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# Voluntary Changes in Accounting Principle: Literature Review, Descriptive Data, and Opportunities for Future Research

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**Voluntary Changes in Accounting Principle:  
Literature Review, Descriptive Data, and Opportunities for Future Research**

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# **Voluntary Changes in Accounting Principle: Literature Review, Descriptive Data, and Opportunities for Future Research**

## **ABSTRACT**

Voluntary changes in accounting principle represent explicit and fundamental decisions by managers to exercise accounting discretion. This paper develops an organizing framework to review prior literature on voluntary changes, provides descriptive insights on contemporary changes, and identifies opportunities for future research on voluntary changes. The voluntary change literature is robust and has examined many questions using data prior to the Sarbanes-Oxley Act of 2002 (SOX). We find that contemporary voluntary changes often vary across the pre-SOX, post-SOX, and post-SFAS No. 154 periods by the materiality of their income effect, issue type, and justifications provided by managers, suggesting that manager use of voluntary changes has evolved over time. Our future research opportunities consider potential determinants of voluntary changes including strategic incentives, environmental conditions, and manager characteristics, as well as the potential direct or moderating role of corporate governance and auditors on manager use of voluntary changes. They also consider user reactions to voluntary changes. By providing insight into both extant voluntary change research and the contemporary use of voluntary changes, our study informs standards setters who grant managers the ability to exercise this form of accounting discretion, as well as researchers who plan to study accounting choice through voluntary changes.

**Keywords:** Voluntary Changes; Accounting Standards; Auditor-Client Interactions

**Data Availability:** Data used in the study are available from public sources.

## **Voluntary Changes in Accounting Principle: Literature Review, Descriptive Data, and Opportunities for Future Research**

### **1. Introduction**

This paper develops an organizing framework to review prior literature on voluntary changes in accounting principle (voluntary changes), provides descriptive insights on contemporary voluntary changes, and identifies opportunities for future research.<sup>1</sup> Standards setters allow managers to change accounting methods from one acceptable method to another acceptable and *preferable* method through a voluntary change (FASB 2010). Voluntary changes have received attention in the popular press after companies such as AT&T and Verizon elected to recognize pension gains and losses in the year they occur rather than amortizing the gains and losses over time, decisions that impacted the financial statements of each company by billions of dollars (Rapoport 2011). For decades, researchers and popular press commentators have expressed skepticism about managers' motivations for voluntary changes and concern about the effects of changes on the stock market (e.g., Bremser 1975; Rapoport 2011).

This paper's focus on voluntary changes is important for several reasons. First, voluntary changes represent a fundamental form of discretion conferred by the Financial Accounting Standards Board (FASB) to managers in order to maintain the decision usefulness of financial statements. That is, the ability to make voluntary changes allows managers to ensure that the financial statements best reflect economic reality when circumstances change. Second, voluntary changes provide unique, publicly available evidence on managers' use of discretion. In this way, voluntary changes are similar to other data in the accounting literature that are not high in

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<sup>1</sup> Although we refer to voluntary changes in accounting principle as voluntary changes, prior studies use various terms such as "accounting changes," "accounting method changes," "accounting procedure changes," "accounting procedure choice," "changes in accounting techniques," "changes in accounting policy," and "discretionary accounting changes."

frequency but provide explicit insight into an important action or decision, removing the need for researchers to infer, estimate, or proxy (e.g., Acito, Burks, and Johnson 2009; Keune and Johnstone 2012). Further, prior literature provides evidence that voluntary changes are often quantitatively or qualitatively material (Pincus and Wasley 1994; SEC 1999). For example, managers have used voluntary changes opportunistically to meet debt covenant calculations (e.g., Sweeney 1994; Beatty and Weber 2003), to smooth income (e.g., Moses 1987; Elliott and Philbrick 1990), and to minimize poor performance (e.g., Kaplan and Roll 1972; Keating and Zimmerman 2000). Finally, in line with these observations on the materiality of voluntary changes, prior literature also provides some evidence that the market responds when companies make voluntary changes (e.g., Harrison 1977; Dharan and Lev 1993).

This paper is organized as follows. Section 2 provides background on voluntary changes. Section 3 develops an organizing framework and extensively reviews the literature beginning in the early 1970s through 2016, although the study of voluntary changes declines around the late 1990s. Section 4 provides descriptive evidence on voluntary changes from 1995-2013 to gain insight on contemporary trends. Our descriptive analysis considers two significant exogenous events, the Sarbanes-Oxley Act (SOX) and SFAS No. 154, *Accounting Changes and Error Corrections* (FASB 2005), that could impact managers' use of voluntary changes. More specifically, we partition our data into three periods: 1) years prior to SOX, 2) years after SOX but before the implementation of SFAS No. 154, and 3) years after SFAS No. 154. We find that voluntary changes often differ across these periods in terms of the materiality of income effects, the issue types of changes, and justifications provided by managers. Section 5 then uses our organizing framework to identify opportunities for future research on the determinants of manager use of voluntary changes (i.e., environmental conditions, strategic incentives, and

manager characteristics), the potential moderating role of corporate governance and auditors on such use, and user reactions to voluntary changes. Finally, Section 6 concludes.

Our paper informs both standards setters and researchers. With regards to standards setters, our literature review and descriptive analyses provide insight into the extant literature on voluntary changes, as well as changes in the use of and justifications for voluntary changes following SOX and SFAS No. 154. In this way, our paper informs the FASB's post-implementation reviews of SFAS No. 154, as well as U.S. and international accounting standards setters' consideration of disclosure standards. With regards to researchers, several factors including the age of published studies, the recent popular press interest in voluntary changes, and the ever-changing financial reporting environment suggest that the nature of voluntary changes may have evolved over recent years, motivating the reexamination of fundamental questions studied in prior research. In addition, advances in publicly available data and the sophistication of accounting research enable researchers to ask and answer questions that could not be considered in prior research. Our paper assists researchers who are planning to study this fundamental form of manager discretion by identifying many opportunities for future research on voluntary accounting changes and providing baseline knowledge on prior literature and contemporary data available for study. Voluntary changes offer rich opportunities for future research, particularly as we approach the implementation of significant principles-based accounting guidance such as *Revenue from Contracts with Customers (Topic 606)*.

## **2. Background on voluntary changes**

The FASB faces a trade-off between creating standards with fewer rules that preparers could apply inconsistently and creating standards with more rules that could become too complex (Nelson 2003). The primary principle the FASB considers in standard setting is

decision usefulness for existing and potential investors, lenders, and other creditors (FASB 2010). However, since standards setters cannot foresee all circumstances that could arise, standards without discretion will not achieve decision usefulness for all companies. As the continued use of the same accounting method may not be as appropriate when company circumstances change, the FASB allows managers the discretion to switch from one acceptable accounting method to a more preferable method that best fits a company's current circumstances.

Managers can voluntarily change to an acceptable alternative accounting method if they can justify that the new principle is preferable. For fiscal years beginning on or prior to December 15, 2005, APB Opinion No. 20 (1971) requires managers to report the cumulative effect of the change on prior periods as a separate income statement line item.<sup>2</sup> For fiscal years beginning after December 15, 2005, SFAS No. 154 (now ASC 250-10) requires managers to record voluntary changes through retrospective application, applying the new principle as if it had always been used (FASB 2005).<sup>3</sup> Retrospective application is similar to restatement in that both approaches require revision of prior financial statements, but retrospective application is distinguished from restatement in that restatement corrects prior period errors (FASB 2005).

Managers disclose the nature of and justification for a voluntary change in the notes to the financial statements (FASB 2016a). In public company 10-Qs or 10-Ks, the company's auditor also provides a preferability letter stating the auditor's agreement that the new principle is preferable based on the company's facts, circumstances, and justifications (FASB 2016b). If the change has a material effect on the financial statements, the auditor recognizes the change in an explanatory paragraph to the auditor's report (PCAOB 2008). Exhibits 1 and 2 illustrate

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<sup>2</sup> APB Opinion No. 20 requires restatement for voluntary changes from the LIFO inventory method to another method, in the method for long-term construction-type contracts, or from the full cost method of accounting.

<sup>3</sup> When it is impracticable to apply the change to any prior period, companies apply the change prospectively from the earliest date practicable.

disclosures of pre-SFAS No. 154 and post-SFAS No. 154 voluntary changes for PPL Corporation and Honeywell International, respectively.

**[Insert Exhibit 1 about Here]**

**[Insert Exhibit 2 about Here]**

SFAS No. 154 also provides reporting guidance for accounting changes other than voluntary changes in accounting principle, including mandatory changes and changes in accounting estimate. Although these other types of changes are not the focus of our study, we briefly describe these changes and their reporting requirements to distinguish them from voluntary changes in accounting principle. When the FASB issues a codification update that requires companies to change to a new accounting principle, managers use the transition guidance provided by the new update or retrospective application of the accounting principle required by SFAS No. 154 to report this mandatory change (now ASC 250-10).<sup>4</sup>

A change in accounting estimate occurs when managers identify new information that necessitates modification of the valuation of assets or liabilities such as uncollectible accounts, inventory, and the service lives and salvage values of depreciable assets. Changes in accounting estimate are applied prospectively (i.e., in the period of the change and/or future periods). In some circumstances, a change in accounting estimate can be difficult to distinguish from a change in accounting principle. Prior to SFAS No. 154, changes in depreciation, amortization, and depletion methods required a cumulative effect adjustment and an auditor preferability letter, as the preceding authoritative literature categorized these changes as voluntary changes in accounting principle. In contrast, SFAS No. 154 (ASC 250-10-45-19) categorizes changes in

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<sup>4</sup> A mandatory change could include any update to the Codification that “requires use of a new accounting principle, interprets an existing principle, expresses a preference for an accounting principle, or rejects a specific principle” (ASC 250-10-45-13). Mandatory changes do not require a preferability letter (Deloitte 2016).



depreciation, amortization, and depletion methods (e.g., straight line to accelerated method) as a change in estimate effected by a change in principle, which requires managers to apply the change prospectively and removes the requirement to file an auditor preferability letter (EY 2016). In summary, our study focuses on voluntary changes in accounting principle reported in auditor preferability letters, which are distinct from changes in estimate effected by a change in principle, mandatory changes, and changes in estimate.

### **3. Prior literature**

We review representative studies from the published literature on voluntary changes through 2016 to provide insight into the nature and findings of the questions studied using these data. Figure 1 presents an organizing framework for our review of prior research and our identification of opportunities for future research. Figure 1 boxes with thick borders and categories in bold font indicate topics that are not examined in prior research but are opportunities for future research. First, we consider environmental determinants for manager use of voluntary changes including factors such as regulation, standards, company and industry characteristics, and the economy. Then, we consider strategic incentives as determinants of manager use of voluntary changes (i.e., managerial contracts, debt contracts, and financial distress; company and managerial reputation; industry peers). In addition, managerial characteristics could serve as determinants of managerial decisions regarding voluntary changes while the company's corporate governance and audit firm could serve as moderators of these decisions. The outcome of the voluntary change process leads to financial reporting choices from managers and auditors. Ultimately, the financial reporting outcomes of the voluntary change process are consumed by financial reporting users including the stock market and analysts.

**[Insert Figure 1 about Here]**

In a separate panel for each of the following sections, Table 1 lists relevant studies in chronological order and summarizes information from these studies. Some study samples include more than one accounting technique (e.g., voluntary and mandatory changes). The table denotes studies that examine techniques in addition to voluntary changes in accounting principle.

**[Insert Table 1 about Here]**

### *3.1 Environment – tax regulation*

The literature on voluntary changes has extensively examined the association between inventory method changes to LIFO and tax savings. Voluntary changes to the LIFO method for inventory represent approximately 38 percent of all voluntary changes between 1969 and 1988, and most of these changes occurred in 1974 and 1975 (Pincus and Wasley 1994). Researchers consistently find that LIFO adoption is due to tax savings (Morse and Richardson 1983; Dopuch and Pincus 1988; Pincus and Wasley 1996). In addition, the evidence suggests that companies do not switch to LIFO immediately but wait until the tax savings become sufficiently large before switching methods (Morse and Richardson 1983; Dopuch and Pincus 1988).

The only other studies examining the effect of specific tax regulations consider whether the regulations lead to opportunistic voluntary changes. For example, Bartley and Chen (1992) examine voluntary changes after the Tax Reform Act of 1986 and conclude that managers make changes to maintain book-tax conformity but not to reduce the company's exposure to the alternative minimum tax. Keating and Zimmerman (2000) examine the 1981 tax law that implemented fixed depreciation schedules and provide evidence of a decrease in the number of depreciation method changes after the law went into effect. Their results are consistent with managers making larger income-increasing depreciation method changes when company performance is lower, suggesting that opportunism could drive at least some voluntary changes.

### 3.2 *Environment – company and industry*

Prior literature has only studied company characteristics related to financial performance. Bremser (1975) considers earnings per share and return on investment and finds that companies with poor performance make voluntary changes more frequently. Similarly, Lilien, Mellman, and Pastena (1988) examine companies with performance at the top and bottom of the industry in terms of total shareholder return. They find that companies at the bottom of the industry are more likely than successful companies to improve income through accounting changes.

### 3.3 *Environment – economy*

Prior studies on specific economic factors and voluntary changes primarily focus on drivers of the decision to adopt the LIFO method for valuing inventory. Dopuch and Pincus (1988) suggest that high inflationary periods result in greater tax savings from LIFO adoption as the study examines the association between tax savings and LIFO adoption (see Section 3.1). In addition, Pincus and Wasley (1994) find evidence of a positive correlation between LIFO adoptions and inflation rates (rather than tax savings), which suggests that managers choose LIFO to realize tax savings. The exception to the LIFO focus of economic factors studies is Frishkoff (1970) who examines all voluntary changes rather than only changes to LIFO. He finds evidence of companies making voluntary changes to minimize earnings decreases in years of economic uncertainty and inflation.

### 3.4 *Strategic incentives – managerial contracts, debt contracts, and financial distress*

We next consider literature on managerial contracts, debt contracts, and financial distress. Watts and Zimmerman (1986) developed positive accounting theory to predict how managers choose accounting policies in response to the use of accounting information in contracts. The bonus plan hypothesis from positive accounting theory (Watts and Zimmerman 1978) suggests

that managers choose accounting policies that are favorable for calculating compensation under bonus plans. The literature generally provides evidence that voluntary changes are not associated with the existence of manager bonus plans, which is inconsistent with the bonus plan hypothesis (Holthausen 1981; Hunt 1985; Ramanan and Balachandran 1993). Healy, Kang, and Palepu (1987) provide evidence that while bonuses are commonly calculated using the new rather than the old method, switching from accelerated to straight-line depreciation or from FIFO to LIFO has little to no effect on manager compensation, especially in comparison to industry-wide and economy-wide impacts. Abdel-Khalik (1985) similarly finds that a switch from FIFO to LIFO does not affect manager compensation. In contrast, Ramanan and Balachandran (1993) find that managers receive additional short-term compensation when changing to a policy of capitalizing interest on long-term construction projects, but the full evidence from the study does not support the bonus plan hypothesis. The reasoning for the lack of findings related to bonus contracts and voluntary changes might be provided by Abdel-Khalik, Chi, and Ghicas (1987) who find that compensation changes are associated with the real (i.e., cash flow) rather than the income consequences of accounting changes. Overall, the literature provides virtually no evidence that managers benefit from bonus compensation achieved through the effects of voluntary changes.

Voluntary changes associated with big baths and income smoothing also can be related to managerial contracts. Indeed, Moore (1973) finds that the majority of companies with new managers have income-decreasing voluntary changes that likely increase the probability of future bonuses. Gordon (1964) argues that a smooth trend of earnings maximizes management's reputation and welfare, and he suggests that managers could use accounting policies to help produce such a trend. The evidence in the literature indicates that managers smooth income with voluntary changes, particularly those in manager as opposed to owner controlled companies

(Smith 1976; Salamon and Smith 1979) as well as those facing bonus plans, political costs, and unexpected earnings (Moses 1987). In addition, Elliott and Philbrick (1990) find evidence that is consistent with managers making voluntary changes in order to smooth income.

Researchers who examine the role of debt contracts and financial distress on manager use of voluntary changes hypothesize that managers are more likely to make income-increasing voluntary changes when they are nearing default on covenants or have limited ability to receive funding through credit markets. Most studies support this hypothesis, finding that managers are more likely to make income-increasing voluntary changes when approaching debt covenant default (Labelle 1990; Sweeney 1994) and experiencing financial distress (Schwartz 1982). In addition, Beatty, Ramesh, and Webber (2002) find that companies with debt contracts that allow voluntary changes in the calculation of covenants are willing to pay substantially higher interest rates, suggesting that managers perceive value in the ability to potentially use voluntary changes to improve covenant ratios. Beatty and Weber (2003) follow up to report that companies with debt contracts that allow voluntary changes are more likely to make income-increasing changes.

Further support for the debt covenant hypothesis emerges from studies on specific types of voluntary changes. Hunt (1985) provides evidence that companies are *less* likely to adopt LIFO when financial ratios approach debt covenant limitations, likely due to the fact that LIFO during the study's time period decreases income and worsens financial ratios. Johnson and Ramanan (1988) also find that oil and gas companies with higher or increasing levels of debt are more likely to switch to full-cost accounting from successful efforts. In contrast to these studies, Holthausen (1981) concludes that covenant constraints are not a determinant of voluntary changes from accelerated depreciation methods to the straight-line method.

### 3.5 *Strategic incentives – industry peers*

It is possible that companies in the same industry make the same voluntary changes as circumstances change or to compete with peers for resources. Pincus and Wasley (1994) is the only study of which we are aware that examines the extent to which peers in the same industry make similar types of voluntary changes in the same time periods. They do not find evidence of clusters of voluntary changes in the same industry and year, except for LIFO adoptions in 1974.

### 3.6 *Audit firm*

Two descriptive studies provide evidence on the role of the auditor in making voluntary changes. A study conducted with data prior to the surge of LIFO adoptions in the 1970s finds that LIFO adoptions are more likely for clients of some firms, although there is no association between specific auditors and the direction of income effects from the changes (Eggleton, Penman, and Twombly 1976). Gosman (1973) provides descriptive evidence that clients of one firm are less likely to report voluntary changes identified using consistency paragraphs in the auditor's report during the sample period of 1959-1968.

### 3.7 *User reactions – stock market*

Following the work of Ball and Brown (1968), researchers began examining whether the market reacts to voluntary changes. This early literature generally finds that investors do not react to voluntary changes, suggesting that the market is efficient (e.g., Ball 1972; Baskin 1972; Kaplan and Roll 1972; Sunder 1973, 1975; Holthausen 1981). The focus of the literature then shifts to investigating market responses to the adoption of LIFO. In contrast to earlier studies, Abdel-Khalik and McKeown (1978), Brown (1980), Ricks (1982), and Hand (1993) find evidence of a negative reaction to the announcement of LIFO adoption, consistent with the market reacting to the lower earnings associated with LIFO. However, Biddle and Lindahl

(1982) find a positive association between abnormal returns and the magnitude of tax savings from LIFO adoption, and Stevenson (1987) also finds a positive market reaction to LIFO switches using more accurate dates for the announcement of LIFO adoption than prior studies.

Other studies examine the market's reaction to *all* types of voluntary changes. These studies generally provide evidence of a negative market reaction that is contingent on other factors. In particular, Harrison (1977) finds a negative market reaction to income-increasing voluntary changes, and Dharan and Lev (1993) find negative abnormal returns only for companies with income-increasing changes and only in the five years after the change. Likewise, Cheng and Coulombe (1993) indicate abnormal returns are negative for companies that make income-increasing voluntary changes but only when the companies face financial adversity that was previously unknown to the market. Linck, Lopez, and Rees (2007) find no evidence of either abnormal returns or differences in earnings informativeness following voluntary changes. In general, prior research on the market's response to voluntary changes yields mixed results, but suggests that any market response to voluntary changes is likely contingent upon other factors.

### *3.8 User reactions – analysts*

Prior literature suggests that analysts are prone to misestimating earnings for companies with voluntary changes. Brown (1983) provides evidence that analysts inaccurately forecast company earnings in the year following voluntary changes in pension costing assumptions. Similarly, analysts overestimate company earnings in years with switches to LIFO (Biddle and Ricks 1988). Analysts also have larger forecast errors and forecast dispersion in company years with voluntary changes (Elliott and Philbrick 1990).

#### **4. Insights from contemporary data**

Although the published literature on voluntary changes primarily examines periods prior to the late 1990s and early 2000s, the passage of time and associated environmental changes are not necessarily sufficient to indicate that researchers should revisit fundamental questions examined by prior research. In this section, we first discuss recent significant events that have occurred since most prior studies were published. Then, we use voluntary changes reported after the sample periods of most prior studies to provide descriptive evidence on whether the nature of voluntary changes evolves over time.

##### *4.1 Significant events since prior studies*

At least two significant events have occurred since the time periods used in prior literature. First, SOX introduced many reforms affecting the financial reporting environment, which could increase the reporting of voluntary changes due to efforts to improve financial reporting quality. However, increased regulatory scrutiny and greater penalties after SOX make the opportunistic or inappropriate use of voluntary changes riskier for managers and auditors. The post-SOX environment also has greater conservatism in financial reporting (Lobo and Zhou 2006, 2010), less earnings management (e.g., Cohen, Dey, and Lys 2008), and less ability to hide information (Hutton, Marcus, and Tehranian 2009), suggesting managers might be less likely to report voluntary changes after SOX. As a result, the use of voluntary changes might increase, decrease, or stay the same after SOX.

Second, the FASB issued SFAS No. 154 for fiscal years beginning after December 15, 2005. Although its proponents argued that it enhances financial statement consistency for the periods presented and is more useful for making decisions (FASB 2005), practitioners anticipated that the costs of retrospective application would outweigh the benefits, and they



expected that users' perceptions of financial statement credibility would suffer due to numerous revisions of prior-period financial statements and improper conclusions that retrospective application is the correction of errors (Deloitte 2004; EY 2004; Pfizer 2004).<sup>5</sup> Accordingly, some comment letter writers predicted that companies would make fewer voluntary changes in order to avoid the financial statement user confusion and costs associated with applying the changes (Deloitte 2004; EY 2004). Next, we consider both SOX and SFAS No. 154 as we present descriptive evidence on voluntary changes to provide contemporary insight into their nature.

#### 4.2 *Sample selection and company industry*

We identify voluntary changes through auditors' preferability letters filed in 10-Qs and 10-Ks for fiscal year ends from June 1, 1995 through December 31, 2013.<sup>6,7</sup> Table 2, Panel A shows that we reduce our initial sample of 1,315 unique preferability letters by 248 and 61 due to missing Compustat data and duplicates resulting from subsidiaries whose parent companies are also in our sample, respectively, leading to a sample of 1,006 companies. We perform analyses that require disclosure of the cumulative effect of the changes using 604 observations. Table 2, Panel B presents the industry representation of the voluntary change companies in our sample.

**[Insert Table 2 about Here]**

We measure the cumulative effect upon implementation of voluntary changes as the impact to net income or retained earnings. For pre-SFAS No. 154 changes, we use the prior period amount presented on a separate line item on the income statement as our cumulative

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<sup>5</sup> SFAS No. 154 also requires retrospective application for mandatory accounting changes. Deloitte (2004) noted that some companies applying retrospective treatment to all mandatory changes could have been required to revise their prior period financial statements four separate times in 2003.

<sup>6</sup> Regulation S-K Title 17 § 229.601 Paragraph b(18) requires filing preferability letters in Exhibit 18. Some preferability letters disclose more than one voluntary change. We do not collect mandatory accounting changes or voluntary changes in accounting estimates, as they are not disclosed via preferability letters.

<sup>7</sup> We use directEDGAR (Kealey 2013) for our search of fiscal year ends from June 1, 1995 through May 31, 2011 and use Bloomberg BNA for our search of fiscal year ends from June 1, 2011 through December 31, 2013.

effect (see \$10 million increase in Exhibit 1, Panel C). For post-SFAS No. 154 changes, we use the impact of the change on retained earnings as our cumulative effect (see \$3,464 million reduction in retained earnings in Exhibit 2, Panel C). Our approach allows us to consistently measure the impact of voluntary changes across the two reporting regimes in our study.

#### *4.3 Frequency and income effect of voluntary changes by time period*

Table 3 compares by time period (pre-SOX, post-SOX, post-SFAS No. 154) the frequency of voluntary changes, average number of changes per year, percentage of changes disclosing an income effect and the direction of the effect, and percentage of changes with an income effect that are above and below common materiality thresholds. We define pre-SOX as 1995 to 2001, post-SOX as 2002 to 2005, and post-SFAS No. 154 as 2006 to 2013. On average, companies reported 52.9 voluntary changes per year. However, the average annual number of voluntary changes increases from 51.3 in the pre-SOX period to 60.8 in the post-SOX period. It then decreases to 50.5 in the post-SFAS No. 154 period, suggesting that manager reporting of voluntary changes could be subject to external factors such as regulation and standards. We return to these findings when we discuss future research opportunities (e.g., Sections 5.1 and 5.2). The percentage of voluntary changes disclosing income effect data decreases over time.<sup>8</sup> In the pre-SOX period, 79.1 percent of voluntary changes disclose an income effect, but the percentage decreases to 65.8 in the post-SOX period and drops to 39.6 in the post-SFAS No. 154 period. These results suggest that managers perceive retrospective application as increasing the costs associated with making voluntary changes with income effects after SFAS No. 154, which is consistent with critics' predictions. Sections 5.11 and 5.13 highlight how variation in the

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<sup>8</sup> Voluntary changes for which income effect data are not disclosed include those that: 1) do not have an income effect, 2) have an income effect that is not disclosed (i.e., deemed too immaterial to disclose), or 3) are applied prospectively (i.e., retrospective application after SFAS No. 154 is deemed "impracticable").

application of voluntary changes created by SFAS No. 154 can provide additional insight into managers' motivations and their effects on users.

**[Insert Table 3 about Here]**

Finally, Table 3 presents the quantitative materiality of the voluntary changes disclosing an income effect. We use revenues as our materiality benchmark (Eilifsen and Messier 2015) and report the percentage of voluntary changes that are less than 0.5 percent, between 0.5 and 1.0 percent, between 1.0 and 2.0 percent, and greater than 2.0 percent of sales. The percentage of voluntary changes less than 0.5 percent of sales increases while the percentage of changes greater than or equal to 2.0 percent of sales decreases from the pre-SOX period to the post-SOX period but the percentages remain statistically the same between the post-SOX and post-SFAS No. 154 periods. These results suggest that researchers could exploit this variation in quantitative materiality to study determinants and effects across material and immaterial voluntary changes.

#### *4.4 Voluntary change issue types and justifications*

Table 4 presents the percentage of voluntary changes by issue type across the pre-SOX, post-SOX, and post-SFAS No. 154 periods. Appendix A provides definitions and examples of issue types. Table 4 reveals that, overall, changes in the timing of goodwill impairment evaluations are the most frequent type of change (17.7 percent) followed by changes for LIFO to FIFO (16.7) and revenue recognition (7.7). Changes in the timing of goodwill impairment evaluations and in financial statement classification are more prevalent in the post-SOX than the pre-SOX period while changes in revenue recognition and pension recognition are less likely.<sup>9</sup> Table 4 indicates that managers are more likely after SFAS No. 154 relative to the post-SOX period to make voluntary changes related to goodwill impairment test timing, pension

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<sup>9</sup> In the interest of brevity, we discuss variation in the proportion of total voluntary changes for issue types representing 50 or more total observations in the sample.

recognition, and financial statement classification. In contrast, managers were less likely after SFAS No. 154 relative to the post-SOX period to make voluntary changes for LIFO to FIFO, revenue recognition, and amortization/depreciation expense. The increases in goodwill impairment test timing and classification changes in the post-SOX and post-SFAS No. 154 periods provide an explanation for the decrease in percentage of voluntary changes with income effects in these same periods (Table 3). In summary, manager reporting of voluntary changes by issue type is not consistent across time, suggesting some factors or circumstances could lead to increases or decreases in specific types of voluntary changes. Sections 5.1, 5.2, 5.4, and 5.5 highlight opportunities for future research related to results identified in Table 4.

**[Insert Table 4 about Here]**

Table 5 presents 1,528 justifications that managers of our 1,006 sample companies disclose for voluntary changes, an average of 1.54 justifications per company. Each reason provided for voluntary changes falls into one of six categories: 1) more justifiable from an accounting perspective because it better reflects economic reality or better follows principles perceived as important such as matching or conservatism (40.0 percent of all reasons provided), 2) more advantageous administratively due to new systems or process improvements (15.6), 3) more consistent with and more comparable to peer companies (14.9), 4) more consistent with other company policies (13.6), 5) responsive to business or strategy changes (8.9), and 6) justifiable for other reasons (7.0). Appendix B defines and provides examples for each category.

**[Insert Table 5 about Here]**

The descriptive evidence on justifications by time period indicates that the frequency of accounting-related justifications has neither increased nor decreased across the periods. In contrast, the use of administrative justifications increased after SOX and again after SFAS No.

154. The increased use of administrative justifications coincides with the greater likelihoods of making voluntary changes without an income effect as revealed in Tables 3 and 4. In addition, justifications related to business or strategy changes are used less frequently after both SOX and SFAS No. 154. Finally, companies are more likely after SOX than before SOX to justify changes as conforming policies across the company and are less likely to justify changes as following practices of peer companies. It appears from the justifications data that managers after SOX are considering internal (i.e., administrative efficiencies, conforming disparate policies to the same method) more than external (i.e., copying peer practices, responding to business changes) benefits when making voluntary changes. In Sections 5.8, 5.9, and 5.11, we discuss opportunities for future research using manager justifications.

Overall, the results indicate that there are differences in the use of voluntary changes over time. This variation suggests that opportunities exist to extend prior literature on voluntary changes. Further, new opportunities exist for future research on voluntary changes. In the next section, we discuss potential areas for future research on voluntary changes.

## **5. Opportunities for future research**

### *5.1 Environment – regulation*

Similar to our review of prior literature, we use the framework presented in Figure 1 to organize our discussion of opportunities for future research on voluntary changes.<sup>10</sup> Changes in the regulatory landscape such as the introduction of SOX provide opportunities for researchers to consider the impact of regulation on manager use of voluntary changes. After SOX, managers have incentives to make voluntary changes in order to better reflect economic reality in the financial statements or to implement procedural modifications related to financial reporting.

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<sup>10</sup> For parsimony, our discussion focuses on research opportunities using archival data, although we recognize that many of our research opportunities can be examined with experimental or qualitative methods.

However, reducing risk and reporting more conservatively after SOX could also decrease manager use of voluntary changes if, as the prior literature finds prior to SOX, managers use voluntary changes opportunistically for reasons related to poor financial performance and debt contracting (Sections 3.2 and 3.4).<sup>11</sup> As we discuss in Section 4.3, we observe an increase in the average annual number of voluntary changes reported after SOX (Table 3). However, it is unclear whether this finding would hold in a multivariate test, suggesting research is necessary to determine the overall impact of SOX on the reporting of voluntary changes.

Although the overarching goal of SOX is to improve the financial reporting quality of publicly-traded companies, some individual components of SOX likely have greater potential than others to encourage or discourage manager reporting of voluntary changes.<sup>12</sup> For illustration purposes, we consider one of these components. The requirement for and value of auditor attestation of internal control over financial reporting is arguably one of the most debated and contested aspects of SOX. Accelerated filers and large accelerated filers are subject to SOX 404 (b) and must have an auditor attest to the effectiveness of their internal control over financial reporting. In contrast, non-accelerated filers are not subject to SOX 404 (b) and are only required by SOX 404 (a) to have managers attest to the effectiveness of internal controls. If the requirement for auditor attestation of internal control encourages managers to improve both

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<sup>11</sup> Staff Accounting Bulletin No. 99 (SAB No. 99), *Materiality* (SEC 1999) identifies circumstances where items that are quantitatively small could have a qualitatively material impact on financial statements. These circumstances include masking a change in earnings or other trends, failing to meet analysts' consensus forecasts, changing a loss into income, compliance with loan covenants, and increasing management's compensation. The benchmarks itemized in SAB No. 99 provide researchers with examples to consider in determining whether managers opportunistically use voluntary changes to achieve financial reporting outcomes. Throughout Section 5, unless otherwise specified, we refer to voluntary changes that enable managers to achieve benchmarks such as those referenced in SAB No. 99 as "opportunistic."

<sup>12</sup> A contemporaneous study considers the impact of a specific requirement of SOX regulation on manager use of voluntary accounting changes. Keune and Keune (2017) suggest that managers make voluntary accounting changes as part of their efforts to improve financial reporting processes and procedures following the identification of a material weakness in internal control.

financial reporting processes and quality beyond only the requirements of SOX 404 (a), we expect companies subject to SOX 404 (b) make more voluntary changes than companies subject only to SOX 404 (a).

In addition, variation in the nature of voluntary changes including their justifications and their impact on income has the potential to provide insight into whether auditor attestation on internal control encourages the improvement of financial reporting outcomes (e.g., accounting-improvement justifications) or financial reporting processes (e.g., administrative justifications). Tables 4 and 5 reveal an increase in voluntary changes that do not impact net income (e.g., goodwill timing and pensions timing) and an increase in manager reporting of administrative justifications after SOX (Section 4.4). However, it is unclear if these increases are more or less prominent in companies subject to specific SOX mandates, as companies with auditor attestation of internal control could be less likely to report voluntary changes if auditor attestation of internal control curbs managers' opportunistic use of voluntary changes. For these reasons, we suggest the following research question as illustrative of questions that researchers can examine on specific components of SOX:

**RQ1:** Are companies subject to the SOX mandate for auditor attestation on internal control more likely or less likely to report voluntary changes than companies only subject to the SOX mandate for manager reporting on internal control? If more likely, do the voluntary changes impact financial reporting outcomes or financial reporting processes?

## 5.2 *Environment – standards*

New accounting standards also provide opportunities for research on voluntary accounting changes. SFAS No. 154 is an accounting standard that critics suggested would create a disincentive for managers to report voluntary changes, but this standard as it relates to voluntary changes has not been considered in the literature (see Section 4.1). Accordingly, it provides many opportunities for future research that can shed light on both voluntary changes

and the effects of financial statement presentation on managers' accounting choices. One of the most apparent questions is whether SFAS No. 154 and its retrospective application requirement is associated with a decrease in voluntary changes. The average number of voluntary changes per year decreases from the post-SOX period to the post-SFAS No. 154 period (Section 4.3). However, the number of changes per year after SFAS No. 154 is similar to that of the pre-SOX period so it is unclear whether the standard (in a multivariate setting) has had an effect on managers making voluntary changes (Section 4.3).

Another reporting change implemented in SFAS No. 154 provides a second question to examine the impact of reporting requirements on managers' decisions to implement accounting changes. As discussed in Section 2, the impact of changes in depreciation, amortization, and depletion method was historically reported as a cumulative effect adjustment, but is reported prospectively after SFAS No. 154. In addition, an auditor preferability letter is no longer required for these changes after SFAS No. 154. Accordingly, the costs for reporting changes in depreciation, amortization, and depletion method are lower after SFAS No. 154. If reporting costs are a primary determinant in manager decisions to make accounting changes as critics of SFAS No. 154 contend, we expect to see no change or even an increase in depreciation, amortization, and depletion method changes after SFAS No. 154.<sup>13</sup> In line with the above discussion, we propose the following research questions:

**RQ2:** Are managers less likely to report voluntary changes after SFAS No. 154's requirement for retrospective application of changes?

**RQ3:** Are managers more likely to report changes in depreciation, amortization, and depletion method after SFAS No. 154 modified the reporting for these changes?

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<sup>13</sup> Consistent with the removal of the preferability letter requirement, amortization/depreciation expense voluntary changes decline after SFAS No. 154 (Section 4.4). In addition to preferability letters, this research question also requires the collection of data on changes in estimate that are effected by a change in accounting principle after SFAS No. 154.



Accounting standards other than SFAS No. 154 also have the potential to modify manager reporting of voluntary changes if these standards modify the accounting discretion available to managers. We focus our discussion on the accounting for revenue recognition but acknowledge that additional research opportunities likely exist surrounding other accounting standard changes. In 2014, the FASB issued Update No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, which public companies apply in fiscal years beginning after December 15, 2017. This update replaces SAB No. 104 and industry-specific explicit rules on revenue recognition and provides principles-based guidance for public company revenue recognition, likely increasing the discretion available to managers in accounting for revenue.<sup>14</sup> Future research can consider the extent to which this substantial shift in revenue accounting impacts manager use of revenue-related discretion via voluntary changes, thereby informing future FASB deliberations.<sup>15</sup> We suggest the following research question based on the above discussion, as illustrative of the nature of future research opportunities related to accounting standard setting:

**RQ4:** Are managers more likely to report voluntary changes for revenue after the effective date of the principles-based guidance in Topic 606, *Revenue from Contracts with Customers*?

### 5.3 *Environment – company and industry*

In addition to the external influences of regulations and standards, internal influences such as company characteristics and circumstances could also be important to managers’

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<sup>14</sup> Not all industries operate under specific and detailed revenue recognition standards and guidance. Companies in industries without specific guidance follow general guidance issued by the FASB and Staff Accounting Bulletin No. 104 until the implementation of Topic 606. Therefore, it is possible that managers in some industries have *less* discretion related to revenue recognition after the implementation of Topic 606.

<sup>15</sup> In 1999 the SEC issued Staff Accounting Bulletin No. 101, *Revenue Recognition in Financial Statements*, which was replaced by Staff Accounting Bulletin No. 104 in 2003. These rules, along with developments in industry-specific guidance during this period, clarified the revenue recognition accounting for public companies, likely reducing the discretion available to managers and the opportunities to make revenue-related voluntary changes. Consistent with this expectation, we observe a decrease in revenue recognition changes after SOX in Table 4 (Section 4.4). Another potential research question related to standards is whether SAB No. 101 and SAB No. 104, along with industry-specific guidance, reduced manager reporting of revenue-related voluntary changes.

decisions regarding voluntary changes. Research in this area can provide insight into the reasons for the changes, informing future accounting standard setting. We highlight two examples of company characteristics and circumstances that have not been examined in prior literature and could be determinants of voluntary changes.

First, companies that merge with or acquire other companies could be more likely to use different accounting methods for the same transactions within the consolidated company. More specifically, a newly acquired company could use a different inventory costing method than the acquirer or could expense certain transactions that the acquirer capitalizes. As the companies integrate their operations, managers could be more likely to make voluntary changes in order to ensure policies are consistent within the combined entity, resulting in simplified accounting processes and lower risk of future misstatements. The results in Table 5 reveal that managers commonly justify voluntary changes by stating the new method conforms policies across the company and that the use of this justification increased after the passage of SOX (Section 4.4). Future research could further examine whether acquisitions are more likely to lead to voluntary changes after SOX as the usefulness of conforming policies may have increased after SOX due to the requirement for internal control assessments. This discussion leads to our next proposed research question:

**RQ5:** Are managers more likely to make voluntary changes after mergers and acquisitions that result in inconsistent methods within the company? Are voluntary changes after mergers and acquisitions more likely in the post-SOX period? Is this effect present in companies disclosing auditor and/or manager reports on internal control?

Another company characteristic that could encourage managers to make voluntary changes is a company's exposure to reporting requirements other than U.S. Generally Accepted Accounting Principles (GAAP). When companies have subsidiaries in countries that require IFRS, for example, managers could be more likely to switch to policies under U.S. GAAP that

are more similar to IFRS. Aligning internal policies across IFRS and U.S. GAAP could reduce the administrative burden of maintaining different accounting policies for similar transactions and potentially improve the consistency of accounting methods within the company. For instance, companies with operations in IFRS reporting countries could be more likely to voluntarily change from LIFO to the FIFO method in the U.S. to align reporting for U.S. locations with reporting for locations that have statutory reporting requirements in IFRS, which does not allow the use of the LIFO method.<sup>16</sup> Accordingly, we suggest the following question:

**RQ6:** Do companies that have a substantial presence in IFRS reporting countries make more voluntary changes? If so, do these changes “converge” U.S. and IFRS accounting methods within the company?

Similar to company characteristics, industry characteristics and circumstances could also be associated with managers’ likelihood of making voluntary changes. An unexamined industry characteristic and opportunity for future research is industry concentration or competition. When industry concentration is high, companies could place greater importance on implementing accounting policies that enhance their ability to compare favorably to industry competitors in order to attract capital. A company, for example, that expenses certain costs might switch to capitalizing and amortizing if operating results under immediate expensing appear less favorable.<sup>17</sup> The same reasoning could apply to other policies that have income effects such as depreciation methods, inventory costing methods, and pension recognition policies, suggesting the following research question:

**RQ7:** Are companies in highly concentrated or more competitive industries more likely to make voluntary changes?

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<sup>16</sup> This expectation could be one factor contributing to the substantial percentage of voluntary changes (16.7 percent) from LIFO to FIFO during our sample period (see Table 4).

<sup>17</sup> This argument could also apply to peer companies. That is, industry peers in highly concentrated or competitive industries may be more likely to make voluntary changes after one company in the industry makes a similar change. To avoid redundancy, we do not propose a similar research question in our Section 5.7 discussion of industry peers.

#### 5.4 *Environment – economy*

In addition to factors associated with individual companies and their specific industries, macro-level economic factors could impact a company's circumstances and managers' subsequent decision to report a voluntary change. A wide range of opportunities is available for future research in this area. We offer as examples two possible links between economic factors and the likelihood that a company reports a voluntary change. First, our sample period of 1995-2013 includes an economic downturn in the early 2000s and the financial crisis in 2008. Unfavorable economic climates present a change in circumstances that could necessitate a change in policies. For instance, in periods of economic decline, goodwill impairments could be more likely or more significant, and goodwill impairment evaluations in these circumstances likely require more time to complete to determine if a writedown is necessary. As a result, companies could make a voluntary change to move the timing of goodwill impairment evaluations earlier in the year to ensure adequate time to complete analyses and evaluations prior to year-end. (See Section 4.4 for a discussion of changes in the frequency of timing of goodwill evaluations in our sample.) Alternatively, financial performance often suffers during economic downturns, and managers could be more likely to make income-increasing voluntary changes or voluntary changes that improve the appearance of financial statement trends to help offset the effects of the downturn on the financial statements. Therefore, we propose the following research question:

**RQ8:** Are managers more likely to report voluntary changes during a financial crisis or economic downturn? If so, is this increase due to opportunism or improving financial reporting quality and processes?

A second example of a research opportunity related to economic changes extends prior work on the LIFO inventory method. As discussed in Sections 3.1 and 3.3, the literature has

extensively examined the factors leading to widespread LIFO adoptions in 1974 and 1975. However, to our knowledge, no studies have examined why companies move away from LIFO. The prior literature attributes LIFO adoptions to inflation as well as tax savings, but it is unclear when and why companies elect to change away from LIFO, especially since the changes occur over time rather than all at once. As we noted in Section 4.4, changes from LIFO to FIFO are one of the most common issue types in our sample (Table 4). It is possible that consistently low inflation or increases in productivity and efficiency cause the LIFO method to be less representationally faithful. Similar to Dopuch and Pincus (1988) who find that LIFO adoptions occur once the tax benefits become sufficiently large, research into changes away from LIFO could investigate whether a particular economic factor leads to a tipping point at which managers change to a different method. The literature made significant progress on our understanding of inventory costing decisions after the economic conditions of the 1970s, but there is much that we still do not understand about factors that lead to inventory method changes after previously studied conditions subside. This leads to our next proposed research question:

**RQ9:** Are managers more likely to move away from the LIFO inventory method in times of low or decreasing inflation or in times of high or increasing productivity/efficiency?

### 5.5 *Strategic incentives – managerial contracts, debt contracts, and financial distress*

Although the impact of bonus plans, debt covenants, and financial distress on voluntary changes was a focus of prior research (see Section 3.4), there are reasons to revisit these areas. We provide examples of two such reasons. First, a reexamination of the bonus plan hypothesis is warranted due to the contemporary availability of a variety of executive compensation data. More detailed executive compensation disclosure data became available in proxy statements beginning in 1992 and was further enhanced in 2006 to include disclosure of specific targets and performance measures. It is possible that, while voluntary changes are not related to the *existence*

of a bonus plan overall (e.g., Hunt 1985), changes could be associated with closeness to specific bonus targets available in more recent proxy statements. Researchers could reexamine the impact of bonus plans on voluntary changes using these more detailed disclosure data.

Second, SFAS No. 154 significantly modified the reporting for voluntary changes (see Section 2). Accordingly, it significantly modified the ways that managers can use voluntary changes to opportunistically achieve financial reporting outcomes due to the requirement for retrospective treatment. For this reason, SFAS No. 154 provides motivation to examine whether managers continue to use voluntary changes to meet debt covenant calculations.

Many entirely new research questions are also possible using contemporary data and conditions. For brevity, we focus on only one potential avenue. Retrospective treatment required by SFAS No. 154 does not preclude managers from using voluntary changes opportunistically to achieve certain outcomes. Instead, retrospective treatment likely modifies how managers use voluntary changes opportunistically. For example, managers could be more likely after SFAS No. 154 to use voluntary changes to execute an opportunistic strategy to shift earnings decreases to prior years, resulting in the appearance of lower income in *prior* years, higher income in *future* years, and an improved overall trend across years. For example, Table 4 reveals an increase in pension recognition changes after SFAS No. 154 that often decrease prior-year income through retrospective application, likely resulting in increased income in current or future periods (Section 4.4). Future research could examine whether managers use the retrospective application of voluntary changes to shift losses into prior periods as part of a strategy to improve earnings trends, leading to the following research question:

**RQ10:** After SFAS No. 154, are managers more likely to make voluntary changes that shift losses rather than gains to prior periods? If so, does this strategy improve the appearance of the trend in earnings?

### 5.6 *Strategic incentives – company and managerial reputation*

Companies and managers experience reputation damaging events such as financial reporting fraud that call into question the quality of their financial reporting practices. It is important for managers to quickly reassure financial statement users and other external parties that the company is committed to high-quality financial reporting because damaging events could be associated with lower stock prices, higher costs of capital, manager turnover, and penalties from regulators (Hribar and Jenkins 2004; Palmrose, Richardson, and Scholz 2004; Desai, Hogan, and Wilkins 2006). Managers could potentially use the public disclosure and corresponding auditor approval of voluntary changes to signal managerial diligence to investors, regulators, and the external labor market after a negative event, such as financial reporting fraud. Based on this discussion, we propose the following example of a research question in this area:

**RQ11:** Do managers make voluntary changes after a reputation damaging event such as financial reporting fraud? If so, does the reporting of voluntary changes improve the market's response and/or regulators' response in these circumstances?

### 5.7 *Strategic incentives – industry peers*

Although Pincus and Wasley (1994) do not find evidence of companies in the same industry making voluntary changes in the same year (Section 3.5), our justification results in Table 5 suggest that managers do consider peer practices when determining their own accounting policies. We also observed during data collection that the same voluntary changes were made by multiple companies but over a longer period of time than one year. For instance, several cruise and cargo ship companies made income-increasing voluntary changes related to drydock costs over many years (e.g., Europa Cruises Corporation in 1995, Seaboard Corporation in 2003, and Royal Caribbean Cruises, Ltd. in 2005). The data and anecdotal evidence raise questions on whether and why companies change accounting methods after peer companies also make similar

changes. Future research could examine whether companies make voluntary changes after peers for comparability purposes or for opportunistic reasons. This discussion leads to the following research question:

**RQ12:** Do managers make voluntary changes in response to voluntary changes made by their industry peers? Is this to improve financial reporting or for opportunistic reasons?

### 5.8 *Manager characteristics*

Although managers are central to the voluntary change process, the only prior study of which we are aware that examines a manager characteristic is Moore (1973), who finds that companies with new managers are more likely to make income-decreasing voluntary changes than companies without management changes. For that reason, many opportunities exist related to the impact of manager characteristics on voluntary changes. For example, researchers could examine whether greater financial accounting expertise is associated with managers who make voluntary changes, as the identification and justification of more preferable accounting methods (for opportunistic reasons or to improve financial reporting) requires relatively advanced accounting knowledge.<sup>18</sup> Further, researchers could also examine whether these manager characteristics lead to any differences in the reporting of opportunistic voluntary changes and changes to improve financial reporting. We propose the following research question as an example of the many questions that are possible:

**RQ13:** Are managers with greater financial accounting expertise more or less likely to make voluntary changes? If so, are they more likely to make changes to improve financial reporting or for opportunistic reasons? Are they more likely to disclose justifications that reflect whether they make changes to improve financial reporting or for opportunistic reasons?

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<sup>18</sup> Relevant indicators of accounting expertise include certifications, a degree in accounting versus finance, the number of years of accounting experience, the number of years of specific industry experience, and prior manager or partner experience in public accounting.



## 5.9 *Corporate governance*

The majority of research on voluntary changes occurred prior to the SOX-mandated enhancement of the audit committee's role, suggesting many new research opportunities exist regarding how the audit committee impacts the use of voluntary changes. In its governance capacity, the audit committee could moderate managers' role in the use of voluntary changes (i.e., an interaction between manager and audit committee characteristics). For example, independent audit committee members, members with longer tenure, and members with more expertise could provide greater oversight of financial reporting and be more likely to reject voluntary changes that are opportunistic or do not improve financial reporting and could be more likely to accept voluntary changes that improve financial reporting. However, it is also possible that the audit committee drives (i.e., a main effect) the use of voluntary changes by initiating or suggesting changes to managers.<sup>19</sup> Audit committee members often have officer positions and directorships at other companies. These "network" companies could use accounting methods other than the methods used by the company, potentially resulting in an audit committee member suggesting a more preferable accounting method for the company. Alternatively, "network" companies could initiate voluntary changes, leading an audit committee member to suggest a similar change at the company. As an illustration of the opportunities available related to audit committees and voluntary changes, we propose the following research question:

**RQ14:** Do novel policies and/or voluntary changes at network companies lead audit committee members to initiate voluntary changes? Is this to improve financial reporting or for opportunistic reasons? How do these companies justify their changes?

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<sup>19</sup> For simplicity, we depict the audit committee's and audit firm's potential effects as moderators in Figure 1.

### 5.10 *Audit firm*

Although the auditor must evaluate voluntary changes (see Section 2), prior literature provides only univariate evidence indicating the auditor could impact managers' use of this form of discretion (see Section 3.6). Accordingly, many opportunities for future research are available regarding the auditor's role in managers' voluntary change decisions, although we provide only one specific avenue for future research in this area. It is possible that auditor expertise moderates managers' use of voluntary changes as auditors with greater expertise may curtail opportunistic reporting of voluntary changes or encourage managers' reporting of changes that improve financial reporting (i.e., an interaction).<sup>20</sup> Although auditors are only responsible for the *evaluation* of these changes, it is also possible that auditors with expertise could identify and initiate opportunities for managers to report voluntary changes (i.e., a main effect). Based on this discussion, we provide the following example of a research question:

**RQ15:** Does auditor expertise curtail or encourage manager reporting of voluntary changes? Is this to improve financial reporting or for opportunistic reasons? What are the characteristics of the companies and their managers in these circumstances?

### 5.11 *Financial reporting choices*

Prior researchers have examined some of the additional data points disclosed with voluntary changes, such as the issue type and direction of income effect (e.g., Kaplan and Roll 1972; Sweeney 1994; Beatty and Weber 2003). We suggest that researchers incorporate these data points into research questions on the various topics in Figure 1 to provide further evidence on how managers use voluntary changes. For example, in addition to examining the likelihood of making voluntary changes, researchers can also examine managers' propensity to make changes that exceed common materiality thresholds (e.g., one percent of sales), their propensity to make

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<sup>20</sup> For example, auditors can have industry expertise or personal experience with voluntary changes at other clients.

changes with no income effect versus those with an income effect, or their propensity to exceed (or fall short of) GAAP's requirements for the information provided in voluntary change disclosures.

Voluntary change disclosure data points such as manager justifications (see Table 5) can also serve as the primary focus of a study. Managers justify many voluntary changes using accounting reasons that claim the new policy is more reflective of economic reality or more transparent. Reasons such as these imply there are benefits from these voluntary changes. Researchers could examine earnings response coefficients and indicators of earnings quality before and after voluntary changes with accounting justifications to determine whether there are indeed benefits associated with these changes. Examining this research question before and after SFAS No. 154 could also be informative because retrospective treatment for voluntary changes modifies how managers can make opportunistic changes (see Section 5.2 for further discussion), suggesting there could be a change in the effect of voluntary changes justified with accounting reasons after SFAS No. 154. This leads to the following research question example:

**RQ16:** Are voluntary changes disclosed with accounting-improvement related justifications associated with changes in earnings response coefficients and earnings quality? If so, are the effects different after SFAS No. 154?

#### *5.12 User reactions – stock market*

Some prior studies examining market reactions to voluntary changes find evidence of negative abnormal stock returns after companies make income-increasing changes (e.g., Harrison 1977; Dharan and Lev 1993; Cheng and Coulombe 1993). However, all of the studies of which we are aware investigate market reactions to voluntary changes occurring prior to SOX. We contend that the passage of SOX and the implementation of SFAS No. 154 warrant a reexamination of this literature (see Section 4.1 for a discussion). Market reactions to voluntary

changes made after SOX and/or SFAS No. 154 are important empirical questions because the research would provide insight not only into investors' perceptions of voluntary changes, but also more broadly into the effects of major legislation and changes in accounting presentation.

We illustrate one potential question based on SFAS No. 154's requirement for retrospective treatment. Prior to SFAS No. 154, regulators and academics were concerned that investors could be alarmed by the increase in restatements following SOX, leading to the potential for confusion about the quality of financial reports (Burks 2011). Similarly, many practitioners were concerned that the retrospective application of voluntary changes, despite being labeled as retrospective application, would lead investors to confuse voluntary changes with restatements, resulting in a negative view of voluntary changes (e.g., Pfizer 2004).

However, it is unclear whether investors are indeed confused by the retrospective presentation of voluntary changes. Therefore, we propose the following research question:

**RQ17:** Does the market respond differently to voluntary changes after SFAS No. 154?

### *5.13 User reactions – analysts*

As we discuss in Section 3.8, the prior literature generally finds that analysts experience challenges in forecasting earnings in the same year as and year following company reporting of voluntary changes. However, the implementation of SFAS No. 154 is a significant change since the time period of the previous studies. This change in accounting treatment could facilitate various research questions, and we highlight one example. Retrospective treatment for voluntary changes presents prior period financial statements under the new method and, accordingly, limits the amount of the change that affects current year earnings. In contrast, prior to SFAS No. 154 the entire cumulative income effect of the voluntary change impacted current year earnings, and prior period financial statements were not revised. If prior period financial statements are

presented using the new method, then the collection of analysts' forecasts for a company after the reporting of the voluntary change likely exhibits less dispersion as any adjustments to forecasts for the voluntary change are less complex. This leads to the following research question:

**RQ18:** After SFAS No. 154, are analysts' earnings forecasts more accurate and less dispersed for company years after voluntary changes?

## **6. Conclusion**

Voluntary changes in accounting principle represent explicit choices by managers to exercise accounting discretion. This paper develops an organizing framework to review prior literature on voluntary changes, provides descriptive insights on contemporary changes, and identifies opportunities for future research on voluntary changes. The voluntary change literature is robust and has examined many questions using data prior to SOX. Contemporary voluntary changes often vary across the pre-SOX, post-SOX, and post-SFAS No. 154 periods by the materiality of their income effect, their issue type, and justifications provided by managers, suggesting that manager use of voluntary changes has evolved over time. We consider future research opportunities on potential determinants of voluntary changes (i.e., strategic incentives, environmental conditions, and manager characteristics). We also consider the potential direct or moderating role of corporate governance and auditors on manager use of voluntary changes. Finally, we consider user reactions to voluntary changes. Our study is useful to researchers and standards setters who require knowledge of this fundamental decision to exercise accounting discretion, desire an understanding of contemporary voluntary change data, or plan to study accounting choice through voluntary changes.

## APPENDIX A

### Definitions and Examples of Voluntary Change Issue Types

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#### **Amort./Depreciation Expense**

Definition: Amortization, depreciation, and depletion expense method (e.g., change from straight-line to units of production) including interest expense, fixed assets, mining assets, deferred costs, etc.

Example: ...we changed our method of computing depreciation on domestic fixed assets from the double declining method to the straight-line method. – *Cyberonics (1999)*

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#### **Assets – Capitalize to Expense**

Definition: Expense recognition change from capitalizing an asset to expensing as incurred or accruing a liability.

Example: ...we changed our accounting policy for rail grinding costs from a capitalization method, under which we capitalized the cost of rail grinding and depreciated such capitalized costs, to a direct expense method, under which we expense rail grinding costs as incurred. – *Union Pacific Corporation (2010)*

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#### **Assets – Expense to Capitalize**

Definition: Expense recognition change from expensing as incurred or accruing a liability to capitalizing an asset.

Example: Instruments are hand held devices used by orthopaedic surgeons...instruments are recognized as long-lived assets and are included in property, plant and equipment. Undeployed instruments are carried at cost, net of allowances for obsolescence. Instruments in the field are carried at cost less accumulated depreciation... In prior periods, undeployed instruments were carried as a prepaid expense at cost and recognized in selling, general and administrative expense in the year in which the instruments were placed into service. – *Zimmer (2003)*

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#### **Assets – Other Recognition**

Definition: Asset recognition including cash, property, plant, and equipment, equity method investments, goodwill, and intangibles.

Example: The Company has reclassified its rotating service spare parts assets from inventory to non-current assets in the accompanying Balance Sheets... – *Integrated Measurement Systems (1996)*

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#### **Classification**

Definition: Classification and net or gross presentation of assets, liabilities, equity, revenue, and expenses. These changes have no effect on current period net income, prior period net income, or retained earnings.

Example: ...the Company changed its definition of cash equivalents for presentation in the statement of cash flows. The Company previously defined short-term investments with original maturities of 90 days or less to be cash equivalents for statement of cash flow purposes. The Company changed its policy to exclude short-term investments from cash equivalents. – *Selective Insurance Group (2006)*

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#### **Complex Issues**

Definition: Complex accounting issues including derivatives, business combinations, deferred taxes, leases, share-based awards, and asset retirement obligations.

Example: ... the Company elected to designate the changes in forward exchange rates for the measurement of effectiveness in net investment hedges... the Company has decided to designate the changes in spot exchange rates for the measurement of effectiveness in net investment hedges. – *Oracle (2001)*

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#### **Consolidation – Timing**

Definition: Consolidation timing including foreign subsidiaries.

Example: Historically, the Company consolidated its international subsidiaries using the twelve month period ended December 31<sup>st</sup>...Due to more efficient financial reporting procedures, the Company was able to eliminate this one month lag in fiscal 2004. - *Hayes Lemmerz International, Inc. (2005)*

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#### **Estimation and Valuation**

Definition: Estimation method changes including workers' compensation liability, warranty accrual, recoverability of goodwill, fair values of goodwill, and insurance reserves and not including amortization and depreciation expense.

Example: ...CONSOL Energy changed its method of accounting for workers' compensation. Under the new method, the undiscounted liability is actuarially calculated based on claims filed and an estimate of claims incurred but not yet reported. Additionally, the workers' compensation liability will be recorded on a discounted basis, which has been actuarially determined using various assumptions, including a discount rate of 6% and a future health care trend rate of 10%, declining to 4.75% in 2010. – *CONSOL Energy (2004)*

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## APPENDIX A - Continued

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### Goodwill – Timing

Definition: Assessment timing for goodwill.

Example: ...the date of the annual goodwill impairment test for Field Services was changed to August 31st from September 30th. - *Duke Energy Corporation (2004)*

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### Inventory – FIFO to LIFO

Definition: Inventories change from first in, first out to last in, first out.

Example: ...the Company changed its method of accounting for certain inventories of the Pork Division from FIFO to LIFO... - *Seaboard Corporation (1999)*

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### Inventory – LIFO to FIFO

Definition: Inventories change from last in, first out to first in, first out.

Example: ...one subsidiary used the LIFO (last-in, first-out) method to determine cost...the subsidiary changed to the FIFO method. - *NS Group, Inc. (1998)*

---

### Inventory – Other Method

Definition: Other inventory costing changes (e.g., weighted average to last in, first out).

Example: ...we changed our method of valuing our U.S. inventories to the average cost method. In prior years, principally all U.S. inventories were valued using the last-in, first-out (“LIFO”) method. - *Kraft Foods, Inc. (2009)*

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### Inventory – Other Recognition

Definition: Other inventory recognition issues including changes in calculation, recognition periods, overhead/administrative cost allocation, inventory pools, and price indices.

Example: The Company assigns cost to store inventories using the retail inventory method...the Company used one inventory pool for this calculation...the Company began using approximately thirty inventory pools in its retail inventory calculation. - *Dollar Tree, Inc. (2010)*

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### Liabilities

Definition: Liability recognition including changes in accrual method and related timing of expense recognition.

Example: ...PECO changed its method of accounting for nuclear outage costs to record such costs as incurred. Previously, PECO accrued these costs over the operating cycle. - *Exelon Corporation (2000)*

---

### Other

Definition: Other issues including equity, overall financial statement presentation, and issues with unclear disclosures. Also includes companies with multiple voluntary changes in the same year.

Example: ...the Company changed the presentation of its cash flows from the direct method to the indirect method... - *Encore Capital Group, Inc. (2008)*

---

### Pensions – Recognition

Definition: Pensions recognition including calculations, amortization, and valuation.

Example: Historically, Verizon has recognized actuarial gains and losses as a component of Equity in its consolidated balance sheets on an annual basis. These gains and losses were amortized into operating results generally over the average future service period of active employees. Verizon elected to immediately recognize actuarial gains and losses in its operating results in the year in which the gains and losses occur. - *Verizon Communications, Inc. (2010)*

---

### Pensions – Timing

Definition: Assessment timing for pensions.

Example: ...we changed the annual measurement date of our pension plan assets used in determining their market-related value and of our plan liabilities for our pension plans and postretirement benefit plans from September 30 to November 30. - *Cummins, Inc. (2002)*

---

### Revenue

Definition: Revenue recognition issues such as contract accounting and timing of recognition.

Example: ...the Company made a preferential change in its revenue recognition policies regarding semester-based tuition for its campus-based universities...The universities now recognize tuition revenue ratably on a weekly straight-line basis over each academic session instead of the previously used monthly straight-line basis. - *Laureate Education, Inc. (2006)*

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## APPENDIX B

### Definitions and Examples of Justification Types

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#### **Accounting Terms**

- Definition: Accounting justification such as better matching, more transparent, more conservative, more reflective of economic substance due to factors including better measurement, better precision, better information for decisions, and less subjectivity.
- Examples: The Company believes that the straight-line method ... provides a better matching of revenues and expenses. – *TranSwitch Corporation (2003)*  
The change in accounting method was made because the Company believes that it better reflects the substance of the Company’s collaborative agreements—... - *Regeneron Pharmaceuticals, Inc. (2003)*
- 

#### **Administrative**

- Definition: Administrative justification such as utilizing new administrative availability or systems, improving timeliness of reporting, facilitating budgeting or planning processes, and improving benefits over costs.
- Example: ...the Company changed its annual impairment testing date...The Company believes the last day of the eleventh month of the fiscal year is preferable as it provides the Company additional time to complete the impairment test and report the results of that test in the Company’s annual filing on Form 10—, - *LeCroy Corporation (2008)*
- 

#### **Conforming Policies Within Company (Conforming Policies)**

- Definition: Conforming policies across subsidiaries, often due to a recent merger.
- Example: ...the Company changed its method of valuing inventories in the United States from the lower of last-in, first-out (LIFO) cost or market to the lower of first-in, first-out (FIFO) cost or market in order to provide conformity among subsidiaries due to recent acquisition—, - *Carson, Inc. (1997)*
- 

#### **Conforming Policies with Policies of Peers (Peers)**

- Definition: Using accounting principles consistent with industry peers.
- Example: ...the new accounting principle is preferable because the direct expense method is the predominant method used in the airline industry... - *World Airways, Inc. (2000)*
- 

#### **In Response to Business or Economic Change (Response to Change)**

- Definition: Responding to company changes including changes in fiscal year end and business strategy.
- Example: The adoption of this method...reflects the change in the operating strategy of the Company as a result of the BFI acquisition. Previously the Comp’y’s strategy was focused on the acquisition and development of waste disposal capacity. Through the BFI acquisition, the Company substantially achieved its previous strategy and will now focus on the increased utilization of landfill capacity—, - *Allied Waste Industries, Inc. (1999)*
- 

#### **Other**

- Definition: Other or no justification.
-



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**EXHIBIT 1**  
**Illustration of Pre-SFAS No. 154 Voluntary Change Disclosures**

**Panel A:** Preferability Letter from PricewaterhouseCoopers Excerpt – PPL Corporation

... Note 14 to the financial statements describes a change in accounting principle related to the method of amortization of unrecognized gains and losses in the annual pension expense/income... It should be understood that the preferability of one acceptable method of accounting over another for the amortization of unrecognized gains or losses calculated in the annual pension expense/income determined under SFAS 87 has not been addressed in any authoritative accounting literature, and in expressing our concurrence below we have relied on management's determination that this change in accounting principle is preferable. Based on our reading of management's stated reasons and justification for this change in accounting principle in the Form 10-K, and our discussions with management as to their judgment about the relevant business planning factors relating to the change, we concur with management that such change represents, in the Company's circumstances, the adoption of a preferable accounting principle in conformity with Accounting Principles Board Opinion No. 20.

**Panel B:** Auditor's Report from PricewaterhouseCoopers Excerpt – PPL Corporation

...PPL also changed its method of accounting for amortizing unrecognized gains or losses in the annual pension expense/income determined under Statement of Financial Accounting Standards No. 87, Employers' Accounting for Pensions, as discussed in Note 14 to the consolidated financial statements.

**Panel C:** Consolidated Income Statement Excerpt – PPL Corporation (in millions, except per share)

	2001	2000	1999
<b>Income Before Cumulative Effect of a Change in Accounting Principle</b>	<b>221</b>	524	458
Cumulative Effect of a Change in Accounting Principle (net of income taxes) (Note 14)	<b>10</b>		
<b>Income Before Dividends on Preferred Securities</b>	<b>231</b>	524	458
Dividends - Preferred Securities	<b>52</b>	26	26
<b>Net Income</b>	<b>\$ 179</b>	\$ 498	\$ 432

**Panel D:** Note 14 Excerpt – PPL Corporation (in millions, except per share)

In 2001 PPL changed its method of amortizing unrecognized gains or losses in the annual pension expense/income determined under SFAS 87, "Employers' Accounting for Pensions." This change resulted in a cumulative-effect credit of \$10 million after-tax or \$.07 per basic share, which is reflected as a "Cumulative Effect of a Change in Accounting Principle" on the Statement of Income. Under the old method, unrecognized gains and losses in excess of ten percent of the greater of the plan's projected benefit obligation or market-related value of plan assets were amortized on a straight-line basis over the estimated average future service period of plan participants. Under the new method, a second corridor will be utilized for unrecognized gains and losses in excess of thirty percent of the plan's projected benefit obligation. Unrecognized gains and losses outside the second corridor will be amortized on a straight-line method over a period equal to one-half of the average future service period of the plan participants. The new method is preferable under SFAS 87 because it provides more current recognition of gains and losses, thereby lessening the accumulation of unrecognized gains and losses.

**Notes:** PPL Corporation reported a voluntary change in accounting principle in its December 31, 2001 10-K. The above are excerpts from the related disclosures.

**EXHIBIT 2**  
**Illustration of Post-SFAS No. 154 Voluntary Change Disclosures**

**Panel A:** Preferability Letter from PricewaterhouseCoopers Excerpt – Honeywell International, Inc.

...As discussed further in Note 1 to the consolidated financial statements, the Company changed its method of accounting for pension costs... It should be understood that the preferability of one acceptable method of accounting over another for pension costs has not been addressed in any authoritative accounting literature, and in expressing our concurrence below we have relied on management's determination that this change in accounting principle is preferable. Based on our reading of management's stated reasons and justification for this change in accounting principle in the Form 10-K, and our discussions with management as to their judgment about the relevant business planning factors relating to the change, we concur with management that such change represents, in the Company's circumstances, the adoption of a preferable accounting principle in conformity with Accounting Standards Codification 250, *Accounting Changes and Error Corrections*.

**Panel B:** Auditor's Report from PricewaterhouseCoopers Excerpt – Honeywell International, Inc.

As discussed in Note 1 to the consolidated financial statements, in 2010 the Company has changed its method of accounting for defined benefit pension costs. All periods have been retroactively restated for this accounting change.

**Panel C:** Note 1 Excerpt – Honeywell International, Inc.

In 2010 we elected to change our method of recognizing pension expense. Previously, for our U.S. defined benefit pension plans we used the market-related value of plan assets reflecting changes in the fair value of plan assets over a three-year period and net actuarial gains or losses in excess of 10 percent of the greater of the market-related value of plan assets or the plans' projected benefit obligation (the corridor) were recognized over a six-year period. Under our new accounting method, we recognize changes in the fair value of plan assets and net actuarial gains or losses in excess of the corridor annually in the fourth quarter each year (MTM Adjustment). The remaining components of pension expense, primarily service and interest costs and assumed return on plan assets, will be recorded on a quarterly basis (On-going Pension Expense). While the historical policy of recognizing pension expense was considered acceptable, we believe that the new policy is preferable as it eliminates the delay in recognition of actuarial gains and losses outside the corridor. This change has been reported through retrospective application of the new policy to all periods presented. The impacts of all adjustments made to the financial statements are summarized below:

**Consolidated Statement of Operations**

	<b>Year Ended December 31, 2009</b>		
	<b>Previously Reported</b>	<b>Revised</b>	<b>Effect of Change</b>
Cost of products sold	18,637	19,317	680
Cost of services sold	4,548	4,695	147
Selling, general and administrative expenses	4,341	4,443	102
Income before taxes	2,978	2,049	(929)
Tax expense	789	465	(324)
Net income	2,189	1,584	(605)
Net income attributable to Honeywell	2,153	1,548	(605)
Earnings per share of common stock-basic	2.86	2.06	(0.80)
Earnings per share of common stock-assuming dilution	2.85	2.05	(0.80)



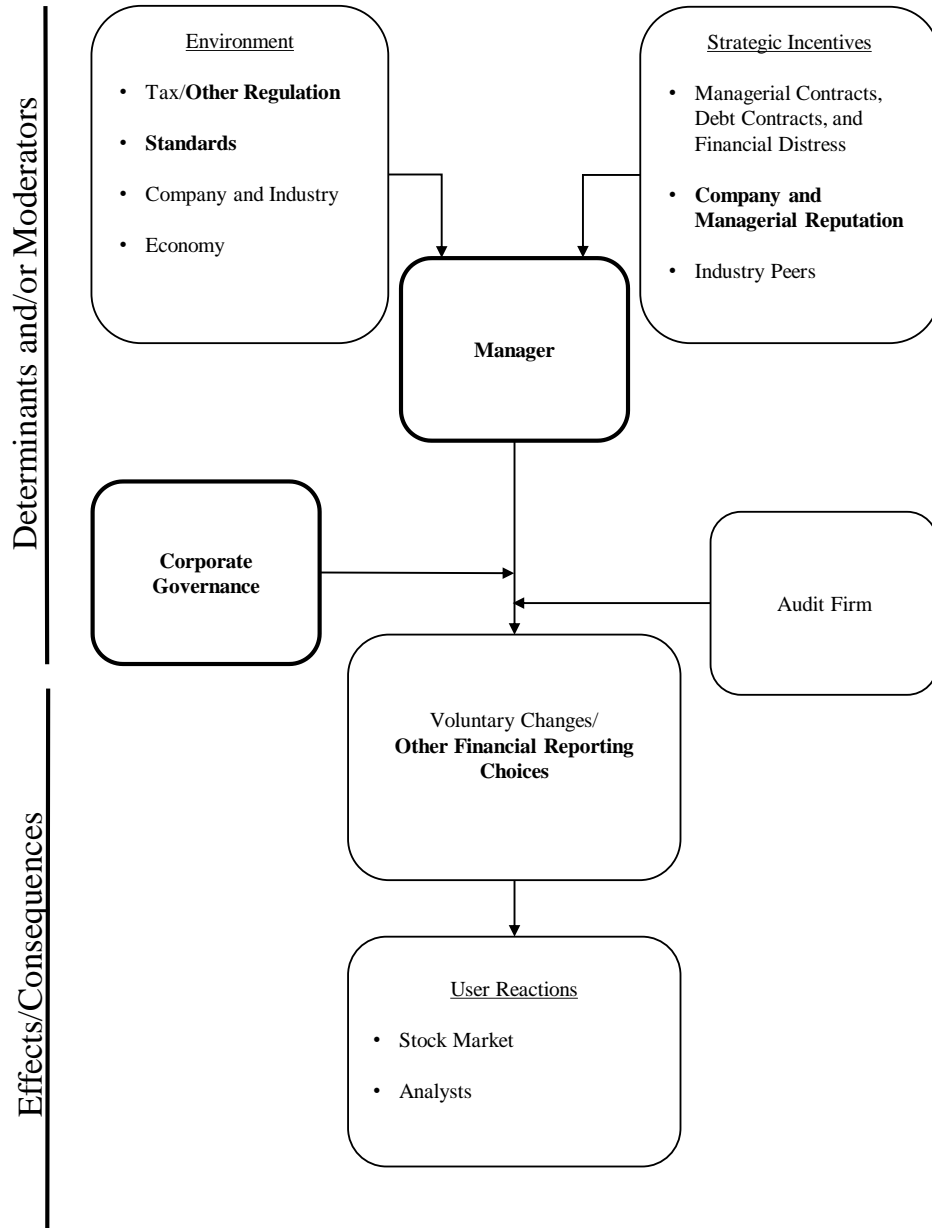
**EXHIBIT 2 - Continued****Balance Sheet**

	<u>December 31, 2009</u>		
	<b>Previously Reported</b>	<b>Revised</b>	<b>Effect of Change</b>
Deferred income taxes	2,017	2,006	(11)
Total assets	36,004	35,993	(11)
Other liabilities	6,481	6,453	(28)
Accumulated other comprehensive income (loss)	(4,429)	(948)	3,481
Retained earnings	17,487	14,023	(3,464)
Total Honeywell shareowners' equity	8,844	8,861	17
Total shareowners' equity	8,954	8,971	17
Total liabilities and shareowners' equity	36,004	35,993	(11)

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**Notes:** Honeywell International, Inc. reported a voluntary change in accounting principle in its December 31, 2010 10-K. The above are excerpts from the related disclosures. Additional disclosures on the annual impact of the voluntary change on prior years are available in the Honeywell 10-K.

**FIGURE 1**  
**Framework of Prior Research and Opportunities for Future Research**  
**on Voluntary Changes**



**Note:** Figure 1 presents an organizing framework for discussion of prior research and opportunities for future research on voluntary changes. Boxes with thick borders and categories in bold font indicate topics that are not examined in prior research, but are opportunities for future research. For parsimony, Figure 1 illustrates environmental determinants, strategic incentives, and managerial characteristics as determinants of voluntary changes and corporate governance and audit firm as moderators of voluntary changes. However, these “determinants” could serve as moderators, and “moderators” could serve as determinants.

**TABLE 1**  
**SUMMARY OF PRIOR LITERATURE ON VOLUNTARY CHANGES**

**Panel A: Literature on Tax Regulation (Section 3.1)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Morse and Richardson (1983)	Examines potential tax benefits in the years surrounding a change in inventory costing methods	<ul style="list-style-type: none"> <li>• 48 companies from 1939-1978 in six industries with a wholesale price index</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Tax benefits of switching to LIFO</li> </ul> DV: <ul style="list-style-type: none"> <li>• Voluntary changes to LIFO</li> </ul>	<ul style="list-style-type: none"> <li>• Companies with different inventory methods than industry peers have different tax benefit characteristics.</li> <li>• LIFO-switch tax benefits are higher in change year.</li> <li>• Companies wait until tax savings hit a certain level before making LIFO change.</li> <li>• Large companies are more likely to adopt LIFO.</li> </ul>
Dopuch and Pincus (1988)	Examines why companies change from FIFO to LIFO	<ul style="list-style-type: none"> <li>• 70 companies that switched from FIFO to LIFO from 1965-1978</li> <li>• 102 FIFO companies from 1962-1981</li> <li>• 29 LIFO companies from 1962-1981</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Tax savings</li> <li>• Size (Assets and Sales)</li> <li>• Market value of equity</li> <li>• Net income</li> </ul> DV: <ul style="list-style-type: none"> <li>• Inventory and cost of sales using other costing method</li> </ul>	<ul style="list-style-type: none"> <li>• Changes to LIFO appear related to tax savings.</li> <li>• High inflation rates were likely responsible for LIFO adoptions in 1974 due to large immediate tax savings.</li> <li>• When the difference between LIFO and FIFO cost of sales becomes large, companies switch to LIFO.</li> <li>• Companies that use FIFO long-term do not forego large tax savings by remaining on FIFO.</li> </ul>
Bartley and Chen (1992)****	Examines whether the Tax Reform Act of 1986 (TRA) caused discretionary accounting changes	<ul style="list-style-type: none"> <li>• 1,863 companies from July 1986-June 1988</li> </ul>	IV: <ul style="list-style-type: none"> <li>• TRA time periods</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Income-increasing/decreasing discretionary changes</li> </ul>	<ul style="list-style-type: none"> <li>• Companies make accounting changes that maintain book-tax conformity.</li> <li>• Very few companies make accounting changes to reduce their exposure to the alternative minimum tax.</li> </ul>
Pincus and Wasley (1994)***	Provides descriptive evidence on voluntary changes and the economic characteristics of companies making changes	<ul style="list-style-type: none"> <li>• 2,249 companies that made voluntary changes from 1969-1988 (2,978 company years)</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Sales</li> <li>• Earnings growth</li> <li>• Leverage</li> <li>• Dividend constraints</li> <li>• Industry and year</li> </ul> DV: <ul style="list-style-type: none"> <li>• Voluntary changes</li> </ul>	<ul style="list-style-type: none"> <li>• The most common voluntary changes are LIFO adoptions, which are associated with inflation.</li> <li>• Non-LIFO voluntary changes are typically income-increasing.</li> <li>• Companies making income-increasing voluntary changes have lower sales, lower earnings growth, higher leverage, and tighter dividend constraints.</li> <li>• Non-LIFO changes do not cluster by industry/time.</li> <li>• Earnings response coefficients negatively correlated with non-LIFO changes.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Pincus and Wasley (1996)	Examines stock returns surrounding LIFO changes announced prior to or at the same time as annual earnings	<ul style="list-style-type: none"> <li>• 190 companies that changed to LIFO from 1979-1989</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Earnings effect of LIFO change</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• The average return after LIFO change announcements is not significant.</li> <li>• The market response to LIFO changes disclosed at the earnings announcement differs from that of other LIFO changes.</li> </ul>
Keating and Zimmerman (2000) <sup>****</sup>	Examines the association between changes in depreciation and the tax treatment of depreciable assets	<ul style="list-style-type: none"> <li>• 232 companies that changed depreciation methods from 1972-1994</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• ROA</li> <li>• Leverage</li> <li>• Current ratio</li> </ul> DV: <ul style="list-style-type: none"> <li>• Income-increasing changes</li> </ul>	<ul style="list-style-type: none"> <li>• Tax law removed book and tax depreciation links.</li> <li>• The frequency of income-increasing depreciation method changes declines after the 1981 tax law.</li> <li>• Companies making income-increasing depreciation changes for all assets have worse performance than companies making changes for new assets only.</li> </ul>

#### **Panel B: Literature on Company and Industry (Section 3.2)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Bremser (1975) <sup>****</sup>	Compares earnings for voluntary change companies to control companies	<ul style="list-style-type: none"> <li>• 80 companies with accounting method changes from 1965-1970</li> <li>• 80 control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• EPS</li> <li>• ROI</li> </ul> DV: <ul style="list-style-type: none"> <li>• Voluntary changes</li> </ul>	<ul style="list-style-type: none"> <li>• Companies reporting accounting changes have lower EPS and lower ROI than companies that do not report accounting changes.</li> <li>• 81% of accounting changes are income-increasing.</li> </ul>
Lilien, Mellman, and Pastena (1988) <sup>****</sup>	Examines whether accounting changes can be used to mask performance problems	<ul style="list-style-type: none"> <li>• 46 companies ranked in the top two and 46 ranked in the bottom two in industry shareholder return from 1974-1983</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Successful companies</li> </ul> DV: <ul style="list-style-type: none"> <li>• Income-increasing and income-decreasing accounting changes</li> </ul>	<ul style="list-style-type: none"> <li>• Unsuccessful companies are more likely to make income-increasing accounting changes.</li> <li>• The same results hold for companies in the top half as well as for companies in the bottom half of the Fortune 500 in terms of size.</li> </ul>

#### **Panel C: Literature on Economy (Section 3.3)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Frishkoff (1970) <sup>***</sup>	Provides descriptive evidence on voluntary changes	<ul style="list-style-type: none"> <li>• Approximately 4,500 companies reported in Earnings Digest column in <i>Wall Street Journal</i> from 1967-1969</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Year</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Number of voluntary changes</li> <li>• Issue type</li> </ul>	<ul style="list-style-type: none"> <li>• There is an increase in voluntary changes overall and in income-increasing changes.</li> <li>• Depreciation changes increased threefold from 1967-1969.</li> <li>• Companies make changes to reduce income decreases amidst economic uncertainty and inflation.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Dopuch and Pincus (1988)	See the summary for this study in Table 1, Panel A			
Pincus and Wasley (1994) <sup>***</sup>	See the summary for this study in Table 1, Panel A			

**Panel D: Literature on Managerial Contracts, Debt Contracts, and Financial Distress (Section 3.4)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Moore (1973) <sup>*</sup>	Studies whether manager changes are related to income-decreasing discretionary changes	<ul style="list-style-type: none"> <li>• 36 companies with manager changes from 1966-1969</li> <li>• 200 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes in management</li> </ul> DV: <ul style="list-style-type: none"> <li>• Discretionary changes</li> </ul>	<ul style="list-style-type: none"> <li>• 23 of the 36 companies with manager changes have income-decreasing accounting changes.</li> <li>• Manager change companies make more types of accounting changes and larger accounting changes.</li> <li>• Companies with manager changes are more likely to take a bath in the year of the change.</li> </ul>
Smith (1976) <sup>**</sup>	Examines whether manager controlled companies make voluntary changes that smooth income	<ul style="list-style-type: none"> <li>• 110 randomly selected NYSE companies from 1954-1962</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Manager controlled companies</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Earnings smoothing</li> <li>• Proportion of changes used to smooth income</li> </ul>	<ul style="list-style-type: none"> <li>• The policy decisions made by manager controlled companies smooth income more often.</li> </ul>
Salamon and Smith (1979) <sup>**</sup>	Examines whether manager controlled companies change accounting policies to misrepresent performance	<ul style="list-style-type: none"> <li>• 64 companies randomly selected from the 1955 U.S. Senate Staff Report on <i>Factors Affecting the Stock Market</i> for 1954-1962</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Accounting changes</li> <li>• Manager controlled companies</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Analyst forecast error</li> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Manager controlled companies have fewer change years in which forecast error and abnormal return signs align.</li> <li>• There is an association between accounting change timing and abnormal stock returns for manager controlled companies.</li> </ul>
Holthausen (1981)	Examines whether debt covenants and manager compensation plans are associated with depreciation method changes and their effects on stock prices	<ul style="list-style-type: none"> <li>• 139 companies that changed from accelerated to straight-line depreciation for book purposes only from 1955-1978</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Bonus plan based on earnings</li> <li>• Effect of depreciation change on EPS</li> <li>• Deviation from dividend constraint</li> <li>• Company size</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Abnormal returns for switching companies are not significant immediately after the switch.</li> <li>• Abnormal performance is not related to the existence of a management bonus plan, the effect of depreciation changes on earnings, deviations from dividend constraints, or company size.</li> <li>• Debt covenants and management bonus plans are not determinants of changes from accelerated to straight-line depreciation.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Schwartz (1982) <sup>****</sup>	Investigates whether companies with uncertain solvency use voluntary changes to influence market perceptions	<ul style="list-style-type: none"> <li>• 163 companies facing possible insolvency from 1974-1980</li> <li>• 163 control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Bond downgrades</li> <li>• Premium interest rates</li> <li>• Bankruptcy model predictions</li> <li>• Bankruptcy filings</li> </ul> DV: <ul style="list-style-type: none"> <li>• Voluntary changes</li> </ul>	<ul style="list-style-type: none"> <li>• Of the companies facing insolvency, 40% make a material change with most being income-increasing.</li> <li>• Distressed companies make more than twice as many voluntary changes and four times as many income-increasing changes as healthy companies.</li> </ul>
Abdel-Khalik (1985)	Examines the effect of changes from FIFO to LIFO on CEO compensation	<ul style="list-style-type: none"> <li>• 88 companies switching to LIFO in 1974</li> <li>• 88 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes from FIFO to LIFO</li> </ul> DV: <ul style="list-style-type: none"> <li>• Annual CEO pay</li> </ul>	<ul style="list-style-type: none"> <li>• LIFO changes do not impact CEO compensation.</li> <li>• LIFO-switch companies revise CEO bonus pay to reflect the effect of the LIFO change on income.</li> </ul>
Hunt (1985)	Examines potential determinants other than tax savings for inventory method changes	<ul style="list-style-type: none"> <li>• 191 companies that switched to LIFO in 1974-1975</li> <li>• 191 control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Manager bonus plan</li> <li>• Close to covenant constraints</li> <li>• Manager ownership percentage</li> </ul> DV: <ul style="list-style-type: none"> <li>• Changes to LIFO</li> </ul>	<ul style="list-style-type: none"> <li>• Companies with a manager bonus plan are no more likely to switch to LIFO.</li> <li>• Companies with ratios closer to violating debt covenants do not switch to LIFO.</li> <li>• Companies with lower levels of manager ownership switch to LIFO.</li> </ul>
Abdel-Khalik, Chi, and Ghicas (1987) <sup>***</sup>	Examines the effect of changes on management compensation	<ul style="list-style-type: none"> <li>• 74 LIFO switch companies in 1974-1975</li> <li>• 63 companies that maintained FIFO</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Income effect of changes</li> </ul> DV: <ul style="list-style-type: none"> <li>• Salary plus bonus</li> </ul>	<ul style="list-style-type: none"> <li>• LIFO-switch companies have greater than expected executive compensation in the year of change.</li> <li>• The increase in abnormal compensation is positively correlated with cash flow effects of LIFO changes.</li> </ul>
Healy, Kang, and Palepu (1987)	Examines the effect of accounting procedure changes on CEO cash compensation	<ul style="list-style-type: none"> <li>• 52 companies changing from FIFO to LIFO from 1970-1976</li> <li>• 38 companies changing from accelerated to straight-line depreciation from 1967-1974</li> <li>• 87 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Earnings effect of accounting change as a percentage of earnings before the change</li> </ul> DV: <ul style="list-style-type: none"> <li>• CEO salary plus bonus</li> </ul>	<ul style="list-style-type: none"> <li>• There is a positive relation between CEO compensation and earnings for companies with LIFO and depreciation changes.</li> <li>• The effect of inventory and depreciation changes on CEO compensation are smaller than industry- and market-wide economic changes.</li> </ul>
Moses (1987)	Investigates whether discretionary changes are used for smoothing	<ul style="list-style-type: none"> <li>• 212 companies that made discretionary accounting changes from 1975-1980</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Sales</li> <li>• Bonus compensation</li> <li>• Earnings uncertainty</li> </ul> DV: <ul style="list-style-type: none"> <li>• Amount of change relative to expected earnings</li> </ul>	<ul style="list-style-type: none"> <li>• Managers make tradeoffs between accounting change effects and both the level of earnings and earnings variability.</li> <li>• Smoothing is associated with company size, existence of bonus plans, earnings surprise, and the directional impact of changes on earnings.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Johnson and Ramanan (1988)	Studies differences between companies changing to full cost accounting and those retaining successful efforts	<ul style="list-style-type: none"> <li>• 19 companies switching from successful efforts to full cost accounting from 1970-1976</li> <li>• 55 successful efforts control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Debt covenant proximity</li> <li>• Exploration intensity</li> <li>• Size</li> </ul> DV: <ul style="list-style-type: none"> <li>• Changes to full cost accounting</li> </ul>	<ul style="list-style-type: none"> <li>• Companies that change to full cost accounting have higher financial risk and exploration activity.</li> <li>• Companies that change to full cost accounting also have increases in debt financing.</li> </ul>
Elliott and Philbrick (1990) <sup>***</sup>	Examines analysts' forecasts for companies that make changes	<ul style="list-style-type: none"> <li>• 500 companies that made accounting changes from 1976-1984</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Effect of change on EPS</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Analysts' forecast error</li> <li>• Analysts' forecast revision</li> <li>• Analysts' forecast dispersion</li> </ul>	<ul style="list-style-type: none"> <li>• Forecast errors and dispersion are larger in change years.</li> <li>• Analysts do not fully revise forecasts for the effects of accounting changes in the current year.</li> <li>• The earnings effects of changes are negatively associated with analysts' forecast revisions.</li> </ul>
Labelle (1990)	Investigates the association between debt covenant constraints and voluntary changes	<ul style="list-style-type: none"> <li>• 183 Canadian companies reporting voluntary changes from 1979-1982</li> <li>• A group of control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Debt covenant limit on leverage</li> <li>• Interest coverage limit</li> <li>• Dividend constraint</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Income-increasing changes</li> <li>• Income-decreasing changes</li> </ul>	<ul style="list-style-type: none"> <li>• The interest coverage ratio is negatively associated with income-increasing changes.</li> </ul>
Ramanan and Balachandran (1993)	Studies executive compensation when companies elect to capitalize interest on construction projects	<ul style="list-style-type: none"> <li>• 45 companies that changed to capitalizing interest on long-term construction projects from 1966-1974</li> <li>• 45 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes to capitalized interest for construction projects</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Excess executive compensation</li> <li>• Capital expenditures</li> </ul>	<ul style="list-style-type: none"> <li>• Companies capitalizing interest do not reduce capital expenditures related to construction projects.</li> <li>• Companies that change to capitalizing interest increase construction borrowing after the change.</li> <li>• Cash compensation to top management increases in the year of the change.</li> </ul>
Sweeney (1994) <sup>***</sup>	Examines the relation between voluntary changes and accounting-based debt covenant violations	<ul style="list-style-type: none"> <li>• 130 manufacturing companies that were first-time violators of debt covenants from 1980-1989</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Debt covenant violations</li> </ul> DV: <ul style="list-style-type: none"> <li>• Earnings effect of changes</li> </ul>	<ul style="list-style-type: none"> <li>• Companies near covenant violations make more income-, cash-, and non-cash-increasing changes.</li> <li>• Companies violating covenants make more income-increasing changes in year of default than other years.</li> <li>• Default costs and accounting flexibility are determinants of accounting responses to violations.</li> </ul>
Beatty, Ramesh, and Weber (2002) <sup>***</sup>	Examines how excluding accounting changes from covenant calculations affects loan interest rates	<ul style="list-style-type: none"> <li>• 206 new private loans from 1994-1996</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Exclusion of voluntary changes for covenant calculations</li> </ul> DV: <ul style="list-style-type: none"> <li>• Loan interest rate</li> </ul>	<ul style="list-style-type: none"> <li>• Excluding voluntary changes from covenant calculations decreases average rate by 84 basis points.</li> <li>• Excluding mandatory changes from covenant calculations decreases average rate by 71 basis points.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Beatty and Weber (2003)	Examines whether debt contract features affect method choices	<ul style="list-style-type: none"> <li>• 125 companies with material bank debt that made voluntary changes from 1995-2000</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes allowed in calculations</li> </ul> DV: <ul style="list-style-type: none"> <li>• Income-increasing changes</li> </ul>	<ul style="list-style-type: none"> <li>• Borrowers with loans that allow voluntary changes are more likely to make income-increasing changes.</li> <li>• Results only hold for loans that have dividend restrictions and performance-pricing provisions.</li> </ul>

**Panel E: Literature on Industry Peers (Section 3.5)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Pincus and Wasley (1994) <sup>***</sup>	See the summary for this study in Table 1, Panel A			

**Panel F: Literature on Audit Firm (Section 3.6)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Gosman (1973) <sup>***</sup>	Studies differences between companies making voluntary changes and those that do not	<ul style="list-style-type: none"> <li>• 100 companies randomly selected in 1969 with sample period from 1959-1968</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Size</li> <li>• Industry classification</li> <li>• Auditor</li> </ul> DV: <ul style="list-style-type: none"> <li>• Consistency qualifications</li> </ul>	<ul style="list-style-type: none"> <li>• Companies with consistency qualifications are larger.</li> <li>• There are no differences by industry.</li> <li>• Companies with consistency qualifications are less likely to use Lybrand, Ross Bros., &amp; Montgomery as auditor.</li> </ul>
Eggleton, Penman, and Twombly (1976)	Provides evidence on various factors associated with voluntary changes	<ul style="list-style-type: none"> <li>• 161 companies that changed to or from LIFO from 1946-1966</li> <li>• Same as used in Sunder (1973) plus 6 companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Personnel changes</li> <li>• Industry</li> <li>• Auditor</li> </ul> DV: <ul style="list-style-type: none"> <li>• Changes to or from LIFO</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in management are associated with switches away from LIFO but not to LIFO.</li> <li>• LIFO-switch results are different across industries.</li> <li>• Changes to or from LIFO are more likely for Price Waterhouse and Ernst &amp; Ernst clients.</li> </ul>

**Panel G: Literature on Stock Market Reactions (Section 3.7)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Ball (1972)	Examines the market response to voluntary changes	<ul style="list-style-type: none"> <li>• 197 companies (267 changes) that changed accounting techniques from 1947-1960</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes in accounting techniques</li> </ul> DV:	<ul style="list-style-type: none"> <li>• The market does not respond to changes in accounting techniques.</li> </ul>



<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
			<ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• The market reaction to income changes caused by changes in accounting techniques is different from the reaction caused by typical changes in income.</li> </ul>
Baskin (1972) <sup>***</sup>	Examines information content of auditor consistency paragraph	<ul style="list-style-type: none"> <li>• 135 companies that changed techniques from 1965-1968</li> <li>• 135 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes in auditor's report</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• The consistency exception paragraph in the auditor's report does not have information content for investors.</li> </ul>
Kaplan and Roll (1972) <sup>***</sup>	Examines the market effect of depreciation method changes	<ul style="list-style-type: none"> <li>• 71 companies that changed from accelerated to straight-line depreciation from 1962-1968</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes from accelerated to straight-line depreciation</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Companies that change from accelerated to straight-line depreciation are poor performers.</li> <li>• Depreciation method changes to straight-line temporarily boost stock prices in the short term but the effect is not significant.</li> </ul>
Sunder (1973)	Analyzes voluntary inventory costing changes and stock prices	<ul style="list-style-type: none"> <li>• 155 companies that changed to or from LIFO from 1946-1966</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes to or from LIFO</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• There is a positive abnormal return in the 12 months prior to, but not after, a LIFO change.</li> <li>• No association found between stock returns and changes from LIFO to FIFO.</li> </ul>
Sunder (1975)	Analyzes voluntary inventory costing changes and stock prices while considering risk	<ul style="list-style-type: none"> <li>• Same sample as used in Sunder (1973)</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes to or from LIFO</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Relative stock risk</li> <li>• Cumulative abnormal returns adjusted for relative risk</li> </ul>	<ul style="list-style-type: none"> <li>• There is a positive risk-adjusted abnormal return in the 12 months prior to, but not after, a LIFO change.</li> <li>• Changes to LIFO are associated with an increase in the relative risk of stocks.</li> <li>• No association found between stock returns and changes from LIFO to FIFO.</li> </ul>
Harrison (1977) <sup>***</sup>	Examines differences in market responses to discretionary and nondiscretionary accounting changes	<ul style="list-style-type: none"> <li>• 280 companies with accounting changes from 1968-1972</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Discretionary changes</li> <li>• Nondiscretionary changes</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Income-increasing discretionary accounting changes are associated with negative stock returns.</li> <li>• Income-increasing nondiscretionary accounting changes are associated with positive stock returns.</li> </ul>
Abdel-Khalik and McKeown (1978)	Examines stock returns around changes to LIFO and whether returns are affected by expected performance	<ul style="list-style-type: none"> <li>• 107 companies switching to LIFO in 1974-1975</li> <li>• 107 control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Changes to LIFO</li> <li>• Analysts' expected EPS growth</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• No relation between effects of changes to LIFO and analysts' EPS growth forecasts.</li> <li>• The effect of LIFO changes on stock returns depends on expectations for the change in EPS.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Brown (1980)	Analyzes the short-term market reaction to changes to LIFO	<ul style="list-style-type: none"> <li>• 86 companies that changed to LIFO from 1974-1975</li> <li>• 73 control companies</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Changes to LIFO</li> <li>• LIFO effect on EPS</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Returns decrease in the short-term after a change to LIFO while returns for non-change companies increase.</li> </ul>
Holthausen (1981)	See the summary for this study in Table 1, Panel D			
Biddle and Lindahl (1982)	Examines stock returns and first-year tax savings from LIFO changes	<ul style="list-style-type: none"> <li>• 311 companies that adopted LIFO from 1972-1980</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Adoption year tax savings realized from switch to LIFO</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• The magnitude of tax savings from LIFO adoptions in 1974 are positively associated with abnormal returns.</li> <li>• LIFO adoption is negatively associated with changes in systematic risk.</li> </ul>
Ricks (1982)	Provides evidence on market reactions to LIFO adoptions	<ul style="list-style-type: none"> <li>• 275 companies that switched to LIFO in 1974</li> <li>• 275 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes to LIFO</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Stock returns of LIFO change companies are lower after the change but equal to returns of non-adopters within 12 months.</li> <li>• The difference in returns is largest in the week of the preliminary earnings announcement.</li> </ul>
Stevenson (1987)	Provides evidence on stock returns associated with changes to LIFO	<ul style="list-style-type: none"> <li>• 351 companies that changed to LIFO from 1974-1975</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Tax savings from LIFO switch</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• LIFO change companies experience an increase in stock prices.</li> </ul>
Cheng and Coulombe (1993)	Studies the market reaction to the announcement of income-increasing voluntary changes	<ul style="list-style-type: none"> <li>• 77 companies that announced income-increasing voluntary changes (excluding changes to LIFO) from 1977-1984</li> </ul>	IVs: <ul style="list-style-type: none"> <li>• Earnings effect of change</li> <li>• Financial leverage</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Companies with greater financial adversity make income-increasing changes.</li> <li>• Abnormal returns in the announcement period of the change are not different from zero.</li> <li>• Abnormal returns after changes are positively associated with unexpected earnings and negatively associated with prior information about adversity.</li> <li>• Associations are stronger for highly leveraged companies and changes during non-recession periods.</li> </ul>
Dharan and Lev (1993)****	Examines accounting changes and stock returns	<ul style="list-style-type: none"> <li>• 285 companies with discretionary accounting changes from 1978-1989</li> <li>• 285 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Earnings effect of discretionary changes</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Changes do not impact current-year stock returns.</li> <li>• Income-increasing changes are negatively associated with returns in years after change.</li> <li>• Five years after an income-decreasing change, abnormal returns exceed the returns for companies with income-increasing changes.</li> </ul>

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Hand (1993)	Analyzes the effect of uncertainty about changing to LIFO on stock returns	<ul style="list-style-type: none"> <li>• 821 companies that changed to LIFO from 1974-1975</li> <li>• 100 potential adopters of LIFO</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Probability of a change to LIFO</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Companies considering a LIFO change that do adopt have a negative abnormal stock return.</li> <li>• Companies considering a LIFO change that do not adopt have a positive abnormal stock return.</li> </ul>
Link, Lopez, and Rees (2007) <sup>****</sup>	Studies long-run stock performance of voluntary change companies and changes in earnings informativeness	<ul style="list-style-type: none"> <li>• 518 voluntary change companies from 1982-2000</li> <li>• 584 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Analysts' forecast error surrounding voluntary changes</li> </ul> DV: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> </ul>	<ul style="list-style-type: none"> <li>• Trading based on earnings effect of voluntary changes does not generate abnormal returns.</li> <li>• Voluntary changes do not change earnings informativeness.</li> </ul>

**Panel H: Literature on Analysts (Section 3.8)**

<b>Author (Date)<sup>a</sup></b>	<b>Focus of Study</b>	<b>Sample</b>	<b>Main Variables</b>	<b>Key Findings</b>
Brown (1983) <sup>***</sup>	Investigates analysts' ability to forecast earnings for accounting change companies	<ul style="list-style-type: none"> <li>• 200 companies that changed accounting techniques from 1974-1979</li> <li>• 200 control companies</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Accounting changes</li> </ul> DV: <ul style="list-style-type: none"> <li>• Analyst forecast error</li> </ul>	<ul style="list-style-type: none"> <li>• Analysts are less accurate forecasting one year ahead earnings for companies with pension changes.</li> <li>• Mandatory changes for SFAS Nos. 8 and 34 do not affect forecast accuracy, but mandatory changes for SFAS No. 13 improved forecast accuracy.</li> </ul>
Biddle and Ricks (1988)	Examines whether Ricks (1982) results are due to analysts' forecast errors	<ul style="list-style-type: none"> <li>• 394 companies that changed to LIFO from 1973-1980</li> </ul>	IV: <ul style="list-style-type: none"> <li>• Changes to LIFO</li> </ul> DVs: <ul style="list-style-type: none"> <li>• Cumulative abnormal returns</li> <li>• Analysts' forecast error</li> </ul>	<ul style="list-style-type: none"> <li>• Results for 1974 LIFO changes replicate Ricks (1982).</li> <li>• Analysts overestimate earnings for change companies.</li> <li>• Analyst forecast errors are correlated with excess returns and earnings effects of LIFO changes.</li> </ul>
Elliott and Philbrick (1990) <sup>***</sup>	See the summary for this study in Table 1, Panel D.			

**Notes:** <sup>a</sup> All studies in this table examine voluntary accounting changes. The following denote studies that clearly indicate their samples include accounting techniques in addition to voluntary changes in accounting principle : <sup>\*\*\*\*</sup> includes changes in accounting estimates; <sup>\*\*\*</sup> includes mandatory accounting changes and method changes for new standards; <sup>\*\*</sup> includes extraordinary items; and <sup>\*</sup> includes write-offs, write-downs, and provisions for future losses.

**TABLE 2**  
**Sample Selection and Company Industry**

**Panel A: Sample Selection**

<b>Sample</b>	<b>VAC</b>
Total companies disclosing at least one voluntary change	1,315
Less: Compustat missing data	248
Less: Subsidiary companies	61
Sample of companies disclosing at least one voluntary change	1,006
Less: Companies disclosing changes without a cumulative effect or missing cumulative effect information	402
Sample of companies disclosing at least one voluntary change with cumulative effect information	604

**Panel B: Voluntary Changes by Company Industry**

<b>Industry</b>	<b>Total</b>	
	<b>N</b>	<b>%</b>
Manufacturing	227	22.6
Retail	127	12.6
Computers	79	7.8
Utilities	78	7.7
Textiles, publish.	78	7.7
Transportation	77	7.6
Financial	70	7.0
Services	68	6.8
Chemicals	49	4.9
Food	40	4.0
Mining /construct.	29	2.9
Extractive	24	2.4
Insurance/real estate	23	2.3
Pharmaceuticals	22	2.2
Other	15	1.5
<b>Total</b>	<b>1,006</b>	<b>100.0</b>

**Notes:** We define industry classifications according to Barth, Beaver, and Landsman (1998).

**TABLE 3**  
**Frequency and Quantitative Materiality of Voluntary Changes**

	Pre-SOX/ Pre-SFAS 154	Post-SOX/ Pre-SFAS 154	Post-SOX/ Post-SFAS 154	Total
Voluntary changes:	n = 359	n = 243	n = 404	n = 1,006
Avg. n per year	51.3	60.8	50.5	52.9
% of n disclosing an income effect	79.1	65.8 ***	39.6 +++	60.0
Changes with a disclosed income effect:	n = 284	n = 160	n = 160	n = 604
% income-increasing	48.2	50.6	46.9	48.5
% income-decreasing	51.8	49.4	53.1	51.5
	100.0	100.0	100.0	100.0
Quantitative materiality of income effect:	n = 284	n = 160	n = 160	n = 604
% of changes < 0.5% of sales	43.0	51.3 *	49.3	46.8
% of changes ≥0.5% and < 1.0% of sales	15.8	18.1	16.9	16.7
% of changes ≥1.0% and < 2.0% of sales	13.7	10.6	9.4	11.8
% of changes ≥2.0% of sales	27.5	20.0 *	24.4	24.7
	100.0	100.0	100.0	100.0

**Notes:** We define the time periods as follows: pre-SOX/pre-SFAS No. 154 is the period from 1995 to 2001; post-SOX/pre-SFAS No. 154 is the period from 2002 to 2005; post-SOX/post-SFAS No. 154 is the period from 2006 to 2013. We measure “quantitative materiality” as the absolute value of the cumulative effect of the voluntary change to prior periods divided by net sales  $\times$  100. Significance levels for differences in indicator variables are based on z-stats from Wilcoxon rank sum tests. \* and \*\*\* indicate two-tailed significance at the 0.10 and 0.01 level, respectively, between the pre-SOX/pre-SFAS No. 154 and post-SOX/pre-SFAS No. 154 periods. +++ indicates two-tailed significance at the 0.01 level between the post-SOX/pre-SFAS No. 154 and post-SOX/post-SFAS No. 154 periods.

**TABLE 4**  
**Voluntary Changes by Issue Type**

Issue Type	Pre-SOX/ Pre-SFAS 154		Post-SOX/ Pre-SFAS 154		Post-SOX/ Post-SFAS 154		Total	
	N	%	N	%	N	%	N	%
Goodwill – Timing	0	0.0	27	11.1 ***	151	37.4+++	178	17.7
Inventory – LIFO to FIFO	78	21.7	42	17.3	48	11.9+	168	16.7
Revenue	48	13.4	19	7.8 **	11	2.7+++	78	7.7
Amort./Depreciation Expense	36	10.0	18	7.4	15	3.7++	69	6.9
Pensions – Recognition	25	7.0	9	3.7 *	28	6.9+	62	6.1
Assets – Capitalize to Expense	27	7.5	15	6.2	19	4.7	61	6.0
Inventory – Other Method	21	5.9	13	5.3	26	6.5	60	6.0
Classification	4	1.1	10	4.1 **	43	10.7+++	57	5.7
Inventory – Other Recognition	18	5.0	17	7.0	7	1.7+++	42	4.1
Assets – Expense to Capitalize	29	8.1	5	2.1 ***	6	1.5	40	4.0
Estimation and Valuation	22	6.1	8	3.3	5	1.2+	35	3.5
Pensions – Timing	8	2.2	23	9.5 ***	2	0.5+++	33	3.3
Liabilities	11	3.1	11	4.5	5	1.2+++	27	2.7
Inventory – FIFO to LIFO	13	3.6	6	2.5	5	1.2	24	2.4
Complex Issues	7	1.9	8	3.3	8	2.0	23	2.3
Consolidation – Timing	2	0.6	7	2.9 **	11	2.7	20	2.0
Other	6	1.7	1	0.4	12	3.0++	19	1.9
Assets – Other Recognition	4	1.1	4	1.6	2	0.5	10	1.0
<b>Total</b>	<b>359</b>	<b>100.0</b>	<b>243</b>	<b>100.0</b>	<b>404</b>	<b>100.0</b>	<b>1,006</b>	<b>100.0</b>

**Notes:** We define the time periods as follows: pre-SOX/pre-SFAS No. 154 is the period from 1995 to 2001; post-SOX/pre-SFAS No. 154 is the period from 2002 to 2005; post-SOX/post-SFAS No. 154 is the period from 2006 to 2013. Issue type definitions and examples are located in Appendix A. Significance levels for differences in indicator variables are based on z-stats from Wilcoxon rank sum tests. \*, \*\* and \*\*\* indicate two-tailed significance at the 0.10, 0.05 and 0.01 level, respectively, between the pre-SOX/pre-SFAS No. 154 and post-SOX/pre-SFAS No. 154 periods. +, ++ and +++ indicate two-tailed significance at the 0.10, 0.05 and 0.01 level, respectively, between the post-SOX/pre-SFAS No. 154 and post-SOX/post-SFAS No. 154 periods.

**TABLE 5**  
**Voluntary Changes by Justification Type**

Justification	Pre-SOX/ Pre-SFAS 154		Post-SOX/ Pre-SFAS 154		Post-SOX/ Post-SFAS 154		Total	
	N	%	N	%	N	%	N	%
Accounting Terms	235	42.0	152	41.2	225	37.5	612	40.0
Administrative	20	3.6	58	15.7***	160	26.7+++	238	15.6
Peers	104	18.6	46	12.5**	78	13.0	228	14.9
Conforming Policies	63	11.3	58	15.7**	86	14.3	207	13.6
Response to Change	85	15.2	30	8.1***	21	3.5+++	136	8.9
Other	52	9.3	25	6.8	30	5.0	107	7.0
Total	559	100.0	369	100.0	600	100.0	1,528	100.0
Total per VAC	1.58		1.52		1.48		1.54	

**Notes:** Sample contains 1,528 justifications disclosed by 1,006 companies with voluntary changes. We define the time periods as follows: pre-SOX/pre-SFAS No. 154 is the period from 1995 to 2001; post-SOX/pre-SFAS No. 154 is the period from 2002 to 2005; post-SOX/post-SFAS No. 154 is the period from 2006 to 2013. Appendix B presents definitions and examples of justification types. Significance levels for differences in indicator variables are based on z-stats from Wilcoxon rank sum tests. \*\* and \*\*\* indicate two-tailed significance at the 0.05 and 0.01 level, respectively, between the pre-SOX/pre-SFAS No. 154 and post-SOX/pre-SFAS No. 154 periods. +++ indicates two-tailed significance at the 0.01 level between the post-SOX/pre-SFAS No. 154 and post-SOX/post-SFAS No. 154 periods.