flood 2018). Due to the requirement of informing outsiders about the accounting principles used by the management, ASC 235 encourages firms to identify and describe all significant accounting policies as well as methods of these principles that have a material effect on the determination of financial positions and the financial situation (ASC 235-10-50-3; Flood 2018).

Furthermore, disclosures should include the selection from existing acceptable alternatives, industry specific principles and methods in which the firm operates or unique applications of GAAP (ASC 235-10-50-3 (a) – (c)).

ASC 235-10-50-3 requires companies to disclose material judgements in applying accounting policies. Moreover, companies face risks and uncertainties arising internally or from changes in the economic or industry environment. ASC 275 therefore provides guidelines that should help outsiders to identify risks and uncertainties in the preparation of their financial statements (Flood 2018). Further, ASC 275 requires disclosure of the use of estimates in the preparation of financial statements (ASC 275-10-50-1 (b)) as well as certain significant estimates (ASC 275-10-50-1 (c)). The former one includes an explanation that the preparation of financial statements requires the use of estimates (Flood 2018). The latter one, ASC 275-10-50-6, refers to disclosures of certain estimates used by the management when it is possible that the estimate used will change soon and would have a material effect on the financial statements (ASC 275-10-50-8). According to ASC 275-10-50-9, the company shall disclose the nature of the uncertainties as well as an indication that it is reasonable that a change in the estimate will occur. ASC 275-10-50-15 contains some examples of financial positions that may be based on estimates (e.g. litigation-related obligations, inventory subject to rapid technological changes or capitalized computer software costs).

In sum, current disclosure requirements in the U.S.-GAAP and IFRS comprise disclosures of significant accounting policies, judgements as well as estimation uncertainties (Figure 1). The rules, however, appear to be superficial and do not contain specific guidance about required disclosures. Moreover, many investors and outsiders criticize current disclosure practice because of boilerplate and too many unspecific information. This leads to relevant information fading into the

background. One important challenge is the increasing demand for transparent and high quality financial disclosures (SEC 2001, 2002a). In 2001, after the Enron failure in the U.S., the SEC began to review critically former financial reporting requirements. They concluded that capital markets could reach higher efficiency and investors' confidence if companies provide insightful information about accounting policies and estimates that entail uncertainties as well as subjectivity.

CRITICAL ACCOUNTING POLICY DISCLOSURE

Institutional Background

In the early 2000s, the SEC announced to include additional disclosures other than those referred to in ASC 275-10-50. In this Cautionary Advice (FR-60), the SEC called for new requirements that relate to the disclosure of judgements and uncertainties affecting the application of accounting policies that management believes are most 'critical' (SEC 2001) in their MD&A. The SEC defines them as CAPs and thus, as those accounting policies requiring "management's most difficult, subjective, or complex judgements, often as a result of the need to make estimates about the effect of matters that are inherently uncertain" (SEC 2001; Bauman and Shaw 2014, p. 821). FR-60 encourages firms to include a full explanation of their CAP, the judgements and uncertainties affecting the application of the CAP as well as the likelihood that materially different amounts are reported under different conditions or by using different assumptions (SEC 2001). However, FR-60 does not contain specific guidance regarding the implementation of critical accounting policy disclosures (Hughes *et al.* 2009).

Immediately after FR-60, Robert Herdmann, former Chief Accounting of the SEC (Herdman 2002) and Harvey L. Pitt, former Chairman of the SEC (Pitt 2002) emphasized the importance of informing investors about judgements and uncertainties within accounting policies and estimates

and the potential impact on future financial statements (Hughes *et al.* 2009). Moreover, the SEC promised further guidance on how to improve disclosures about CAPs in a statement on disclosure requirements (SEC 2002b). In May 2002, the SEC proposed new rules containing more detailed guidance on quantitative as well as qualitative CAP disclosures. The rules implicitly distinguish between Critical Accounting Estimates (CAE) on the one hand and CAPs on the other hand. The former ones are defined as judgmental and subjective estimates involved in the application of accounting policies with material impact on a firm's financial condition whereas the latter ones are defined as accounting policies that require management's most difficult, subjective and complex judgements (SEC 2002a). However, to this day companies still do not differentiate adequately between these two terms and therefore, I use the terms interchangeably within this paper. The primary goal of the proposed rule is to increase the transparency of disclosures regarding judgement and uncertainties and those investors would get a greater understanding about a firm's CAPs. Hereby, financial statement users might assess the quality as well as potential variability of a company's earnings (SEC 2002a). The rule provides detailed explanations and information that should support practitioners. Among others, each section should include disclosures about the nature, the significance of each CAP and, if material to individual financial statement line items, qualitative and quantitative analysis about the sensitivity as well as possible future effects and how earnings would be affected by the change of an uncertain estimate. Furthermore, the SEC requires to disclose an explanation about whether the selection and application of CAP were discussed with the audit committee and a discussion on a segment basis (SEC 2002a; Holtzmann 2007). Additionally, the SEC called for comment letters to receive feedback from investors and other external addressees.

Based on the comment letters received, the rule was criticized for requiring too extensive and too broad information that are not useful and are likely to obscure investors in their decisions rather than revealing information (Sullivan and Cromwell 2002). However, the proposed rule was never adopted within Item 303 of Regulation S-K, which requires a company to discuss its current financial condition, related changes and results of operations (Bauman and Shaw 2014). To this day, it still serves as a guideline for registrants when preparing CAP disclosures (Fülbier *et al.* 2017).

In 2003, the Division of Corporate Finance reviewed 10-k by all Fortune 500 companies. Principally, the review focused on a firm's CAP disclosure according to the requirements included in FR-60. As an overall result, the SEC noted that a substantial number of companies did not provide any CAP disclosures and if they were published, the disclosure was not adequately congruent with the guidance (SEC 2003b).

Consequently, the SEC released interpretive guidance (FR-72) in December 2003. Herewith, the SEC intention was to provide a more detailed guideline and clarification about the disclosure of critical accounting policies within the MD&A (SEC 2003a, p. 12).. Moreover, the commission stated that the description should supplement, not duplicate the accounting policy section already disclosed within the notes. While the notes about accounting policies generally describe the method used to apply an accounting principle, each CAP section within the MD&A should provide an analysis of the company uncertainties involved in applying accounting policies and estimates. A company should discuss how accurate the estimates were in the past and will be in the future, how they arrived at the estimate and analyze the sensitivity of each estimate. However, most disclosure subjects in FR-72 reproduce the contents of FR-60.

In the following years, no further guidelines or additional explanations about CAP disclosures were published and the SEC only referred to them in some releases. For instance, in 2006, the division of corporate finance reviewed current accounting and disclosures requirements and mentioned the necessity of more clear and precise description of accounting issues (e.g. leasing, pensions, goodwill impairment) in the discussion of critical accounting policies in the MD&A (SEC 2006). Despite the SEC guidance, many companies repeat parts of the significant accounting policies from the notes (SEC 2016). Following, the SEC published a concept release (S7-06-16) in 2016 to collect comment letters to improve certain disclosure requirements in Regulation S-K (SEC 2016). Based on eight questions, the Commission wanted to receive feedback on how to improve a firm's CAP disclosure and make them more informative to investors. To this day, the commission received 371 comment letters, of which only 32 comment letters addresses CAP disclosures. Overall feedback is mixed. While some state that CAP disclosures should be included within Regulation S-K, others argue that there is no need to revise current guidelines.

In sum, there has been several SEC initiatives to emphasize the importance of communicating highly uncertain accounting estimates and assumptions as well as providing companies more guidelines to improve their disclosures. Still it is unclear whether the Commission will incorporate CAP disclosures into Regulation S-K in the near future. Nevertheless, it seems that the guidelines and proposed rule of the SEC may have a significant binding effect for companies because of the continuing focus of the SEC on CAPs and that most public companies in the U.S. provide disclosures about their CAP.

Dismissing all regulatory effort, no final rule has been published to this date. Thus, FR-60 and FR-72 still represent mayor guidelines and the basis on which companies can refer to when preparing their CAP disclosures. The mayor goal of CAPs is to describe the uncertainties, assumptions and judgements contained in estimates which material effects of a firm's financial performance (Levine and Smith 2011). As described in the previous section, no rules about CAP disclosures within the IFRS exist (i.e. neither in the notes nor the management commentary). Notwithstanding, there are similarities between the requirements of the rules of a firm's disclosure about estimation uncertainties according to IAS 1.125 ff. and ASC 275-10-50-4 ff. (see Table 1).

[Insert Table 1 around here]

Current Requirements of CAP Disclosures

The main contents of the proposed rule are consistent with the rules required by IAS 1.125 ff. and ASC 275-10-50 (Fülbier *et al.* 2017). For instance, IAS 1 enables companies to decide whether to disclose the nature of assumption or estimation uncertainty, a sensitivity analysis or a range of reasonable possible outcomes within the next years (IAS 1.129). In comparison, FR-60 and FR-72 recommend and require detailed description of the following (examples) (SEC 2002a, pp. 10–11, 2003a):

- an explanation about the estimate used and its significance to the financial condition,
- the methodology used in determining the CAP and any assumptions about highly uncertain matters with significant consequences
- quantitative and qualitative discussion about material changes that could result from the use of the estimate and material changes made to the estimate in the last three years,

- a statement whether the senior management discussed their application, development and disclosure of the estimate with the audit committee, and
- a discussion of the accounting estimate on a segment basis and how the estimate might affect each single segment.

Despite some overlapping rules, the SEC extends those requirements in the notes by demanding a large number of further detailed information. In addition, CAP disclosures are part of MD&A whereas information about estimation uncertainties within the IFRS and U.S.-GAAP are presented in the notes. The SEC argues that such disclosures would further explain to investors and other external addressees the financial condition "through management eyes" (SEC 2002a, pp. 7–8). Further, they would fit into disclosures about significant uncertainties and favorable and unfavorable trends in MD&A. Although, CAP disclosures might be seen as mandatory, the content of the whole section is left to discretion of each company due to the missing legal basis (Levine and Smith 2011). Prior studies find that especially in the first years after the Cautionary Advice, CAP disclosures improved significantly but that a wide disparity between firms still exists.

To this day, there are only a few studies focusing on the regulation, reasons and economic consequences of CAP disclosures. I present each study in the following section.

PRIOR LITERATURE

Paprocki and Stone (2004) published the first literature focusing on critical accounting policy disclosure. They focus on the most frequent choices of critical accounting policies and if the number and quality of critical accounting policy disclosures increased from the first to second year

after the release of SEC cautionary advice. Furthermore, they analyze whether or not the quality of critical accounting policy disclosure is significantly associated with information asymmetry. The authors define disclosure quality by using a self-constructed measure. Firms with lower disclosure quality do not disclose any critical accounting policies whereas firms with one or more policies that would meet the SEC's definition of critical accounting policies have higher disclosure quality. The measure of information asymmetry is based on the Altman'z Z bankruptcy prediction score. They hypothesize a positive association between the quality of critical accounting policy disclosure and the bankruptcy score. They conclude that an increase in the number and quality of critical accounting policy disclosure as well as the quality of critical accounting policies is significantly associated with information asymmetry.

Cho *et al.* (2005) investigate the association of voluntary disclosure on critical accounting policies and estimates with accrual quality and other determinants of voluntary disclosure. They argue that high quality disclosure on critical accounting policies can make accounting policies and estimates more transparent and thereby increasing the likelihood of higher stock valuations. To determine a firm's disclosure quality, the authors use a self-constructed rating system that evaluates a firm's disclosure on accounting estimates for each critical accounting policies with a 5-point scale. They find that the quality of critical accounting policy and estimate disclosure varies across and within industries and is positively related to accrual quality measured by using the modified Jones (1991) model and the standard deviation of firm-specific regressions of changes in working capital (Dechow and Dichev 2002). Additionally, they find that the most frequent CAPs are revenue

recognition, accounting for goodwill, pension accounting, property, plant, and equipment and environmental liabilities and conclude that pension accounting has the highest average disclosure quality.

In their 2005 study, O'Shaughnessy and Rasthy conduct a survey and review the critical accounting policy sections in the MD&A of ten technology National Association of Securities Dealers Automated Quotations (NASDAQ) companies in 1999 and 2003. Thereby, they provide detailed insights to the critical accounting policy sections for the first time. They find that disclosures about critical accounting policies are more robust and comprehensive than related information in the notes. However, it may be too difficult to fully address the SEC requirements. Most discussion of critical accounting policies is limited to a description of GAAP and conventional accounting policies. Thus, they conclude that there is still a lack of critical accounting policy disclosure and that sometimes, firms fail to disclose the judgements surrounding the uncertainty.

In a short review of annual reports of the largest 100 publicly traded companies from the Fortune 500 firms, Holtzmann (2007) analyzes 10-K filings in 2005 and 2006. He finds that impairments (39 out of 100), pensions (64 out of 100) and income taxes (56 out of 100) are the three most disclosed critical accounting policies. On average, 5.6 CAPs were reported in the firm's MD&A. The fewest number of CAPs reported was 2 whereas the highest number of CAPs was 11. Moreover, various firms provide industry-specific critical accounting policies (e.g. claims (insurance companies), purchase allowance (retail), oil and gas accounting (oil and gas firms), capitalization of entertainment assets (entertainment)).

Hughes *et al.* (2009) use the content analysis method to assess in how far which companies respond to the initial SEC guidance and determine the extent to which company disclosures changed with additional SEC guidance included in the 2001 and 2003 10-K fillings. They find an increase from 2001 to 2003 in the number of sentences within the subjects, the number of accounting topics included in critical accounting policy disclosures, the disclosure quality and the percentage of companies making at least one critical accounting policy disclosure.

Levine and Smith (2011) were the first ones to analyze the motives for critical accounting policy disclosure. In addition, they investigate the extent to which they provide information to investors and which disclosures correlate with existing financial statement information. They find that firms with *ex-ante* higher litigation risk are more likely to provide CAP disclosures indicating that firms use this disclosure practice to reduce their exposure of lawsuits. In their prediction model to assess whether critical disclosures are informative, they show that the disclosure decision has predictive ability for changes in account balances. Using a market model, they find that following a disclosure firms with fewer (more) critical disclosures than expected see an increase (reduction) in their reliability of reported earnings (e.g. less earnings multiples). Additionally, they construct the first large database of CAP disclosures and provide both descriptive statistics and analysis of the decision to declare an accounting policy as critical.

Glendening (2012) uses a large sample of non-financial and non-utility Standard & Poor's (S&P) 500 firms from 2004 to 2009 (2,033 firm-year observations) and analyzes whether the presence of a CAE disclosure partially explains cross-sectional variation in the value relevance of balance sheet items. Moreover, he investigates if the presence of a CAE disclosure is associated with the predictive value of accruals with respect to future cash flows. In comparison to Cho *et al.*

(2005) as well as Levine and Smith (2011), he focuses on the presence of a quantitative sensitivity analysis relating to CAPs. The author concludes that investors perceive balance sheet items accompanied by a related CAE disclosure to be less reliable (but only in the post-disclosure period). Moreover, accruals are less useful in predicting future cash flows when CAE disclosures are present, but only when the accounting estimate is important.[1] Thereby, he compares the mean change in the absolute value of the residuals of two cash flow prediction models of firms without and with non-pension CAE disclosure.

Bauman and Shaw (2014) examine the details and determinants of critical accounting estimates disclosures related to pension of 147 firms with relatively large defined-benefit pension plans. They find that only 60% of the sample quantify the effect on pension measurements of a given change in discount rates. Furthermore, they show that the likelihood of providing a CAP related to the discount rate or expected asset return is positively related to firm size, BIG4 auditor and the variability of pension plan funded status and is lower for firms operating in regulated industries and for firms with better pension plans. They conclude that only few firms provide information with respect to their pension plans and that there is room for improvement in pension related critical accounting policy disclosure.

Glendening *et al.* (2014) study the determinants of a firm's decision to provide quantitative sensitivity disclosures about CAEs. They demonstrate that the decision of CAE disclosure reflects strategic preferences of those that are responsible for financial reporting. By analyzing 317 distinct

[1] Importance is estimated by the sum of the average of the beginning and ending account balances in year *t* for which a firm provides a CAE disclosure multiplied by 1 percent, scaled by the absolute value of earnings in relating to the CAE disclosures.

S&P 500 non-financial and non-utilities companies (2,298 firm-year observations) from 2003 to 2010, they show that CAE disclosure is less likely when the incentives to misreport are high. Moreover, their results indicate that an auditors' opposition to critical accounting estimate disclosure reduces the likelihood of clients to disclose them in the MD&A and that the likelihood as well as the number of CAE disclosures increase in audit committee accounting expertise.

Most recent studies focus on the usefulness of CAPs. Glendening (2017) uses disclosure about CAEs to identify accounting measurement uncertainties. He examines how the predictive ability of current aggregated earnings with respect to future cash flows varies in the presence of CAE disclosure. He finds a negative association of the predictive value of earnings with respect to future cash flows in the presence of CAE disclosures. Chen and Li (2017) provide an approach to determine the total amount of estimation within accruals in a given firm using information from the notes and CAP sections. They find that accruals influenced by unreliable estimates are less useful in predicting future cash flows. Moreover, their results are determined by both the expected and unexpected amount of estimation. They conclude that the amount of estimation plays an important role in the quality and usefulness of accruals.

While a number of prior studies present descriptive statistics about which CAP are disclosed by companies, there are others focusing on the contents, economic consequences and usefulness of related disclosures. However, most existing studies focus on the years immediately after issuing Cautionary Advice (FR-60), Proposed Rule and Interpretative Guidance (FR-72). Moreover, various events (e.g. financial crisis, lower-interest phase or several accounting changes) have occurred since 2001 with probably a significant effect on CAP disclosures. To this day, small number of studies focusing on CAPs exist. Thus, the current knowledge about this topic is limited. To gain

more insights in this field, additional research about the implementation and presentation of CAP disclosures may be useful. To my best knowledge, no such study exists. Therefore, I analyze how firms implement CAP disclosures over time. Based on my findings, I will derive practical implications as well as future research suggestions.

SAMPLE AND DATA

I analyze CAP disclosures of all firms that are included in the S&P 500 between 2001 and 2016. The S&P 500 index includes the largest companies from various industries in the U.S. with the highest market capitalizations. This provides interesting insights about the occurrence of highly uncertain accounting estimates and accounting positions of the largest and most important companies in the U.S. Moreover, S&P 500 firms may be more often the focal point of the SEC and should thus, strive to be compliant with their guidance regarding CAP disclosures. I start my sample selection as follows. First, I create a list of all companies included in the S&P 500 as of December 31, 2016. Second, I download all 10-k from the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) platform between 2001 and 2016. Third, I eliminate all firms without complete time series data. Fourth, I extract the MD&A section as well as the CAP section using *Python*. Afterwards, I hand-collect each CAP-heading from each 10-k. I use a keyword based coding system to code the data. My final coding system is based on the Financial Accounting Standards Board (FASB) Taxonomy and the study of Levine and Smith (2011) and contains twenty-nine accounting positions. In order to assign each CAP heading to one of the categories, I determine decisive keywords that pick up a related policy disclosure. To determine these keywords, I manually code CAP headings from 100 firms between 2001 and 2016. Following, I code automatically all reaming

CAP headings based on my defined keywords. This procedure allows a replicable coding approach. I present the final coding system in Appendix A. To my knowledge, the resulting data is the largest and most representative than any data that is used in prior studies. As a result, 6,432 firm-year observations remain. Table 2 presents my sample selection procedure and descriptive statistics about my final sample.

[Insert Table 2 around here]

RESULTS

Number and Type of CAPs

In 2002, the SEC stated that the number of CAP varies by company and it has between 3 to 5 critical accounting estimate (SEC 2002a; Levine and Smith 2011). Prior research find that the average number of critical policies is between 6 and 7. Several SEC initiatives in the past years addressed CAP disclosures. Moreover, the financial crisis since in 2007 and important accounting changes (e.g. stock-based compensation in 2005 (Statement of Financial Acccouting Standards (SFAS) 123 respectively Accounting Principle Board (APB) 25 to SFAS 123-R)) may have affected number of CAP disclosures in the past. Table 3 Panel A presents descriptive statistics about the total number of CAPs, the average number of CAPs, as well as the average number of CAP-headings between 2001 and 2016.

[Insert Table 3 around here]

Directly after the SEC issued Cautionary Advice in 2001, 248 companies provided disclosures with about on average 3 CAPs. In the following year, the average number of CAPs increased to 5. This may be due to the Proposed Rule in May 2002 as well as an increase of companies

providing CAP disclosures. Afterwards, the average number of CAPs steadily increased to nearly 7 in 2011, but decreased slightly until 2016. Nonetheless, between 2007 and 2016, the average number of CAPs remained largely the same. It is possible that ambiguity in CAP headings led to actually more CAPs than headings. According to my pre-test, I identified several firms with two or more accounting positions in a single heading. As a result, I manually went through the data to identify multiple CAP headings and assign them to additional CAP categories. Thus, I differentiated between number of CAP headings as well as the number of unique CAPs. By looking at Panel A of Table 3, it can be seen that on average, the number of CAP-headings is lower than the number of unique headings. This indicates that some CAP headings contain several CAPs that relate to different categories of my coding system. Moreover, there are huge discrepancies in the number of CAPs. While some firms only have 2 or 3 CAPs, there are others with 17 (Panel B of Table 3).

[Insert Table 4 around here]

Table 4 provides descriptive statistics for each category of my coding system. My results are consistent with prior literature. Deferred taxes, goodwill, property, plant and equipment, retirement benefits, revenue recognition and contingencies are the five most frequent critical accounting policies. Other accounting policies, such as equity, loans, cash and cash equivalents and deferred revenue are classified at least critical by few firms. Appendix B provides descriptive statistics for each category and year. Figure 2 presents the 9 most disclosed CAPs between 2001 and 2016.

[Insert Figure 2 around here]

On the one hand, the number of firms that classified their deferred taxes, intangibles or contingencies increased over time, whereas CAPs related to compensation, receivables and financial instruments decreased. On the other hand, the number of firms disclosed their property, plant and equipment, revenue recognition and inventories as CAPs remain similar. However, it becomes apparent that the number of uncertain and critical accounting policies and estimates has increased over time in the first years after Cautionary Advice.

To evaluate the differential disclosure policies across industries, I provide disclosure frequencies by the Standards Industrial Classification (SIC) Fama and French 12 Industry Portfolio based on four-digit code in Table 5.

[Insert Table 5 around here]

Fair value measurement, software capitalization, regulatory accounting (e.g. oil and gas) apply only to particular industries. It can be seen that other more general accounting policies relate to all firms, but the judgement and uncertainty required remains industry or firm specific. This is consistent with the results by Levine and Smith (2011). The results in Table 4 increase the confidence of my coding system. For instance, CAPs regarding financial instruments and investments mainly occurs in firms from the financial industry whereas uncertain regulatory accounting matters as well as oil and gas accounting appears more frequently in firms from the energy and gas industry. Moreover, retailers tend to disclose their inventory valuations more often as critical, while firms from the business equipment and healthcare industry classify their revenue recognition as CAPs (e.g. Levine and Smith (2011)). Subsequently, industry is significant in explaining the representation of CAPs.

Length of CAP Disclosures

Since 2001, the SEC published guidelines regarding the required information about CAPs. Dismissing all effort, no final rule has been published. The content of CAPs is thus left to the discretion of each firm (Levine and Smith 2011). However, the SEC states that companies should not provide a "lengthy discussion of a multitude of accounting estimates in which the truly critical ones are obscured" (SEC 2002a; Levine and Smith 2011). I use *Pyth*on to determine the length of each CAP section. Because 10-k are provided in Hypertext Markup Language (HTML) on EDGAR, I use the following steps that is based on the general procedure of Loughran and McDonald (2018) to extract the raw text from each file.[2]

1. Remove , <li>, <tr>, <td>, <th> and <FONT> tags.
2. Remove all headings. Headings are identified as a text between two tags with less than 60 characters and that do not end with a dot.
3. Remove list tags (e.g. <u1>, <dt>, <dd>)
4. Replace all HTML special characters (e.g. &amp with &,   with a blank space).
5. Remove all tables, e.g. all text between <table> and </table>. However, several firms use table tags to present text. Thus, I identify each potential table and then compare the number of numeric vs. alphabetic characters. Only table encapsulated where *numeric chars / (alphabetic + numeric chars) > 10 %.*
6. Remove all numbers and other special characters

[2] Several firms have published amendments to their 10-k on EDGAR. If these amendments contain information about CAP, I include these sections in my analysis. Using this approach allows me to identify changes in the CAP content between the initial and revised CAP section.

7. Remove all remaining html tags.

Table 3 shows that the average length of CAP sections are similar to the average number of CAPs. In the first years after Cautionary Advice, firms provide relative few information. This may be due to missing disclosure guidance. Afterwards, the average length of CAP sections increases significantly and remains similar in the years between 2011 and 2016. Nevertheless, the largest firms in the U.S. present on average 18,000 characters, which reflect six DIN A4 pages.[3] In comparison, Fülbier *et al.* (2017) find that German public firms disclose on average 7,000 characters about their estimation uncertainties. As a result, U.S. firms disclose two to three times more information about their uncertain accounting policies and estimates compared to German firms. This may be because of detailed disclosure guidance of the SEC and therefore, more insightful information about the underlying uncertainties.

Disclosure Examples of CAPs

Disclosure requirements based on the Proposed Rule state that companies should provide basic information about the accounting policy, a description of the methodology as well as estimates underlying each CAP as well as highly uncertain and material assumptions. Moreover, companies should provide useful information to investors about the sensitivity of operating results due to changes in assumptions and estimates that are used in applying the accounting policies (SEC 2002a). In the following, two distinct disclosures examples are presented. Since 2002, *Cigna Corporation* (CI) uses a tabular format to present information regarding the nature of the CAP, the assumption used and the effect if different assumptions are used. Thus, investors have a

[3] One DIN A 4 represents on average 3,000 characters.

direct and better access to the general description of the CAP, the underlying assumptions as well as the sensitivity of these assumptions if sudden changes occur. Figure 3 Panel A presents an example of CAP disclosures about global health care medical costs payable of in 2016 (Cigna Corporation 2016).

[Insert Figure 3 around here]

23 other companies uses this tabular format to present their CAPs. However, this is only the case for 5 % of the whole S&P 500. The majority of companies present their CAPs as a continuous text. Thus, the identification of important and relevant information is more difficult. Figure 3 Panel B contains another example of allowance of loan losses as a CAP of *Alliance Data System Corporation* (ADS) in 2006 (Alliance Data System Corporation 2016). Both examples illustrate the key features of a CAP disclosure – the effect of reported earnings if different assumptions are used. However, ADS does not accentuate this sensitivity analysis under a prominent heading as CI does. Nevertheless, most firms only present textual information without any sensitivity nor quantitative analysis of firms reported earnings. Other companies only mention their CAPs but refer to the notes. For instance, Intel presents 7 CAPs in their MD&A and refer to Note 2 for further information. However, in prior years, *Intel* (INTC) discussed its CAPs in detail within the MD&A (Figure 4) (Intel Corporation 2016).

[Insert Figure 4 around here]

Factors with an influence of CAP Disclosures

There are huge discrepancies in the disclosure frequencies, the length and disclosure format of the CAP sections within the MD&A. For instance, the number of firms with critical und uncertain

compensation matters increased significantly from 2005 to 2006, whereas there was a great increase of firms that disclosed their financial instruments as critical between 2007 and 2009. Thus, along with the SEC's recommendation, there seems to be other factors that might affect a firm's decision to classify an accounting policy or estimate as critical. However, the nature of the following findings is exploratory and form the basis of the practical recommendations and research implications.

a. Macroeconomic Factors

One of the most relevant events in the past years was the global financial crisis between 2007 and 2009. Due to the subprime mortgage bubble and the banking crisis, various financial institutions got into financial trouble leading to massive bail-outs to prevent a collapse of the global financial system. Such macroeconomic developments may have an effect on the number and type of uncertain accounting matters, especially important for banks and other financial institutions. By looking at the total number of uncertain accounting positions, there seems to be no significant increase of CAPs. The single and the average number of CAPs in each industry indicate that the financial crisis had led to an increased disclosure of accounting matters with respect to financial instruments as well as the total number of CAPs of firms from the finance sector. A large number of firms have classified their fair value accounting as CAPs primarily after the beginning of the financial crisis. Nevertheless, most of these accounting matters were already highly uncertain with a material effect on firm's future financials before the crisis has begun. This finding suggests that on the one hand, firms may adapt disclosure attitudes from other firms of the same industry as well as to meet the expectations of the market. On the other hand, firms may use CAP disclosures to mitigate or avoid litigation due to surprises if subsequent realizations differ from the reported

amounts (Levine and Smith 2011). This confirms the finding of Levine and Smith (2011) providing evidence that firms with higher *ex-ante* litigation risk are more likely to make disclosures about CAPs. As a result, CAP disclosures may be used to reduce their exposure to lawsuits if investors are surprised to unforeseen changes.

b. Accounting Standard Changes

Changes in the underlying rules of accounting standards may affect the classification of accounting matters as critical. In this context, I identify additional saliences by looking at the development of other single CAPs. For instance, the number of CAPs related to stock-based compensation increases significantly from 2005 to 2006 (see Figure 2). This increase may be due the change of SFAS 123 to SFAS 123R (ASC 718 – Stock Compensation) that led to material changes with respect to the recognition of share-based payments. SFAS 123 (ASC 718) gives firms the discretion to disclose stock options expense in the footnotes rather than including it in the incoming statement. According to SFAS 123R (issued in December 2004), all expenses have to be incorporated in the income statement (Frederickson *et al.* 2006). Therefore, it seems that the accounting changes led to a significant increase of classifying a firm's stock-based compensation as critical.

c. SEC Enforcement

The SEC mandate all companies to make their registration documents, periodic reports and other forms on EDGAR available. According to Sarbanes-Oxley (SOX) Section 408 (a), the SEC "shall review disclosures made by issuers reporting under section 13(a) of the Securities Exchange Act of 1934" (U.S. Government 2002, § 408 (a)). Moreover, the division of corporate fi-

nance selectively reviews fillings to verify if disclosures conflict with Commission rules, applicable accounting standards or disclosures that are insufficiently clear (Cassell *et al.* 2013). Evidence from examining SEC comment letters find that more than 25 % of comment letters issued by the SEC between 2004 and 2009 include topics related to critical accounting policies and estimates (Cassell *et al.* 2013). In the first year after SEC issued FR-60, some companies did not provide CAP disclosures and thus, did not comply with the SEC's disclosure requirement. However, Glendening (2012) finds that SEC comment letters explain that a minority of firms began to provide CAP disclosures. Only 19.4 % of newly disclosing firms received a SEC comment letter in advance (Glendening 2012).

Moreover, other firms may change their CAP disclosures because of restatements, accounting and auditing enforcement releases as well as litigation releases. For instance, *American Tower Corporation* did not provide any CAP disclosures regarding their stock-based compensation until 2005. In 2005, the company filed an amendment to its annual report due to a restatement of its consolidated financial statements as of December 31, 2004 and 2005. Furthermore, the amendment reflects corrections made by the company because of identified errors related to their stock-based compensation. The company then began to classify their stock-based compensation as critical. Moreover, *General Motors Corporation* (GM) was sued because of its disclosures concerning two pension accounting estimates: pension discount rate selection and expected return on pension assets. Due to several other misstatements in the financial statements published in the years after 2002, GM got a restatement and filed an amendment in 2006 adjusting various accounting matters, including those misstatements that relate to pension accounting (SEC 2009;

General Motors Corp 2006). However, GM had already CAP disclosures with respect to its pension accounting. Thus, accounting positions may still be subject to SEC enforcement despite the fact that they are already disclosed as CAPs.

PRACTICAL IMPLICATIONS AND FUTURE RESEARCH SUGGESTIONS

Practical Implications

Results presented in the last section show interesting insights. Since 2001, the SEC attaches great importance to disclosures about highly uncertain matters. In 2016, all firms of the S&P 500 provided CAP disclosures in their MD&A, but with huge discrepancies in the format and content. Even though most companies are complying with the basic requirements, some firms do not disclose related information about the judgements, assumptions and uncertainties surrounding the estimate used. While only a handful of firms provided a two- or three-section disclosure (general description, judgements and assumption, possible future effects), the majority presented their CAPs in a continuous text without distinguishing between specific parts. Moreover, some firms presented detailed description and a sensitivity analysis for all their CAPs while others disclose boilerplate information und duplicate the note section. Additionally, a handful of firms only mentions their CAPs and refers to the note section without providing any additional information. As a result, a potential lack of CAP disclosures exist. This may complicate extracting relevant information and the SEC's goal to enhance investors' understanding about highly uncertain accounting policies and estimates. There may be two possibilities to solve these issues. First, the SEC should provide clearer guidelines about the presentation format to reduce discrepancies in the content of CAP sections. Second, CAP disclosures should be part of Regulation S-K to

taking on a statutory regulation. Investors and capital markets may benefit from more structured, informative and clearer financial statements.

While IFRS and U.S.-GAAP rules mandate firms to disclosure information about significant accounting policies, judgements and estimation uncertainties, no similar requirements about CAPs within the IFRS exist. The most comparable requirements are disclosure about estimation uncertainties according to IAS 1.125 (Fülbier *et al.* 2017). Nevertheless, Fülbier *et al.* (2017) find that regarding IAS 1.125, there are also unambiguous disclosure differences across firms. While various firms' present information about estimation uncertainties in a separated section, others include related information in the notes of each financial statement position. Thus, investors have to spend considerable time and effort to identify, analyse and understand the uncertainties and subjectivity within accounting estimates. To improve the quality and transparency of insightful financial information about uncertainties in the measurement process within the IFRS, introducing a similar regulation like CAP disclosures may be fruitful and may streamline disclosures about estimation uncertainties. Based on that, it has to be questioned if such disclosures have to be included within the notes or in another section of the annual report. Following the SEC, including such disclosures within the management report may separate them from other financial information. Instead, they would be highlighted in disclosures about uncertainties and risks in a firms' business environment and future financial condition (SEC 2002a). In 2017, the IASB published the Discussion Paper "Disclosure Initiative – Principles of Disclosures" to develop new and clarify existing disclosure requirements. One part of the Discussion Paper deal with the location of accounting policy disclosures as well as which accounting policies to disclose (IASB 2017). In their Agenda Paper 11A (March 2018), the staff presents first results

based on the comment letters received. Overall, relative few respondents provided comments about the location of accounting policies. Those who did propose that the Board should provide further guidance as it would be helpful for preparers. However, some respondents and the staff recommend prioritizing which accounting policies to disclose (IASB 2018a, No. 29). Thereby, many respondents supported the Boards efforts to developed new guidelines and requirements about which accounting policies to disclose (IASB 2018a, No. 44). However, the staffs' recommendation focused mainly on accounting policies disclosures based on IAS 1.117 rather than estimation uncertainties (IAS 1.125). Nevertheless, informing investors with uncertainties surrounding the measurement process is indispensable to reach a higher capital market efficiency and investor confidence. To some extent this might be more important than disclosing general accounting policies. Due to disclosure lack identified by Fülbier *et al.* (2017), the IASB could focus even more on the disclosure requirements about estimation uncertainties. With respect to this, introducing specific guidelines would be helpful for two reasons. First, companies may be able to use these guidelines as a basis for the preparation of disclosures about estimation uncertainties. Second, investors may obtain a direct access to relevant information about uncertainties and subjectivity in the measurement process with a material effect of a firm's future financial condition. Thus, the SEC regulation about CAPs could be a fundament for further developments in disclosure requirements about estimation uncertainties within the IFRS.

Future Research Implications

In the following section, future research implications are presented based on the results discussed in the previous sections. CAP disclosures are still left to the discretion of a firm. Thus,

several factors seem to affect a firm's classification of accounting policies and estimates as uncertain. Based on my exploratory findings, I mainly identify three areas: macroeconomic factors, accounting standard changes and SEC enforcement. In this context, further research may focus on these three areas to identify additional reasons for companies to classify an accounting policy or estimate as a CAP and to develop existing empirical findings.

Glendening (2017) and Chen and Li (2017) focus on whether CAP/CAE disclosures provide relevant information for investors and are useful to identify measurement uncertainties. However, both studies capture the amount of measurement uncertainties on a considerable aggregated basis and do not distinguish between single certain and uncertain accruals. Glendening (2017) only focuses on whether there are disclosures about CAE. Nevertheless, he differentiates neither between financial statements accounts that are 'certain 'respectively 'uncertain' nor between the different number of uncertain positions between firms. Chen and Li (2017) provide an approach to determine the total amount of estimation within accruals in a given firm. They find that accruals susceptible to unreliable estimates are less useful in predicting future cash flows. However, they do not consider if specific uncertain accrual-based measures exist or if there are accruals that are not susceptible to estimation errors. Not every accrual component is uncertain and not all accruals are created the same way. Thus, it is possible that two firms have the same change in accrual components but have a different level of reliability due to differences in firm's fundamentals and accounting policies. Thus, future research may focus on this issue and analyze whether CAP disclosures are useful to identify single accrual components that are affected by measurement uncertainties and if these accruals are less useful in predicting future cash flows.

Additionally, the extent and importance of uncertain position varies strongly between firms over time. First, there are huge discrepancies in the number of uncertain accounting numbers. Thus, the total amount of uncertain positions and the resulting effect on a firm's financial condition may be different in each firm. Second, there is a wide dispersion in the type of CAPs across firms as well as industries. While there are CAPs that exist in nearly every firm and that are common within industry (e.g. deferred taxes, pensions), others are more unusual (e.g. oil and gas accounting, regulatory accounting, fair value measurement). As a result, future research could elaborate the effect of uncertain accrual components on the predictability of future cash flows and earnings that are important and / or specific for a firm in a given industry.

O'Shaughnessy and Rasthy (2005), Bauman and Shaw (2014) and Hughes *et al.* (2009) investigate the content of CAP disclosures in their studies. They only focus on single CAPs or on disclosures immediately after the SEC issued FR-60. Therefore, researchers could evaluate how the quality of CAP disclosures has changed in the last years and how firms comply with the SEC guidance and recommendations. Suggestions to improve the SEC guidelines and requirements could be thereby derived.

CONCLUSION

Providing investors and capital markets with information about measurement uncertainties is indispensable. It is now seventeen years since the SEC issued Cautionary Advice and recommends disclosure of CAPs to improve investors' understanding about highly uncertain estimates with a material effect of a firms' financial presentation. However, this field of research is still underdeveloped. There exist huge discrepancies in the number, content and format of CAP disclosures. Therefore, the SEC should develop further guidelines and specifications of required contents to

improve disclosures. Moreover, there are clear differences between U.S.-GAAP/SEC and IFRS requirements. Due to an existing lack of disclosure within the IFRS, obtaining similar requirements based on CAP disclosures would be fruitful and help investors to assess information about uncertainties in the measurement process. Thereby, the information of financial reports could be improved and capital markets may benefit from such disclosures. Based on my exploratory findings, future research could focus on determinants that affect the decisions to classifying an accounting policy and/or estimate as critical, the usefulness of single CAPs for the identification of measurement uncertainties as well as the predictability of firm's future fundamentals and the quality of CAP disclosures. This may enhance current knowledge about CAPs and accounting policy disclosure in general. Therefore, I look forward to future studies in this field of research.

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Figure 1
Disclosure of Accounting Policies

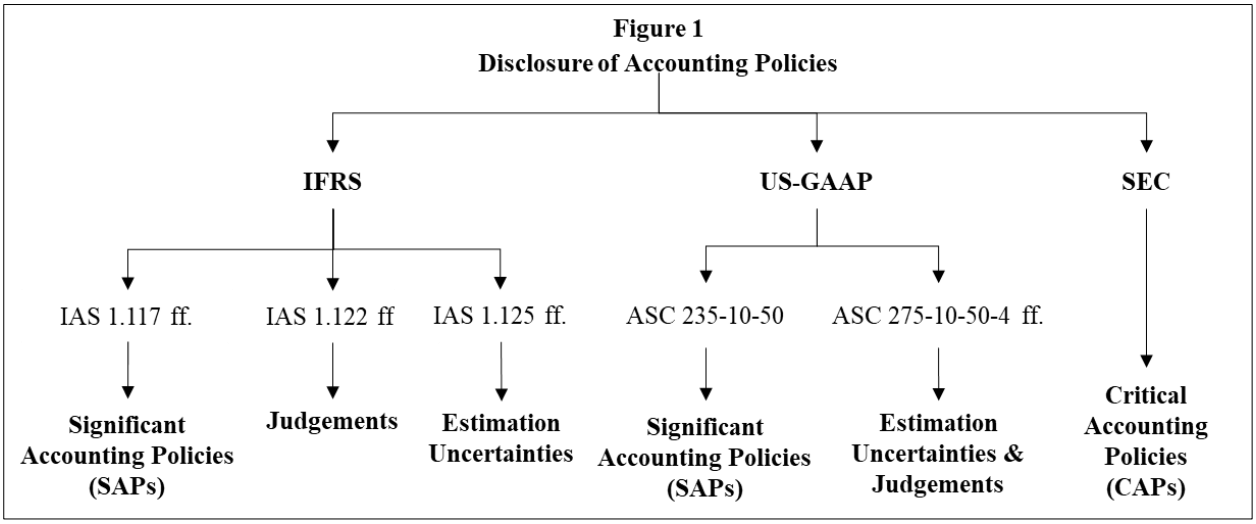

Figure 2
Number of CAP Disclosing Firms

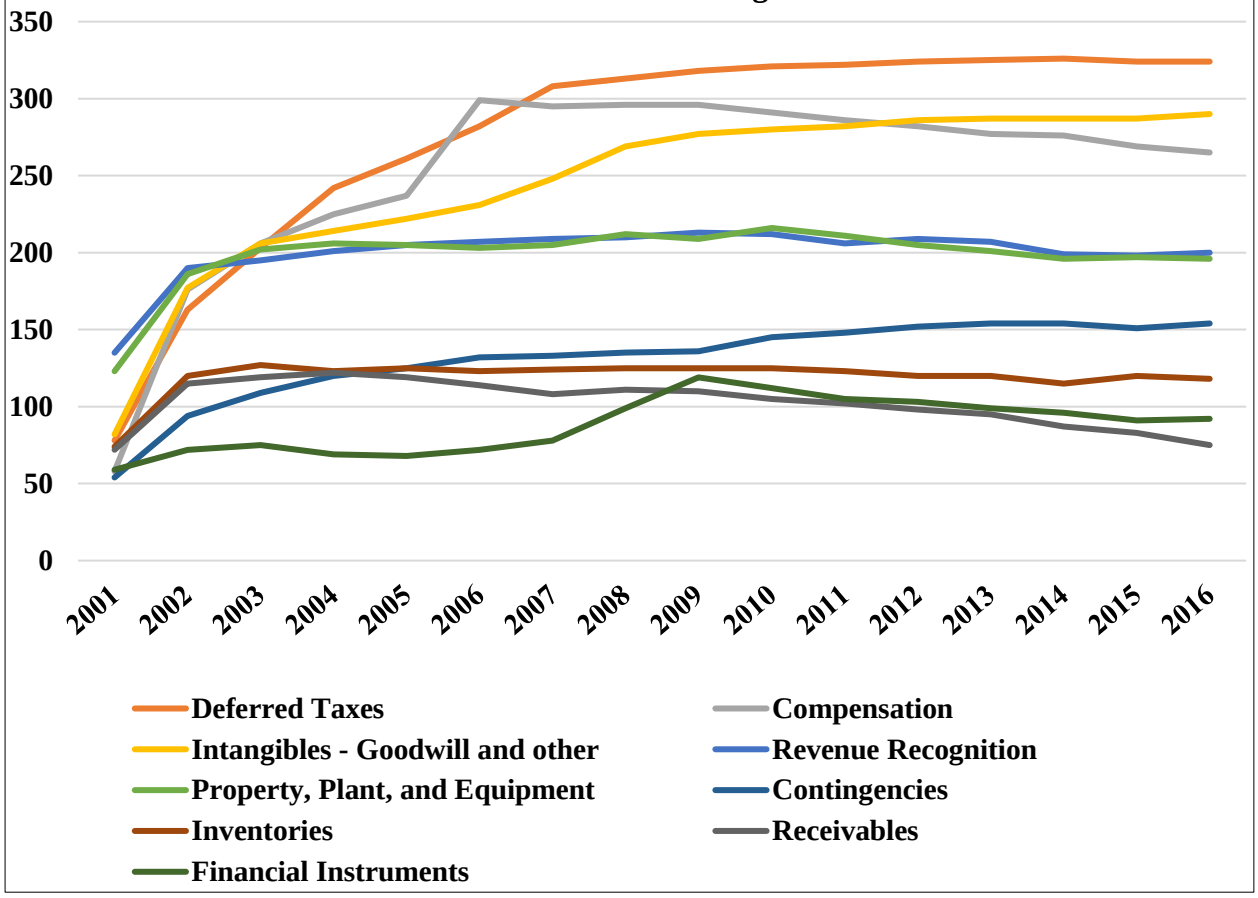

Figure 3

Panel A: Textual Disclosure – Cigna Corporation 2016 – Global Health Care Medical Costs Payable

Nature of the Critical Accounting Estimate	Effect if Different Assumptions Used
Medical costs payable for the global health care segment include both reported claims and estimates for losses incurred but not yet reported. Liabilities for medical costs payable as of December 31 were as follows (in millions): 2016 – gross $2,532; net $2,257 2015 – gross $2,355; net $2,112 These liabilities are presented above both gross and net of reinsurance and other recoverables and generally exclude amounts for administrative services only business.	As described in note 7, global health care medical costs payable are primarily impacted by assumptions related to completion factors and medical cost trend. Changes in either assumption from actual results could impact the global health care medical costs payable balance as noted below. A large number of factors may cause the medical cost trend to vary from the company's estimates, including: changes in medical management practices, changes in the level and mix of benefits offered and services utilized, and changes in medical practices. Completion factors may be affected if actual claims submission rates from providers differ from estimates (that can be influenced by a number of factors, including provider mix, and electronic versus manual submissions), or if changes to the company's internal claims processing patterns occur. Based on studies of our claim experience, it is reasonably possible that a 100 basis point change in the medical cost trend and a 50 basis point change in completion factors could occur in the near term. A 100 basis point increase in the medical cost trend rate would increase this liability by approximately $30 million, resulting in a decrease in net income of approximately $20 million after-tax, and a 50 basis point decrease in completion factors would increase this liability by approximately $70 million, resulting in a decrease in net income of approximately $45 million after-tax.

Panel B: Textual Disclosure – Alliance Data System Corporation 2016 – Allowance for Loan Losses

We maintain an allowance for loan loss at a level that is appropriate to absorb probable losses inherent in credit card and loan receivables. The estimate of our allowance for loan loss considers uncollectible principal, interest and fees reflected in the credit card and loan receivables. While our estimation process includes historical data and analysis, there is a significant amount of judgment applied in selecting inputs and analyzing the results to determine the allowance for loan loss. We use a migration analysis to estimate the likelihood that a loan will progress through the various stages of delinquency. The considerations in these analyses include past and current credit card and loan performance, seasoning and growth, account collection strategies, economic conditions, bankruptcy filings, policy changes, payment rates and forecasting uncertainties. Given the same information, others may reach different reasonable estimates.

If we used different assumptions in estimating net losses that could be incurred, the impact to the allowance for loan loss could have a material effect on our consolidated financial condition and results of operations. For example, a 100 basis point change in our estimate of incurred net loan losses could have resulted in a change of approximately $161 million in the allowance for loan loss at December 31, 2016, with a corresponding change in the provision for loan loss.

Figure 4

Textual Disclosure – Intel 2016 – Complete CAP Section:

Critical Accounting Estimates

The methods, estimates, and judgments that we use in applying our accounting policies have a significant impact on our financial position and the results that we report in our consolidated financial statements. Some of these policies require us to make subjective estimates and apply judgment regarding matters that are inherently uncertain.

Our most critical accounting estimates include:

- the valuation of inventory, which impacts gross margin;
- the determination of useful lives for our property, plant and equipment and the timing of when depreciation should begin, which impacts our gross margin, r&d expenses, and to a lesser extent mg&a expenses;
- the determination of other-than-temporary impairments for non-marketable equity investments requires the use of estimates about their valuations, which impacts gains or losses on equity investments, net;
- the valuation and the allocation of purchase price paid for assets acquired and liabilities assumed in connection with our acquisitions, which impacts our gross margin and operating expenses in periods subsequent to the acquisition;
- the evaluation of recoverability of long-lived assets (property, plant and equipment; identified intangibles; and goodwill), which impacts gross margin or operating expenses when we record impairments or accelerate their depreciation or amortization;
- the recognition and measurement of current and deferred income taxes (including the measurement of uncertain tax positions), which impact our provision for taxes as well as tax-related assets and liabilities; and
- the recognition and measurement of loss contingencies, which impact gross margin or operating expenses when we recognize a loss contingency, revise the estimate for a loss contingency, or record an asset impairment.

Refer to "note 2: accounting policies" in part ii, item 8 of this form 10-k for further information on our critical accounting estimates and policies.

Table 1. Comparison of Disclosure Regulations about Estimation Uncertainties

Legend:		**Description**	**IFRS** Estimation Uncertainties	**U.S.-GAAP** Estimation Uncertainties	**SEC** Critical Accounting Policies
✓	Mandatory	**Regulation**	IAS 1.125 ff.	ASC 275-10-50-4 ff.	FR-60 and FR-72
(✓)	Recommendation	**Obligation**	Mandatory	Mandatory	Recommendation
x	Not required	**Location**	Notes	Notes	MD&A
Explanation that the preparation of financial statements requires the use of management's estimates			x	✓	x
Description of the CAE and the methodology used in determining the CAE			(✓)	✓	✓
Explanation of all circumstances that are reasonably likely to occur and materially affect the methodology or the assumption			x	(✓)	✓
Explanation of the significance of the CAE to the company's financial condition and results of operations			x	x	✓
Quantitative and qualitative discussion of any material changes made to the CAE in the past three years			(✓)	x	✓
Sensitivity analysis related to changes in the overall financial performance			(✓)	x	✓
Range of reasonably possible outcomes within the next financial year			(✓)	x	✓
Statement of whether or not the selection and development of the accounting estimate was discussed with the audit committee			x	x	✓
Identification of the segments of the company's business the accounting estimate affects and a discussion of the accounting estimates on a segment basis			x	x	✓

Table 2.

Panel A:Sample selection procedure		
	All firms between 2001 and 2016	8,000
-	Firms without 10-k	697
-	Firms without complete time-series data	871
=	Finale Sample	6,432

Panel B:Number of firms per year

	All firms	**No. of firms CAP = 1**	**No. of firms CAP = 0**
2001	402	248	141
2002	402	381	8
2003	402	387	2
2004	402	388	1
2005	402	388	1
2006	402	388	1
2007	402	389	0
2008	402	389	0
2009	402	389	0
2010	402	389	0
2011	402	389	0
2012	402	389	0
2013	402	389	0
2014	402	389	0
2015	402	389	0
2016	402	389	0
Sum	**6,432**	**6,070**	**154**

Table 3.

Panel A: Descriptive Statistics

	No. of Total CAPs	Ø No. of CAPs	Ø No. of CAP-Headings	Length of CAP Sections	No. of Tables
2001	1,100	3.12	2.98	3,782	0.13
2002	1,866	5.19	4.90	8,892	0.90
2003	2,020	5.66	5.29	10,637	1.53
2004	2,107	5.91	5.52	12,136	2.45
2005	2,139	6.10	5.67	12,864	2.35
2006	2,238	6.46	5.97	14,554	2.74
2007	2,296	6.68	6.11	15,247	2.86
2008	2,365	6.95	6.38	17,642	3.72
2009	2,403	7.08	6.49	18,623	4.01
2010	2,424	7.08	6.52	18,842	4.11
2011	2,392	7.00	6.46	18,866	5.13
2012	2,377	7.01	6.43	18,919	4.65
2013	2,366	6.99	6.41	19,112	4.95
2014	2,330	6.84	6.28	18,381	4.91
2015	2,303	6.72	6.21	18,418	5.01
2016	2,294	6.71	6.20	18,067	4.71

Panel B: Number of firms by number of CAPs

Total CAPs	No. of Firms	Total CAPs	No. of Firms
0	128	9	319
1	19	10	251
2	137	11	93
3	459	12	40
4	959	13	30
5	1,366	14	21
6	1,110	15	2
7	882	16	1
8	614	17	1

Table 4. Descriptive statistics for each category of the coding system

Category	Variable	No. Disclosing	Percent Disclosing
Cash and Cash Equivalents	CASH	39	0.61%
Receivables	RECEIV	1,635	25.42%
Investments	INVEST	1,470	22.85%
Inventories	INVENT	1,907	29.65%
Other Assets and Deferred Costs	OTHERASSET	1,500	23.32%
Intangibles - Goodwill and other	INTANG	3,925	61.02%
Property, Plant, and Equipment	PPE	3,173	49.33%
Liabilities	LIAB	561	8.72%
Asset Retirement / Environmental	RETIRE	758	11.78%
Exit or Disposal Cost Obligations	EXITCOSTS	307	4.77%
Deferred Revenue	DEFREV	0	0.00%
Commitments	COMMIT	154	2.39%
Contingencies	CONTING	2,096	32.59%
Guarantees	GUARANT	630	9.79%
Debt	DEBT	757	11.77%
Equity	EQUITY	23	0.36%
Revenue Recognition	REVREC	3196	49.69%
Compensation	COMPEN	4034	62.72%
Other Expenses	OTHEREXP	789	12.27%
Reseach and Development	RESEARCH	114	1.77%
Deferred Taxes	DEFTAX	4434	68.94%
Business Combination	BUSINESSCOMB	710	11.04%
Consolidation	CONSOL	320	4.98%
Financial Instruments	FINANCIALINST	1409	21.91%
Foreign Currency Matters	CURRENCY	115	1.79%
Interest	INTEREST	38	0.59%
Leasing	LEASING	315	4.90%
Regulatory Accounting	REGULATE	356	5.53%
Oil and Gas Accounting	OAG	255	3.96%

Table 5: Descriptive statistics of each category of the coding system

Industry	No. of Firms	No. of Total CAPs	Ø No. of CAPs	Ø No. of CAP-Headings	1st	2st	3st	4st	5st
NoDur	384	2,176	6.58	5.86	DEFTAX	COMPEN	INTANG	PPE	REVREC
Durbl	128	739	6.63	6.40	COMPEN	DEFTAX	GUARANT	INTANG	INVEST
Manuf	522	3,165	6.92	6.34	COMPEN	DEFTAX	INTANG	PPE	INVENT
Enrgy	352	1,938	6.48	6.17	COMPEN	OAG	DEFTAX	PPE	FINANCIALINST
Chems	240	1,186	6.02	5.36	COMPEN	DEFTAX	INTANG	PPE	CONTING
BusEq	928	5,555	6.70	6.07	REVREC	DEFTAX	INTANG	COMPEN	INVENT
Telcm	160	820	6.15	5.89	DEFTAX	INTANG	COMPEN	PPE	CONTING
Utils	448	2,538	6.23	5.92	COMPEN	REGULATE	PPE	FINANCIALINST	DEFTAX
Shops	736	4,285	6.83	6.22	INVENT	DEFTAX	PPE	INTANG	COMPEN
Hlth	544	3,128	6.57	6.06	REVREC	DEFTAX	COMPEN	INTANG	CONTING
Finance	1232	5,576	5.53	5.19	INTANG	INVEST	DEFTAX	FINANCIALINST	PPE
Others	758	3,914	6.18	5.78	DEFTAX	COMPEN	INTANG	PPE	REVREC

Appendix A. Coding System

	Topic Category 1	Topic Category 2
1	Cash and Cash Equivalents	Cash and Cash Equivalents
2	Receivables	Receivables
3	Investments	Debt and Equity Securities
		Equity Method and Joint Ventures
		Financial Instruments - Credit Losses
4	Inventories	Inventories
5	Other Assets and Deferred Costs	Insurance Contracts
		Contracts With Customers
		Other Assets
6	Intangibles - Goodwill and other	Goodwill
		Intangibles - other than Goodwill
		Internal-Use Software
7	Property, Plant, and Equipment	Property, Plant, and Equipment
8	Liabilities	Liabilities
9	Asset Retirement / Environmental	Asset Retirement Obligations
		Environmental Obligations
10	Exit or Disposal Cost Obligations	Restructuring
		Exit and Closing Obligations
11	Deferred Revenue	Deferred Revenue
12	Commitments	Commitments
13	Contingencies	Contingencies
14	Guarantees	Guarantees
15	Debt	Reserves
		Loans
		Other Debt
16	Equity	
17	Revenue Recognition	Revenue Recognition
		Returns
		Rebates
		Other Income
18	Compensation	Retirement Benefits
		Stock Compensation
		Other Incentives
19	Other Expenses	Other Expenses
20	Reseach and Development	Reseach and Development
21	Deferred Taxes	Deferred Taxes
22	Business Combination	Business Combination

Appendix A - continued

	Topic Category 1	Topic Category 2
23	Consolidation	Consolidation
24	Financial Instruments	Derivatives
		Heding
		Financial Instruments
		Fair Value Accounting
25	Foreign Currency Matters	Foreign Currency Matters
26	Interest	Interest
27	Leasing	Leasing
28	Regulatory Accounting	Regulatory Accounting
29	Oil and Gas Accounting	Oil and Gas Accounting

Appendix B. Descriptive Statistics for each CAP Category and Year

Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Cash and Cash Equivalents	1	4	2	1	1	1	2	3	3	3	3	4	4	2	3	2	**39**
Receivables	72	115	119	122	119	114	108	111	110	105	102	98	95	87	83	75	**1,635**
Investments	60	93	89	94	93	87	87	95	98	101	101	98	97	93	93	91	**1,470**
Inventories	74	120	127	123	125	123	124	125	125	125	123	120	120	115	120	118	**1,907**
Other Assets and Deferred Costs	56	100	100	103	105	105	101	102	100	98	93	92	90	89	83	83	**1,500**
Intangibles - Goodwill and other	82	177	206	214	222	231	248	269	277	280	282	286	287	287	287	290	**3,925**
Property, Plant, and Equipment	123	186	202	206	205	203	205	212	209	216	211	205	201	196	197	196	**3,173**
Liabilities	25	36	32	36	33	36	36	36	32	35	35	37	39	39	38	36	**561**
Asset Retirement	16	35	44	42	44	45	52	53	56	55	52	53	53	53	53	52	**758**
Exit or Disposal Cost Obligations	14	31	27	24	24	19	21	18	20	18	15	14	16	15	15	16	**307**
Deferred Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Commitments	10	12	9	8	10	9	9	10	11	11	11	10	9	8	8	9	**154**
Contingencies	54	94	109	120	125	132	133	135	136	145	148	152	154	154	151	154	**2,096**
Guarantees	17	34	40	40	37	40	41	43	44	44	42	44	44	43	40	37	**630**
Debt	38	54	54	50	46	48	48	47	49	48	47	47	46	47	44	44	**757**
Equity	1	4	2	2	0	0	0	0	1	1	2	2	2	2	2	2	**23**
Revenue Recognition	135	190	195	201	205	207	209	210	213	212	206	209	207	199	198	200	**3,196**
Compensation	58	176	206	225	237	299	295	296	296	291	286	282	277	276	269	265	**4,034**
Other Expenses	29	56	54	56	55	54	53	51	48	51	53	48	47	46	44	44	**789**
Reseach and Development	4	7	9	8	8	8	9	9	7	6	7	7	8	6	6	5	**114**
Deferred Taxes	78	163	203	242	261	282	308	313	318	321	322	324	325	326	324	324	**4,434**

Appendix B – continued.

Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Business Combination	14	19	24	25	27	34	39	42	46	54	59	57	60	67	69	74	**710**
Consolidation	11	14	18	17	16	17	21	23	21	25	23	25	24	23	21	21	**320**
Financial Instruments	59	72	75	69	68	72	78	99	119	112	105	103	99	96	91	92	**1,409**
Foreign Currency Matters	11	9	12	13	9	9	8	7	5	7	5	4	3	3	5	5	**115**
Interest	9	5	4	4	2	2	1	2	3	4	2	0	0	0	0	0	**38**
Leasing	14	23	20	23	24	23	20	17	17	18	20	18	20	20	20	18	**315**
Regulatory Accounting	22	22	23	23	22	22	22	20	22	22	22	22	22	22	23	25	**356**
Oil and Gas Accounting	13	15	15	16	16	16	18	17	17	16	15	16	17	16	16	16	**255**
	1,100	**1,866**	**2,020**	**2,107**	**2,139**	**2,238**	**2,296**	**2,365**	**2,403**	**2,424**	**2,392**	**2,377**	**2,366**	**2,330**	**2,303**	**2,294**	**35,020**