AN EMPIRICAL ANALYSIS OF FINANCIAL STATEMENT COMPARABILITY: SEGMENT DISCLOSURE AND INVESTOR RESPONSIVENESS TO EARNINGS NEWS

by

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AN EMPIRICAL ANALYSIS OF FINANCIAL STATEMENT COMPARABILITY: SEGMENT DISCLOSURE AND INVESTOR RESPONSIVENESS TO EARNINGS NEWS

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Chapter One estimates financial statement comparability measures of accounting disclosures surrounding the enactment and implementation of SFAS No. 131 to examine potential variation in comparability associated with the segment reporting regime shift. Initial results indicate an increase in comparability levels for firms reporting reformulated segments in the post-SFAS No. 131 period. However, greater decreases in financial statement comparability are associated with firms that experienced increases in the number of segments disclosed due to application of the revised standard. Overall, results suggest that segment information reformulated according to how companies manage their businesses enhances financial comparability, but greater segment information disaggregation attributed to SFAS No. 131 adoption diminishes comparability. Chapter Two examines whether financial statement comparability enhances the usefulness of information to capital markets participants. I use three measures of financial statement comparability to investigate the role of comparability in the stock price sensitivity to firm-specific earnings news. I find that information content of earnings is greater for firms with higher comparability, suggesting that comparability contributes to information usefulness for investors in equity valuation decisions. I offer further support that

comparability enhances usefulness through increased response to positive earnings surprises. This influence is pronounced for the earnings news of small firms, high volatility firms, growth/value firms, and firms with low return on assets, indicating that comparability is more informative for more speculative stocks. Overall, financial statement comparability appears to enhance the usefulness of information to capital market participants by increasing the informativeness of firm-specific earnings news.

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CHAPTER ONE: FINANCIAL STATEMENT COMPARABILITY AND SEGMENT DISCLOSURE

I. INTRODUCTION

Chapter One investigates whether the enactment and implementation of Statement of Financial Accounting Standards (SFAS) No. 131, *Disclosures about Segments of an Enterprise and Related Information* (Financial Accounting Standards Board (FASB) [1997]), is associated with changes in financial statement comparability.[1] My investigation is consistent with a recent review process by the FASB to evaluate the accomplished objectives and benefits of SFAS No. 131.[2] An empirical evaluation of SFAS No. 131's effect on financial statement comparability is also compatible with the FASB recognizing the importance of comparable accounting information (FASB [1997, Paragraph 63]. Financial statement comparability is commonly defined as the quality of information enabling users to identify similarities in and differences between two sets of economic phenomena in order to enhance usefulness (FASB [2010]).[3] The FASB [1980, *Summary of Principal Conclusions*] suggests that comparable information is useful because the "significance of information, especially quantitative information, depends to a great extent on the user's ability to relate it to some benchmark." The FASB [2010, BC3.33] indicates that analyzing the effect of standards such as SFAS No. 131 on comparability is a way to gauge the FASB's success because "one of the most important

[1] The FASB Accounting Standards Codification (ASC) became effective September 15, 2009 and supersedes all outstanding SFASs. SFAS No. 131 is codified under ASC Topic 280, *Segment Reporting*, but I refer to SFAS No. 131 due to familiarity and ease of written description.
[2] The Post-Implementation Review (PIR) process determines whether SFAS No. 131 is accomplishing its stated purpose, evaluates SFAS No. 131's implementation and continuing compliance costs and related benefits, and provides recommendations to improve the FASB standard-setting process.
[3] Because decisions of financial statement users involve choosing between alternatives, relevant and faithfully represented information about a reporting entity is most useful if it can be compared with similar information reported by other entities and by the same entity in other periods (FASB [2010], QC20).

reasons that financial reporting standards are needed is to increase the comparability of reported financial information."

Segment reports have long been promoted as a means to understand more fully the operations and results of the total enterprise in order that a better assessment of future prospects may be obtained (FASB [1976]). To achieve this goal, segmental data must be comparable (FASB [1980]). SFAS No. 131 is intended to help investors better understand an enterprise's performance, and better assess future net cash flows, in order to make more informed judgments about the enterprise as a whole (FASB [1997], Paragraph 3).[4] Further, to provide comparability between enterprises, SFAS No. 131 requires an enterprise to report certain information about revenues derived from products and services, regardless of enterprise organization (FASB [1997, Paragraph 7]). Overall, reformed disclosure requirements under SFAS No. 131 arguably reduced manager ability to conceal information about segment profitability, thereby increasing the market's capacity to estimate future corporate-level cash flows (Ettredge et al. [2006]).

There is a continuing debate about whether the information provided under SFAS No. 131 is more useful to investors than the information available under SFAS No. 14, *Financial Reporting for Segments of a Business Enterprise* (FASB [1976]).[5] Proponents of SFAS No. 131 claim that the standard provides more relevant, disaggregated information to financial statement users and grants financial analysts their objective of an insider view of segment results (e.g., Ernst & Young [1998]; Reason [2001]). Opponents of SFAS No. 131 argue that the standard compromises comparability and reliability of

[4] These objectives are consistent with the objectives of general-purpose financial reporting.
[5] See Appendix I for a summary and comparison of segment reporting under SFAS No. 14 and SFAS No. 131.

segment reporting through subjective rules that are open to interpretation (e.g., Springsteel [1998]; McConnell et al. [1998]). The primary focus of my study is on the relationship between segment reporting and comparability.[6] Because financial statement comparability is a qualitative characteristic of accounting information (FASB [1980]) where opposing positions fail to settle the debate of whether information provided by SFAS 131 increases or decreases comparability among companies' financial information, this relationship becomes an empirical issue.

Using a matching set of firms for both the pre- and post-SFAS No. 131 periods, I investigate the association between financial statement comparability and the segment reporting regime shift. I measure financial accounting comparability applying three methods: (1) the De Franco et al. [2011] accounting system comparability measure, (2) the De Franco et al. [2011] earnings covariation measure, and (3) a discretionary accruals measure similar to Francis et al. [2014]. I use these three measures to provide evidence on the extent to which comparability of accounting statements varies surrounding the enactment and implementation of SFAS No. 131. My tests are divided into two parts. The first set of tests examines whether accounting comparability levels are different for SFAS No. 14 defined segments versus SFAS No. 131 reformulated segments. The second set of tests considers financial statement comparability changes after firms adopt SFAS No. 131 that are associated with increases in the number of segments disclosed under the revised standard (Berger and Hann [2003]; Ettredge et al. [2005]).

[6] Within the scope of further investigation, studies could be extended to potential capital market effects resulting from the association between segment reporting and comparability, as well as an analysis of tradeoffs between comparability and relevance in the SFAS No. 131 domain.

My empirical results may initially seem puzzling to interpret. Univariate results indicate lower levels of financial statement comparability in the post-SFAS No. 131 period across all three measures. This leads to the conclusion that comparability levels are reduced for firms in the period surrounding the enactment and implementation of the revised segment standard. Initial multivariate tests also support this decrease in comparability around the regime shift. However, further test results suggest that financial statement comparability is improved for firms reporting segments under the SFAS No. 131 reformulated guidelines but which do not report an increase in the number of segments. Conversely, firms with increases in the number of segments disclosed and greater changes in the number of reported segments after SFAS No. 131 adoption are associated with greater decreases in financial statement comparability. Overall, my results suggest that financial statement comparability levels improved for firms reformulating their segment disclosures from those based on the industry method to the method focusing on how the firm is managed with greater reductions in comparability being more associated with firms that increase disaggregation of segment information attributed to SFAS No. 131 implementation.

My results contribute to two research streams. First, past research (Knutson [1993]) indicates that segment disclosures are integral to the investment process.[7] My study extends the segment reporting literature by advancing the debate about SFAS No. 131's impact on financial statement comparability that results from redefining segment disclosures from an industry view to a view focused on the way the company is managed.

[7] The FASB quotes Knutson [1993] when substantiating the demand for the revised business segment standard (FASB [1996], Appendix A).

My results also contribute to the segment disclosure literature by providing evidence about the information effects of greater segment information disaggregation related to increasing the number of disclosed segments. Second, my findings contribute to the financial statement comparability literature by presenting a unique setting to test multiple comparability measures surrounding a reporting standard revision.[8] Overall, results from this study should have practical implications for both regulators and investors and can potentially aid in the International Financial Reporting Standards (IFRS) convergence discussion with respect to differences in disclosure across national and international segment reporting standards.[9]

The remainder of Chapter One proceeds as follows. Section II reviews relevant literature and formulates the hypotheses. Section III provides the research design and defines the variables used in the empirical tests. Section IV describes the sample selection and presents descriptive statistics. Section V reports results from the empirical analyses. Section VI presents an additional analysis. Section VII concludes and Appendix A summarizes segment reporting.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Financial Statement Comparability

The focus of my study is on the relationship between changes in financial statement comparability and the enactment and implementation of SFAS No. 131. Text

[8] De Franco et al. [2011] conclude that their financial statement comparability measure could be used to help assess changes in comparability as a result of changes in accounting measurement rules or reporting standards, accounting choice differences, or of adjustments.

[9] See Nichols et al. [2013] for a review on the studies of the effect of applying SFAS No. 131 and IFRS 8 on segment reporting characteristics and a report on whether the concerns of adopting the management approach in IFRS 8 have been realized.

books on financial statement analysis (e.g., Revsine, Collins, and Johnson [2004]; Penman [2006]; Wild, Subramanyam, and Halsey [2006]; Palepu and Healy [2007]) state that rational investing decisions involve evaluating a firm's future opportunities as compared to the opportunities of other similar firms. The textbooks frequently illustrate techniques to increase comparability across firms' financial statements in order to better assess individual firm performance. The textbooks also suggest that enhancing comparability of disclosures across firms is likely to result in more accurate valuations of individual firm performances (Dye and Sunder [2001]). These views are consistent with the FASB assignment of comparability to an important position in its conceptual framework found in *Conceptual Framework for Financial Reporting* (FASB [2010]) and with the FASB making the goal of increasing comparability an important component of its agenda that drives the need for accounting standards.

Despite the apparent importance of financial statement comparability, empirical research investigating changes in comparability related to changes in accounting standards is somewhat limited. One reason for the lack of research has been the difficulty in measuring changes in comparability; recent advances in accounting research have filled this need by providing a number of these measures.[10] In my study, I utilize three measures of financial statement comparability established in this prior literature. Two of these measures are found in De Franco et al. [2011] that uses these comparability measures to provide evidence that financial statement comparability lowers the cost of

[10] Several recent papers focus on IFRS adoption and financial statement comparability effects (e.g. Lang et al. [2010], DeFond et al. [2011], Barth et al. [2012], Brochet et al. [2013]). Additional studies in the comparability literature focus on financial statement comparability association with capital market decisions and alternative determinants of comparability (e.g., De Franco et al. [2011], Bradshaw et al. [2011], Wang [2011], Kim et al. [2013], Francis et al. [2014]).

acquiring information, and increases the overall quantity and quality of information available to analysts about the firm. The third measure is found in Francis et al. [2014], whose comparability measure relates to the relative sizes of unexpected discretionary accruals across firms and finds that auditor style increases earnings comparability within Big 4 auditor clientele. All three of these comparability measures are discussed in the Research Design section.

Comparability in the Context of Segment Reporting

A change in financial statement comparability in the context of segment reporting pertains to whether the additional segmental disclosures mandated by the new standard constitute important inputs to return and risk analysis and are useful when making comparisons with similar firms. These segment disclosures should provide information that increases the precision of estimates about economic conditions, trends, and financial relationships among firms, and so assists in predicting the size and risk of these firms' future cash flows (FASB [1976, paragraph 58]).[11] Throughout the accounting literature, there are various views about the value of information provided by segment reporting. My study focuses on the ongoing debate about whether SFAS No. 131 increased the usefulness of segment information by increasing the comparability of companies' financial information with other supposedly closely related companies.

In order to understand the potential incremental effects of SFAS No. 131, it is important to first understand the effect of SFAS No. 14 on the usefulness of a company's

[11] The FASB states that in analyzing an enterprise, a financial statement user often compares information about the enterprise with information about other enterprises and industry-wide information to help in determining whether a given enterprise's operations may be expected to move with, against, or independently of developments in its industry (FASB [1976, paragraph 56]).

financial information. Though very little accounting research on SFAS No. 14 focuses on comparability of industry segment data across firms, a substantial amount focuses on its usefulness to investors. For example, a number of empirical studies evaluate improvements in time-series sales and earnings models and analyst forecasts associated with SFAS No. 14 and find that industry segment data improves time-series forecasts and earnings estimates of sell-side analysts (Pacter [1993]; Givoly et al. [1999]). Further, Botosan and Harris [2000] discover that firms with decreases in liquidity and increases in information asymmetry are more likely to increase segment disclosure frequency. Therefore, prior literature related to SFAS No. 14 suggests that segment information under SFAS No. 14 guidelines is useful to investors for predicting future cash flows and the riskiness of those cash flows. However, past research provides little information about the usefulness of SFAS No. 14 segment disclosure in evaluating comparable firms.

A number of studies focus on the incremental usefulness of the segment reporting regime shift from SFAS No. 14 to SFAS No. 131, but most of these studies only investigate segment information usefulness in analyzing the firm providing the information. Maines et al. [1997] find that financial analysts believe segment data to be more dependable under SFAS No. 131, where greater coherence between internal and external segment reporting exists. Street et al. [2000] discover that disclosures under SFAS No. 131 are more consistent with the Management Discussion and Analysis section of the financial statements. Berger and Hann [2003] focus on the change in the information environment and the regime shift from SFAS No. 14 industry oriented segment reporting to SFAS No. 131 "how the business is managed" reporting. They find that the management approach presents distinct and useful information to both analysts

and the aggregate market that was not previously available under the industry approach. Botosan and Stanford [2005] use retroactive SFAS No. 131 disclosures to examine managers' incentives for withholding segment information under SFAS No. 14 and find that managers of firms mandated to initiate SFAS No. 131 segment disclosures withheld segment information under SFAS No. 14 to preserve profits in less competitive industries. Ettredge et al. [2005] investigate the effect of SFAS No. 131 on the stock market's ability to predict the firms' earnings, as captured by the forward earnings response coefficient (FERC)[12] and find that pre-SFAS No. 131 multi-segment firms realized a significant increase in FERC after adopting SFAS No. 131. Ettredge et al. [2006] find that SFAS No. 131 increased the transparency of segment profitability disclosures and allowed firms that depend more on external financing to report more concerning segment profitability differences. Berger and Hann [2007] utilize the change in segment reporting rules to analyze whether managers' disclosure decisions are motivated by their proprietary and agency cost incentives to conceal abnormal segment profits and find that SFAS No. 131 segments are associated with lower abnormal profits than SFAS No. 14 segments.[13]

One of the few studies to investigate the potential changes in comparability related to the regime shift from SFAS No. 14 to SFAS No. 131 is Emmanuel and Garrod [2002] which investigates whether relevance and comparability are mutually exclusive or can be simultaneously achieved in segmental disclosure.[14] Results from the study suggest

[12] The FERC is the association between current-period returns and next-period earnings.
[13] Abnormal segment profits are defined as a segment's rate of return relative to that of its industry.
[14] Prior to SFAS No. 131, Emmanuel and Garrod [1987] report that users, as represented by financial analysts, favor segments identified and reported consistently in respect to industry sectors or sub-sectors.

that both comparability and relevance levels are simultaneously low due to the segment identification choices made under the management approach, implying that the adoption of SFAS No. 131 may lead to reduced comparability in some cases.[15] Their results suggest that financial statement comparability in the context of segment reporting pertains to segmental figures providing data that are comparable regarding relevant industry norms, where information contained in financial statements constitutes an important input to risk analysis because financial statements provide information about conditions, trends, and ratios that assist in predicting cash flows (FASB [1976, paragraph 58]).[16] However, because Emmanuel and Garrod [2002] use simulated data from United Kingdom firms, their results are more suggestive than conclusive regarding the effect of the revised standard from SFAS No. 14 to SFAS No. 131 disclosure requirements.

Overall, prior literature suggests that segment reporting is intended to benefit financial statement users in analyzing and understanding financial statement information through better enabled assessment of past firm performance and future prospects (FASB [1976], paragraph 5). This past research suggests that better understanding of the way a given company's cash flows and risks correspond to how a company is managed enhances the usefulness of a company's financial information for evaluating prospects of

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Hussein and Skerratt [1992] reinforce the needs of the managers of capital and advocate line of business segments being reported which match analysts' special expertise of forecasting profitability for specific industry sectors.

[15] Emmanuel and Garrod [2002] use a data set drawn from the United Kingdom, a jurisdiction that explicitly allows director discretion when identifying reportable segments, to highlight the comparability issue and generalize their results to United States GAAP and the management approach under SFAS No. 131.

[16] The FASB states that in analyzing an enterprise, a financial statement user often compares information about the enterprise with information about other enterprises and industry-wide information to help in determining whether a given enterprise's operations may be expected to move with, against, or independently of developments in its industry (FASB [1976, paragraph 56]).

that firm. However, past research provides limited evidence regarding the enhanced usefulness of the given company's financial information in evaluating the future cash flows and risks of other comparable companies' future cash flows and risks. Whether this increased comparability is achieved by SFAS No. 131 versus SFAS No. 14 segmental reporting requirements is to a large extent an unanswered question that constitutes an important void in accounting research.

Hypotheses

The broadening of an enterprise's activities into different industries complicates the analysis of conditions, trends, and ratios and, therefore, the ability to predict a company's future cash flows and risks. This may be further complicated when the various industry segments of an enterprise have different rates of profitability, degrees and types of risk, and opportunities for growth (FASB [1976, paragraph 59]).[17] Segment reports have long been promoted as a means to understand more fully the operations and results of the total enterprise in order that a better assessment of future prospects may be obtained (FASB [1976]). In my study, I focus on how the comparability of one company's financial information with other supposedly similar firms is affected by how companies report their segment information rather than by the differential complexity of business operations among companies.

Past research on the transition from no segment reporting to segment reporting based on industry indicates that distinctly different activities aggregated into a single set of financial statements can make an informed projection of future performance more

[17] Specifically, there may be differences in the rates of return on the investment commitment in the various industry segments and future capital demands (FASB [1976, paragraph 59]).

difficult and so the transition from no segmental information to industry based segment information clearly appears to have improved analysts' abilities to estimate the disclosing companies' future cash flows and risk. For example, the multi-period outlooks among the areas of the economy represented by the firm's different segments may vary greatly. Furthermore, integrated financial statements do not reveal the pertinent investments in each of the business segments, nor the success the company has had within each economic area. Aggregated information may also be of diminished usefulness when companies opt to balance operating risks through diversification, presenting potential problems for financial statement users in interpreting aggregated financial disclosures.

The main reason SFAS No. 14 was opposed is because its industry definition allowed firm managers the ability to report all operations as broadly defined industry segments (FASB [1997], paragraph 58) rather than to reflect the underlying economics of the business.[18] Therefore, the SFAS No. 14 industry approach discretion allowed reporting of much less company specific segment information to external users compared to that reported internally (Ernst & Young [1998]). Specifically, SFAS No. 14 defined segments did not correspond to the internal organization of the company, where performance information at the sub-corporate level was often inconsistent across various items in the Form 10-K (Herrmann and Thomas [2000]). As a result, financial analysts requested that financial statement segment data be disclosed to a greater degree to reveal management of company resources (Pacter [1993]). The regime shift was acclaimed by many analysts (Reason [2001]) as they consider properly reported segment performance

[18] The management approach allows multiple operating segments to be aggregated into one reporting segment if consistent with SFAS No. 131 objectives and the segments have similar economic characteristics.

data to be the most useful data for their investment decisions (Epstein and Palepu [1999]).

Defining segments under the industry approach was also problematic because managerial responsibilities unorganized along industry lines could lead to external financial disclosures on an industry basis becoming irrelevant for risk analysis of the actual business segments, rendering enterprise cash flow predictions suspect (Albrecht and Chipalkatti [1998]). The management approach improves the ability to predict managerial behavior that significantly affects future cash flow prospects (Ernst & Young [1998]). Overall, SFAS No. 131 benefits may accrue due to improvements in across-firm reporting signals from changes in how business segments are defined, though not necessarily in the number of segments disclosed. This would enhance investor ability to understand an enterprise's relative performance from financial information under the SFAS No. 131 regime which may lead to greater financial statement comparability.

The prevailing criticism of SFAS No. 131 is that it likely reduces the comparability of segment information between similar lines of business within the same industry because the chief operating decision maker for each company may use a different measure of financial information to make operating decisions (Berger and Hann [2003]). Specifically, the new standard does not define the measure of segment profit or loss to be disclosed and allows any measure used for decision making to be reported as the segment profit. Further, SFAS No. 131 does not require the measure of segment profit used to be consistent with the asset attributed to the segment, as was required under

SFAS No. 14.[19] The management approach requires that reported segment information be measured corresponding to those for internal purposes. Consequently, AIMR was surprised the FASB would introduce a standard that did not follow GAAP definitions for all segment disclosures (Springsteel [1998]; McConnell et al. [1998]).

In summary, I argue that segment information reported under SFAS No. 131 leads to changes in comparability from segment information reported under SFAS No. 14, yet it is unclear whether the new information is associated with increases or decreases in financial statement comparability among firms. The SFAS No. 131 Post-Implementation Review (PIR) states that although overall impressions of SFAS No. 131 are positive, there still remain opposing preferences about the importance for better uniformity to improve comparability across companies. I state the first hypothesis in null form to capture the essence of my contention that comparability is different in the post SFAS No. 131 period due to a change in the reporting standard and that arguments support both its decrease and increase. Therefore, hypothesis H1, in null form, is stated as follows:

> *H1*: Ceteris paribus, there is no association between financial statement comparability and the change in segment reporting under SFAS No. 131 guidelines.

[19] These considerations were the critical reason James Leisenring, one of the FASB board members, dissented from the issuance of SFAS No. 131. The management approach permits any measure of performance to be presented as segment profit or loss if the measure is reviewed by the chief operating decision maker. Further, revenue and expense items directly determined from a given segment does not need to be included in in the disclosed segment operating results, and no allocation of items not directly associated with a given segment is required (FASB [1997], paragraph 92). Mr. Leisenring states that as a consequence, an item directly resulting from one segment's activities can be excluded from that segment's profit or loss and that, minimally, SFAS No. 131 should require amounts directly incurred by a segment be included in that segment's profit or loss and that assets identified with a particular segment be consistent with the measurement of that segment's profit or loss. Overall, Mr. Leisenring supports assisting financial statement users but believes it is very unlikely SFAS No. 131 objectives will be accomplished (FASB [1997], paragraph 40).

It is plausible that the impact of SFAS No. 131 varied across firms based on how the firms were affected by the change. For example some companies may have reformulated their segment disclosures from an industry perspective to a "how the company is managed" perspective without changing the number of segments disclosed and so without increasing the disaggregation of their financial results. Other companies may have reformulated their disclosure and also disaggregated their segment results into a greater number of segments. By focusing on firms most affected by the revision in segment reporting guidelines, financial statement comparability changes can be more closely attributed to SFAS No. 131 application. An intended effect of the management approach was to increase the average number of disclosed segments in order to increase segment information available to the market (FASB [1997]). Ettredge et al. [2006] find that SFAS No. 131 resulted in an increase in the number of reported segments and disaggregated information, as well as altered analyst and market expectations.[20] Therefore, in the second hypothesis, I focus on firms with an increase in reported segment numbers after SFAS No. 131 implementation because these firms are representative of disclosure under the management approach (Street et al. [2000]; Ettredge et al. [2002b]). Accordingly, hypothesis H2, in null form, is:

> *H2*: Ceteris paribus, there is no association between firms with increases in the number of segments disclosed and changes in financial statement comparability after SFAS No. 131 adoption.

[20] Despite previous tests indicating that both analysts and the collective market had access to some of the new segment information before it was publicly released, they also appear to have been unaware of a significant portion of the newly mandated data. This inference is evidenced by a significant improvement in analyst forecast accuracy after the new standard adoption, and extended to the market as a whole through developed trading strategies.

III. RESEARCH DESIGN

Prior research examines comparability based on inputs such as related accounting methods and policy choices (e.g., DeFond and Hung [2003]; Bradshaw and Miller [2008]). Additional measures of comparability in the literature are based primarily on similarities in cross-sectional levels of contemporaneous measures, designed to estimate differences across countries (e.g., Joos and Lang [1994]; Land and Lang [2002]; Brochet et al. [2013]). Alternatively, further studies focus on financial statement output covariation across time (e.g., De Franco et al. [2011]; Barth et al. [2012]; Francis et al. [2014]), argued to hold several advantages over input based methods.[21] To test my hypotheses, I build upon this research and focus on three measures of financial statement comparability based on variation in firm accounting systems, earnings covariation over time, and differences in discretionary accruals.

Accounting System Variation

My first proxy for financial statement comparability is based on De Franco et al. [2011], where the authors define the accounting system as a mapping from economic events to financial statements. This mapping is represented by the following equation:

$$Financial\ Statements_i = f_i(Economic\ Events_i) \quad (1)$$

where $f_i()$ depicts firm i's accounting system and similar mappings indicate that two firms have comparable accounting systems. Because equation (1) asserts that a firm's financial

[21] Potential advantages include employing actual weights firms use when calculating reported earnings, holding economic events constant while focusing on accounting system differences, and using widely available financial statement and market return data.

statements are a function of the economic events and of the accounting of these events, De Franco et al. [2011] conceptually define financial statement comparability as two firms having comparable accounting systems if, for a likely set of economic events, the systems produce similar financial statements.

To apply this conceptual definition of financial statement comparability, I follow De Franco et al. [2011] to develop an understandable empirical model of the firm's accounting system, using earnings as a proxy for financial statements and stock return as a proxy for the net effect of economic events on the financial statements.[22] I estimate the following equation for each firm-year, using the 16 previous quarters of data:

$$IBQ_{it} = \beta_{0i} + \beta_{1i} RET_{it} + u_{it} \quad (2)$$

where *IBQ* is firm *i*'s income before extraordinary items for quarter *t*, scaled by market value of equity at the beginning of quarter *t*. *RET* is calculated as firm *i*'s cumulative stock return over quarter *t*. The estimated coefficients, $\hat{\beta}_{0i}$ and $\hat{\beta}_{1i}$, from equation (2) proxy for firm *i*'s accounting function, $f(\bullet)$. In addition, I estimate $\hat{\beta}_{0j}$ and $\hat{\beta}_{1j}$ for *J* firms, using the earnings and stock return for firm *j*.

Conclusively, I use the estimated accounting functions of firm *i* and firm *j* to predict their earnings, while holding their economic events constant. Specifically, I project firm *i*'s expected earnings utilizing the accounting functions of firm *i* and firm *j* as follows:

[22] This measure is consistent with the empirical financial accounting literature reviewed by Kothari [2001] and Beyer et al [2010].

$$E(IBQ)_{iit} = \hat{\beta}_{0i} + \hat{\beta}_{1i}RET_{it} \quad (3)$$

$$E(IBQ)_{ijt} = \hat{\beta}_{0j} + \hat{\beta}_{1j}RET_{it} \quad (4)$$

where $E(IBQ)_{iit}$ is the expected earnings for firm *i* given firm *i*'s accounting function and firm *i*'s stock return in quarter *t*, and $E(IBQ)_{ijt}$ is the expected earnings for firm *j* given firm *j*'s accounting function and firm *i*'s stock return in quarter *t*.

To define financial statement comparability between firms *i* and *j* in quarter *t*, I follow De Franco et al. [2011] and calculate:

$$aCOMP_{ijt} = -1/16 \times \sum_{t-15}^{t} |E(IBQ)_{iit} - E(IBQ)_{ijt}| \quad (5)$$

where *aCOMP* is the negative value of the average absolute difference between the projected earnings using firm *i*'s and firm *j*'s accounting functions. Greater $aCOMP_{ijt}$ values signify greater financial statement comparability. Consistent with De Franco et al. [2011], I estimate financial statement comparability for each firm *i* – firm *j* combination within the same two-digit Standard Industry Classification (SIC) and with fiscal years ending in March, June, September, or December.[23]

De Franco et al. [2011] generate alterations based upon a firm-year measure of accounting comparability by combining the firm *i* – firm *j* comparability measure for a given firm *i* and ranking all of the comparability measure values for each firm *i*.[24]

[23] To avoid matching parent and subsidiary companies, I exclude holding firms from the Compustat sample. In addition, American Depository Receipts (ADRs) and limited partnerships are excluded in order to focus on corporations domiciled in the United States.

[24] These permutations consist of taking the average of a decided number of firms with the highest comparability in a particular firm-year to capture accounting systems that are more congruent to their peer

Following this methodology, I define $ACOMP_{it}$ as the mean $aCOMP_{ijt}$ for all firms in the same industry as firm *i* during period *t*. Therefore, firms with greater *ACOMP* values have accounting systems that are more congruent with those in their industry. I also estimate my regression models using the mean of both four and ten different firms with the highest comparability in a particular firm-year to capture peer group comparable accounting systems and report findings if the results are similar to those with industry congruency.

Earnings Covariation

Because the accounting system comparability measure is established by the distance between accounting earnings for two firms while holding economic events constant, De Franco et al. [2011] argue that the advantage to this measure is its isolation of financial statement comparability by explicitly controlling for economic effects. However, because of the possibility that accounting earnings could achieve comparability in the eyes of investors without firms having identical accounting systems, a specific and estimated accounting system may not be necessarily required.[25]

Therefore, my second comparability measure is the magnitude of earnings covariation for firm-pairs in the same industry across time (De Franco et al. [2011]; Barth et al. [2012]; Francis et al. [2014]). Following the De Franco et al. [2011] methodology, I use 16 quarters of earnings data to estimate the following model for all firm-pairs in the same industry:

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group, or taking the average or median comparability for all firms in the same industry in a particular firm-year to capture accounting systems that are more congruent to those in their industry.

[25] De Franco et al. [2011] offer an example of two firms with accounting earnings varying over time where information about the earnings of one firm is useful in forecasting earnings of another firm.

$$IBQ_{it} = \beta_{0ij} + \beta_{1ij} IBQ_{jt} + u_{ijt} \quad (6)$$

where *IBQ* is income before extraordinary items for firm *i* or firm *j* in quarter *t*, scaled by market value of equity at the beginning of quarter *t*. I define the firm *i* – firm *j* correlation measure of comparability ($eCOMP_{ijt}$) as the adjusted R^2 from the regression. Following De Franco et al. [2011], I compute a firm-year comparability measure and define $ECOMP_{it}$ as the average $eCOMP_{ijt}$ for the four firms *j* in the same industry as firm *i* during period *t* with the highest R^2s, where higher values of *ECOMP* indicate higher financial statement comparability.

Because *ECOMP* could be driven by differences in economic shocks, I control for cash flow correlations across firms (De Franco et al. [2011]; Francis et al. [2014]). Specifically, I parallel the construction of *ECOMP*, replacing income before extraordinary items with operating cash flows in estimating model (6) as follows:

$$CFO_{it} = \beta_{0ij} + \beta_{1ij} CFO_{jt} + u_{ijt} \quad (7)$$

where *CFO* is the ratio of quarterly cash flows from operations to the beginning of period market value. I define $cfoCOV_{it}$ by taking the average adjusted R^2 from the regression for all firms in the same industry as firm *i* during period *t*. By performing analyses on firm-pairs within the same industry and year, I control for common economic shocks and fundamentals, and through including *cfoCOV* I capture near-term economic shock covariation associated with cash flow expectations.

Discretionary Accruals Differences

My third proxy for comparability follows the Francis et al. [2014] approach to testing accounting comparability by examining the similarity of discretionary accruals for pairs of firms in the same industry, at a common point in time. My analysis adheres to this methodology and examines discretionary accruals under the argument that two firms in the same industry and year are more likely to possess similar accrual adjustments in utilizing the same set of accounting choices and judgments in implementing GAAP.
I follow Jones [1991] and Kothari et al. [2005] to estimate discretionary accruals cross-sectionally for each firm-year, using 16 quarters of previous data in the same two-digit SIC code as follows:

$$TA_{it} = \beta_0 + \beta_1(1/ATQ_{it-1}) + \beta_2 \Delta SALE_{it} + \beta_3 PPE_{it} + \beta_4 ROA_{it} + u_{it} \quad (8)$$

where *TA* is firm *i*'s total accruals for quarter *t*, defined as the change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization, scaled by lagged total assets. Using lagged total assets as a deflator proposes to mitigate heteroskedasticity in residuals.[26] Prior research typically does not hold a constant in the discretionary accruals model, but Kothari et al. [2005] include the inverse of lagged total assets (ATQ_{it-1}) in the estimation.[27] The variable, $\Delta SALE$, is the change in firm *i*'s sales for quarter *t*, scaled by lagged total assets, ATQ_{it-1}. Observing Kothari et al. [2005], I follow previous research

[26] White [1980] statistics for the Kothari et al. [2005] annual cross-sectional, industry models show reduced but not eliminated heteroskedasticity.
[27] Including a constant in the estimation provides an additional control for heteroskedasticity unalleviated by using assets as a deflator (Kothari et al. [2005]) and mitigates problems potentially arising from an omitted size (scale) variable (Brown et al. [1999]).

and subtract the change in firm *i*'s accounts receivable for quarter *t* from $\Delta SALE_{it}$ prior to model estimation (e.g., DeFond and Park [1997]; Subramanyam [1996]; Guidry et al. [1999]). The variable, *PPE*, is firm *i*'s net property, plant, and equipment for quarter *t*, scaled by lagged total assets, ATQ_{it-1}. The variable, *ROA*, is firm *i*'s net income divided by total assets for quarter *t*, used to control for contemporaneous performance.[28]

Similar to Francis et al. [2014], the model for discretionary accruals differences as a measure of financial statement comparability is as follows:

$$dCOMP_{ijt} = 1/16 \times \sum_{t-15}^{t} |DACC_{it} - DACC_{jt}| \quad (9)$$

where *dCOMP* is the average absolute value of the difference between signed discretionary accruals for firm-pairs in the same two-digit SIC code in period *t*. Residuals from the regression model (8) are the modified-Jones model discretionary accruals (*DACC*). Lower $dCOMP_{ijt}$ values signify greater financial statement comparability. I estimate the Francis et al. [2014] financial statement comparability metric for each firm *i* – firm *j* pairwise combination within the same industry and fiscal year. Similar to Francis et al. [2014], I define $DCOMP_{it}$ as the average $dCOMP_{ijt}$ for all firms in the same industry as firm *i* and period *t*, where lower values of *DCOMP* indicate firms with accounting systems that are more consistent with those in their industry.

[28] Kothari et al. [2005] calculate ROA using net income instead of net income including net-of-tax interest expense in order to avoid possible problems associated with tax rate estimation.

The Impact of SFAS No. 131 on Financial Statement Comparability

Financial statement comparability is measured over two periods surrounding the enactment and implementation of SFAS No. 131 to investigate the relatedness of across-firm financial information before and after the segment reporting changes. I use the following equation to test hypothesis H1:

$$\begin{aligned} COMP_{it} = {} & \beta_0 + \beta_1 SEG_{it} + \beta_2 POST_{it} + \beta_3 [SEG_{it} \times POST_{it}] \\ & + \beta_4 SIZE_{it} + \beta_5 BTM_{it} + \beta_6 EVOL_{it} + \beta_7 RVOL_{it} \\ & + \beta_8 PREDICT_{it} + \beta_9 CR_{it} + \beta_{10} LOSS_{it} + u_{it} \end{aligned} \quad (10)$$

where $COMP_{it}$ is one of the three firm-year comparability measures, *ACOMP*, *ECOMP*, or *DCOMP*, as defined above. I estimate the equation three times, one for each comparability measure. SEG_{it} is the number of reported segments for firm *i* at time *t*. The $POST_{it}$ variable is an indicator equal to 1 if firm *i*'s reported segments belong to the post-SFAS No. 131 period, and 0 if firm *i*'s reported segments belong to the pre-SFAS No. 131 period.

My hypothesis H1 test is based on my examination of the coefficient for *SEG* and the coefficient for the interaction between *SEG* and *POST* in model (10). When *POST* equals zero, the coefficient on *SEG*, β_1, captures the effect on financial statement comparability for firms reporting segments during the SFAS No. 14 period. Alternatively, when *POST* equals one, the coefficient on *POST*, β_2, captures comparability levels in the post-SFAS No. 131 period and the coefficient on the interaction between *SEG* and *POST*, β_3, captures the incremental effect on comparability for firms disclosing segments formulated under the new SFAS No. 131 regime. Therefore, when *POST* equals one, the

coefficients $\beta_1 + \beta_3$ capture the total effect on comparability of firms reporting segments under SFAS No. 131 guidelines and this total effect compared to just the coefficient β_1 will reveal the effect of SFAS No. 131 on comparability.[29]

One implication of the De Franco et al. [2011] results is that economic similarities can affect their comparability measures, specifically suggesting that larger firms and lower growth firms have greater average comparability. Following Lang et al. [2010], I control for variation in economic characteristics with variables commonly used to match control firms with treatment firms (e.g., Barber and Lyon [1997], Brennan and Xia [2001], Ravina and Sapienza [2010]). $SIZE_{it}$ is the logarithm of the market value of equity measured at the end of the year. BTM_{it} is the ratio of the book value of equity to the market value of equity. In addition, De Franco et al. [2011] find that firms with greater earnings volatility and return volatility tend to have lower levels of their comparability measure. $EVOL_{it}$ is the standard deviation of 16 quarterly earnings, scaled by total assets, consistent with the period used to estimate comparability. $RVOL_{it}$ is the standard deviation of monthly stock returns during the 48-month horizon used to estimate comparability.

De Franco et al. [2011] also predict and find that their comparability measures are related to similarities in earnings properties. $PREDICT_{it}$ is the square root of the error variance from a firm-specific AR1 model of annual earnings (Lipe [1990]; Francis et al.

[29] To avoid reader confusion, I would like to emphasize that I am investigating the effect of SFAS No. 131 on comparability as a function of the number of segments that a company has. I am not at this point testing the effect on comparability changes of increasing the number of reporting segments, which is hypothesis H2.

[2004]).[30] Large (small) values of *PREDICT* imply less (more) predictability. De Franco et al. [2011] note that firms in their sample with higher earnings predictability have higher comparability. CR_{it} is a conventional measure of industry competition, calculated by dividing the top four firms' total sales by the sum of all the firms' sales in each firm's primary industry (Ettredge et al. [2002a; 2002b]). $LOSS_{it}$ is an indicator variable that equals one if firm *i*'s current earnings are less than zero, and zero otherwise (Dechow and Dichev [2002]).[31] I control for potential firm effects by using robust standard error estimates clustered at the firm *i* level in all regression models (Petersen [2009]; Gow et al. [2010]).[32]

Influence of Reported Segment Increases on Comparability Changes

The second hypothesis examines the relationship between changes in financial statement comparability and whether an increase occurred in the number of segments reported after SFAS No. 131 adoption. I estimate the following model to test hypothesis H2:

$$\Delta COMP_{it} = \beta_0 + \beta_1 INCREASE_{it} + \beta_2 \Delta SIZE_{it} + \beta_3 \Delta BTM_{it} + \beta_4 \Delta EVOL_{it} + \beta_7 \Delta RVOL_{it} + \beta_8 \Delta PREDICT_{it} + \beta_9 \Delta CR_{it} + u_{it} \quad (11)$$

[30] Following Francis et al. [2004], predictability is measured from an AR1 model for annual earnings per share ($X_{i,t}$ measured as firm *i*'s earnings before extraordinary items in year *t* scaled by weighted average number of outstanding shares during year *t*): $X_{it} = \beta_{0i} + \beta_{1i} X_{i,t-1} + u_{it}$. Following Lipe [1990], $PREDICT_i = \sqrt{\sigma^2(\hat{u}_i)}$.

[31] In untabulated analysis, De Franco et al. [2011] find evidence that the large negative skewness in their comparability measure is greater for firms that are smaller, have lower book-to-market ratios, have lower earnings predictability, and report a loss.

[32] Cluster-robust standard errors are also known as Huber-White or Rogers standard errors and are a generalization of the heteroscedasticity-robust standard errors of White [1980].

COMP, *SIZE*, *BTM*, *EVOL*, *RVOL*, *PREDICT*, and *CR* are as previously defined and calculated as the difference in values between the pre- and post-SFAS No. 131 periods. As before, I estimate equation (11) three ways, once for each comparability measure. $INCREASE_{it}$ is an indicator variable equal to one if firm *i*'s number of segments increased after the adoption of SFAS No. 131, and zero otherwise. Of interest in examining the second hypothesis is the coefficient on *INCREASE*, β_1. This coefficient captures the relationship between changes in financial statement comparability and whether a firm experienced an increase in the number of segments reported after implementing SFAS No. 131. If there is an association between comparability changes and whether firms had increased segment after the regime shift, then β_1 will be statistically different from zero.[33]

IV. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Sample Selection

Standard & Poor's Compustat database is utilized to collect firm- and segment-level data for the years, 1997 and 2002. This sample period range allows for construction of the three financial statement comparability measures surrounding the adoption and application of SFAS No. 131, which I require 16 quarters of data for each of the pre- and post-SFAS No. 131 sample period years. Specifically, the years used for the pre-SFAS No. 131 period comparability measures are 1994 through 1997 and the years used for the post-SFAS No. 131 period comparability measures are 1999 through 2002. Because SFAS No. 131 became effective for financial statements for periods beginning after

[33] I also estimate a similar model, but replace the dichotomous *INCREASE* variable with a continuous variable to proxy for changes in the number of reported segments across the standard revision. Results are reported in the Additional Analysis section.

December 15, 1997 and non-December year-end firms adopted SFAS No. 131 in 1999, I exclude the transitional-year, 1998, from the sample. The Center for Research in Security Prices (CRSP) database is used to obtain stock return data for completing construction of the De Franco et al. [2011] accounting system comparability measure and additional control variables used throughout the tests. Finally, I require that firms have sufficient data to calculate all regression variables and at least one segment observation in both the pre- and post-SFAS No. 131 periods.

The composition of the sample is provided in Table 1, with sample attrition shown in Panel A. Of the 11,957 firms on the Compustat segment file, 6,803 observations are deleted for all three comparability measures because the firms did not have at least one segment observation in both the pre- and post-SFAS No. 131 periods.[34] Additionally, for all three comparability measures, 1,585 observations are not included due to mergers, acquisitions, or divestitures.[35] Because I require 16 quarters to calculate each of the comparability measures, I eliminate 2,678 firms without necessary data to construct *ACOMP*, 2,809 firms without necessary data to construct *ECOMP*, and 2,955 firms without necessary data to construct *DCOMP*. Finally, 16, 140, and 200 firms are excluded because of insufficient Compustat or CRSP data needed to compute the control variables in the *ACOMP*, *ECOMP*, and *DCOMP* models, respectively. The final samples comprise 785 firms for the *ACOMP* sample, 620 firms for the *ECOMP* sample, and 414 firms for the *DCOMP* sample, which disclose segments under both reporting regimes.

[34] I exclude any segments with negative sales or no primary SIC code due to the possibility of being corporate transfers or eliminations.

[35] Firms are excluded for mergers, acquisitions, or divestitures during the post-adoption period. I identify mergers or acquisitions using the Compustat Fundamental Footnote File. I eliminate the possibility of divestitures by deleting firms with a decrease in the number of reported segments following SFAS No. 131 implementation.

Panel B of Table 1 provides groupings based on the number of pre- and post-SFAS No. 131 reported segments. Change-firms are those firms that increased the number of segments after adopting the new standard (e.g., single-multiple, multiple-multiple). Single-Multiple firms reported a single segment under SFAS No. 14 and report multiple segments under SFAS No. 131. Multiple-Multiple firms reported multiple firms under SFAS No. 14 and report a greater number of firms under SFAS No. 131. No-change firms disclose the same number of segments under both reporting standards (e.g., single-no-change, multiple-no-change). Of the 785 *ACOMP* sample firms, 361 (45.99%) had reported segment increases after SFAS No. 131, where 217 (60.11%) of those firms had single-multiple increases. Of the 620 *ECOMP* firms, 493 (45.32%) reported an increase in number of segments in the post-SFAS No. 131 period, where 161 (32.66%) of those firms had single-multiple increases. Of the 414 *DCOMP* firms, 177 (42.75%) reported an increase in segments after the regime shift, where 99 (55.93%) of those firms had single-multiple increases. Overall, *ACOMP*, *ECOMP*, and *DCOMP* firms reported 1,161, 914, 586 segments under SFAS No. 14 requirements and 2,062, 1,605, and 996 segments under SFAS No. 131 requirements, respectively.

TABLE 1
Sample Selection

Panel A: Sample Attrition

	Observations		
	ACOMP	*ECOMP*	*DCOMP*
Population of firms on Compustat segment file	11,957	11,957	11,957
Observations not included because:			
Missing observation pre- or post-SFAS No. 131[a]	(6,803)	(6,803)	(6,803)
Mergers, acquisitions, or divestitures [b]	(1,585)	(1,585)	(1,585)
Missing necessary data for comparability measure	(2,768)	(2,809)	(2,955)
Missing necessary Compustat or CRSP data	(16)	(140)	(200)
Final Segment Reporting Sample	785	620	414

TABLE 1 (continued)

Panel B: Sample Groupings

	ACOMP			*ECOMP*			*DCOMP*		
	Single-Multiple	Multiple-Multiple	No Change	Single-Multiple	Multiple-Multiple	No Change	Single-Multiple	Multiple-Multiple	No Change
Firms	217	144	424	161	120	339	99	78	237
Pre-SFAS No. 131 Segments	217	402	542	161	332	421	99	190	295
Post-SFAS No. 131 Segments	806	716	542	598	586	421	357	334	295

This table shows the composition for the segment reporting sample. The database of reported segments from the Compustat segment file is the basis of the sample in Panel A and Panel B. Compustat Segments Data provides business and geographic detail, product information and customer data for over 70% of the companies in the North American database. Panel A presents the segment reporting sample attrition. Panel B groups the segment reporting sample into classifications based on the change in number of segments pre- and post-SFAS No. 131. Change firms are those firms that increased the number of segments after adopting the new standard. Single-Multiple firms reported a single segment under SFAS No. 14 and report multiple segments under SFAS No. 131. Multiple-Multiple firms reported multiple firms under SFAS No. 14 and report a greater number of firms under SFAS No. 131. No-change firms report the same number of segments under both segment reporting standards.

[a] At least one segment observation in the SFAS No. 14 period and one observation in the SFAS No. 131 is required. Those segments with negative sales or segments without a primary SIC code are also eliminated from the sample due to the possibility of being a corporate transfer or elimination.

[b] Firms are excluded for mergers, acquisitions, or divestitures during the post-adoption period. Mergers and acquisitions are identified using the Compustat Fundamental Footnote File. Divestitures are eliminated by excluding firms with a decrease in the number of reported segments following SFAS No. 131 implementation.

Descriptive Statistics

Descriptive statistics are provided in Table 2, where Panel A provides comparison of pre- and post-SFAS No. 131 values of the regression variables. Nine of the variables are statistically different in the pre- versus post-SFAS No. 131 periods: *ACOMP*, *ECOMP*, *SEG*, *BTM*, *EVOL*, *RVOL*, *PREDICT*, *LOSS*, and *cfoCOV*. Specifically, in the post-SFAS No. 131 sample the accounting system comparability of firms is lower, earnings covariation decreased, the number of reported segments increased, the growth rate is lower, volatility is higher, earnings are less predictable, there is a greater frequency of reported losses, and cash flow covariation decreased.[36] Industry composition is reported in Panel B. The largest concentrations of firms are in manufacturing (52.23 percent) and financial (19.49 percent) industries. Overall, a wide variety of industries is represented in the sample.

[36] In untabulated analysis, I also examine and find that financial statement comparability levels increased surrounding SFAS No. 14 adoption, where the pre- and post-sample periods are 1976 and 1981, respectively. However, because the arguments behind this prediction are less clear than the arguments with SFAS No. 131 and data availability is limited surrounding SFAS No. 14, I do not make a formal prediction about the relation between financial statement comparability and SFAS No. 14 enactment and implementation.

TABLE 2
Descriptive Statistics

Panel A: Regression Variables

	Pre-SFAS No. 131 Period				
Variable	**Mean**	**Standard Deviation**	**Q1**	**Median**	**Q3**
ACOMP	-2.170	1.181	-2.540	-1.880	-1.420
ECOMP	0.483	0.197	0.340	0.480	0.620
DCOMP	0.033	0.011	0.030	0.030	0.040
SEG	1.485	1.037	1.000	1.000	1.000
SIZE	5.446	1.994	3.954	5.296	6.726
BTM	0.543	0.424	0.264	0.474	0.723
EVOL	0.025	0.035	0.006	0.013	0.029
RVOL	0.122	0.068	0.068	0.105	0.161
PREDICT	0.497	0.722	0.131	0.293	0.596
CR	0.321	0.118	0.254	0.331	0.342
LOSS	0.225	0.418	0.000	0.000	0.000
cfoCOV	0.222	0.164	0.100	0.190	0.310

	Post-SFAS No. 131 Period				
Variable	**Mean**	**Standard Deviation**	**Q1**	**Median**	**Q3**
ACOMP	-4.055***	3.376	-4.530	-3.330	-2.250
ECOMP	0.454***	0.187	0.320	0.450	0.570
DCOMP	0.034	0.011	0.030	0.030	0.040
SEG	2.592***	2.000	1.000	2.000	4.000
INCREASE	0.451	0.498	0.000	0.000	1.000
SIZE	5.237	2.203	3.563	5.123	6.826
BTM	0.803***	1.337	0.353	0.639	1.080
EVOL	0.031***	0.052	0.007	0.015	0.036
RVOL	0.172***	0.112	0.095	0.141	0.221
PREDICT	0.771***	2.184	0.188	0.413	0.817
CR	0.355	0.125	0.270	0.348	0.418
LOSS	0.306***	0.461	0.000	0.000	1.000
cfoCOV	0.209***	0.146	0.100	0.170	0.290

TABLE 2 (continued)

Panel B: Industry Composition

Industry	1-Digit SIC	# of Observations	% of Observations
Agriculture	0	0	0.00
Mining and Construction	1	41	5.22
Manufacturing	2	155	19.75
Manufacturing	3	255	32.48
Transportation and Utilities	4	57	7.26
Wholesale and Retail Trade	5	59	7.52
Financial Firms	6	153	19.49
Services	7	45	5.73
Services	8	20	2.55
Other	9	0	0.00
Total		785	100%

*** Significantly different between pre- and post-period at 0.01 level.
This table presents descriptive statistics for the multivariate analyses. Panel A describes the regression variables for the pre- and post-SFAS No. 131 periods. Panel B provides the industry composition of the firms in the sample. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *SEG* is the number of segments reported. *INCREASE* equals one if the number of segments increased after the adoption of SFAS No. 131, zero otherwise. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of 16 quarterly earnings, scaled by total assets, consistent with the horizon used to estimate comparability. *RVOL* is the standard deviation of monthly stock returns during the 48-month period used to estimate comparability. *PREDICT* is the square root of the error variance from regressing current-period earnings on previous-period earnings. *CR* is the top four firms' total sales divided by the sum of the firms' total sales in the primary industry. *LOSS* is an indicator variable that equals one if current earnings are less than zero, zero otherwise. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*.

Table 3 provides correlation matrices, with Panel A presenting Pearson correlation statistics for the pre-SFAS No. 131 test variables. Consistent with Francis et al. [2014], the earnings covariation comparability measure is negatively correlated with the discretionary accruals comparability measure. Consistent with De Franco et al. [2011], larger firms experience higher accounting system comparability, whereas firms with higher volatility and firms that more frequently report a loss are associated with

lower accounting system comparability. Panel B provides Pearson correlations for the post-SFAS No. 131 variables. Consistent with pre-SFAS No. 131 correlations, larger firms are associated with higher accounting system comparability, and more volatile firms and firms that more frequently report a loss have lower accounting system comparability on average. Also of note in Panel B, firms reporting additional segments under SFAS No. 131 requirements are positively correlated with accounting system comparability and negatively correlated with discretionary accrual comparability.

TABLE 3
Correlation Matrices

Panel A: Pre-SFAS No. 131 Period

		(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)
ACOMP	(I)	-0.036	**-0.245**	**0.110**	**0.346**	-0.048	**-0.461**	**-0.545**	**-0.129**	0.006	**-0.478**	**0.349**
ECOMP	(II)		**-0.150**	**-0.112**	0.041	-0.063	**0.184**	**0.089**	**0.093**	**-0.334**	**0.239**	0.002
DCOMP	(III)			-0.029	**-0.330**	0.003	**0.304**	**0.373**	-0.078	**0.156**	**0.161**	**-0.477**
SEG	(IV)				**0.324**	0.005	**-0.167**	**-0.212**	**0.206**	-0.005	**-0.157**	0.069
SIZE	(V)					**-0.340**	**-0.251**	**-0.445**	**0.200**	**-0.154**	**-0.263**	**0.337**
BTM	(VI)						**-0.189**	-0.062	0.034	**0.155**	0.010	**-0.091**
EVOL	(VII)							**0.466**	0.064	**-0.091**	**0.452**	**-0.254**
RVOL	(VIII)								**-0.088**	0.004	**0.471**	**-0.480**
PREDICT	(IX)									-0.010	0.041	-0.068
CR	(X)										**-0.090**	0.070
LOSS	(XI)											**-0.248**
cfoCOV	(XII)											

TABLE 3 (continued)

Panel B: Post-SFAS No. 131 Period

		(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)	(XIII)
ACOMP	(I)	-0.092	**-0.237**	**0.074**	0.043	**0.394**	**-0.078**	**-0.318**	**-0.379**	**-0.089**	**-0.118**	**-0.381**	**0.317**
ECOMP	(II)		-0.002	**-0.100**	**-0.099**	-0.061	0.025	**0.187**	**0.186**	0.001	**-0.370**	**0.234**	-0.021
DCOMP	(III)			**-0.184**	**-0.163**	**-0.308**	0.024	**0.362**	**0.289**	-0.061	0.087	**0.159**	**-0.347**
SEG	(IV)				**0.721**	**0.338**	0.015	**-0.186**	**-0.215**	**0.102**	-0.062	**-0.141**	-0.012
INCREASE	(V)					**0.206**	0.052	**-0.194**	**-0.181**	**0.071**	-0.026	**-0.126**	-0.003
SIZE	(VI)						**-0.215**	**-0.264**	**-0.401**	**0.096**	**-0.114**	**-0.349**	0.302
BTM	(VII)							-0.065	0.018	0.013	0.058	**0.098**	-0.062
EVOL	(VIII)								**0.351**	0.050	-0.038	**0.276**	**-0.222**
RVOL	(IX)									-0.045	**-0.128**	**0.447**	**-0.383**
PREDICT	(X)										-0.002	0.022	-0.064
CR	(XI)											**-0.109**	**0.149**
LOSS	(XII)												**-0.254**
cfoCOV	(XIII)												

This table reports Pearson correlations for the variables used in the multivariate analyses. Bold font indicates significance at a p-value < 0.05. *ACOMP* is the average firm i – firm j accounting system comparability measure for all firms in the same industry as firm i. *ECOMP* is the average firm i – firm j earnings covariation comparability measure of the four firms with the highest comparability to that of firm i. *DCOMP* is the average firm i – firm j discretionary accruals comparability measure for all firms in the same industry as firm i. *SEG* is the number of segments reported. *INCREASE* equals one if the number of segments increased after the adoption of SFAS No. 131, zero otherwise. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of 16 quarterly earnings, scaled by total assets, consistent with the horizon used to estimate comparability. *RVOL* is the standard deviation of monthly stock returns during the 48-month period used to estimate comparability. *PREDICT* is the square root of the error variance from regressing current-period earnings on previous-period earnings. *CR* is the top four firms' total sales divided by the sum of the firms' total sales in the primary industry. *LOSS* is an indicator variable that equals one if current earnings are less than zero, zero otherwise. *cfoCOV* is the average firm i – firm j cash flow covariation measure for all firms in the same industry as firm i.

V. EMPIRICAL RESULTS

The Impact of SFAS No. 131 on Financial Statement Comparability

The null Hypothesis H1 posits no association between financial statement comparability and the enactment of SFAS No. 131, suggesting that I expect an effect of the enactment but am not sure of the direction of the effect. Table 4 reports regression results for the sample surrounding the segment reporting regime shift.[37] The coefficient on the interaction between *SEG* and *POST*, β_3, is the focus of my hypothesis test because it indicates the incremental effect on comparability of the enactment of SFAS No. 131 regulations. I find this coefficient to be significant and in similar directions for all three comparability measures, suggesting that SFAS No. 131 reporting standards result in segment information that is systematically different than under SFAS No. 14 guidelines. Specifically, when *POST* equals one, the effect on the comparability measures, *ACOMP*, *ECOMP*, and *DCOMP*, of reporting an additional segment (though not necessarily an additional segment as a result of SFAS No. 131) is improved under SFAS No. 131 guidelines for each comparability measure by 70 percent, 5.49 percent, and 100 percent, respectively.[38] Therefore, I reject H1 and offer support to the alternative form that the enactment and implementation of SFAS No. 131 is associated with financial statement comparability.

[37] In untabulated analysis, I include an indicator variable for firms that report corporate segments to examine any association with financial statement comparability. Firms with corporate segments may have decreased comparability due to potential difficulty in financial statement user interpretation across firms. Although I find a negative relationship between those firms and comparability, the results are statistically insignificant.

[38] To avoid reader confusion, I would like to emphasize I find that the effect of SFAS No. 131 is to increase comparability as a function of the number of segments that a company has. However, I am not at this point testing the effect on comparability of increasing the number of reporting segments, which is hypothesis H2.

TABLE 4
Impact of SFAS No. 131 on Financial Statement Comparability

$$COMP_{it} = \beta_0 + \beta_1 SEG_{it} + \beta_2 POST_{it} + \beta_3 [SEG_{it} \times POST_{it}] + \beta_4 SIZE_{it} + \beta_5 BTM_{it} + \beta_6 EVOL_{it} + \beta_7 RVOL_{it} + \beta_8 PREDICT_{it} + \beta_9 CR + \beta_{10} LOSS_{it} + u_{it} \quad (10)$$

	Dependent Variables					
Independent	*ACOMP*		*ECOMP*		*DCOMP*	
Variables	Estimate	*p*-value	Estimate	*p*-value	Estimate	*p*-value
Intercept	-0.802	0.120	0.510***	0.000	0.033***	0.000
SEG	-0.213***	0.000	-0.164**	0.019	0.001*	0.050
POST	-0.764***	0.000	0.018	0.270	0.000	0.977
SEG × *POST*	0.132**	0.017	0.009*	0.051	-0.001**	0.038
SIZE	0.251***	0.000	0.006**	0.029	-0.001***	0.000
BTM	-0.073	0.714	0.012***	0.002	-0.000*	0.430
EVOL	-11.928***	0.002	0.304*	0.074	0.069***	0.000
RVOL	-5.664***	0.000	0.188***	0.007	0.027***	0.000
PREDICT	-0.146*	0.051	0.003	0.115	-0.001	0.112
CR	-1.734***	0.002	-0.454***	0.000	0.004	0.363
LOSS	-1.478***	0.000	0.074***	0.001	-0.002**	0.021
cfoCOV	---		0.120***	0.001	---	
Peer	Yes		---		No	
N	1,570		1,240		828	
Adjusted R^2	0.346		0.170		0.238	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *SEG* is the number of segments reported. *POST* equals one for the post-SFAS No. 131 period, zero otherwise. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of 16 quarterly earnings, scaled by total assets, consistent with the horizon used to estimate comparability. *RVOL* is the standard deviation of monthly stock returns during the 48-month period used to estimate comparability. *PREDICT* is the square root of the error variance from regressing current-period earnings on previous-period earnings. *CR* is the concentration ratio. *LOSS* is an indicator variable that equals one if current earnings are less than zero, zero otherwise. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*. Peer represents significant peer group comparability.

The table 4 results also provide some important insights about the trends in comparability related to the number of segments a firm discloses and comparability among firms over time. The coefficient on *SEG*, β_1, is significant and in similar directions for all three comparability measures. This result indicates a decrease in comparability as a function of the number of segments that firms reported under SFAS No. 14. The coefficient on *POST*, β_2, is negative and significant at the one percent level for the accounting system comparability measure. This result implies that comparability is decreasing both as a function of the number of segments disclosed but also across both the SFAS No. 14 and SFAS No. 131 regimes.

Influence of Reported Segment Increases on Comparability Changes

Hypothesis H2 proposes that there is no association between changes in financial statement comparability and whether firms have increases in the number of segments disclosed after SFAS No. 131 adoption. Results are provided in Table 5. *INCREASE* is coded one for firms increasing the number of their segments in the post-SFAS No. 131 period, and zero otherwise. The coefficient on *INCREASE*, β_1, is negative and significant for dependent comparability variables, *ACOMP* and *ECOMP*. My result provides support for the conclusion that firms experiencing increases in the number of reported segments in the post-SFAS No. 131 period have greater reductions in accounting system comparability and earnings covariation comparability. Therefore, I reject H2 and offer support to those critics of SFAS No. 131 who suggest that the standard led to lower comparability among firms through the greater disaggregation of segment results.

TABLE 5
Influence of Reported Segment Increases on Comparability Changes Following SFAS No. 131

$$\Delta COMP_{it} = \beta_0 + \beta_1 INCREASE_{it} + \beta_2 \Delta SIZE_{it} + \beta_3 \Delta BTM_{it} + \beta_4 \Delta EVOL_{it} + \beta_5 \Delta RVOL_{it} + \beta_6 \Delta PREDICT_{it} + \beta_7 \Delta CR + u_{it} \quad (11)$$

	Dependent Variables					
Independent	*ΔACOMP*		*ΔECOMP*		*ΔDCOMP*	
Variables	Estimate	*p*-value	Estimate	*p*-value	Estimate	*p*-value
Intercept	-1.030***	0.000	0.024	0.169	-0.001	0.393
INCREASE	-0.586**	0.014	-0.004*	0.085	-0.001	0.536
ΔSIZE	1.387***	0.000	-0.009	0.319	0.001*	0.065
ΔBTM	-0.010	0.967	0.004	0.288	-0.000*	0.085
ΔEVOL	-14.803***	0.001	0.703**	0.016	0.035***	0.007
ΔRVOL	-6.098***	0.000	-0.039	0.718	0.005	0.455
ΔPREDICT	-0.112***	0.002	0.002	0.639	0.000	0.705
ΔCR	1.220	0.404	0.029	0.797	0.001	0.947
cfoCOV	---		0.014*	0.079	---	
Peer	No		---		Yes	
N	785		620		414	
Adjusted R^2	0.300		0.113		0.285	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. All variables except *INCREASE* and *cfoCOV* are calculated as the differences in values across periods. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *SEG* is the number of segments reported. *INCREASE* equals one if the number of segments increased after the adoption of SFAS No. 131, zero otherwise. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of 16 quarterly earnings, scaled by total assets, consistent with the horizon used to estimate comparability. *RVOL* is the standard deviation of monthly stock returns during the 48-month period used to estimate comparability. *PREDICT* is the square root of the error variance from regressing current-period earnings on previous-period earnings. *CR* is the top four firms' total sales divided by the sum of the firms' total sales in the primary industry. *LOSS* is an indicator variable that equals one if current earnings are less than zero, zero otherwise. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*. Peer represents significant peer group comparability.

VI. ADDITIONAL ANALYSIS

Influence of Segment-Level Changes on Comparability Changes

In testing hypothesis H2 for an association between comparability changes and firms in the post-SFAS No. 131 which experienced an increase in the number of reported segments, a dichotomous variable was used to indicate whether firms disclosed additional segments following the standard revision. To examine this same relationship using a continuous variable, I re-estimate model (11) and replace the segment increase indicator (*INCREASE*) with a segment change variable. Specifically, I estimate the following model:

$$\Delta COMP_{it} = \beta_0 + \beta_1 \Delta SEG_{it} + \beta_2 \Delta SIZE_{it} + \beta_3 \Delta BTM_{it} + \beta_4 \Delta EVOL_{it} + \beta_7 \Delta RVOL_{it} + \beta_8 \Delta PREDICT_{it} + \beta_9 \Delta CR_{it} + u_{it} \quad (12)$$

where *COMP*, *SIZE*, *BTM*, *EVOL*, *RVOL*, *PREDICT*, and *CR* are as previously defined and calculated as the difference in values between the pre- and post-SFAS No. 131 periods. As in the previous tests, I estimate equation (12) three times, once for each comparability measure. ΔSEG_{it} is defined as the difference between the number of segments reported by firm *i* in the post-SFAS No. 131 period and the number of segments that firm *i* reported under SFAS No. 14 guidelines. Of particular interest is the coefficient on ΔSEG, β_1, which captures the association between comparability changes and the change in number of segments reported across regimes. If there is an association between comparability changes and greater changes in reported segments after SFAS No. 131 adoption, then β_1 will be statistically different from zero.

Table 6 presents regression results. The coefficient on ΔSEG, β_1, is negative and significant when the dependent variable is *ACOMP* or *ECOMP*. This result implies a greater decrease in accounting system comparability and earnings covariation comparability for firms reporting a greater change in the number of segments following the enactment of SFAS No. 131. Therefore, I again reject hypothesis H2 and offer additional support to the alternative form that firms with greater numbers of reported segments after SFAS No. 131 adoption are associated with greater decreases in financial statement comparability.

TABLE 6
Influence of Reported Segment Changes on Comparability Changes Following SFAS No. 131

$$\Delta COMP_{it} = \beta_0 + \beta_1 \Delta SEG_{it} + \beta_2 \Delta SIZE_{it} + \beta_3 \Delta BTM_{it} + \beta_4 \Delta EVOL_{it} + \beta_5 \Delta RVOL_{it} + \beta_6 \Delta PREDICT_{it} + \beta_7 \Delta CR + u_{it} \quad (12)$$

	Dependent Variables					
Independent	*ΔACOMP*		*ΔECOMP*		*ΔDCOMP*	
Variables	Estimate	*p*-value	Estimate	*p*-value	Estimate	*p*-value
Intercept	-1.126***	0.000	0.029*	0.097	-0.025	0.464
ΔSEG	-0.056**	0.025	-0.006*	0.067	-0.000	0.451
ΔSIZE	1.384***	0.000	-0.010	0.306	0.001*	0.066
ΔBTM	-0.014	0.948	0.004	0.263	-0.000*	0.076
ΔEVOL	-14.597***	0.001	0.700**	0.017	0.034***	0.008
ΔRVOL	-6.004***	0.000	-0.045	0.674	0.005	0.474
ΔPREDICT	-0.109***	0.003	0.002	0.635	0.000	0.673
ΔCR	0.956	0.512	0.036	0.745	0.001	0.919
cfoCOV	---		0.014**	0.080	---	
Peer	No		---		Yes	
N	785		620		414	
Adjusted R^2	0.295		0.129		0.287	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. All variables except *cfoCOV* are calculated as the differences in values across periods.*ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *SEG* is the number of segments reported. *DISAGG* is the change in the difference between number of firm four-digit SIC codes and number of segments. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of 16 quarterly earnings, scaled by total assets, consistent with the horizon used to estimate comparability. *RVOL* is the standard deviation of monthly stock returns during the 48-month period used to estimate comparability. *PREDICT* is the square root of the error variance from regressing current-period earnings on previous-period earnings. *CR* is the top four firms' total sales divided by the sum of the firms' total sales in the primary industry. *LOSS* is an indicator variable that equals one if current earnings are less than zero, zero otherwise. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*. Peer represents significant peer group comparability.

VII. SUMMARY AND CONCLUSION

Chapter One examines whether the enactment and implementation of Statement of Financial Accounting Standards No. 131, *Disclosures about Segments of an Enterprise and Related Information* (FASB [1997]), is associated with changes in financial statement comparability. I estimate three financial statement comparability measures of accounting disclosures surrounding SFAS No. 131 adoption to investigate potential variation in comparability associated with the segment reporting regime shift, where comparability is commonly defined as the quality of information enabling users to identify similarities in and differences between two sets of economic phenomena in order to enhance usefulness. Initial results indicate an increase in comparability levels for firms reporting reformulated segments in the post-SFAS No. 131 period. However, greater decreases in financial statement comparability are associated with firms that experienced increases in the number of segments disclosed due to application of the revised standard. Overall, results suggest that segment information reformulated according to how companies manage their businesses enhances financial comparability, but greater segment information disaggregation attributed to SFAS No. 131 adoption diminishes comparability.

My investigation is consistent with a recent review process by the FASB to evaluate the accomplished objectives and benefits of SFAS No. 131 and also compatible with the FASB recognizing the importance of comparable accounting information in the standard setting process. Further, these results bridge two literature streams by providing empirical evidence on the association between segment reporting and financial statement comparability. Specifically, this study extends the segment reporting literature and

advances the debate on financial statement comparability effects and SFAS No. 131 adoption by focusing on the impact of redefining segment disclosure regulations on comparability. The findings contribute to the financial statement comparability literature by providing a unique setting to test multiple comparability measures surrounding a reporting standard revision. Overall, results from this study should be useful to regulators and investors and also to discussion with respect to IFRS convergence. Future research could extend to capital market effects arising from the association between segment reporting and financial statement comparability. It could also examine comparability and relevance compromises in regards to SFAS No. 131 application and investigate other potential causes of decreased comparability in the post-SFAS No. 131 period.

APPENDIX A

Summary of Segment Disclosure

Financial analysis of a diversified company (e.g. a company that operates in several unconnected business segments) can be especially complicated. Distinctly different activities aggregated into a single set of financial statements can make an informed projection of future performance more difficult. For example, the multi-period outlooks among the areas of the economy represented by the firm's different segments may vary greatly. Furthermore, integrated financial statements do not reveal the pertinent investments in each of the business segments nor the success the company has had within each economic area. Companies may also choose to balance their operating risks through diversification, presenting potential problems for financial statement users in interpreting aggregated financial disclosures.

Statement of Financial Accounting Standards No. 14

Over the years, an increasing number of business enterprises have broadened the scope of their activities into different industries, foreign countries, and markets. To assist progress in the analysis and evaluation of financial data, several groups in the mid-1960s pushed the accounting profession to require disclosure of segment information.[39] In December 1976, the FASB instructed companies to apply SFAS No. 14, *Financial Reporting for Segments of a Business Enterprise* (FASB [1976]). This statement required businesses to include information about the enterprise's operations in different industries (FASB [1976], paragraphs 9–30), foreign operations and export sales (FASB [1976], paragraphs 31–38), and major customers (FASB [1976], paragraph 39) in the annual Form 10–K.[40] Reportable segments of an enterprise were determined by identifying the individual products and services from which revenue is derived (FASB [1976], paragraph 11), grouping those products and services by industry lines into industry segments (FASB [1976], paragraphs 12–14), and selecting those significant industry segments (FASB [1976], paragraphs 15–21). Specifically, SFAS No. 14 originated instructions for the presentation within corporate financial statements of segment descriptions and information that comprise each reporting entity based on industry groupings[41] and

[39] These groups included professional institutions such as the Financial Analysts Federation, the Financial Executives Research Foundation, and the National Association of Accountants. Particularly, the indicated organizations sponsored research studies to assess the desirability and feasibility of disclosing information for line-of-business segments in external financial statements. In addition, organizations such as the Accounting Principles Board, the Financial Accounting Policy Committee of the Financial Analysts Federation, the Financial Executives Institute, the Committee on Management Accounting Practices of the National Association of Accountants, and the Accountants International Study Group, issued pronouncements that supported segment reporting (SFAS No. 14, paragraph 43).

[40] The required information included segment revenue, operating profit, identifiable assets, and other related disclosures (FASB [1976], paragraphs 22–27).

[41] Industry clustering (e.g., Standard Industrial Classification [SIC], Enterprise Standard Industrial Classification [ESIC]) under SFAS No. 14 implied a focused disaggregation on comparability with industry

geographic location. Overall, the information provided by SFAS No. 14 was a disaggregation of an enterprise's consolidated financial information.[42]

SFAS No. 14 was intended to benefit financial statement users in analyzing and understanding the enterprise's financial statements through enabling better assessment of the company's past performance and future prospects (FASB [1976], paragraph 5). In addition, period-to-period consistency in the methods a company uses to prepare and present segment information is as important as consistency in the application of the accounting principles utilized in preparing the company's financial statements, where consistency is a quality that is encapsulated by the objective of consolidated comparability and is an important feature of segment reporting that contributes to objective verification (FASB [1976], paragraph 67). Therefore, FASB decided that the information required by SFAS No. 14 should be included as a necessary part of an enterprise's financial statements.

Statement of Financial Accounting Standards No. 131

Over time, however, financial analysts consistently requested that financial statement data be disaggregated to an even greater extent than it was in practice under SFAS No. 14 guidance, with many analysts stating that they found SFAS No. 14 helpful but inadequate (FAPC [1992]). In June 1997, the FASB issued SFAS No. 131, *Disclosures about Segments of an Enterprise and Related Information* (FASB [1997]). SFAS No. 131 supersedes SFAS No. 14 and became effective for financial statements for

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benchmarks and is referred to by the FASB as the *industry approach* to segment disclosures (FASB [1997], paragraph 57).

[42] Consolidated financial information refers to aggregate information pertaining to an enterprise as a whole regardless of whether or not the enterprise has consolidated subsidiaries.

periods beginning after December 15, 1997. The FASB concluded that the industry approach to segment disclosures under SFAS No. 14 was not providing the information required by financial statement users and that disclosure of disaggregated information should be based on operating segments (FASB [1997], paragraph 57). The method the FASB chose for determining what information to report is referred to as the management approach, based on the way that management organizes segments within the enterprise for making operating decisions and evaluating performance (FASB [1997], paragraph 4). This means that the segments disclosed are determined from the structure of the enterprise's internal organization.

The management approach promotes consistent descriptions of an enterprise in its accounting statements and focuses on financial information that an enterprise's decision makers use to form judgments about operating affairs (FASB [1997], paragraph 5).[43] Under SFAS No. 131, the FASB requires an enterprise to disclose general segment information (FASB [1997], paragraph 26), information about reported segment profit or loss (FASB [1997], paragraphs 27–31), reconciliations of segment totals of significant items to corresponding enterprise amounts (FASB [1997], paragraph 32), and interim period segment information (FASB [1997], paragraph 33). Moreover, the required disclosure pertaining to general segment information relates to factors used to identify the reportable segments, including the basis of organization, and types of products and services that determine segment revenues (FASB [1997], paragraph 26). Overall, SFAS No. 131 guidance is intended to help financial statement users more completely

[43] The components that management establishes for that purpose are what the FASB refers to as operating segments.

understand an enterprise's performance, and more effectively estimate future net cash flows, in order to be better informed about the enterprise in its entirety.

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CHAPTER TWO: FINANCIAL STATEMENT COMPARABILITY AND INVESTOR RESPONSIVENESS TO EARNINGS NEWS

I. INTRODUCTION

Chapter Two investigates whether financial statement comparability impacts the usefulness of information through its effect on the cross-sectional variation in the earnings-return relationship. The Financial Accounting Standards Board (FASB) defines financial statement comparability as the quality of information enabling users to identify similarities in and differences between two sets of economic phenomena in order to enhance usefulness (FASB [1980, 2010]).[44] Because decisions of financial statement users involve choosing between alternatives, relevant and faithfully represented information about a reporting entity is most useful if it can be compared with similar information reported by other entities and by the same entity in other periods (FASB [2010], QC20).[45] Following De Franco et al. [2011] and Francis et al. [2014], I conceptually define financial statement comparability as how closely similar economic events map into the financial statements of firms due to the consistency with which accounting rules are applied across the firms. From an empirical framework, firm-pairs in the same industry and fiscal year are expected to have similar earnings and accruals structures, implying comparability, all else being equal (De Franco et al. [2011]; Francis et al. [2014]).

[44] Characteristics of desirable information can be viewed as a hierarchy of qualities, where decision making usefulness is the most important (FASB [1980], Paragraph 111).

[45] The FASB ([1980], *Summary of Principal Conclusions*) states that "Comparability between enterprises and consistency in the application of methods over time increases the informational value of comparisons of relative economic opportunities or performance. The significance of information, especially quantitative information, depends to a great extent on the user's ability to relate it to some benchmark."

I extend the financial statement comparability literature to the setting of earnings announcements and information content of earnings to examine whether comparability contributes to information usefulness, with investor responsiveness to earnings being a direct proxy for earnings informativeness (Holthausen and Verrechia [1988]; Liu and Thomas [2000]).[46] Because earnings news is correlated with equity market characteristics that occur when investors revise their equity valuations, information in earnings is correlated with the information used by investors in the equity valuation decisions (Beaver [1968]; Ball and Brown [1967, 1968]). Overall, earnings announcements provide information about future firm earnings and cash flows, where stock price response to the announcement leads to investor valuation of these incremental cash flows (Kasznik and McNichols [2002]). If financial statement comparability helps investors better understand firm-specific earnings news/information, then based on the FASB definition and qualitative objective, comparability should be useful in evaluating alternative investments.

To investigate the role of financial statement comparability in the cross-section of the earnings-return relationship, I use the standard event study methodology to compute abnormal returns around the annual earnings announcement date to measure stock price sensitivity to earnings news for the years 1985–2012. The behavior of security prices is an operational test of usefulness of information in financial statements (Ball and Brown [1968]), where positive capital markets research uses changes in security prices as an

[46] The FASB ([1978], paragraph 43) states that "The primary focus of financial reporting is information about an enterprise's performance provided by measures of earnings and its components. Investors, creditors, and others who are concerned with assessing the prospects for enterprise net cash flows are especially interested in the information. Their interest in an enterprise's future cash flows and its ability to generate favorable cash flows leads primarily to an interest in information about its earnings."

objective, external outcome to infer whether information in accounting reports is useful to market participants (Kothari [2001]). Using accounting system variation, earnings covariation, and discretionary accruals differences as measures of comparability, I examine the impact of comparability on the sensitivity of stock prices to both good and bad earnings surprises (Earnings Response Coefficients [ERCs]). Initial results indicate higher information content of earnings for firms with greater accounting system comparability and earnings covariation comparability. Further results suggest greater magnitude in ERC for firms with positive unexpected earnings news and higher levels of accounting system comparability, earnings covariation comparability, and discretionary accruals comparability.

To examine the possibility that the higher ERC for positive earnings news when financial statement comparability is introduced may reflect the greater information content of the news during periods with higher average comparability, I control for the informativeness of earnings news and how the estimates of the information content of earnings may vary with comparability. Using the measure of information content of earnings developed by Kasznik and McNichols [2002], I find no evidence in support of this alternative as the incremental effect of all three comparability measures on positive unexpected earnings is statistically indistinguishable from zero when examining past and current earnings predictability for future earnings. I also control for risk-based explanations for my results by computing the abnormal return over a narrow window around the earnings announcement, where the variation of risk over time is less likely to be evidence for such a short return accumulation period (Mian and Sankaraguruswamy [2012]).

In additional analyses, I form portfolios based on firm characteristics used as controls in De Franco et al. [2011] to investigate whether the effect of accounting system comparability on the valuation of stocks is uniform across these attributes. By focusing on firm characteristic extremes and the effect of comparability, I am controlling for potential skewness in the distribution of comparability to examine whether comparability remains useful. Because financial statement comparability lowers the cost of acquiring information and increases the overall quantity and quality of firm information (De Franco et al. [2011]), it is possible that the effect of comparability on the assessment of stocks is greater for speculative stocks whose expected cash flows are more uncertain and more difficult to value.[47] In addition, both extreme growth and distressed firms are prone to speculation and are also difficult to arbitrage (Baker and Wurgler [2006]) and so could be more affected by financial statement comparability, through a reduction in the propensity to speculate. Considering that the earnings of speculative stocks are often also less persistent (Baginski et al. [1999]), it can make the identification and valuation of the associated incremental cash flows more difficult and more subjective, leading to a greater effect of comparability in the pricing of the earnings of such stocks. Therefore, I investigate and find that the impact of comparability on the pricing of positive earnings is greater for small firms, high volatility firms, growth/value firms, and firms with low return on assets. These results indicate that financial statement comparability exhibits greater usefulness for more speculative stocks, implying that comparability increases informativeness for firms with cash flows that are more uncertain and difficult to assess,

[47] Speculative stocks can be defined as stocks with a high degree of risk, low predictability of fundamentals, and a high degree of volatility (Lui, Markov, and Tamayo [2007]).

thereby reducing the propensity to speculate. Overall, my results suggest that financial statement comparability enhances the usefulness of information to capital markets participants.

This paper advances the capital markets literature in the following ways. My results bridge two research streams by providing evidence on the cross-sectional effect of financial statement comparability on the stock price sensitivity to firm-specific earnings news. Specifically, my study utilizes newly developed firm-specific, output-based measures of comparability to investigate additional benefits of comparable information to financial statement users through enhanced usefulness in influencing the ability of current share prices to reflect the information in current earnings announcements. My paper also answers the call from Schipper [2003] for more research investigating comparability usefulness and presents additional evidence to support claims that comparability is useful in evaluating alternative investing opportunities (FASB [1980]).[48] In addition, my results are important to the International Accounting Standards Board (IASB) because the primary objective of the International Financial Reporting Standards (IFRS) is to develop a single set of global standards that are transparent and comparable (IASB [1989, 2008]). Overall, this study contributes to the accounting literature by identifying a factor that influences the ability of current stock prices to reflect the information in current earnings and provides evidence supporting the FASB contention that financial statement comparability enhances the decision usefulness of accounting information (FASB [1980]).

[48] The FASB [2010, BC3.33] states that "one of the most important reasons that financial reporting standards are needed is to increase the comparability of reported financial information."

This study complements another concurrent paper on the impact of financial statement comparability and the relationship between stock returns and earnings information. Choi et al. [2013] examine whether financial statement comparability affects the ability of current period stock returns to reflect information in future earnings. They find that future earnings response coefficients (FERCs) are higher for firms issuing financial statement that are more comparable with those of their industry peers. My paper is different from the Choi et al. [2013] study in that I examine how comparability affects the initial pricing of earnings information. Although Choi et al. [2013] report that the ERC increases with comparability, they use a multiple-year valuation model with the emphasis on FERCs. My study focuses on cumulative abnormal returns using a narrower window around the earnings announcement date to control for risk-based explanations. In addition, I use a larger sample, a longer sample period, three measures of comparability, and earnings surprises defined relative to analyst forecasts. I also examine stock price response to good and bad earnings news, separately.

The remainder of Chapter Two proceeds as follows. Section II reviews relevant literature and develops the hypothesis. Section III describes the research design and defines the variables used in the empirical tests. Section IV presents the sample selection and provides descriptive statistics. Section V reports results from the empirical analyses. Section VI conducts additional analyses and Section VII concludes.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Financial Statement Comparability

Rational investing decisions fundamentally involve evaluating alternative opportunities and are not possible if comparable information is unavailable, where comparability is defined as the quality of information that enables users to identify similarities and differences between two sets of economic phenomena (FASB [1980]). The FASB specifically argues that demand for comparable information drives accounting regulation. Additionally, when market participants ascertain the comparability of investments, efficient allocation of capital is facilitated (SEC [2000]). Further, financial statement analysis textbooks frequently illustrate techniques to adjust accounting numbers and increase comparability across financial statements in order to better assess individual firm performance (e.g., Revsine, Collins, and Johnson [2004]; Penman [2006]; Wild, Subramanyam, and Halsey [2006]; Palepu and Healy [2007]). In addition, enhancing comparability of disclosures across firms is likely to result in more accurate valuations of individual firm performances (Dye and Sunder [2001]).

Despite the apparent importance of financial statement comparability, empirical research in this area is somewhat limited. Current studies have responded to this demand by developing new comparability measures and applying those measures in a financial accounting context. Several recent papers focus on IFRS adoption and financial statement comparability effects. For example, Barth et al. [2012] examine comparability between U.S. firms and IFRS firms and find that IFRS adoption enhances financial statement comparability with U.S. firms. Brochet et al. [2013] examine whether IFRS leads to capital market benefits through increased comparability and find that mandatory IFRS

adoption improves comparability and leads to capital market benefits by reducing the ability of insiders to exploit private information. Lang et al. [2010] examine cross-country comparability changes surrounding mandatory IFRS adoption and find that financial statement comparability is increased with IFRS adoption. DeFond et al. [2011] provide evidence that foreign mutual fund ownership increases when mandatory IFRS adoption leads to improved financial statement comparability.

Other studies in the comparability literature focus on financial statement comparability association with capital market decisions and alternative determinants of comparability. For example, Francis et al. [2014] find that auditor style increases earnings comparability within Big 4 auditor clientele. De Franco et al. [2011] provide evidence that financial statement comparability lowers the cost of acquiring information and increases the overall quantity and quality of information available to analysts about the firm. Kim et al. [2013] predict and find that increased comparability is associated with lower bid-ask spreads for traded bonds, lower credit spreads for bonds and credit default swaps, and steeper credit default swap term structures, essentially reducing debt market participants' uncertainty about and pricing of credit risk. Bradshaw et al. [2011] study financial analysts and suggest that similar accounting policy choices persuade analyst coverage. Wang [2011] shows that comparability brings economic benefits by allowing investors to extract additional information from one firm's information signal for another firm's valuation. Overall, if comparability helps investors to understand firm-specific information, then it should be useful to investors in evaluating alternative investments.

Stock Market Response to Earnings News

Financial statement information allows capital providers to evaluate the return potential of investment opportunities (FASB [1980]). Accounting research studies have long focused on the valuation implications of corporate earnings, presupposing that accounting information is efficiently compounded into stock prices by rational agents in well-functioning capital markets.[49] In many instances, this research relies on the assumption of efficient pricing of information and uses stock price variation around an information event to capture the effect of that event on shareholder value. The behavior of security prices is an operational test of usefulness of information in financial statements (Ball and Brown [1968]), where positive capital markets research uses changes in security prices as an objective, external outcome to infer whether information in accounting reports is useful to market participants (Kothari [2001]). These stock prices reflect the market's expectations about firm performance (Collins et al. [1994]; Haw et al. [2012]) and are more informative when they better anticipate earnings realizations.

Research contends that the correlation between accounting numbers and security returns is a function of the objectives of financial statements, in which there is a demand for objective, verifiable information that is useful for performance evaluation purposes (Watts and Zimmerman [1986]).[50] Typically, capital-markets research assumes that an accounting performance measure serves the valuation information role with the measure designed to provide information useful for valuation gives an indication of the firm's

[49] See Holthausen and Watts [2001] and Kothari [2001] for a review of the literature.
[50] Previous studies suggest that high quality disclosure helps investors to better predict firm performance (e.g., Gelb and Zarowin [2002]; Lundholm and Myers [2002]; Orpurt and Zang [2009]; Choi et al. [2011]; Haw et al. [2012]).

economic income or the change in shareholders' wealth (Kothari [2001]). The relation between abnormal stock returns and unexpected earnings is commonly labeled the earnings response coefficient (ERC) and is widely used as a proxy for the informativeness of earnings. The measure directly links earnings to decision usefulness, which is quality in the context of equity valuation decisions, as investors respond to information that has value implications.[51] Therefore, a higher correlation with value implies that earnings better reflect fundamental performance (i.e., more informative components of earnings will have a higher response coefficient). Overall, investor responsiveness to earnings has been used to test a variety of predictions about the determinants of earnings informativeness including the effects of accounting methods, governance, firm fundamentals, and leverage.[52]

Hypothesis

Financial statement comparability has the potential to influence ERC magnitudes because comparability expands the information set available to investors, arguably increasing usefulness. De Franco et al. [2011] suggest that financial statement comparability lowers the cost of acquiring information, and increases the overall quantity and quality of information available. In addition, enhancing comparability of disclosures across firms can result in efficiency gains by reducing investors' duplication of

[51] Researchers' use of the term "earnings quality" is usually in the context of examining whether earnings information is useful to investors for valuation (Kothari [2001]). The general definition of earnings quality suggests that quality could be evaluated with respect to any decision that depends on an informative representation of financial performance and is not limited solely to the context of equity valuation decisions (Dechow et al. [2010]).

[52] See Kothari [2001] and Dechow et al. [2010] for a review of the earnings quality literature.

information production (Dye and Sunder [2001]).[53] Further, Haw et al. [2012] provide evidence that more information about the transactions and judgments underlying a firm's current performance can facilitate accurate prediction of future performance. Similarly, investors can rely on comparable financial statements to obtain more information about the transactions and judgments underlying the financial statements (Campbell and Yeung [2012]). Using comparable accounting information, investors can identify similarities and differences among firms to make more meaningful comparisons (Chen et al. [2013]).[54] As a result, investors are likely to set optimistic valuations on the incremental cash flows embedded in earnings announcements for firms with more comparable financial information.

Based on the above arguments, if information is enhanced through greater financial statement comparability, I expect higher earnings response coefficients for firms that have more comparable financial statements with those of their industry peers. Since the earnings response coefficient is a measure of earnings quality (Liu and Thomas [2000]), comparability should increase information quality through an incremental effect on the earnings-return relationship.[55] Because financial statement comparability enhances the usefulness of information (FASB [1980, 2010] and lowers the cost of acquiring and processing information (De Franco et al. [2011]), my hypothesis examines whether

[53] This may generate economies of scale in terms of understanding and evaluating disclosures for investors. Mahoney [1995] and Dye and Sridhar [2008] argue that disclosure regulation can provide market-wide cost savings and efficiency gains when the optimal disclosure level is comparable across firms.
[54] Information transfer among comparable firms should be greater, where studies document the effect of one firm's financial statement information on the financial statements and operating decisions of other related firms, with the net result being a set of higher-quality information for more comparable firms (e.g., Ramnath [2002]; Gleason et al. [2008]; Durnev and Mangen [2009]).
[55] Liu and Thomas [2000] provide evidence on the ERC as a proxy for earnings quality and define quality as overall decision usefulness for equity valuation.

financial statement comparability enhances the informativeness of earnings through increased earnings response coefficient magnitude. Hypothesis H1, in alternative form, is stated as follows:

> *H1*: Ceteris paribus, earnings response coefficients are higher for firms with greater financial statement comparability.

III. RESEARCH DESIGN

Previous literature establishes financial statement comparability from inputs such as similar accounting methods and related policy choices (e.g., DeFond and Hung [2003]; Bradshaw and Miller [2008]). Additional comparability proxies are based on correlations in cross-sectional levels of contemporaneous measures, designed to estimate variation across countries (e.g., Joos and Lang [1994]; Land and Lang [2002]; Brochet et al. [2013]). Further studies focus on financial statement output covariation across time (e.g., De Franco et al. [2011]; Barth et al. [2012]; Francis et al. [2014]), argued to hold advantages over input based methods.[56] To test my hypothesis, I build upon this research and utilize three measures of financial statement comparability based on variation in firm accounting systems, earnings covariation over time, and differences in discretionary accruals.

[56] Potential advantages include employing actual weights firms use when calculating reported earnings, holding economic events constant while focusing on accounting system differences, and using widely available financial statement and market return data.

Accounting System Variation

My first financial statement comparability measure follows De Franco et al. [2011], where the accounting system is defined as a mapping from economic events to financial statements. The following equation represents this mapping:

$$Financial\ Statements_i = f_i(Economic\ Events_i) \quad (1)$$

where $f_i()$ represents firm i's accounting system and similar mappings indicate that two firms have comparable accounting systems. Equation (1) declares that a firm's financial statements are a function of economic events and the accounting for these events. De Franco et al. [2011] conceptually define financial statement comparability as two firms having comparable accounting systems if the systems deliver similar financial statements for an analogous set of economic events.

To apply this conceptual definition of financial statement comparability, I follow De Franco et al. [2011] to develop an understandable empirical model of the firm's accounting system, using earnings as a proxy for financial statements and stock return as a proxy for the net effect of economic events on the financial statements.[57] I estimate the following equation for each firm-year, using the 16 previous quarters of data:

$$IBQ_{it} = \beta_{0i} + \beta_{1i}RET_{it} + u_{it} \quad (2)$$

where IBQ is firm i's income before extraordinary items for quarter t, scaled by market value of equity at the beginning of quarter t. RET is calculated as firm i's cumulative

[57] This measure is consistent with the empirical financial accounting literature reviewed by Kothari [2001] and Beyer et al [2010].

stock return over quarter t. The estimated coefficients, $\hat{\beta}_{0i}$ and $\hat{\beta}_{1i}$, from equation (2) proxy for firm i's accounting function, $f(\bullet)$. In addition, I estimate $\hat{\beta}_{0j}$ and $\hat{\beta}_{1j}$ for J firms, using the earnings and stock return for firm j.

Conclusively, I use the estimated accounting functions of firm i and firm j to predict their earnings, while holding their economic events constant. Specifically, I project firm i's expected earnings utilizing the accounting functions of firm i and firm j as follows:

$$E(IBQ)_{iit} = \hat{\beta}_{0i} + \hat{\beta}_{1i}RET_{it} \tag{3}$$

$$E(IBQ)_{ijt} = \hat{\beta}_{0j} + \hat{\beta}_{1j}RET_{it} \tag{4}$$

where $E(IBQ)_{iit}$ is the expected earnings for firm i given firm i's accounting function and firm i's stock return in quarter t, and $E(IBQ)_{ijt}$ is the expected earnings for firm j given firm j's accounting function and firm i's stock return in quarter t.

To define financial statement comparability between firms i and j in quarter t, I follow De Franco et al. [2011] and calculate:

$$aCOMP_{ijt} = -1/16 \times \sum_{t-15}^{t} |E(IBQ)_{iit} - E(IBQ)_{ijt}| \tag{5}$$

where $aCOMP$ is the negative value of the average absolute difference between the projected earnings using firm i's and firm j's accounting functions. Greater $aCOMP_{ijt}$ values signify greater financial statement comparability. Consistent with De Franco et al. [2011], I estimate financial statement comparability for each firm i – firm j combination

within the same two-digit Standard Industry Classification (SIC) and with fiscal years ending in March, June, September, or December.[58]

De Franco et al. [2011] generate alterations based upon a firm-year measure of accounting comparability by combining the firm *i* – firm *j* comparability measure for a given firm *i* and ranking all of the comparability measure values for each firm *i*.[59] Following this methodology, I define $ACOMP_{it}$ as the mean $aCOMP_{ijt}$ for all firms in the same industry as firm *i* during period *t*. Therefore, firms with greater *ACOMP* values have accounting systems that are more congruent with those in their industry. I also estimate my regression models using the mean of both four and ten different firms with the highest comparability in a particular firm-year to capture peer group comparable accounting systems and report findings if the results are similar to those with industry congruency.

Earnings Covariation

Because the accounting system comparability measure is established by the distance between accounting earnings for two firms while holding economic events constant, De Franco et al. [2011] argue that the advantage to this measure is its isolation of financial statement comparability by explicitly controlling for economic effects. However, because of the possibility that accounting earnings could achieve comparability

[58] To avoid matching parent and subsidiary companies, I exclude holding firms from the Compustat sample. In addition, American Depository Receipts (ADRs) and limited partnerships are excluded in order to focus on corporations domiciled in the United States.

[59] These permutations consist of taking the average of a decided number of firms with the highest comparability in a particular firm-year to capture accounting systems that are more congruent to their peer group, or taking the average or median comparability for all firms in the same industry in a particular firm-year to capture accounting systems that are more congruent to those in their industry.

in the eyes of investors without firms having identical accounting systems, a specific and estimated accounting system may not be necessarily required.[60]

Therefore, my second comparability measure is the magnitude of earnings covariation for firm-pairs in the same industry across time (De Franco et al. [2011]; Barth et al. [2012]; Francis et al. [2014]). Following the De Franco et al. [2011] methodology, I use 16 quarters of earnings data to estimate the following model for all firm-pairs in the same industry:

$$IBQ_{it} = \beta_{0ij} + \beta_{1ij} IBQ_{jt} + u_{ijt} \quad (6)$$

where *IBQ* is income before extraordinary items for firm *i* or firm *j* in quarter *t*, scaled by market value of equity at the beginning of quarter *t*. I define the firm *i* – firm *j* correlation measure of comparability ($eCOMP_{ijt}$) as the adjusted R^2 from the regression. Following De Franco et al. [2011], I compute a firm-year comparability measure and define $ECOMP_{it}$ as the average $eCOMP_{ijt}$ for the four firms *j* in the same industry as firm *i* during period *t* with the highest R^2s, where higher values of *ECOMP* indicate higher financial statement comparability.

Because *ECOMP* could be driven by differences in economic shocks, I control for cash flow correlations across firms (De Franco et al. [2011]; Francis et al. [2014]). Specifically, I parallel the construction of *ECOMP*, replacing income before extraordinary items with operating cash flows in estimating model (6) as follows:

$$CFO_{it} = \beta_{0ij} + \beta_{1ij} CFO_{jt} + u_{ijt} \quad (7)$$

[60] De Franco et al. [2011] offer an example of two firms with accounting earnings varying over time where information about the earnings of one firm is useful in forecasting earnings of another firm.

where *CFO* is the ratio of quarterly cash flows from operations to the beginning of period market value. I define $cfoCOV_{it}$ by taking the average adjusted R^2 from the regression for all firms in the same industry as firm *i* during period *t*. By performing analyses on firm-pairs within the same industry and year, I control for common economic shocks and fundamentals, and through including *cfoCOV* I capture near-term economic shock covariation associated with cash flow expectations.

Discretionary Accruals Differences

My third proxy for comparability follows the Francis et al. [2014] approach to testing accounting comparability by examining the similarity of discretionary accruals for pairs of firms in the same industry, at a common point in time. My analysis adheres to this methodology and examines discretionary accruals under the argument that two firms in the same industry and year are more likely to possess similar accrual adjustments in utilizing the same set of accounting choices and judgments in implementing GAAP.
I follow Jones [1991] and Kothari et al. [2005] to estimate discretionary accruals cross-sectionally for each firm-year, using 16 quarters of previous data in the same two-digit SIC code as follows:

$$TA_{it} = \beta_0 + \beta_1(1/ATQ_{it-1}) + \beta_2 \Delta SALE_{it} + \beta_3 PPE_{it} + \beta_4 ROA_{it} + u_{it} \quad (8)$$

where *TA* is firm *i*'s total accruals for quarter *t*, defined as the change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization, scaled by lagged total assets. Using lagged

total assets as a deflator proposes to mitigate heteroskedasticity in residuals.[61] Prior research typically does not hold a constant in the discretionary accruals model, but Kothari et al. [2005] include the inverse of lagged total assets (ATQ_{it-1}) in the estimation.[62] The variable, $\Delta SALE$, is the change in firm *i*'s sales for quarter *t*, scaled by lagged total assets, ATQ_{it-1}. Observing Kothari et al. [2005], I follow previous research and subtract the change in firm *i*'s accounts receivable for quarter *t* from $\Delta SALE_{it}$ prior to model estimation (e.g., DeFond and Park [1997]; Subramanyam [1996]; Guidry et al. [1999]). The variable, *PPE*, is firm *i*'s net property, plant, and equipment for quarter *t*, scaled by lagged total assets, ATQ_{it-1}. The variable, *ROA*, is firm *i*'s net income divided by total assets for quarter *t*, used to control for contemporaneous performance.[63]

Similar to Francis et al. [2014], the model for discretionary accruals differences as a measure of financial statement comparability is as follows:

$$dCOMP_{ijt} = 1/16 \times \sum_{t-15}^{t} |DACC_{it} - DACC_{jt}| \quad (9)$$

where *dCOMP* is the average absolute value of the difference between signed discretionary accruals for firm-pairs in the same two-digit SIC code in period *t*. Residuals from the regression model (8) are the modified-Jones model discretionary accruals (*DACC*). Lower $dCOMP_{ijt}$ values signify greater financial statement comparability. I

[61] White [1980] statistics for the Kothari et al. [2005] annual cross-sectional, industry models show reduced but not eliminated heteroskedasticity.
[62] Including a constant in the estimation provides an additional control for heteroskedasticity unalleviated by using assets as a deflator (Kothari et al. [2005]) and mitigates problems potentially arising from an omitted size (scale) variable (Brown et al. [1999]).
[63] Kothari et al. [2005] calculate ROA using net income instead of net income including net-of-tax interest expense in order to avoid possible problems associated with tax rate estimation.

estimate the Francis et al. [2014] financial statement comparability metric for each firm *i* – firm *j* pairwise combination within the same industry and fiscal year. Similar to Francis et al. [2014], I define $DCOMP_{it}$ as the average $dCOMP_{ijt}$ for all firms in the same industry as firm *i* and period *t*, where lower values of *DCOMP* indicate firms with accounting systems that are more consistent with those in their industry.

Earnings Surprise

Consistent with prior studies (eg., Conrad et al. [2002], Mian and Sankaraguruswamy [2012]), I define the earnings surprise as actual earnings minus expected earnings, scaled by stock price. Specifically, I calculate unexpected earnings, *UE*, which represent the news component associated with the earnings announcement, as follows:

$$UE_{it} = (ACTUAL_{it} - FORECAST_{it}) / P_{it} \quad (10)$$

where $ACTUAL_{it}$ is the primary earnings per share of firm *i* for year *t*. $FORECAST_{it}$ is the median of analyst forecasts for firm *i* prominent within nine months prior to the day before the year *t* earnings announcement (Gu and Wu [2003]).[64] P_{it} is firm *i*'s share price at the end of forecasted year *t*. The actual earnings, forecasted earnings, and share price are adjusted for stock splits using the method described in Payne and Thomas [2003]. In addition, I delete observations where a firm reports a loss because prior research finds

[64] Gu and Wu [2003] argue that if analysts' objective is to provide the most accurate forecast by minimizing the mean absolute forecast error, then the optimal forecast is the median instead of the mean earnings.

that the earnings response coefficients are essentially zero for negative earnings (Hayn [1995]; Lipe et al. [1998]).

Because my prediction as to whether earnings are overpriced or underpriced for different levels of financial statement comparability may depend on whether the news is good or bad, I also split earnings news into good news and bad news. First, I follow Mian and Sankaraguruswamy [2012] and create two indicator variables, *UP* and *DOWN*, where *UP* equals one if the unexpected earnings is positive, and zero otherwise, and *DOWN* equals one if unexpected earnings is negative, and zero otherwise. Then, I multiply *UE* by these indicator variables to generate *UEUP* and *UEDOWN*, which are my measures of good and bad earnings news, respectively (Conrad et al. [2002]).

Comparability and Stock Price Sensitivity to Earnings News

I measure stock market sensitivity to earnings news by the elasticity of stock prices to unexpected earnings at announcement dates. My primary hypothesis is that the ERC is higher for firms with greater financial statement comparability. To investigate the role of comparability in stock price sensitivity to earnings news, I estimate the following OLS regression models:

$$CAR_{it} = \beta_0 + \beta_1 UE_{it} + \beta_2 COMP_{it} + \beta_3 [UE_{it} \times COMP_{it}] + \beta_4 NLIN_{it} + \beta_5 SIZE_{it} + \beta_6 BTM_{it} + \beta_7 EVOL_{it} + \beta_i Industry\ FE + \beta_i Year\ FE + u_{it} \quad (11)$$

$$CAR_{it} = \beta_0 + \beta_1 UEUP_{it} + \beta_2 UEDOWN_{it} + \beta_3 COMP_{it} + \beta_4 [UEUP_{it} \times COMP_{it}] + \beta_5 [UEDOWN_{it} \times COMP_{it}] + \beta_6 DOWN_{it} + \beta_7 NLINUP_{it} + \beta_8 NLINDOWN_{it} + \beta_9 SIZE_{it} + \beta_{10} BTM_{it} + \beta_{11} EVOL_{it} + \beta_i Industry\ FE + \beta_i Year\ FE + u_{it} \quad (12)$$

where CAR_{it} is the cumulative abnormal return surrounding the earnings report date for firm *i* at time *t*. I follow Conrad et al. [2002] and define the announcement period event window, extending from day –5 through day 0 of the earnings announcement to account for pre-announcement leakage of information. I follow Collins and Kothari [1989] and calculate the abnormal return as the firm's return less the value-weighted market return around the event date. UE_{it} in Model (11) is unexpected earnings and is as defined above. $UEUP_{it}$ and $UEDOWN_{it}$ are as defined above and represent good and bad earnings news, respectively. The specification in Equation (12) allows the coefficient for *UE* to be different, conditional on the sign of the earnings surprise. $COMP_{it}$ is one of the three firm-year comparability measures, *ACOMP*, *ECOMP*, or *DCOMP*, as defined above. I estimate each model three times, one for each of the three financial statement comparability measures.

I multiply the earnings surprise announced for firm *i* in year *t* with firm *i*'s comparability in year *t* in Model (11) to create the interaction variable, $UE \times COMP$. This allows me to test whether the ERC varies with comparability. If comparability enhances information usefulness through investor response to earnings, I expect the coefficient on this interaction term, β_3, to be positive. I multiply the positive earnings surprise announced for firm *i* in year *t* with firm *i*'s comparability in year *t* in Model (12) to create the interaction variable, $UEUP \times COMP$. This allows me to test whether the ERC of good earnings news varies with comparability. If comparability enhances information usefulness through investor response to good earnings news, I expect the coefficient on this interaction term, β_4, to be positive. This result would indicate that the market reacts more to good news when comparability is high. Similarly, I multiply the

negative earnings surprise announced for firm *i* in year *t* with firm *i*'s comparability in year *t* to create the interaction variable, *UEDOWN* × *COMP*, allowing me to test whether the ERC of bad earnings news varies with comparability.

Kothari (2001) expresses that firm-level characteristics systematically affect the relation between unexpected returns and unexpected earnings. Based on prior research, I include several control variables to mitigate these influences on the measurement of the ERC.[65] *DOWN* is an indicator variable equal to one if the unexpected earnings are negative, zero otherwise, to account for the difference in the intercepts of good and bad earnings news (Bartov et al. [2002]). I also include nonlinearity controls in the model because the occurrence of large earnings surprises causes nonlinearity in the ERC (Freeman and Tse [1992]). Specifically, *NLIN* is the square of *UE*, *NLINUP* is the square of *UEUP*, and *NLINDOWN* is the square of *UEDOWN* multiplied by –1. $SIZE_{it}$ is the logarithm of the market value of equity measured at the end of the year and controls for risk differences not reflected in excess returns (Fama and French [1992, 1993]) and for potential scale differences (Barth and Kallapur [1996]). BTM_{it} is the ratio of the book value of equity to the market value of equity. $EVOL_{it}$ is the standard deviation of four quarterly earnings, scaled by total assets. I include industry fixed effects, *Industry FE*, at the two-digit SIC industry classification and year fixed effects, *Year FE*. Finally, I control for potential firm effects by using robust standard error estimates clustered at the firm *i* level in all regression models (Petersen [2009]; Gow et al. [2010]).[66]

[65] See Subramanyam (1996), Blouin et al. (2003), Wilson (2008), and others.
[66] Cluster-robust standard errors are also known as Huber-White or Rogers standard errors and are a generalization of the heteroscedasticity-robust standard errors of White [1980].

IV. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Sample Selection

I use Standard & Poor's Compustat database to collect firm-level data and earnings report dates for the period 1985 through 2012 for the accounting system variation and discretionary accruals differences samples. The earnings covariation sample is for the period 1992 through 2012 because the operating cash flow data used to construct the cash flow covariation control variable became available in 1987. I use the Center for Research in Security Prices (CRSP) database to obtain share price and stock return data for calculation of cumulative abnormal returns and construction of the accounting system variation comparability measure. I use the Institutional Brokers' Estimate System (I/B/E/S) database to gather realized earnings and earnings forecasts from the unadjusted tables and follow the Payne and Thomas [2003] method for calculating split-adjusted unexpected earnings. Finally, I require that firms have sufficient data to calculate all regression variables and I eliminate loss firms from the samples.

The sample selection for the three comparability samples is reported in Table 1, where Panel A provides the sample attrition. Of the 305,898 firm-year observations on the Compustat file for the sample period, I eliminate 227,549 observations without necessary data to construct *ACOMP*, 257,507 observations without necessary data to construct *ECOMP*, and 243,166 observations without necessary data to construct *DCOMP*. I exclude 36,977, 18,085, and 36,898 observations because of insufficient I/B/E/S data needed to construct abnormal earnings for the *ACOMP*, *ECOMP*, and *DCOMP* samples, respectively. I exclude 1,079, 802, and 1,073 observations because of insufficient CRSP data needed to construct abnormal returns for the *ACOMP*, *ECOMP*,

and *DCOMP* samples, respectively. I exclude 309, 18, and 81 observations because of insufficient Compustat data needed to construct control variables for the *ACOMP*, *ECOMP*, and *DCOMP* samples, respectively. Finally, I exclude 6,524, 5,359, and 4,821 observations where firms report an earnings loss for the *ACOMP*, *ECOMP*, and *DCOMP* samples, respectively. The final samples comprise 33,460 firm-year observations for the *ACOMP* sample, 24,127 firm-year observations for the *ECOMP* sample, and 19,859 firm-year observations for the *DCOMP* sample.

Panel B in Table 1 reports industry composition by 1-digit SIC code for the three comparability samples. For the *ACOMP* sample, the largest concentrations are in manufacturing (45.53 percent), financial (21.09 percent), and services (12.85 percent) industries. For the *ECOMP* sample, the largest concentrations are in manufacturing (49.46 percent), financial (15.26 percent), and services (14.78 percent) industries. For the *DCOMP* sample, the largest concentrations are in manufacturing (54.04 percent), services (16.58 percent), and transportation and utilities (13.85 percent) industries. Overall, a wide variety of industries is represented in all three comparability samples.

TABLE 1
Sample Selection

Panel A: Sample Attrition

	Firm-Year Observations		
	ACOMP	*ECOMP*	*DCOMP*
Firm-year observations for sample period	305,898	305,898	305,898
Observations not included because:			
Missing necessary data for comparability measure	(227,549)	(257,507)	(243,166)
Missing necessary I/B/E/S data	(36,977)	(18,085)	(36,898)
Missing necessary CRSP data	(1,079)	(802)	(1,073)
Missing necessary Compustat data	(309)	(18)	(81)
Firms report an earnings loss	(6,524)	(5,359)	(4,821)
Firm-year observations for final sample	33,460	24,127	19,859

TABLE 1 (continued)

Panel B: Industry Composition

Industry	1-Digit SIC	Firm-Year Observations		
		ACOMP	*ECOMP*	*DCOMP*
Agriculture	0	0	0	0
Mining and Construction	1	1,401	1,243	1,136
Manufacturing	2	5,081	3,901	3,378
Manufacturing	3	10,153	8,032	7,354
Transportation and Utilities	4	3,368	1,959	2,750
Wholesale and Retail Trade	5	2,098	1,744	1,698
Financial Firms	6	7,058	3,682	238
Services	7	3,285	2,736	2,426
Services	8	1,015	830	866
Other	9	1	0	13
Total		33,460	24,127	19,859

This table shows the sample selection. Panel A presents the sample attrition for the three comparability measure samples. Panel B presents the 1-digit SIC industry composition for the three comparability measure samples. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*.

Descriptive Statistics

Table 2 presents summary statistics of the key variables used for the overall sample. The mean of the six-day abnormal announcement return, $CAR_{(-1 \text{ to } +1)}$, is 0.22 percent, which represents the average response to positive, negative, and no-news surprises. The mean difference in accounting systems between firm-pairs, *ACOMP*, is a magnitude of 2.725, similar to the 2.5 reported in De Franco et al. [2011]. The mean difference in earnings covariation between firm-pairs, *ECOMP*, is 0.057. The mean difference in discretionary accruals between firm-pairs, *DCOMP*, is 0.031. The negative mean of -0.001 for abnormal earnings, *UE*, indicates that the earnings news has, on average, been more negative. When I divide the samples into positive and negative

earnings surprises, 55 percent, 57 percent, and 57 percent of the earnings announcements represent positive news for the *ACOMP*, *ECOMP*, and *DCOMP* samples, respectively. Alternatively, 37 percent, 34 percent, and 35 percent of the earnings announcements represent negative news for the *ACOMP*, *ECOMP*, and *DCOMP* samples, respectively, consistent with excluding loss firms from the sample.

TABLE 2
Descriptive Statistics

Variable	Mean	Standard Deviation	Q1	Median	Q3
$CAR_{-5, 0}$	0.22%	6.63%	-2.30%	0.05%	3.26%
ACOMP	-2.725	2.262	-3.210	-2.300	-1.600
ECOMP	0.057	0.068	0.010	0.040	0.080
DCOMP	0.031	0.011	0.020	0.030	0.040
UE	-0.001	0.019	-0.002	0.000	0.002
UE [> 0]	0.006	0.013	0.001	0.002	0.005
UE [< 0]	-0.009	0.022	-0.009	-0.003	-0.001
UEUP	0.003	0.010	0.000	0.000	0.002
UEDOWN	-0.004	0.015	-0.002	0.000	0.000
NLIN	0.001	0.011	-0.000	0.000	0.000
NLINUP	0.000	0.001	0.000	0.000	0.000
NLINDOWN	-0.000	0.008	-0.000	0.000	0.000
SIZE	6.627	1.797	5.332	6.566	7.839
BTM	0.574	0.417	0.320	0.499	0.736
EVOL	0.010	0.033	0.002	0.005	0.010
cfoCOV	0.249	0.148	0.130	0.230	0.350

	ACOMP	*ECOMP*	*DCOMP*
# of total (*UE*) obs	33,460	24,127	19,859
Percent of > 0 *UE*	55%	57%	57%
Percent of < 0 *UE*	37%	34%	35%

This table presents descriptive statistics for the multivariate analyses. *CAR* is the cumulative abnormal return around the earnings announcement date. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *UE* is the unexpected earnings calculated as the difference between actual earnings and forecasted earnings, scaled by share price. *UE* [> 0] is positive unexpected earnings. *UE* [< 0] is negative unexpected earnings. *UEUP* is the continuous positive unexpected earnings, zero otherwise. *UEDOWN* is the continuous negative unexpected earnings, zero otherwise. *NLIN* is *UE* squared. *NLINUP* is *UEUP* squared. *NLINDOWN* is *UEDOWN* squared and multiplied by –1. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of four quarterly earnings, scaled by total assets. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation for all firms in the same industry as firm *i*.

Table 3 provides a Pearson correlation matrix for the variables used in the study. Both cumulative abnormal returns measures are positively and significantly correlated at a magnitude of 6.2 percent. Consistent with De Franco et al. [2011], the accounting system comparability measure is positively correlated with the earnings covariation comparability measure. Consistent with Francis et al. [2014], the earnings covariation comparability measure is negatively correlated with the discretionary accruals comparability measure. Also of note in Table 3 and consistent with De Franco et al. [2011], accounting system comparability is negatively correlated with unexpected earnings and firms with greater earnings volatility tend to have lower levels of accounting system comparability.

TABLE 3
Pearson Correlation Matrix

		(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)	(XIII)
$CAR_{-5, 0}$	(I)	0.001	-0.010	**0.020**	**0.069**	**0.083**	**0.029**	**0.020**	**0.033**	-0.009	**-0.048**	**0.046**	**0.016**
ACOMP	(II)		**0.024**	**-0.126**	**-0.019**	**-0.104**	**0.049**	**-0.045**	**-0.070**	**0.039**	**-0.054**	**-0.025**	**-0.116**
ECOMP	(III)			**-0.186**	-0.003	**0.024**	**-0.021**	**0.031**	**0.041**	-0.005	**0.046**	**0.082**	**0.017**
DCOMP	(IV)				**-0.017**	**0.060**	**-0.067**	**0.017**	**0.034**	**-0.032**	**-0.259**	**-0.060**	**0.134**
UE	(V)					**0.613**	**0.835**	**-0.129**	**0.477**	**0.589**	**0.036**	**-0.030**	**0.015**
UEUP	(VI)						**0.076**	**0.330**	**0.829**	**0.014**	**-0.155**	**0.191**	**0.086**
UEDOWN	(VII)							**-0.392**	**0.024**	**0.734**	**0.154**	**-0.171**	**-0.041**
NLIN	(VIII)								**0.496**	**-0.532**	**-0.053**	**0.063**	**0.061**
NLINUP	(IX)									0.004	**-0.076**	**0.120**	**0.067**
NLINDOWN	(X)										**0.043**	**-0.049**	**-0.015**
SIZE	(XI)											**-0.353**	**-0.049**
BTM	(XII)												**-0.030**
EVOL	(XIII)												

This table reports Pearson correlations for the variables used in the multivariate analyses. Bold font indicates significance at a p-value < 0.05. *CAR* is the cumulative abnormal return around the earnings announcement date. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *UE* is the unexpected earnings calculated as the difference between actual earnings and forecasted earnings, scaled by share price. *UEUP* is the continuous positive unexpected earnings, zero otherwise. *UEDOWN* is the continuous negative unexpected earnings, zero otherwise. *NLIN* is *UE* squared. *NLINUP* is *UEUP* squared. *NLINDOWN* is *UEDOWN* squared and multiplied by –1. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of four quarterly earnings, scaled by total assets.

V. EMPIRICAL RESULTS

Comparability and Stock Price Sensitivity to Earnings News

The primary investigation of this study is the role of financial statement comparability in stock price sensitivity to earnings news in order to determine whether comparability enhances the usefulness of financial information. Table 4 reports the estimates of Equation (11). The coefficient for the variable *UE*, β_1, which captures the ERC of earnings news, is positive and statistically significant for all three comparability samples. This is consistent with the accounting literature that documents that earnings surprises evoke significant response from share prices. The main focus in Table 4 is on the interaction variable that captures the effect of financial statement comparability on ERC for earnings surprises. The coefficient of the interaction variable $UE \times COMP$, β_3, is 0.337 and statistically significant for the *ACOMP* sample, and 0.441 and significant for the *ECOMP* sample. These results suggest that accounting system comparability and earnings covariation comparability increase ERC magnitudes for earnings surprises by enhancing the usefulness of financial information. Specifically, the total effect on the information content of earnings for the *ACOMP* sample is a 4.75 percent increase and the total effect on the information content of earnings for the *ECOMP* sample is a 6.58 percent increase. Therefore, I reject the null form of hypothesis H1 and offer support to the alternative form that financial statement comparability enhances usefulness through increased response to earnings news, where the information content of earnings is higher for firms with greater comparability.

TABLE 4
Comparability and Stock Price Sensitivity to Earnings News

$$CAR_{it} = \beta_0 + \beta_1 UE_{it} + \beta_2 COMP_{it} + \beta_3 [UE_{it} \times COMP_{it}] + \beta_4 NLIN_{it} + \beta_5 SIZE_{it}$$
$$+ \beta_6 BTM_{it} + \beta_7 EVOL_{it} + \beta_i Industry\ Fixed\ Effects + \beta_i Year\ Fixed\ Effects + u_{it} \quad (11)$$

Dependent Variable = $CAR_{(-5, 0)}$

Independent Variables	*ACOMP*		*ECOMP*		*DCOMP*	
	Estimate	*p*-value	Estimate	*p*-value	Estimate	*p*-value
Intercept	-0.023***	0.000	-0.006	0.144	0.033***	0.001
UE	0.337***	0.000	0.441***	0.000	0.449***	0.001
COMP	0.000	0.517	-0.000	0.780	0.051	0.450
UE × *COMP*	0.016**	0.024	0.029***	0.007	-5.156	0.210
NLIN	0.174*	0.066	0.075	0.510	0.044*	0.062
SIZE	-0.001***	0.000	-0.001**	0.015	-0.001**	0.017
BTM	0.009***	0.000	0.006***	0.000	0.080***	0.000
EVOL	0.025*	0.097	0.021	0.403	0.019	0.347
cfoCOV			0.010**	0.014		
N	33,460		24,127		19,859	
Adjusted R^2	1.73%		1.65%		1.43%	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. Statistical significance based on firm-level robust standard error estimates. *CAR* is the cumulative abnormal return around the earnings announcement date. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *UE* is the unexpected earnings, calculated as the difference between actual earnings and forecasted earnings, scaled by price. *NLIN* is *UE* squared. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of four quarterly earnings, scaled by total assets. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*.

Table 5 reports regression results from model (12), where the earnings surprise is split into good news and bad news to examine the effect of comparability on both types of firm information. The coefficient for the variable *UEUP*, β_1, which captures the ERC of good earnings news, is positive and statistically significant for all comparability samples. The coefficient for the variable *UEDOWN*, β_2, which captures the ERC of bad earnings news, is positive and statistically significant for the *ACOMP* and *ECOMP* samples. The larger *UEUP* coefficient follows the literature and suggests that positive earnings news is more informative than negative news (Conrad et al. [2002]). The primary focus in Table 5 is on the interaction variables that capture the effect of financial statement comparability on ERC for the positive and negative earnings surprises. The coefficient of the interaction variable *UEUP* × *COMP*, β_4, is 0.014 and statistically significant for the *ACOMP* sample, 0.280 and statistically significant for the *ECOMP* sample, and -0.078 and statistically significant for the *DCOMP* sample. The coefficient of the interaction variable *UEDOWN* × *COMP*, β_5, is not statistically different from zero for all three comparability measures. The results suggest that accounting system comparability, earnings covariation comparability, and discretionary accruals comparability increase ERC magnitudes for positive earnings surprises by enhancing information usefulness. Specifically, the total effect on the information content of positive earnings is a 2.08 percent increase for the *ACOMP* sample, a 34.27 percent increase for the *ECOMP* sample, and a 24 percent increase for the *DCOMP* sample. Therefore, I offer further support that financial statement comparability enhances usefulness through increased response to positive news.

TABLE 5
Comparability and Stock Price Sensitivity to Good and Bad Earnings News

$$CAR_{it} = \beta_0 + \beta_1 UEUP_{it} + \beta_2 UEDOWN_{it} + \beta_3 COMP_{it} + \beta_4[UEUP_{it} \times COMP_{it}] + \beta_5[UEDOWN_{it} \times COMP_{it}] + \beta_6 DOWN_{it}$$
$$+ \beta_7 NLINUP_{it} + \beta_8 NLINDOWN_{it} + \beta_9 SIZE_{it} + \beta_{10} BTM_{it} + \beta_{11} EVOL_{it} + \beta_i Industry\ FE + \beta_i Year\ FE + u_{it} \quad (12)$$

Dependent Variable = $CAR_{(-5, 0)}$

Independent Variables	*ACOMP*		*ECOMP*		*DCOMP*	
	Estimate	*p*-value	Estimate	*p*-value	Estimate	*p*-value
Intercept	-0.029***	0.000	-0.002	0.718	0.041***	0.000
UEUP	0.672***	0.000	0.817***	0.000	0.325*	0.099
UEDOWN	0.135**	0.013	0.156**	0.042	0.232	0.133
COMP	-0.000	0.922	0.001	0.936	-0.004	0.950
UEUP × *COMP*	0.014**	0.043	0.280**	0.012	-0.078*	0.087
UEDOWN × *COMP*	-0.010	0.247	0.306	0.211	0.039	0.292
DOWN	-0.013***	0.000	-0.015***	0.000	-0.017***	0.000
NLINUP	-3.616***	0.002	-6.114***	0.000	-3.449***	0.007
NLINDOWN	-0.574***	0.000	-0.603***	0.002	-0.236	0.240
SIZE	-0.001***	0.000	-0.001***	0.005	-0.001***	0.003
BTM	0.008***	0.000	0.006***	0.000	0.008***	0.000
EVOL	0.026*	0.095	0.011	0.624	0.023	0.254
cfoCOV			0.009***	0.006		
N	33,460		24,127		19,859	
Adjusted R^2	2.92%		3.05%		2.94%	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. Statistical significance based on firm-level robust standard error estimates. *CAR* is the cumulative abnormal return around the earnings announcement date. *CAR* is the cumulative abnormal return around the earnings announcement date. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *UEUP* is the continuous positive unexpected earnings, zero otherwise. *UEDOWN* is the continuous negative unexpected earnings, zero otherwise. *DOWN* is an indicator variable equal to one if unexpected earnings are negative, zero otherwise. *NLINUP* is *UEUP* squared. *NLINDOWN* is *UEDOWN* squared and multiplied by –1. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of four quarterly earnings, scaled by total assets. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*.

VI. ADDITIONAL ANALYSES

Controlling for the Informativeness of Current Earnings for Future Earnings

To control for the informativeness of current earnings for future earnings, I examine how the estimates of the information content of good and bad earnings news very with comparability. Average financial statement comparability varies across my sample period.[67] As a result, the positive abnormal earnings that appear during periods with higher average comparability could indicate higher growth in future earnings than the positive abnormal earnings that appear during periods with lower average comparability. Alternatively, if negative abnormal earnings that occur in periods with lower average comparability suggest a greater decline in future earnings than the negative abnormal earnings in periods with higher average comparability, share prices should rationally respond more to negative abnormal earnings during the low comparability periods. As a result, comparability would then have nothing to do with the differential response of stock prices to positive and negative earnings news across different periods.

To control for potential information content of earnings surprises, I follow the Kasznik and McNichols [2002] methodology. Specifically, to test for the informativeness of earnings news and how the estimates of the information content of good and bad earnings surprises vary with financial statement comparability, I estimate the following equation:

[67] For example, average annual *ACOMP* comparability fluctuates from a high of -4.410 to a low of -1.802 throughout the sample period, a range of 2.608, where the function is non-monotonic.

$$EARN_{it+1} = \beta_0 + \beta_1 EARN_{it-1} + \beta_2 UEUP_{it} + \beta_3 UEDOWN_{it} + \beta_4 COMP_{it}$$
$$+ \beta_5[UEUP_{it} \times COMP_{it}] + \beta_6[UEDOWN_{it} \times COMP_{it}]$$
$$+ \beta_7 DOWN_{it} + \beta_8 NLINUP_{it} + \beta_9 NLINDOWN_{it} + \beta_{10} SIZE_{it}$$
$$+ \beta_{11} BTM_{it} + \beta_{12} EVOL_{it} + \beta_i Industry\ FE + \beta_i Year\ FE + u_{it} \quad (13)$$

where $EARN_{it+1}$ is firm *i*'s actual earnings per share before extraordinary items for year $t+1$. $EARN_{it-1}$ is firm *i*'s actual earnings per share before extraordinary items for year $t-1$. Following Kasznik and McNichols [2002] and Mian and Sankaraguruswamy [2012], I use $EARN_{it-1}$ in Model (13) as the proxy for expected earnings in year $t+1$. *UEUP*, *UEDOWN*, *COMP*, *DOWN*, *NLINUP*, *NLINDOWN*, *SIZE*, *BTM*, and *EVOL* are as previously defined.

Because my previous results suggest higher ERC for good news firms with higher comparability, the coefficient of interest in Model (13) is the coefficient for *UEUP* × *COMP*, β_5. Specifically, if good news has higher information content for future earnings where average comparability is higher contrasted with lower comparability, β_5 should be positive. However, if β_5 is insignificant then the differential information content of news across comparability is unlikely to be an alternative explanation for my results. Table 6 reports results from the estimation of Model (13). The reported estimates of β_5 are statistically indistinguishable from zero for all three comparability samples. For earnings informativeness to account for my main results, this coefficient should be significant rather than insignificant. The results in Table 6 suggest that the time variation in the information content of earnings cannot explain the results in Tables 4 and 5 because the information content of earnings appears unrelated to comparability.

TABLE 6
Comparability and Informativeness of Current Earnings for Future Earnings

$$EARN_{it+1} = \beta_0 + \beta_1 EARN_{it-1} + \beta_2 UEUP_{it} + \beta_3 UEDOWN_{it} + \beta_4 COMP_{it} + \beta_5[UEUP_{it} \times COMP_{it}] + \beta_6[UEDOWN_{it} \times COMP_{it}]$$
$$+ \beta_7 DOWN_{it} + \beta_8 NLINUP_{it} + \beta_9 NLINDOWN_{it} + \beta_{10} SIZE_{it} + \beta_{11} BTM_{it} + \beta_{12} EVOL_{it} + \beta_i Industry\ FE + \beta_i Year\ FE + u_{it} \quad (13)$$

	Dependent Variable = $EARN_{it+1}$					
Independent Variables	*ACOMP*		*ECOMP*		*DCOMP*	
	Estimate	*p*-value	Estimate	*p*-value	Estimate	*p*-value
Intercept	-0.176	0.292	-0.221	0.186	0.579	0.148
$EARN_{it-1}$	0.319***	0.000	0.285***	0.000	0.281***	0.000
UEUP	3.106	0.276	2.252	0.558	-1.818	0.647
UEDOWN	6.022***	0.001	3.470	0.562	0.589	0.942
COMP	-0.018**	0.024	-0.037	0.744	-2.823	0.147
UEUP × *COMP*	-0.098	0.696	7.754	0.237	-2.276	0.977
UEDOWN × *COMP*	0.187	0.314	4.752	0.536	6.862	0.592
DOWN	-0.418***	0.000	-0.420***	0.000	-0.412***	0.000
NLINUP	-18.217	0.216	-11.319	0.107	5.573	0.695
NLINDOWN	-7.520***	0.000	-7.252	0.112	-7.117**	0.018
SIZE	0.244***	0.000	0.244***	0.000	0.236***	0.000
BTM	-0.632***	0.000	-0.614***	0.000	-0.622***	0.000
EVOL	-0.979	0.453	-3.550***	0.000	-1.473	0.364
cfoCOV			0.486***	0.001		
N	31,770		22,781		18,752	
Adjusted R^2	24.79%		23.80%		23.37%	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. Statistical significance based on firm-level robust standard error estimates. *EARN* is the earnings per share before extraordinary items. *CAR* is the cumulative abnormal return around the earnings announcement date. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *UEUP* is the continuous positive unexpected earnings, zero otherwise. *UEDOWN* is the continuous negative unexpected earnings, zero otherwise. *DOWN* is an indicator variable equal to one if unexpected earnings are negative, zero otherwise. *NLINUP* is *UEUP* squared. *NLINDOWN* is *UEDOWN* squared and multiplied by –1. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of four quarterly earnings, scaled by total assets. *cfoCOV* is the average firm *i* – firm *j* cash flow covariation measure for all firms in the same industry as firm *i*.

Cross-Sectional Variation in the Role of Comparability

Financial statement comparability may have greater effects on stocks with varying firm-specific economic characteristics. De Franco et al. [2011] use variables such as size, book-market, volume, return on assets (ROA), and the volatility of returns to control for variation in economic characteristics in their tests.[68] As an example, De Franco et al. [2011] find evidence that skewness in *ACOMP* is greater for firms that are smaller and have lower book-to-market ratios. Specifically, when two firms are in the same extreme size quintile, De Franco et al. [2011] report that the mean *ACOMP* value is greater than it is for two firms in the opposite extreme size quintiles. Similarly, De Franco et al. [2011] report that the mean *ACOMP* value for two firms in the same extreme book-market quintile is greater than it is for two firms in opposite extreme book-market quintiles. By focusing on extremes of the firm characteristics and the effect of comparability, I am controlling for potential skewness in the distribution of comparability to examine whether comparability remains useful.

Because financial statement comparability lowers the cost of acquiring information and increases the overall quantity and quality of firm information (De Franco et al. [2011]), it is also possible that the effect of comparability on the assessment of stocks is greater for speculative stocks whose expected cash flows are more uncertain and more difficult to value. In addition, both extreme growth and distressed firms are prone to speculation and are also difficult to arbitrage (Baker and Wurgler [2006]) and so could be more affected by financial statement comparability, through a reduction in the propensity

[68] For some tests in De Franco et al. [2011], these variables have an established relation with the dependent comparability variables. In other tests, these variables represent natural controls, as their comparability measures are influenced by the characteristics.

to speculate. Considering that the earnings of speculative stocks are often also less persistent (Baginski et al. [1999]), it can make the identification and valuation of the associated incremental cash flows more difficult and more subjective, leading to a greater effect of comparability in the pricing of the earnings of such stocks.

Because firm-specific economic characteristics can potentially affect the financial statement comparability measures, I examine whether the comparability effect on the relationship between unexpected earnings and abnormal returns is more pronounced for these varying firm characteristics. To investigate, I classify stocks into groups that are potentially more or less affected by comparability based on five individual firm characteristics. Similar to the variables used in De Franco et al. [2011], and identified as speculative attributes in the literature (Baker and Wurgler [2006]), these characteristics are size, trading volume, stock return volatility, return on assets, and book-to-market ratio. *Size* is the logarithm of the market value of equity. *Volume* is the logarithm of trading volume in millions of shares during the year. *Stock return volatility* is the standard deviation of monthly returns over the preceding twelve months. *Return on assets* is earnings before extraordinary items divided by total assets for the year. *Book-to-market ratio* is the ratio of the book value of equity to the market value of equity.

I use each individual firm characteristic to identify one portfolio that is likely to be affected more by comparability and a second portfolio that is likely to be affected less. I classify firms that fall in the bottom quintile based on size as small firms and classify their counterparts in the top quintile as large firms. I classify firms that fall in the bottom quintile based on trading volume as low volume firms and classify their counterparts in the top quintile as high volume firms. I classify firms that fall in the bottom quintile

based on stock return volatility as stable and classify their counterparts in the top quintile as volatile. For ROA, I classify firms that fall in the bottom quintile as low ROA and classify their counterparts in the top quintile as high ROA. Finally, I classify firms that fall in the bottom quartile based on book-to-market ratio as growth/value and classify their counterparts in the top quartile as staid firms.

To investigate the cross-sectional differences in the role of comparability, I estimate Equation (12) separately for the subsamples of stocks classified on the five individual firm characteristics. Results of the cross-sectional analyses are reported in Table 7. Each panel of Table 8 reports the estimates of Equation (12) for two sub-groups of stocks sorted on one of the firm characteristics. Specifically, Panels A through E classify stocks based on size, trading volume, stock return volatility, return on assets, and book-to-market, respectively. Results indicate that the ERC for good news is statistically no different from zero with comparability for all characteristics except dividend payout. The ERC for good news firms increases with comparability for small, volatile, low return on assets, and growth/value firms. These results indicate that financial statement comparability exhibits greater usefulness for more speculative stocks, implying that comparability increases informativeness for firms with cash flows that are more uncertain and difficult to assess. Overall, the results in Table 7 provide general support for the notion that the effect of comparability on the stock price sensitivity to news varies cross-sectionally with different firm-specific economic characteristics.

TABLE 7
Cross-Sectional Variation in the Role of Comparability on Stock Price Response to Earnings News

$$CAR_{it} = \beta_0 + \beta_1 UEUP_{it} + \beta_2 UEDOWN_{it} + \beta_3 COMP_{it} + \beta_4[UEUP_{it} \times COMP_{it}] + \beta_5[UEDOWN_{it} \times COMP_{it}] + \beta_6 DOWN_{it} + \beta_7 NLINUP_{it} + \beta_8 NLINDOWN_{it} + \beta_9 SIZE_{it} + \beta_{10} BTM_{it} + \beta_{11} EVOL_{it} + \beta_i Industry\ FE + \beta_i Year\ FE + u_{it} \quad (12)$$

Panel A: Small versus Large Firms

	Characteristics			
Independent Variables	*Small*		*Large*	
	Estimate	*p*-value	Estimate	*p*-value
UEUP	0.925***	0.000	0.323	0.231
UEDOWN	0.127	0.314	0.094	0.623
COMP	-0.001	0.232	-0.000	0.205
UEUP × COMP	0.074**	0.036	-0.036	0.198
UEDOWN × COMP	-0.027	0.417	0.026	0.174
N	6,692		6,692	
Adjusted R^2	4.08%		2.34%	

Panel B: Low Trading Volume versus High Trading Volume Firms

	Characteristics			
Independent Variables	*Low Volume*		*High Volume*	
	Estimate	*p*-value	Estimate	*p*-value
UEUP	0.537***	0.008	0.017	0.965
UEDOWN	0.206*	0.067	-0.176	0.413
COMP	-0.000	0.973	-0.000	0.508
UEUP × COMP	-0.003	0.870	-0.028	0.499
UEDOWN × COMP	0.018	0.389	0.025*	0.074
N	6,681		6,681	
Adjusted R^2	3.36%		2.35%	

Panel C: Stable versus Volatile Firms

	Characteristics			
Independent Variables	*Stable*		*Volatile*	
	Estimate	*p*-value	Estimate	*p*-value
UEUP	0.500***	0.001	0.656***	0.002
UEDOWN	0.137	0.458	0.094	0.435
COMP	-0.000	0.613	0.000	0.982
UEUP × COMP	0.002	0.982	0.026**	0.045
UEDOWN × COMP	0.024	0.214	-0.025	0.501
N	6,681		6,681	
Adjusted R^2	2.91%		3.26%	

TABLE 7 (continued)

Panel D: Low ROA versus High ROA Firms

Independent Variables	Characteristics: *Low ROA* Estimate	*Low ROA* *p*-value	*High ROA* Estimate	*High ROA* *p*-value
UEUP	0.460*	0.062	0.822***	0.000
UEDOWN	0.236*	0.067	-0.297*	0.081
COMP	-0.001	0.286	-0.000	0.744
UEUP × *COMP*	0.070*	0.074	-0.016	0.571
UEDOWN × *COMP*	-0.045	0.250	-0.016	0.488
N	6,692		6,692	
Adjusted R^2	3.33%		3.58%	

Panel E: Growth/Value versus Staid Firms

Independent Variables	Characteristics: *Growth* Estimate	*Growth* *p*-value	*Staid* Estimate	*Staid* *p*-value
UEUP	0.581**	0.018	0.446**	0.017
UEDOWN	-0.095	0.406	0.290***	0.002
COMP	-0.001*	0.067	0.000	0.504
UEUP × *COMP*	0.016*	0.051	0.022	0.376
UEDOWN × *COMP*	-0.064**	0.038	0.015	0.107
N	6,692		6,692	
Adjusted R^2	2.39%		4.89%	

*,**,*** Significantly different from zero at 0.10, 0.05, and 0.01 levels, respectively. *CAR* is the cumulative abnormal return around the earnings announcement date. *ACOMP* is the average firm *i* – firm *j* accounting system comparability measure for all firms in the same industry as firm *i*. *ECOMP* is the average firm *i* – firm *j* earnings covariation comparability measure of the four firms with the highest comparability to that of firm *i*. *DCOMP* is the average firm *i* – firm *j* discretionary accruals comparability measure for all firms in the same industry as firm *i*. *UEUP* is the continuous positive unexpected earnings, zero otherwise. *UEDOWN* is the continuous negative unexpected earnings, zero otherwise. *DOWN* is an indicator variable equal to one if unexpected earnings are negative, zero otherwise. *NLINUP* is *UEUP* squared. *NLINDOWN* is *UEDOWN* squared and multiplied by –1. *SIZE* is the logarithm of the market value of equity measured at the end of the year. *BTM* is the ratio of the book value of equity to the market value of equity. *EVOL* is the standard deviation of four quarterly earnings, scaled by total assets.

VIII. SUMMARY AND CONCLUSION

The Financial Accounting Standards Board (FASB) defines financial statement comparability as the quality of information enabling users to identify similarities in and differences between two sets of economic phenomena in order to enhance usefulness (FASB [1980, 2010]). Chapter Two investigates whether financial statement comparability impacts the usefulness of information through cross-sectional variation in the earnings-return relationship. Specifically, I use three measures of financial statement comparability to examine the role of comparability in the stock price sensitivity to firm-specific earnings news. Since the earnings response coefficient captures earnings usefulness, I test whether financial statement comparability enhances the informativeness of earnings through increased earnings response coefficient magnitude.

Initial results suggest the information content of earnings is higher for firms with financial statements that are more comparable to those of their industry peers. Additional results indicate that the impact of comparability on stock price sensitivity to earnings news is more prominent when abnormal earnings are positive. This influence is especially pronounced for the earnings news of small firms, high volatility firms, growth/value firms, and firms with low return on assets, implying that comparability increases informativeness for firms with cash flows that are more uncertain and difficult to assess. Overall, this study contributes to the accounting literature by identifying a factor that influences the ability of current stock prices to reflect the information in current earnings and provides evidence supporting the FASB contention that financial statement comparability enhances the decision usefulness of accounting information.

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