Does Eliminating Extraordinary Items Impact the Usefulness of Accounting Information?

Yu-Ho Chi
University of Tennessee at Martin

On January 9, 2015, the Financial Accounting Standards Board (FASB) approved Accounting Standards Update (ASU) 2015-01, which eliminates the required reporting of extraordinary items in an entity's income statement. My analyses provide evidence regarding whether the usefulness of information in the financial statements is improved or reduced if no extraordinary items are to be reported. The results of my study suggest that while the change in reporting of extraordinary items does not completely eliminate its usefulness in explaining P/E ratios, the failure of firms to not report extraordinary items does significantly reduce the ability to explain cross-sectional differences in P/E ratios.

Keywords: earnings quality, extraordinary items, price-earnings ratio

INTRODUCTION

On January 9, 2015, the Financial Accounting Standards Board (FASB) unanimously voted to approve Accounting Standards Update (ASU) 2015-01, which eliminated the concept of extraordinary items being required in an entity's income statement. Historically, the FASB has required companies to report these transactions separately on the income statement. In 2015, however, FASB updated its income statement standard number 2015-01 to remove the separate reporting requirements of these items.

In its calls for eliminating extraordinary items guidance, the FASB may have failed to consider the impact that extraordinary items have on users, such as reflected in the use of a firm's price to earnings (P/E) ratio in investment/divestment decisions. This may be an important consideration since stock prices reflect more information about future earnings than do current earnings (Ou and Penman, 1989). In addition, although the historical approach to extraordinary items will not be in place in the future, I think it is still very important to assess whether the usefulness of information in the financial statements is improved or reduced by the FASB's action regarding extraordinary items. This study provides empirical evidence on this issue.

In order to evaluate eliminating extraordinary items, I examine whether the linkage between extraordinary items and P/E ratios is consistent across the old and new standards. My analysis is timely given the background calling for the elimination of the prior approach to accounting for extraordinary items. Concerns about management incentives resulting from extraordinary items guidance also appear regularly in the business press.[1]

Furthermore, understanding the cross-sectional variation in firms' price to earnings (P/E) ratios is a topic of interest to both accounting or finance academics as well as investment professionals. This interest is particularly warranted given the use made of the price to earnings ratio in investment contexts and the reported security pricing effects generally referred to as the P/E anomaly. Recent studies continue to employ the P/E ratio in various ways to predict excess returns, bubbles, or the value premium beta (Jian and Lee, 2012; Leone and Medeiros, 2015; Guo et al. 2017). Other studies such as Ball et al. (2016) and Ball et al. (2015) focus on measures of cash-based operating profitability as being superior to traditional accruals-based measures. Accordingly, I believe a better understanding of the underlying explanatory factors of P/E's impacted by a change in financial accounting and reporting standards is important and is the basis for my study. I address whether the change by the FASB could reduce the ability to explain P/E ratios with accounting information.

Proponents of eliminating the concept of extraordinary items rely on the fact that the FASB heard from stakeholders that the concept of extraordinary items caused uncertainty and confusion because it was unclear when an item should be considered both unusual and infrequent. Some stakeholders noted that it is extremely rare in current practice for a transaction or event to meet the requirements to be presented as an extraordinary item. Consequently, the FASB determined that simplifying accounting standards by eliminating the required reporting of an extraordinary event would (1) reduce the cost and complexity of applying U.S. GAAP while maintaining or improving the usefulness of information in the financial statements; and (2) eliminate an inconsistency between U.S. GAAP and International Financial Reporting Standards.

One explanation for the observed cross-sectional variability in P/E's is provided by Black (1980). Black (1980) argues that P/E ratios should be relatively constant across firms and, if one assumes market efficiency regarding security prices, then the observed variation must be driven by the earnings measure. Black (1980) suggests that the variability in P/E's is due to inadequacies in the accounting earnings number. Assuming inadequacies in the accounting earnings number are manifested in what is termed "earnings quality" in the literature, the quality of earnings may explain a significant portion of the cross-sectional variation in observed P/E ratios.[2]

In addition, this study indirectly responds to Lev's (1989) very dated call for more studies identifying the determinants of earnings quality. The intent of this study is to provide evidence regarding the incorporation of earnings quality in the security valuation process by examining whether a proxy of earnings quality based upon the traditional reporting of extraordinary items assists in better explaining observed cross-sectional variation in E/P ratios. Since Lev's call many years ago, there have been many different approaches to measuring quality of earnings. They range from estimating discretionary accruals to analyzing footnotes. Earnings quality should be linked to both the ability of earnings to predict future cash flows and the persistence of accounting earnings (Kormendi and Lipe, 1987). In the Kormendi and Lipe framework, persistence of shocks to earnings is one of the most important components in understanding the usefulness of accrual earnings numbers.

Previous research investigating the usefulness of cash versus accrual information and the usefulness of historical cost versus current cost information can be generally classified into this topical area. However, neither of these two areas of research provide definitive inferences regarding the quality of various types of accounting earnings information. Rayburn (1986) and Wilson (1986) both demonstrate that given accounting earnings, cash flow data is incrementally associated with security returns. This evidence suggests that cash flow data provides some additional information to the market regarding a firm's future cash flow which is not captured in accrual earnings. Alternatively, this evidence may demonstrate that cash flow data is associated with earnings quality. My approach for including proxies for earnings quality in explaining cross-sectional EP ratios is rather simplistic and is a function of items provided directly from the financial statements: bottom-line accounting earnings, cash flow from operations, and extraordinary items.

Lev (1989) defines earnings quality as the predictive-ability of earnings to predict future cash flows. However, Lev (1989) does not indicate which of the many different accounting earnings numbers that are available from a firm's financial statements are to be used. Therefore, two components of bottom-line accounting earnings are considered in this study: (1) operating cash flows, and (2) earnings from extra-ordinary items and discontinued operations. I measure earnings quality using two proxies based on accounting earnings and these two components of earnings and then use them to explain cross-sectional differences in E/P ratios. My proxies for earnings quality are QCF, QEB, QCE, QXE, QCA, and QXA (definitions are provided in Appendix A) and are based on (1) the difference between current cash flows from operations and the accrual accounting bottom-line measure of earnings, and (2) the difference between earnings before extra-ordinary items and discontinued operations and bottom-line accounting earnings. I employ different combinations of these items to ensure that my results are robust to alternative proxy configurations.

The link between earnings quality and P/E's is consistent with Lev's notion of earnings quality, from an ex ante perspective, if the expectations of both future earnings and future cash flows are reasonably approximated by a martingale process.[3] One can also consider my focus on earnings quality explaining P/E's from the perspective of a mean revision earnings process or an earnings process with varying degrees of persistence across firms.

In instances in which a large proportion of bottom-line accounting earnings is due to extra-ordinary items and discontinued operations, the quality of the bottom-line accounting earnings number is low since it is made up of a significant component which may not be sustainable. This is consistent with the notion that the market perceives total (bottom-line) accounting earnings to be noisier (less persistent) than earnings before extra-ordinary items and discontinued operations and focuses on the less noisy (more persistent) earnings signal in its pricing.[4]

Accounting earnings have long been used as a predictor of future cash flows. However, there is very early evidence that both the current period cash flows (funds from operations) and accounting earnings are used by the market as an indicator of future cash flows (Wilson, 1986; Rayburn, 1986). I expect that earnings before extra-ordinary and discontinued operations is less noisy than bottom-line earnings and may better represent the potential for sustainable earnings since it does not include the temporary shocks due to extraordinary and/or discontinued operating components. My results are consistent with these expectations and allows me then to focus on the informative value that the reporting of extraordinary items may provide. Accordingly, separating regular bottom-line accounting earnings from extraordinary items may be very important for financial statement users.

P/E ratios play an important role in investment analysis and much attention has been given to exploring their determinants. Under certain conditions, the Gordon-Shapiro valuation equation states that the P/E ratio is a function of the dividend payout ratio, the growth in earnings per share, and the risk-free interest rate.[5] Empirically, the relations between the P/E ratios and (1) firm size, (2) systematic risk (beta), (3) dividend payout, (4) growth potential, and (5) accounting methods have been previously investigated.[6] However, an empirical assessment of the association between my measures of earnings quality and P/E ratios is unique to this study. I then examine the extent that the explanatory power of the difference between bottom-line accounting earnings and income before extraordinary items and discontinued operations provides insights regarding whether the FASB's elimination of the reporting of extraordinary items improved the usefulness of accounting information in financial reporting.

Supporting the results of previous studies, I find significant links between E/P ratios and growth, dividend payout, and size. The hypothesized links between my proxies for earnings quality and E/P ratios are supported at relatively high levels of statistical significance. In order to examine my question regarding the information usefulness of extraordinary items, I focus on the changes in explanatory power of my earnings quality measures based upon extraordinary earnings when the earnings quality measures vary due to Accounting Standards Update (ASU) 2015-01. My comparisons indicate a reduction in the ability to explain E/P ratios when my earnings quality measures based upon extraordinary items are not included in my cross-section regressions explaining E/P ratios. Indeed, even after the implementation of Accounting Standards Update (ASU) 2015-01, explaining cross-sectional differences in E/P ratios is maintained by the inclusion of my extraordinary items-based measure of earnings quality based upon voluntary disclosures of extraordinary earnings under the new FASB guidance.

The remainder of this paper is organized as follows. Section two contains a review of the pertinent literature and hypotheses development. Section three describes my methodology and models. The results are presented in section four. The fifth section provides a summary and discusses the implications of my results.

PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

This section reviews previous research in two areas related to this study: (a) studies of the determinants of P/E ratios, and (b) the P/E anomaly studies.

The Determinants of P/E Ratios

Litzenberger and Rao (1971) (hereafter, LR) posit a linear relation between E/P ratios and both systematic risk (beta) and growth. They find empirical evidence consistent with their hypotheses. Beaver and Morse (1978) test the LR model and note that the relation between P/E and growth is positive. However, the sign of the correlation between beta and P/E is expected to vary across economic climates. When the overall market's outlook is good (bad) the firms with higher betas are expected to perform better (worse). Consequently, no particular relation between beta and P/E is expected unless the economic climate is considered. The results reported by Beaver and Morse (1978) are generally consistent with their expectations. Beaver and Morse also conjecture that differential accounting methods may assist in explaining cross-sectional differences in P/E ratios.

Craig et al. (1987) test the Beaver and Morse (1978) conjecture that differential accounting methods may explain some of the cross-sectional variability in P/E ratios. The Beaver and Morse conjecture is based on the notion that it is the difference in accounting methods which affects the earnings number (the denominator of the P/E ratio) rather than a price effect. Craig et al. (1987) hypothesize that firms with more conservative (income-decreasing) accounting methods would be associated with higher P/E ratios. However, one potential difficulty in utilizing accounting methods as an explanatory variable is that some accounting methods are not just cosmetic and have real cash flow effects (through taxes) while other accounting methods do not. This may introduce a confounding variable since one can not ascertain whether it is the accounting method which is driving the result by affecting the earnings figure (the denominator of the P/E ratio) or the cash flow effect which is driving the result by being reflected in the security price (the numerator of the P/E ratio). Consequently, an empirical relation between accounting methods and P/E ratios may not be readily observed, and if observed very difficult to assess.

The empirical observation by Craig et al. (1987) that the LIFO inventory method and the deferred investment tax credit method are associated with higher P/E ratios but depreciation methods are not associated with P/E ratios is consistent with the notion that the market is picking up the cash flow effects of the accounting methods. Craig et al. (1987) also find firm size and dividend payout to be significant in explaining the cross-sectional variability of P/E ratios.

The P/E Anomaly

The use of P/E ratios as an investment strategy has interested finance researchers and the evidence that one can earn abnormal returns using a P/E ratio based investment strategy has been used as an indication of market inefficiency. One possible explanation for this phenomenon is that stock prices reflect more information about future earnings than do current earnings (Ou and Penman, 1989). Beaver and Morse (1978) document the mean-reversion behavior of P/E ratios; high (low) P/E ratios tends to be followed by low (high) P/E ratios in later years.

Basu (1983) provides evidence that low P/E ratio stocks earn statistically significant positive risk-adjusted returns. This phenomenon is contradictory to most notions of market efficiency and has been labeled the "P/E effect" or the "P/E anomaly". Basu (1983) also finds that firm size and P/E ratios are correlated. Consequently, the well-known small firm effect or anomaly (Schwert, 1983) may be partly related to the P/E effect.

Ou and Penman (1989) provide insights into the usefulness of P/E ratios in predicting future earnings. However, the relations among prices, earnings, and P/E ratios are not clear. Ou and Penman (1989) demonstrate that price changes (as opposed to P/E comparisons) are relatively poor predictors of earnings in cases where accounting information indicates a high transitory component to earnings.

Maintained Assumptions (Consistent With My Results)

My analyses assume there is an association between the firm's E/P ratio and its earnings quality proxied by my measures. My results indicate such a significant association and I then go forward to examine the effect that the elimination of the reporting of extraordinary items may have on explaining E/P rations. My inferences are based on the assumption that my two proxies for earnings quality, (1) the difference between cash flows from operations and bottom-line accounting earnings, and (2) the difference between income before extra-ordinary and discontinued operations and accounting earnings, are adequate proxies for earnings quality.

Research Hypothesis

My research question is whether the usefulness of information in the financial statement is improved or reduced by the FASB's action eliminating the requirement to separately report extraordinary items. Accordingly, given the FASB's explanations for the reasoning behind this change and its expected improvement for financial reporting, I will test the following hypothesis:

H1: *The change in the FASB accounting and reporting standards regarding extraordinary items improves the usefulness of financial accounting earnings measures in explaining E/P ratios.*

To test this hypothesis, I will estimate the coefficients associated with my measures of earnings quality (cash-based and extraordinary items-based) in a regression where the dependent variable is the E/P ratio. In my analyses, I employ three measures of earnings quality. Definitions of my variables are provided in Appendix A. This allows me to assess the sensitivity of my results and inferences to the different denominators employed in the proxy. One potential problem with QCF and QCE is that, although I believe QCF and QCE are capturing "earnings quality" as explained above, QCF and QCE may be capturing "capital intensity" when the major difference between bottom-line accounting earnings and cash flows from operations is due to depreciation. QCA utilizes total assets as the denominator and should be free of this problem.

METHODOLOGY

Sample Selection

My sample period is from 2010 to 2019. I collect financial data, systematic risk (BETA), and inventory valuation method from COMPUSTAT. I exclude financial services firms with Standard Industrial Classification (SIC) codes between 6000 and 6999, and utility firms with SIC codes between 4900 and 4999, due to regulatory effects on financial structure, liquidity and governance. The final sample consists of 10,476 firm-year observations. The firms included in my final sample passed through several filters, described below:

(1) The firms must be listed on either the New York Stock Exchange or the American Stock Exchange.
(2) The financial services firms and utility firms must be excluded.
(3) Annual data must be available to compute all of the variables.
(4) The company's fiscal year end is December 31.

Table 1 presents the distribution of my sample across the period of analysis (years). Table 2 presents descriptive statistics for my sample across several characteristics (variables I use in the analyses).

TABLE 1
DISTRIBUTIN OF SAMPLE OBSERVATIONS ACROSS YEARS

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
N	1,248	1,241	1,150	1,090	1,107	884	907	927	952	970	10,476

TABLE 2
DESCRIPTIVE STATISTICS FOR SAMPLE CHARACTERISTICS

Variable	N	Mean	Median	Standard Deviation	Minimum	Maximum
E/P	10,476	0.0712	0.0636	0.0751	0.0018	0.6251
BETA	10,476	1.1064	1.1378	0.4158	0.3846	2.9423
GR	10,476	0.0486	0.0492	0.0827	0.0000	0.1832
DIV	10,476	0.6371	0.7049	0.9646	0.0000	11.0452
SIZE	10,476	5.9452	5.8225	3.4385	1.2463	12.0471
QCF	10,476	0.0316	0.0384	0.1728	-0.9952	1.3624
QEB	10,476	0.0549	0.0582	0.1132	-0.9841	3.2367
QCE	10,476	1.2058	1.3742	3.0513	-0.7356	76.4821
QXE	10,476	-0.0279	0.0000	0.1268	-0.8412	9.5327
QCA	10,476	0.0365	0.0418	0.1301	-0.2035	0.7483
QXA	10,476	-0.0024	0.0000	0.0164	-0.2648	0.0851
INV	10,476	0.4753	0.4826	0.4192	0.0000	1.0000

In Table 3 I provide the Pearson product moment correlations between the variables I use in my regression analyses for my total sample. As expected, I observe significant correlations between E/P and QCF, QEB, QCE, QXE, QCA, and QXA.

Regression Analyses

For my analyses, I estimate my regressions for the full time period, 2010-2019, the five-year period prior to the change in reporting extraordinary items (2010-2014), and the five-year period subsequent to the change in reporting extraordinary items (2015-2019). Comparisons can then be made regarding the usefulness of extraordinary items being reported across periods and both with and without the extraordinary item-based measure of earnings quality.

Three similar regression models are employed in my empirical regression analyses. As explained previously, my three regression models use similar measures of earnings quality in order to investigate the extent to which different configurations of my raw data used in the measures impact the estimated regression coefficients as the accounting and reporting requirements of extraordinary items have changed. I do not claim any single set is better than another set. Accordingly, I employ all three sets in my sets of analyses. The first model (M1) is:

$$E/P = \gamma_0 + \gamma_1 \text{ BETA} + \gamma_2 \text{ GR} + \gamma_3 \text{ DIV} + \gamma_4 \text{ SIZE} + \gamma_5 \text{ QCF} + \gamma_6 \text{ QEB} + \gamma_7 \text{ INV} + \gamma_8 \text{ Fix effect} + \varepsilon. \quad (1)$$

TABLE 3
PEASON CORRELATION STATISTICS

	BETA	GR	DIV	SIZE	QCF	QEB	QCE	QXE	QCA	QXA	INV
E/P	0.2563***	-0.0527	-0.2042***	0.1558***	0.0813***	0.1638***	-0.1423***	-0.1957***	-0.0852***	-0.3582***	0.0375
BETA		-0.1625***	0.0164	0.0036	0.01375*	-0.0424	0.0163	0.3041***	0.1794***	0.0842	0.0218
GR			-0.0257	-0.0846***	0.0144	0.0826***	-0.0374	-0.0762	-0.1362***	-0.0539	-0.0074
DIV				0.0142	-0.0291	0.0048	0.2341***	0.2438***	0.0045	-0.0173	0.0195
SIZE					0.0325	0.0267	0.0835***	0.0985***	0.1517***	-0.0752***	-0.1023***
QCF						0.0152	0.0156	-0.0194	-0.0264	-0.0094	0.0184
QEB							-0.0016	-0.0275	0.0375	-0.0375	-0.0359
QCE								0.0183	0.0102	0.4831***	-0.0374**
QXE									0.0149	0.0596***	0.0196
QCA										-0.0284	0.0135
QXA											0.0128

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

where:

E/P = primary earnings per share divided by year-end closing price;
BETA = Standard and Poor's monthly beta from Compustat;
GR = research and development expense divided by sales;
DIV = dividend payout ratio;
SIZE = logarithm of the firm's total assets;
QCF = (bottom-line accounting earnings minus cash flows from operations) divided by cash flows from operations;
QEB = (bottom-line accounting earnings minus earnings before extraordinary items and discontinued operations) divided by earnings before extraordinary items and discontinued operations;
INV = 1 if FIFO is used and 0 if another inventory valuation method is used.

The γ's are regression coefficients and ε is an error term.

The second model (M2) uses a similar model but QCE and QXE are employed to measure earnings quality:

$$E/P = \gamma_0 + \gamma_1 \text{ BETA} + \gamma_2 \text{ GR} + \gamma_3 \text{ DIV} + \gamma_4 \text{ SIZE} + \gamma_5 \text{ QCE} + \gamma_6 \text{ QXE} + \gamma_7 \text{ INV} + \gamma_8 \text{ Fix effect} + \varepsilon \quad (2)$$

where:

QCE = (cash flows from operations minus bottom-line accounting earnings) divided by bottom-line accounting earnings;
QXE = (earnings before extraordinary items and discontinued operations minus bottom-line accounting earnings) divided by bottom-line accounting earnings.

The third regression model (M3) uses QCA and QXA to measure the quality of accounting earnings. This model is:

$$E/P = \gamma_0 + \gamma_1 \text{ BETA} + \gamma_2 \text{ GR} + \gamma_3 \text{ DIV} + \gamma_4 \text{ SIZE} + \gamma_5 \text{ QCA} + \gamma_6 \text{ QXA} + \gamma_7 \text{ INV} + \gamma_8 \text{ Fix effect} + \varepsilon. \quad (3)$$

where:

QCA = (cash flows from operations minus bottom-line accounting earnings) divided by total assets;
QXA = (earnings before extraordinary items and discontinued operations minus bottom-line accounting earnings) divided by total assets.

The cross-sectional regression models employed in this study are similar to those used in previous studies of P/E ratios. Accordingly, I include (1) a firm's beta, (2) a firm's growth potential (proxied by research and development expenditures), (3) firm size, (4) a firm's dividend payout ratio, (5) a firm's inventory valuation method, and (6) a firm's earnings quality. I do not include depreciation methods in my analysis since previous empirical evidence has not supported a linkage. In addition, due to data availability I do not incorporate the effect of alternative investment tax credit methods in my analysis.

Since the Litzenberger and Rao (1970) model posits linearity in E/P (not in P/E), this study employs E/P as the dependent variable. In addition, E/P ratios are used to mitigate the problems which occur in P/E ratios when earnings approach zero. Each of the variables used in the study are defined and discussed below.

(1) E/P (E/P) - The E/P ratios in this study are computed using the primary earnings per share divided by year-end closing price.
(2) Systematic Risk (BETA) - The beta used in this study is the Standard and Poor's Corporation beta. The expected sign of the relation between beta and the E/P ratio cannot be specified a priori since Beaver and Morse (1978) demonstrate that the sign is dependent upon the general economic conditions.
(3) Growth Potential (GR) - My measure of growth potential is the proxy employed by Titman and Wessels (1988); annual R&D expense deflated by annual sales. A negative (positive) association between growth and the E/P (P/E) ratio is expected.
(4) Firm Size (SIZE) - Firm size is measured by the logarithm of the firm's total assets. Based on the small firm effect documented in the literature, a positive (negative) association between size and the E/P (P/E) ratio is expected.
(5) Dividend Payout Ratio (DIV) - The dividend payout ratio is the annual dividend per share divided by the annual primary earnings per share. A negative (positive) relation between the dividend payout ratio and the E/P (P/E) ratio is expected. This phenomenon has been termed the "dividend puzzle" and is widely discussed in the finance literature (Bhattacharya 1979).
(6) Earnings Quality Based on Cash Flows from Operations (QCF, QCE, QCA) - Three different measures of this variable are employed in this study. The first measure, QCF, assumes that the underlying benchmark for evaluation of earnings quality relates to cash flows from operations. The numerator for QCF is bottom-line accounting earnings minus the cash flows from

operations. The denominator is cash flows from operations. The second measure, QCE, switch the measure a bit and uses cash flows from operations minus bottom-line accounting earnings as the numerator with bottom-line accounting earnings as the denominator. The third measure of earnings quality, QCA, uses the same numerator as QCE but uses total assets as the denominator.

(7) Earnings Quality Based on Extraordinary items and Discontinued Operations (QEB, QXE, QXA) - Based on the same analogy as in the above discussion, three measures are used. The first measure, QEB, uses bottom-line accounting earnings minus earnings before extraordinary items and discontinued operations as the numerator and earnings before extraordinary items and discontinued operations as the denominator. The other two measures, QXE and QXA, both use earnings before extra-ordinary items and discontinued operations minus bottom-line accounting earnings as the numerator and employ accounting earnings for QXE and total assets for QXA as the denominators.

(8) Inventory Valuation Method (INV) - INV is a dummy variable for the choice of inventory method. INV is coded 1 when FIFO is primarily used (as identified by COMPUSTAT) by the sample firm and INV is coded 0 for any other inventory method. The association between inventory method, as coded, and the E/P (P/E) ratio is expected to be positive (negative) given the hypothesis of Beaver and Morse (1978) that conservative (income-decreasing) accounting methods are associated with higher P/E ratios.

RESULTS

Since my time period for analysis includes the 2010-2014 period when the accounting and reporting of extraordinary items is the historical approach while the 2015-2019 reflects the new approach to extraordinary items, I estimate my regressions using the old and new guidance periods as well as the combined 2010-2019 period. I can then make comparisons regarding differences between the two reporting regimes and the impact of no reporting of extraordinary items.

The results for model M1, M2, and M3 are presented for the 2010-2014 period in Table 4. Across models M1, M2, and M3 I include both measures of earnings quality; the results indicate that the regression coefficients for growth, dividend payout, size, and quality of earnings based on operating cash flows (QCF, QCE, and QCA), and quality of earnings based on earnings before extra-ordinary items and discontinued operations (QEB, QXE, and QXA) are statistically significant. The coefficient of determination (R^2) for these models is high; approximately 50% of the cross-sectional variability in the E/P ratios is being explained when both measures of earnings quality are included in the analyses during the 2010-2014 period.

As reported in Table 4, the results for models M2 and M3 are very similar to those of M1. The regression results using model M2 in which accounting earnings are used as the deflator in the two measures of earnings quality are provided. The coefficient estimates for the two earnings quality measures in model M2, QCE and QXE, are statistically significant. The coefficient of determination (R^2) for M2 is 50%; the same as found for M1. The regression results for M3, which uses total assets as the deflator in the earnings quality measures, are reported also in Table 4. The quality of accounting earnings based on earnings before extraordinary items and discontinued operations (QXA) is highly significant. The coefficient of determination (R^2) is 51%.

The results for variables GR, DIV, and SIZE are similar to those of M1; statistically significant with the expected sign. Given these similarities, the following discussion will focus only on the two earnings quality measures.

TABLE 4
REGRESSION RESULTS

2010-2014

Model (1) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCF $+ \gamma_6$ QEB $+ \gamma_7$ INV $+ \gamma_8$ Fix effect $+ \varepsilon$.

Model (2) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCE $+ \gamma_6$ QXE $+ \gamma_7$ INV $+ \gamma_8$ Fix effect $+ \varepsilon$.

Model (3) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCA $+ \gamma_6$ QXA $+ \gamma_7$ INV $+ \gamma_8$ Fix effect $+ \varepsilon$.

Variable	Expected Sign	Model (1)	Model (2)	Model (3)
Intercept	+/-	-0.0674 (0.2953)	-0.0613 (0.2748)	-0.0754 (0.2902)
BETA	+/-	0.1332*** (0.0000)	0.1436*** (0.0000)	0.1376*** (0.0000)
GR	-	-0.0127 (0.2156)	-0.0124 (0.2461)	-0.1346*** (0.0000)
DIV	-	-0.0943*** (0.0000)	-0.0628*** (0.0000)	-0.0852*** (0.0000)
SIZE	+	0.1324* (0.0738)	0.1019*** (0.0000)	0.0348** (0.0446)
QCF	+	0.0213*** (0.0041)		
QEB	+	0.0063*** (0.0072)		
QCE	-		-0.1532*** (0.0000)	
QXE	-		-0.0478*** (0.0029)	
QCA	-			-0.4362*** (0.0000)
QXA	-			-0.0468*** (0.0000)
INV	+	0.1047*** (0.0000)	0.1536*** (0.0000)	0.1425*** (0. 0000)
Fixed Effect		Included	Included	Included
N		5,836	5,836	5,836
Adj. R^2		0.50	0.50	0.51

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

I repeat my analyses in Table 5 using the 2015-2019 period (the change in the accounting and reporting of extraordinary items). During this period, companies are not required to report extraordinary items, although many do report it. Interestingly, one of the reasons the FASB made to support the reporting change was the notion that many companies had difficulty in determining whether an event met the criteria to be classified as extraordinary.

Similar to the results in Table 4, the coefficients on the earnings quality variables based upon extraordinary items are still statistically significant in the hypothesized direction. This suggests that the new FASB approach regarding extraordinary items still allows my measure of earnings quality to be useful in explaining E/P ratios. However, the coefficient of determination (R^2) drops from 50% to 46% for M1, from 50% to 46% for M2, and from 51% to 45% for M3. This suggests a decline in the ability to explain E/P across the two regulatory regimes regarding extraordinary items.

TABLE 5
REGRESSION RESULTS

2015-2019

Model (1) : $E/P = \gamma_0 + \gamma_1 BETA + \gamma_2 GR + \gamma_3 DIV + \gamma_4 SIZE + \gamma_5 QCF + \gamma_6 QEB + \gamma_7 INV + \gamma_8$ Fix effect $+ \varepsilon$.

Model (2) : $E/P = \gamma_0 + \gamma_1 BETA + \gamma_2 GR + \gamma_3 DIV + \gamma_4 SIZE + \gamma_5 QCE + \gamma_6 QXE + \gamma_7 INV + \gamma_8$ Fix effect $+ \varepsilon$.

Model (3) : $E/P = \gamma_0 + \gamma_1 BETA + \gamma_2 GR + \gamma_3 DIV + \gamma_4 SIZE + \gamma_5 QCA + \gamma_6 QXA + \gamma_7 INV + \gamma_8$ Fix effect $+ \varepsilon$.

Variable	Expected Sign	Model (1)	Model (2)	Model (3)
Intercept	+/-	-0.0749 (0.3154)	-0.0726 (0.3814)	-0.0791 (0.3625)
BETA	+/-	0.2364*** (0.0000)	0.1276*** (0.0000)	0.2541*** (0.0000)
GR	-	-0.0203 (0.2946)	-0.0274 (0.3856)	-0.1632*** (0.0000)
DIV	-	-0.0835*** (0.0000)	-0.07394*** (0.0000)	-0.0829*** (0.0000)
SIZE	+	0.2743* (0.0849)	0.1916*** (0.0000)	0.0782** (0.0496)
QCF	+	0.0367*** (0.0095)		
QEB	+	0.0031*** (0.0069)		
QCE	-		-0.2094*** (0.0000)	
QXE	-		-0.0372*** (0.0029)	
QCA	-			-0.4284*** (0.0000)
QXA	-			-0.0326*** (0.0000)
INV	+	0.1734*** (0.0000)	0.1823*** (0.0000)	0.1526*** (0. 0000)
Fixed Effect		Included	Included	Included
N		4,640	4,640	4,640
Adj. R^2		0.46	0.46	0.45

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

For completeness, I estimate the regressions for the combined two time periods (2010-2014 and 2015-2019). The results are provided in Table 6.

TABLE 6
REGRESSION RESULTS

2010-2019

Model (1) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCF $+ \gamma_6$ QEB $+ \gamma_7$ INV $+ \gamma_8$ Fix effect $+ \varepsilon$.

Model (2) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCE $+ \gamma_6$ QXE $+ \gamma_7$ INV $+ \gamma_8$ Fix effect $+ \varepsilon$.

Model (3) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCA $+ \gamma_6$ QXA $+ \gamma_7$ INV $+ \gamma_8$ Fix effect $+ \varepsilon$.

Variable	Expected Sign	Model (1)	Model (2)	Model (3)
Intercept	+/-	-0.0637 (0.2584)	-0.0625 (0.2841)	-0.0723 (0.3942)
BETA	+/-	0.1873*** (0.0000)	0.1962*** (0.0000)	0.1634*** (0.0000)
GR	-	-0.0264 (0.2135)	-0.0275 (0.3206)	-0.1384*** (0.0000)
DIV	-	-0.0365*** (0.0000)	-0.0629*** (0.0000)	-0.0725*** (0.0000)
SIZE	+	0.3582* (0.0836)	0.1462*** (0.0000)	0.0758** (0.0364)
QCF	+	0.0462*** (0.0083)		
QEB	+	0.0038*** (0.0092)		
QCE	-		-0.2637*** (0.0000)	
QXE	-		-0.0324*** (0.0067)	
QCA	-			-0.3869*** (0.0000)
QXA	-			-0.0426*** (0.0000)
INV	+	0.1635*** (0.0000)	0.1726*** (0.0000)	0.1784*** (0. 0000)
Fixed Effect		Included	Included	Included
N		10,476	10,476	10, 476
Adj. R^2		0.48	0.48	0.48

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

In Tables 7, 8, and 9, I present my regression results where the extraordinary items derived variables (QEB, QXE, QXA) are excluded in the regression. In essence, I am examining the impact that completely eliminating extraordinary items would have in my ability to explain E/P ratios. Recall that in January 2015, the FASB adopted a final Accounting Standards Update that eliminated the requirement that preparers reported events that met the criteria for extraordinary classification separately in the income statement, net of tax and after income from continuing operations. However, my data (as reported in the analyses of Tables 4, 5, and 6) shows that many companies have continued to report extraordinary items.

The following regression analyses are based upon the sample in 2010-2014 (Table 7), 2015-2019 (Table 8), and 2010-2019 (Table 9). I use these analyses to determine whether the informativeness of accounting information would be improved or reduced if the FASB completely eliminates extraordinary items. The FASB's action is part of its Simplification Initiative, which is intended to reduce costs and complexity while "maintaining or improving the usefulness" of financial information to users. My results specifically examine this issue.

Across all three models, and all three time periods reported in Tables 7, 8, and 9, the coefficient estimates on the quality of earnings based on operating cash flows (QCF, QCE, and QCA) remain highly significant although the explanatory power (R^2) deteriorates.

The complete elimination of the extraordinary items-based earnings quality measure reduces the R^2 of M1 of 50% in Table 4 to about 39% in Table 7. For M2, the reduction is from 50% to 39% and for M3 the reduction is from 51% to 39%. If the FASB had completely eliminated the reporting of extraordinary items, they would have also eliminated useful information to stockholders, investors, and other financial statement users. The FASB seems swayed by suggestions that that information about unusual or infrequent events and transactions is confusing and distracting.

TABLE 7
REGRESSION RESULTS

2010-2014

Model (1) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCF $+ \gamma_6$ INV $+ \gamma_7$ Fix effect $+ \varepsilon$.

Model (2) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCE $+ \gamma_6$ INV $+ \gamma_7$ Fix effect $+ \varepsilon$.

Model (3) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCA $+ \gamma_6$ INV $+ \gamma_7$ Fix effect $+ \varepsilon$.

Variable	Expected Sign	Model (1)	Model (2)	Model (3)
Intercept	+/-	-0.0532 (0.3682)	-0.0642 (0.328)	-0.0568 (0.467)
BETA	+/-	0.2364*** (0.0000)	0.2837*** (0.0000)	0.1942*** (0.0000)
GR	-	-0.0356 (0.3691)	-0.0283 (0.3045)	-0.3514*** (0.0000)
DIV	-	-0.0832*** (0.0000)	-0.0879*** (0.0000)	-0.0712*** (0.0000)
SIZE	+	0.3845* (0.0892)	0.3152*** (0.0000)	0.2846** (0.0483)
QCF	+	0.0154*** (0.0083)		
QCE	-		-0.2731*** (0.0000)	
QCA	-			-0.3734*** (0.0000)
INV	+	0.1924*** (0.0000)	0.1924*** (0.0000)	0.1859*** (0. 0000)
Fixed Effect		Included	Included	Included
N		5,836	5,836	5,836
Adj. R^2		0.39	0.39	0.39

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

TABLE 8
REGRESSION RESULTS

2015 - 2019
Model (1) : E/P = $\gamma_0 + \gamma_1$ BETA + γ_2 GR + γ_3 DIV + γ_4 SIZE + γ_5 QCF + γ_6 INV + γ_7 Fix effect + ε.
Model (2) : E/P = $\gamma_0 + \gamma_1$ BETA + γ_2 GR + γ_3 DIV + γ_4 SIZE + γ_5 QCE + γ_6 INV + γ_7 Fix effect + ε.
Model (3) : E/P = $\gamma_0 + \gamma_1$ BETA + γ_2 GR + γ_3 DIV + γ_4 SIZE + γ_5 QCA + γ_6 INV + γ_7 Fix effect + ε.

Variable	Expected Sign	Model (1)	Model (2)	Model (3)
Intercept	+/-	-0.0672 (0.3415)	-0.0719 (0.3645)	-0.0815 (0.3748)
BETA	+/-	0.2473*** (0.0000)	0.1058*** (0.0000)	0.1023*** (0.0000)
GR	-	-0.0468 (0.2385)	-0.01356 (0.3945)	-0.1474*** (0.0000)
DIV	-	-0.0934*** (0.0000)	-0.0822*** (0.0000)	-0.0869*** (0.0000)
SIZE	+	0.2076* (0.0943)	0.1022*** (0.0000)	0.0209** (0.0413)
QCF	+	0.0194*** (0.0098)		
QCE	-		-0.1537*** (0.0000)	
QCA	-			-0.3836*** (0.0000)
INV	+	0.1735*** (0.0000)	0.1768*** (0.0000)	0.1524*** (0. 0000)
Fixed Effect		Included	Included	Included
N		4,640	4,640	4,640
Adj. R^2		0.41	0.41	0.41

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

Table 10 summarizes the changes in explanatory power (R^2) between the two FASB approaches and the complete elimination of extraordinary items (if that had taken place). Overall, the results suggest that the change by the FASB, allowing companies to choose what to disclose regarding extraordinary items, does not eliminate the usefulness of an extraordinary items in explaining E/P ratios. However, there is some reduction in the explanatory power between the old approach (2010-2014) and the new approach (2015-2019). The explanatory power drops the most (6%) for M3 and only 4% for M1 and M2.

In my analyses where I delete the inclusion of the extraordinary items-based measure of earnings quality, my results show a drop in explanatory power of 11% for M1 in the 2010-2014 period. Similar reductions also are observed for M2 and M3 in the 2010-2014 period. In all instances, given a baseline R^2 of around 46% in the 2015-2019 period across all models, eliminating the extraordinary items-based measure of earnings quality from the regression lowers the observed R^2 by about 1% to 5% depending upon the model employed. However, in all cases the reduction is statistically significant at the .01 level or better.

The regressions reported in Tables 4, 5, and 6 can be construed as the "full model" and the regressions reported in Tables 7, 8, 9 can be considered nested models. For the nested models, the omission of extraordinary items-based earnings quality is equivalent to constraining the coefficient to be zero.

Accordingly, an F-test can be used to test whether the reduction in the coefficient of determination (R^2) between the full model and the reduced nested model results in a statistically significant decline. In all of the cases reported in the last section of Table 10 (labeled Difference in the Coefficient of Determination (R^2) Across Regressions Including versus Excluding the Extraordinary Item Derived Measure of Earnings Quality), the decline in R^2 is statistically significant at the .01 level or better. This evidence suggests that extraordinary items are important to financial statement users when they are trying to understand the composition of earnings in explaining cross-sectional differences in E/P ratios.

TABLE 9
REGRESSION RESULTS

2010 - 2019

Model (1) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCF $+ \gamma_6$ INV $+ \gamma_7$ Fix effect $+ \varepsilon$.

Model (2) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCE $+ \gamma_6$ INV $+ \gamma_7$ Fix effect $+ \varepsilon$.

Model (3) : $E/P = \gamma_0 + \gamma_1$ BETA $+ \gamma_2$ GR $+ \gamma_3$ DIV $+ \gamma_4$ SIZE $+ \gamma_5$ QCA $+ \gamma_6$ INV $+ \gamma_7$ Fix effect $+ \varepsilon$.

Variable	Expected Sign	Model (1)	Model (2)	Model (3)
Intercept	+/-	-0.0534 (0.5604)	-0.0834 (0.4752)	-0.0946 (0.4751)
BETA	+/-	0.2638*** (0.0000)	0.2673*** (0.0000)	0.2426*** (0.0000)
GR	-	-0.0274 (0.3256)	-0.0298 (0.3954)	-0.2731*** (0.0000)
DIV	-	-0.0736*** (0.0000)	-0.0632*** (0.0000)	-0.0874*** (0.0000)
SIZE	+	0.1924* (0.0925)	0.1435*** (0.0000)	0.0376** (0.0325)
QCF	+	0.0372*** (0.0028)		
QCE	-		-0.1834*** (0.0000)	
QCA	-			-0.5278*** (0.0000)
INV	+	0.2643*** (0.0000)	0.2154*** (0.0000)	0.1536*** (0.0000)
Fixed Effect		Included	Included	Included
N		10,476	10,476	10,476
Adj. R^2		0.44	0.44	0.45

*** Indicates significance at 1 percent level; ** indicates significance at 5 percent level; * indicates significance at 10 percent level

SUMMARY AND IMPLICATIONS

This study enhances my knowledge of how cross-sectional determinants of P/E ratios are impacted by the change in the reporting of extraordinary items by companies through different, yet somewhat similar, proxies of earnings quality. The difference between cash from operations and bottom-line accounting earnings and the difference between earnings before extra-ordinary and discontinued operations and bottom-line accounting earnings are the proxies employed to represent earnings quality. Other variables, which have been found to be significant in explaining cross-sectional variability in P/E ratios in previous studies, are also included in my analysis.

TABLE 10
SUMMARY OF REGRESSION RESULTS – COEFFIENT OF DETERMINATION (R^2)

FULL MODEL - Inclusion of Extraordinary Item Derived Measure of Earnings Quality in Regression – from Tables 4, 5, and 6
(the coefficients on the earnings quality variables are all significant at <.01)

	2010 – 2014	2015 – 2019	2010 – 2019
Model M1	$R^2 = 0.50$	$R^2 = 0.46$	$R^2 = 0.48$
Model M2	$R^2 = 0.50$	$R^2 = 0.46$	$R^2 = 0.48$
Model M3	$R^2 = 0.51$	$R^2 = 0.45$	$R^2 = 0.48$

REDUCED MODEL - Exclusion of Extraordinary Item Derived Measure of Earnings Quality in Regression – from Tables 7, 8, and 9
(the coefficients on the earnings quality variable are all significant at <.01)

	2010 – 2014	2015 – 2019	2010 – 2019
Model M1	$R^2 = 0.39$	$R^2 = 0.41$	$R^2 = 0.44$
Model M2	$R^2 = 0.39$	$R^2 = 0.41$	$R^2 = 0.44$
Model M3	$R^2 = 0.39$	$R^2 = 0.44$	$R^2 = 0.45$

Difference in the Coefficient of Determination (R2) Across Regressions Including versus Excluding the Extraordinary Item Derived Measure of Earnings Quality

	2010 – 2014	2015 – 2019	2010 – 2019
Model M1	0.11^{***}	0.05^{***}	0.04^{***}
Model M2	0.11^{***}	0.05^{***}	0.04^{***}
Model M3	0.12^{***}	0.01^{***}	0.03^{***}

*** Indicates significance at < .01 level

The earnings quality measures I employ, which are based on (1) cash from operations, and (2) earnings before extra-ordinary items and discontinued operations, are statistically important in explaining the cross-sectional variability in E/P ratios. My results suggest that the change in the reporting of extraordinary items by the FASB in 2005 does not improve the usefulness of the financial statement information in my analyses. While many firms continued to report extraordinary items, the complete elimination of extraordinary items would have deprived investors of important information in explaining cross-sectional differences in P/E ratios. From a policy perspective, investors needing the identification of extraordinary items in understanding earnings quality would certainly be short-changed if extraordinary items are completely eliminated or companies voluntarily quit reporting extraordinary items as allowed by Accounting Standards Update (ASU) 2015-01.

In future studies of both the longitudinal and cross-sectional determinants of P/E ratios, I suggest researchers should incorporate my measures of earnings quality in the analysis. In addition, researchers should treat the observations prior to 2015 as being somewhat different than observations from 2015 onward.

ENDNOTES

1. See David Katz "FASB Rids Income Statements of Extraordinary Items" in *CFO.com* (January 13, 2015).
2. Although the empirical analyses conducted in this study are based on the E/P ratio, my discussion follows the more traditional line which uses the P/E ratio. The use of the E/P ratio in my empirical analysis mitigates the problems associated with earnings approaching zero and is based on the Litzenberger and Rao (1971) model which posits linearity in E/P.
3. Extensive literature exists which indicates that reasonable forecasts of earnings may be made employing a random walk model. In addition, many empirical studies focusing on the information content of earnings,

earnings response coefficients, and post-earnings announcement drift have employed a random walk model to approximate for the market's expectation of earnings.

4. This idea is also consistent with the extra-ordinary items and discontinued operations representing transitory shocks to the earnings stream.

5. See Beaver and Morse (1978) for additional detail. The current interest rate, a macro-economic factor in explaining P/E ratios, is not considered in this study since a cross-sectional regression across firms at a single point in time is employed.

6. See Beaver and Morse (1978) or Craig et al. (1987) for additional detail.

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APPENDIX A
VARIABLE DEFINITIONS

E/P	= primary earnings per share divided by year-end closing price;
BETA	= Standard and Poor's monthly beta from Compustat;
GR	= research and development expense divided by sales;
DIV	= dividend payout ratio;
SIZE	= logarithm of the firm's total assets;
INV	= 1 if FIFO is used and 0 if another inventory valuation method is used;
QCF	= (accounting earnings minus cash flow from operations) divided by cash flow from operations;
QEB	= (accounting earnings minus earnings before extra-ordinary items and discontinued operations) divided by earnings before extra-ordinary items and discontinued operations;
QCE	= (cash flow from operations minus accounting earnings) divided by accounting earnings;
QXE	= (earnings before extra-ordinary items and discontinued operations minus accounting earnings) divided by accounting earnings;
QCA	= (cash flow from operations minus accounting earnings) divided by total assets;
QXA	= (earnings before extra-ordinary items and discontinued operations minus accounting earnings) divided by total assets.