Examining the Effects of Fair Value Measurements on Financial Reporting Quality and the Cost of Equity

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ABSTRACT

This study examines whether the implementation of FASB Accounting Standards Codification on Fair Value Measurements (ASC 820-10) improves financial reporting quality and the cost of equity capital. ASC 820-10 was designed and implemented under the premise that it would improve financial reporting quality and comparability of fair value measurements in financial reports by requiring firms to disclose any activity within and between the three-distinct fair value measurement levels. This study examines the annual and quarterly filings of firms with level 2 and level 3 fair value activity from 2007 through 2012. Results reveal that financial reporting quality increased as a result of ASC 820-10 adoption. Results signal to standard setters, investors and regulators that the increased mandatory disclosures around the measurement of unobservable inputs (i.e. level 3 securities) are value relevant and economically significant. This study extends the literature fair value relevance, information asymmetry and information precision in fair value measurements. Furthermore, this study provides increased evidence on the use of earnings forecasts generated by a cross sectional model as an acceptable alternative to analysts' forecasts in implied cost of capital models.

Keywords: Fair value, Cost of Capital, Disclosure, Valuation, Financial Reporting

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INTRODUCTION

The collapse of Bear Stearns coupled with the increased volatility in the market, reignited the debate around the relevancy of fair value measurements and subsequently led to revision of fair value accounting and disclosure policies, Accounting Standards Codification 820-10 (hereafter referred to as ASC 820-10), in 2009. ASC 820-10 required the disclosure of activities within and between the three distinct fair value measurement levels. Extant literature on the economic impact of increased disclosure is mixed at best (Botosan and Plumlee 2002; Chen et al., 2010; Callahan et al. 2012). Furthermore, prior literature concerning the relevancy of level 2 and level 3 fair value measurement inputs and their relation to financial reporting quality is inconsistent (Whalen 2008; Song et al.,2010). The fundamental research objective of this study is to determine whether the increased disclosure mandated by ASC 820-10 improves financial reporting quality by examining and evaluating the relation between ASC 820-10, the cost of equity and financial reporting quality.

This study examines the annual and quarterly filings of firms with level 2 and level 3 fair value activity from 2007 through 2012 and identifies a sample of 216 firms with disclosed transfer activity and 284 firms without material transfer activity. The overall results reveal that financial reporting quality (cost of equity capital) increased (decreased) as a result of ASC 820-10 adoption and the effect is significantly different for firms affected relative to firms not materially affected by ASC 820-10.

ASC 820-10 was adopted with the intent to increase financial statement transparency and comparability surrounding fair value measurements. Critics of fair value accounting and some practitioners believed that compliance would be "…too onerous, operationally challenging, and would not provide useful information." Theoretically, increased disclosure that reduces information asymmetry (risk) will increase financial statement readability and decrease the cost of capital. The efforts of the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) for the past two decades have in some part included efforts to increase financial statement readability through transparent disclosure. This however assumes that the disclosed information is precise and therefore reduces the uncertainty between the informed and uninformed investor. If the disclosed information lacks precision, the value of the information is discounted and its effect on investor perception becomes ambiguous (Bean and Irvine, 2015). The majority of academic literature on the cost of capital effects of increased disclosure documents a negative relationship however that relationship does not always hold and the effect, if any, is a function of a perceived reduction in information asymmetry and future cash flow effects. ." ASC 820-10 attempts to remove some of the ambiguity surrounding fair value estimates by improving the disclosures concerning the activity within and between levels. The impact of these disclosures and whether information asymmetry is reduced remains an open empirical question.

Overall, the results of this study conclude that the mandatory disclosure requirement of ASC 820-10 does increase financial reporting quality and provides useful information to investors, despite managerial opposition to its adoption. This paper makes three contributions. First these results signal to standard setters that the increased mandatory disclosures around the measurement of unobservable inputs (i.e. level 3 securities) are value relevant and economically significant. Secondly, this study extends the literature on the relation between fair value relevance, information asymmetry and information precision and contributes to the debate on the efficacy of unobservable units in fair value measurements. Lastly, this study provides increased

evidence on the use of earnings forecasts generated by a cross sectional model as an acceptable alternative to analysts' forecasts in implied cost of capital models.
The remainder of this paper proceeds as follows: section two discusses the relevant background, prior research and presents hypotheses; sections three and four describe the sample selection process and research methodology, respectively; section five presents the results and section six concludes the study with a discussion of the results.

BACKGROUND AND HYPOTHESES DEVELOPMENT

Statement of Financial Accounting Standards No. 157, "*Fair Value Measurements*," (SFAS 157) was implemented by the Financial Accounting Standards Board (FASB) for financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years. SFAS 157 clearly defined fair value, instituted a framework for measuring fair value according to generally accepted accounting principles (GAAP), and expanded disclosures about fair value measurements in an effort to provide more relevant financial information and increase consistency and comparability in fair value measurements.

SFAS 157 defined fair value as the exchange price in an orderly transaction between market participants to sell an asset or transfer a liability in the market in which the reporting entity would transact for the asset or liability. The focus is on the exit price-that is the price that would be received to sell the asset or paid to transfer the liability. SFAS 157 did not require any new fair value measurements but did provide guidance for determining the fair values of assets and liabilities and required the disclosure of information about (1) the use of fair value to measure assets and the extent to which companies measure assets and liabilities at fair value; (2) the information used to measure fair value; and (3) the effect that fair-value measurements have on earnings. SFAS 157 also established a three-tiered framework for measuring fair value and dictated that the fair value of all assets and liabilities be disclosed into one of the following categories based on the inputs to measure fair values:

(1) Level 1-observable prices in active markets for identical assets and liabilities that the reporting entity has the ability to access at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis. An example would be the unadjusted quoted price of an actively traded "blue chip" security on a nationally recognized stock exchange.

(2) Level 2-observable inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs include:
   a) Quoted prices for similar assets or liabilities in active markets.
   b) Quoted prices for identical or similar assets or liabilities in markets that are not active, the prices are not current or price quotations vary substantially either over time or among market makers (for example, some brokered markets), or in which little information is released publicly (for example, principal-to-principal market).
   c) Inputs other than quoted prices that are observable for the asset or liability (for example interest rates and yield curves observable at commonly quoted intervals)

d) Inputs that are derived principally from or corroborated by observable market data by correlation or other means (market-corroborated inputs).

(3) Level 3- unobservable inputs for the asset or liability and shall be used to measure fair value to the extent that observable inputs are not available (FASB 2006).

During 2008, amid the most recent financial crisis (2007-2009), the utility and efficiency of fair value accounting came under intense public scrutiny. The considerable amount of public objection to fair value prompted action from policy makers and regulators. The Securities and Exchange Commission's Division of Corporation Finance issued letters to some public companies encouraging additional disclosures in the MD&A section of their SEC filings about the application of the fair value measurement standards in U.S GAAP. Congress passed The Emergency Stabilization Act of 2008 which granted authority to the SEC to suspend by rule, regulation, or order, the application of SFAS 157 for any issuer or with respect to any class or category of transaction if the SEC determined that it is necessary or appropriate in the public interest and is consistent with the protection of investors. In addition, the Act required the SEC to study fair value accounting and report on: (1) the effects of such accounting standards on a financial institution's balance sheet; (2) the impact of such accounting on bank failures in 2008; (3) the impact of such standards on the quality of financial information available to investors; (4) the process used by the FASB in developing accounting standards; (5) the advisability and feasibility of modifications to such standards; and (6) alternative accounting standards to those provided in SFAS 157. The SEC was required to submit to Congress a report of the study within a 90-day period containing the findings and determinations of the SEC, including any administrative and legislative recommendations. The report concluded that more detailed information about the holdings of specific financial assets (e.g. Level 2 and Level 3) as well as the methods by which they are valued be required and disclosed.

In response to the developments summarized above, the FASB issued an update to Fair Value Measurements and Disclosures (ASC 820-10) of the *FASB Accounting Standards Codification* (originally issued as FASB Statement No. 157, *Fair Value Measurements*) in February 2010. The main provisions of this amendment require improved disclosures concerning: (1) Transfers in and out of Levels 1 and 2. A reporting entity should disclose separately the amounts of significant transfers in and out of level 1 and level 2 fair value measurements and describe the reasons for the transfers. (2) Activity in level 3 fair value measurements. In reconciliation for fair value measurements using significant unobservable inputs (level 3), a reporting entity should present separately information about purchases, sales, issuances, and settlements (that is on a gross rather than net basis). The amendment also provided clarification concerning existing disclosures as follows: (1) level of disaggregation. A reporting entity should provide fair value measurement disclosures for each class of assets and liabilities. A class is often a subset of assets or liabilities within a line item in the statement of financial position. A reporting entity needs to use judgment in determining the appropriate classes of assets and liabilities. (2) Disclosures about inputs and valuation techniques. A reporting entity should provide disclosures about the valuation techniques and inputs used to measure fair value for both recurring and nonrecurring fair value measurements. Those disclosures are required for fair value measurements that fall in either level 2 or level 3. Most recently, the utility of fair value accounting has become a heated debate among standard setters, policy makers and market participants. Penman (2007) and other proponents of fair value

accounting assert that the fair values of assets or liabilities reflect current market conditions and provide more timely information and increase transparency when compared to historical cost accounting. Critics argue that fair value accounting is not relevant or misleading for assets held to maturity and contributed extensively to the financial crisis (Benston, 2008; Whalen, 2008; Forbes, 2009). However, recent studies have shown that fair value information is value relevant and there were myriad factors that contributed to the financial crisis. Ryan (2008) finds that "...the subprime crisis is not and could not be the fault of any one set of parties. The entire economic ecosystem failed to appreciate the risks of the rapid growth in risk-layered subprime mortgages, the inevitable end of house price appreciation, and unprecedented global market liquidity." Ryan (2008) further concludes that …"Users of financial reports need better disclosures about the critical estimates underlying level 3 fair values and how sensitive fair values are to those estimates." Bean and Irvine (2015) examine the decision-usefulness of annual derivative disclosures and find that generally disclosures were criticized for "not providing sufficient insight into companies risk and risk management strategies." ASC 820-10 attempts to remove some of the ambiguity surrounding fair value estimates by improving the disclosures concerning the activity within and between levels. ASC 820-10 provides academic researchers with the opportunity to empirically examine the relation between disclosure, financial reporting quality and cost of equity capital within an illiquid market context. The next logical step for accounting academic researchers was to explore the value relevance of fair value measurements with respect to the disaggregation of level information demanded by the new standard. Accounting information is considered to be value relevant when it has the predicted association with market value of equity (Barth et al., 2001). Several studies support the FASBs assertion that fair value information is relevant but varies with the source of information (i.e. type of security). Barth (1994) results suggest that the fair values of investment securities of banks and property insurers are value relevant, while Petroni and Wahlen (1995) find that fair values for equities and Treasury securities are value relevant, but fair values of municipal and corporate bonds are not. The findings by Petroni and Wahlen (1995) suggest that securities actively traded in the market are more reliably associated with market value of equity. In the same vein, Kolev (2009) and Song et al. (2010) find that all Level information is value relevant; however level 3 fair value estimates of assets and liabilities are valued less than level 1 or level 2 by investors, irrespective of security type. This suggests that investors recognize the inherent bias of level 3 estimates in financial reporting and adjust their investment decisions accordingly. Overall, these results suggest that fair value estimates are reliable and value relevant despite the fact that investors are likely to decrease the value placed on level 3 fair value measurements relative to level 1 and 2. Financial reporting quality is a multidimensional construct that encompasses such dimensions as earnings quality, shareholder relations, financial disclosures and non-financial disclosures (Gu and Li, 2007). Consistent with SFAC No. 1 and prior literature (DeChow et al., 2010), financial reporting quality is defined as follows:

> *Higher quality financial reporting provides more information about the firms' performance relevant to a specific decision by a specific decision maker.*

The above definition implies that financial reporting quality is dependent on the informativeness of information relevant to financial performance. Extending this implication in conjunction with the empirical evidence on fair value measurements suggests that transfers between categories will likely have differential effects on financial reporting quality and cost of

equity capital. Extant literature has employed many different empirical proxies for financial reporting quality including but not limited to: earnings persistence and predictability, residuals from accrual models, earnings smoothness, timely loss recognition and earnings response coefficient (Callahan et al., 2002; Dechow et al., 2010; Ng, 2011).

Botosan (1997), Botosan and Plumlee (2002) and Francis et al. (2004) document a significant association between financial reporting quality and both the ex-ante cost of equity capital and the ex post cost of equity capital. Botosan (1997) examines the effect of disclosure level on the cost of equity capital for 122 manufacturing firms in 1990. The results of this study, after controlling for size and beta, suggest that greater disclosure is associated with a lower cost of equity capital for firms with low analyst following, while there is no significant relationship observed for firms with high analyst following. This suggests that disclosure has an incrementally greater effect for firms where perceived information asymmetry is greatest. This finding is directly relevant to fair value level estimates as there is greater information asymmetry for level 3 estimates relative to level 1 and 2, respectively. Extending the Botosan (1997) findings, Botosan and Plumlee (2002) find that the type (10-Q, 8-K, Other, etc.) and frequency (annual versus quarterly) of disclosure determines its effect on the cost of equity capital. Consistent with the findings of Botosan (1997), Botosan and Plumlee finds that greater disclosure in annual statements results in a difference of about a 0.7 percentage point in cost of equity capital between the most and least forthcoming firms. Results also indicate, contrary to theoretical and empirical studies on the effect of increased disclosure on the cost of equity capital, that more timely disclosures increase the cost of equity capital.

Analytical research from Easley and O'Hara (2004) and empirical evidence from Francis et al. (2004) demonstrate that firm specific information risk is priced and cannot be diversified away. Easley and O'Hara (2004) develop an asset pricing model that incorporates the effect of public and private information on asset returns. This model provides a link between information structure (disclosure policies) and cost of equity capital that shows that private information increases systematic risk and investors must be compensated for bearing this risk. Francis et al. (2004) examines the relationship between seven attributes of earnings (accrual quality, persistence, predictability, smoothness, value relevance, timeliness and conservatism) and cost of equity capital. Results suggest that accounting-based attributes have a greater effect of cost of equity capital than market-based attributes with accrual quality having the most pronounced effect. This implies that investors recognize and price the subjectivity of accruals when considering investment choices. This implication is important for fair value estimates, specifically level 2 and level 3, as both contain at the minimum, a moderate level of managerial subjectivity in formulating estimates. The above research provides theoretical motivation and support for the link between cost of equity capital and financial reporting quality.

Financial reporting quality can be directly linked to the cost of equity capital through the theories of incomplete information, estimation risk, information asymmetry, and impacts on future cash flows (Legoria et al., 2008; Ng, 2011). Incomplete information (Merton, 1987) arises when investors are unaware of all investment opportunities, which results in a smaller investor base and lower stock price. Estimation risk is affected when investors are uncertain about the return distribution parameters which lead investors to demand higher required rates of return (Barry and Brown, 1984). Information asymmetry risk (Easley & O'Hara, 2004) occures when informed investors exploit their informational advantage to earn trading gains at the expense of less informed investors. Amihud and Mendelson (1986) find a positive association between bid-ask spreads and stock returns and Brennan and Subrahmanyam (1996) show a positive relation

between stock returns and inverse market depth. Overall, these studies indicate that investors demand a premium for holding illiquid stocks and lower market liquidity impacts the cost of equity capital. Financial reporting quality is thus indirectly linked to the cost of capital (via its effects on spreads and depth) to the extent that higher reporting quality reduces information asymmetry and cost of capital (Callahan et al., 2002; Legoria et al., 2008; Ng. 2011). In summary, the aforementioned theories and empirical and analytical evidence predict that increased mandatory disclosure from compliance with ASC 820-10 should (1) reduce incomplete information, (2) reduce estimation risk, (3) reduce information asymmetry, and/or (4) impact expected future cash flows. Based on the above discussion, I hypothesize:

H1: There is no relation between financial reporting quality and transfers of level 3 fair value measurements.
H2: There is no relation between cost of equity capital and transfers of level 3 fair value measurements.

SAMPLE SELECTION AND DESCRIPTION

The sample was compiled using a combination of hand gathered procedures and available data from Compustat and I/B/E/S databases. First, all firms with any activity in level 2 and level 3 from 2007 to 2012 were identified in Compustat resulting in 816 firms. Next, the number of firms in the initial sample was reduced by 238 because of missing Compustat data and 76 firms because of missing price data in CRSP. The above procedures results in a final sample of 502 firms and 8,416 firm-quarter observations for the 2007 through 2012 period.

To gather disclosure data on selected firms, 10-K Wizard search engine was employed to search quarterly and annual reports filed beginning in Q3 2009. Transfers between fair value hierarchical levels were identified with a keyword search for all occurrences of "transfers to/from level 3 (III)" and "Level 2 (3) reclassification" in quarterly and annual financial statements. This process produced a subsample of 218 firms with transfers between level 2 and level 3 and 284 firms that reported "no material activity between levels" and/or "adoption of ASC 820-10 does not materially affect the financial statements." Panel A of Table 1 (Appendix) describes the final sample of 502 firms and subsample of firms with (218) and without (284) transfer activity while Panel B of Table 1 (Appendix) reports level 3 transfer activity.

RESEARCH METHODOLOGY AND EMPIRICAL PROXIES

To examine the effect of the increased disclosure around fair value estimates on financial reporting quality and cost of equity, this study utilizes a difference in difference comparative statistical methodology (Muller et al., 2011; Callahan et al., 2012; Reid, 2016). The most significant "revision" of fair value accounting disclosures, FAS 157, was implemented and effective for interim and annual periods beginning after November 15, 2007. The amendment to FAS 157, ASC 820-10, became effective for interim and annual periods beginning December 15, 2009. Figure 1 (Appendix) provides a graphical depiction of the 33 month period reviewed from the fourth quarter of 2009 through the second quarter of 2012. Prior academic literature is split on the definition and measurement of financial reporting quality (DeChow et al., 2010). The list of acceptable proxies for financial reporting quality is extensive and yet there is no superior

measure for all decision models. In this study, the proxy for financial reporting quality is motivated by prior research (Dichev et al., 2012; Ng , 2011; Reid, 2016).

Control Variables

Following prior literature (Barth et al., 2008), the following control variables are used to test the relation between financial reporting quality and ASC 820-10.

Variable definitions:

size = log of market value of equity at the end of the previous period
growth = percentage change in sales
eissue = percentage change in common stock
dissue = percentage change in total liabilities
leverage = short-term debt divided by market value of equity
cashflow = quarterly net cash flow from operating activities divided by end of quarter total assets
auditor = 1 if audited by one of the Big Four firms, 0 otherwise
alv1 (alv2, alv3) = total quarterly assets in levels 1, 2 and 3 respectively
llv1 (llv2, llv3) = total quarterly liabilities in levels 1, 2 and 3 respectively
lv3change = change in level 3 assets over the previous qtr.
ni = net income for the quarter
roe = return on equity for the quarter

Prior research documents the difficulty in accurately estimating the cost of capital as evidenced by the use of multiple measures in research studies (Dhaliwal et al., 2006; Bhattacharya et al., 2012; Callahan et al., 2012; Fu et al., 2012). To ensure that results are robust to methodological choice, this study uses multiple measures to estimate the implied cost of equity capital (Ogneva et al., 2010; Chen et al., 2010). Following prior literature, this study uses a special case of the Gordon growth model, the PEG ratio and a modified residual income valuation model developed by Gebhardt et al. (2001) in addition to the average of the three proxies as implied cost of capital measures (Hou et al., 2012).

Control Variables

Prior literature (Hughes et al., 2009) suggests that studies that utilize implied cost of equity as a dependent variable should control for factors associated with cash flow volatility, leverage, beta and growth and as such I include these variables as controls in the base model.

Variable definitions:

alv1 (alv2, alv3) = total quarterly assets in levels 1, 2 and 3 respectively
llv1 (llv2, llv3) = total quarterly liabilities in levels 1, 2 and 3 respectively
level3 = total quarterly level 3 fair value measurements, log transformed
leverage = short-term debt divided by market value of equity
ubeta = unlevered beta based on a single factor model
sdocf = standard deviation of operating cash flows over previous five years plus 1, log transformed
sdbeta = standard deviation of beta values over previous year plus 1, log transformed

oigrowth = operating income this quarter divided by operating income in previous quarter
size = log of market value of equity at the end of the previous period

Panel A of Table 2 (Appendix) displays the descriptive statistics for sample firms by time period while Panel B of Table 2 (Appendix) provides descriptive statistics by category of transfer activity. Firms without material level 3 transfer activity generally had smoother earnings than transfer firms. The difference in the implied cost of capital estimates for the two categories are marginally significant for *rgls* and *rmpeg* while *rgdn* and *ravg* show no difference between the categories. Overall, Panel B of Table 2 (Appendix) indicates that firms with material transfers have more volatile earnings, issue more debt and have faster growth when compared to firms without material transfer activity.

Models for Tests of Financial Reporting Quality (H1) and Cost of Capital (H2)

To test H1, the following model is used:

$$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 size_{it} + \beta_5 growth_{it} + \beta_6 eissue_{it} + \beta_7 dissue_{it} + \beta_8 leverage_{it} + \beta_9 cashflow_{it} + \beta_{10} auditor_{it} + \beta_{11} alv1_{it} + \beta_{12} alv2_{it} + \beta_{13} alv3_{it} + \beta_{14} llv1_{it} + \beta_{15} llv2_{it} + \beta_{16} lv3_{it} + \beta_{17} lv3change_{it} + \beta_{18} ni_{it} + \beta_{19} roe_{it} + e_{it} \quad (1)$$

where Y_{it} indicates one of the proxies for financial reporting quality, *Smoothness*, *Consensus* and *Frquality*, detailed above. ASC is a dummy variable coded as 1 if calendar quarter is after Q4 2009, 0 otherwise; fv3_trns is a dummy variable coded as 1 if transfer activity to/from level 3, 0 otherwise; asc x fv3_trns is the interaction term coded 1 if both asc and fv3_trns equal 1, 0 otherwise.

This study uses earnings forecasts generated from a cross sectional model to proxy for analysts' forecasts in the estimation of implied cost of capital. Earnings forecasts are used in lieu of analysts' forecasts because prior literature finds that analyst forecasts are generally bias resulting in valuation errors (Abarbanell and Bushee, 1997; McNichols and O'Brien, 1997; Francis et al., 2000). Secondly, analyst data obtained from IBES database is dominated by large and financially stable firms. Small or distressed firms are not likely to have analyst data available while many of those firms that are followed by analysts do not have long term growth forecasts necessary to compute the implied cost of capital in some models. Following Hou et al., (2012) earnings forecasts, estimated for five years from time *t*, are used to calculate the implied cost of capital in the various models from 1992-2011.

To test H2 using the implied cost of capital measures, the following model is used:

$$r_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 alv1_{it} + \beta_5 alv2_{it} + \beta_6 alv3_{it} + \beta_7 llv1_{it} + \beta_8 llv2_{it} + \beta_9 llv3_{it} + \beta_{10} highfrq_{it} + \beta_{11} lowfrq_{it} + \beta_{12} asc \times highfrq_{it} + \beta_{13} asc \times lowfrq_{it} + \beta_{14} leverage_{it} + \beta_{15} ubeta_{it} + \beta_{16} sdocf_{it} + \beta_{17} sdbeta_{it} + \beta_{18} oigrowth_{it} + \beta_{19} size_{it} + e_{it} \quad (2)$$

where r_e indicates one of the proxies for implied cost of capital, ravg, rgdn, rmpeg or rgls referenced above and detailed in Chart 1 (Appendix). ASC is a dummy variable coded as 1 if calendar quarter is after Q4 2009, 0 otherwise; fv3_trns is a dummy variable coded as 1 if transfer activity to/from level 3, 0 otherwise; asc x fv3_trns is the interaction term coded 1 if both asc and fv3_trns equal 1, 0 otherwise. highfrq is the high financial

reporting quality proxy dummy coded as 1 if in top quartile of each financial reporting quality proxy, 0 otherwise; lowfrq is the low financial reporting quality proxy dummy coded as 1 if in bottom quartile of each financial reporting quality proxy, 0 otherwise; asc x highfrq is the interaction term coded 1 if both asc and highfrq equal 1, 0 otherwise; asc x lowfrq is the interaction term coded 1 if both asc and lowfrq equal 1, 0 otherwise;

RESULTS

Table 3 (Appendix) presents the correlation coefficients for the financial reporting quality proxies and associated control variables. Table 4 (Appendix) presents the results for the analysis of the relation between financial reporting quality and ASC 820-10. The significant negative coefficient for *asc, fv3_trns* and *asc* x *fv3* when financial reporting quality is proxied by *smoothness* and *frquality* indicate that financial reporting quality increased. The C*consensus* proxy did not return any significant results and may be the result of analysts discounting the information and not including it in earnings expectations. Furthermore, the results found in Table 4 (Appendix) reflect the mean effect of ASC 820-10 on financial reporting quality and assumes the effect is the same for all firms. This is an erroneous assumption as the perceived effect will vary depending on the existing information environment of the firm. To analyze how ASC 820-10 affects firms differently, the sample was split into quartiles based on financial reporting quality. The first (fourth) quartile represents the firms with the highest (lowest) financial reporting quality as calculated by *smoothness*, *consensus* and *frquality*.

Table 5 (Appendix) presents the regression results of the relation between financial reporting quality and ASC 820-10 for fourth quartile. In Table 5 (Appendix) the significant negative coefficient for *smoothness* (-.1617) and *consensus* (-4.867) indicates that the release of ASC 820-10 increased financial reporting quality for those firms affected. This is not surprising as financial analysts are more sophisticated and privy to more precise and private information than most investors. Therefore, it is reasonable to assume that the release of ASC 820-10 likely provided some informational advantage to analysts and therefore had a negative effect of financial statement transparency. Overall, results provide support for H1 and indicate that for the full sample ASC 820-10 increases financial reporting quality for the average investor but decreases for more sophisticated investors (i.e. analysts). Additionally, the results indicate that for firms within the fourth quartile the concentration of fair value assets and liabilities of all levels significantly impact financial reporting quality. This is an important distinction as this effect is not realized for firms in the first, second and third quartiles.

Table 6 (Appendix) presents the correlation coefficients for the implied cost of capital proxies and associated control variables. The results follow expectations and prior literature with the risk proxies being significantly related to the implied cost of capital measures, leverage and size. To test the relationship between financial reporting quality and ASC 820-10 the sample was sorted by financial reporting quality and placed into two groups, *highfrq* and *lowfrq*. The *highfrq* group represents firms in the top quartile and the *lowfrq* represents firms in the bottom quartile of financial reporting quality as measured by *smoothness*, *consensus* and *frquality*. Analyzing the data in this manner provides clear evidence of the relative impact of ASC 820-10 on firms with varying information environments. Table 7 (Appendix) presents the results for the regression analysis of implied cost of capital proxies

on ASC 820-10 for the full sample. Results in Table 7 (Appendix) indicate that there is a significant relationship between implied cost of capital (rmpeg) and asc but for no other measure of implied cost of capital. However, these results are on the full sample of firms.

For additional analysis, the sample was bifurcated into those firms with material transfers of level 3 fair value measurements and those without. Data was also gathered concerning the type (asset/liability) and direction (transfer into/out level 3) of the level 3 fair value transfers to provide further clarity on the relationship between implied cost of capital and illiquid securities. Table 8 (Appendix) presents the results for the regression analysis of implied cost of capital proxies on firms with material transfer activity. Results indicate that transfers into level 3 by firms with low financial reporting quality do not have a significant negative relationship with implied cost of capital. In addition, firms with transfers into level 3 fair value measurements report both a significant negative and positive relationship with implied cost of capital. These results are consistent with the implication expressed above that ASC 820-10 provides limited information advantage, if any, for those firms with high financial reporting quality or those firms with poorer informational environments. Overall, these results support H2. In additional analysis I test the sensitivity of these results by various measures of size (total sales; # employees and; total assets) and found that the aforementioned results held; The disclosure requirement did improve the financial reporting quality of those firms affected, however its affect on the implied cost of capital is sensitive to its measurement.

CONCLUSION AND EXPECTED CONTRIBUTIONS

Overall this study concludes that the mandatory disclosure requirements of Subtopic 820-10 does increase financial reporting quality and provides useful information to investors, despite managerial opposition to its adoption. These results may be used by financial analysts, investors, creditors, and suppliers as a proxy for managerial stewardship, consideration of investment decisions by these various stakeholders and by regulators evaluating the efficacy of the reporting standard. These results signal to standard setters that the increased mandatory disclosures around the measurement of unobservable inputs (i.e. level 3 securities) are value relevant and economically significant. This study extends the literature on the relation between fair value relevance, information asymmetry and information precision and contributes to the debate on the efficacy of unobservable units in fair value measurements. Furthermore, this study provides increased evidence on the use of earnings forecasts generated by a cross sectional model as an acceptable alternative to analysts' forecasts in implied cost of capital models.

The results of this study should be interpreted with the consideration of its limitations. First, it is unclear if and how these results would change if restricted to a specific industry (i.e. banking, insurance) and/or an increased sample period. Second, the validity of FAS 157 when market liquidity is low (e.g., time period from which the sample was taken) is unclear and its effects unknown. These limitations offer adequate avenues for future research.

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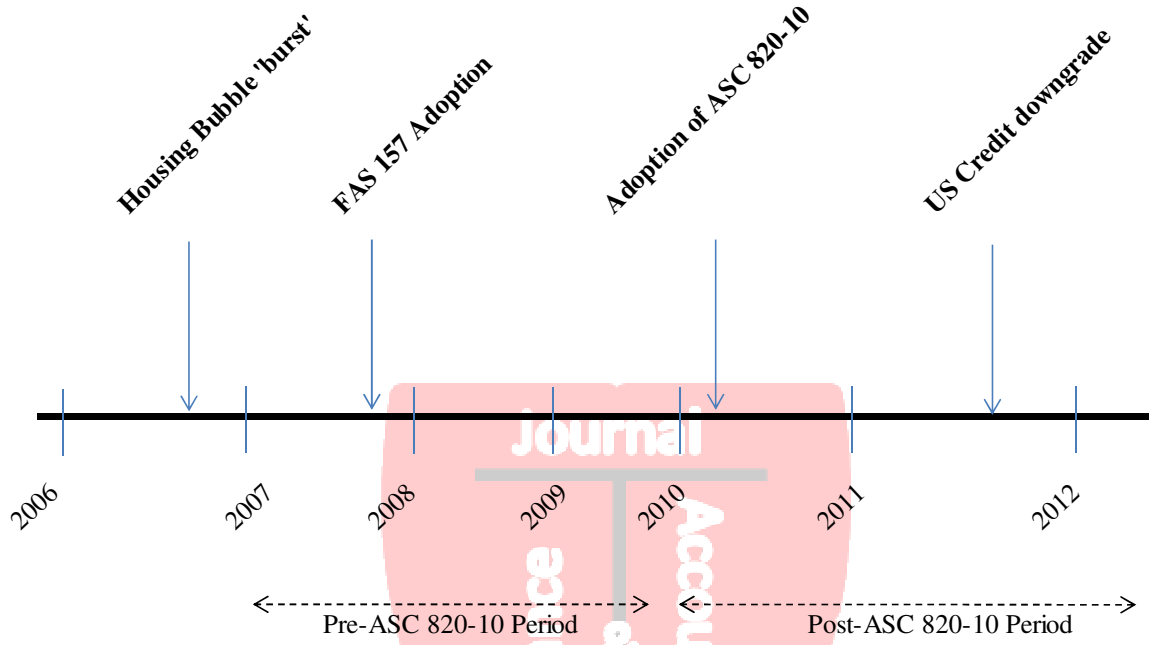
APPENDIX

Figure 1
Timeline of significant events surrounding adoption of ASC 820-10



This timeline graphically represents significant events occurring prior to and subsequent to the release and adoption of ASC 820-10. The pre-ASC 820-10 period is defined as the 24 months immediately preceding mandatory adoption of ASC 820-10, beginning in the fourth quarter of 2007 and ending in the third quarter of 2009. The ASC 820-10 time period is defined as the 33 month period from the fourth quarter of 2009 through the second quarter of 2012.

TABLE 1
Description of Sample Firms and Transfer Activity Type

Panel A: Sample Reconciliation	# of Firms
All Firms in Compustat database with Level 2 and Level 3 fair value activity	816
Less firms with missing financial data from Compustat database	(238)
Less firms with missing price data from CRSP database	(76)
Final Sample	502
Firms reporting no material activity between fair value levels	284
Firms reporting material activity between fair value levels	218

Panel B: Type of Transfer Activity

	Assets		Liabilities		Total	
Level 3 Activity	n	Percent	n	Percent	n	Percent
Transfer In	595	52%	84	63%	679	53%
Transfer Out	559	48%	50	37%	609	47%
Totals	1,154	100%	134	100%	1,288	100%

Panel A displays the sample reconcilitation to determine final sample and sub-samples. Panel B shows the type of level 3 transfer activity taken by firms materially affected by ASC 820-10.

TABLE 2
Descriptive Statistics

	Pre-ASC 820-10 (n =2,195)				Post-ASC 820-10 (n = 1,989)			
Variable	Mean	Std. Dev	Q1	Q3	Mean	Std. Dev	Q1	Q3
smoothness	5.49	62.28	0.37	3.90	6.18	114.94	0.40	3.87
consensus	1.00	8.51	0.00	0.31	1.02	14.28	0.00	0.31
frquality	0.32	1.41	0.01	0.13	0.23	1.38	0.01	0.11
ravg	0.11	0.03	0.09	0.12	0.10	0.03	0.09	0.12
rgdn	0.10	0.07	0.07	0.11	0.11	0.05	0.08	0.12
rmpeg	0.11	0.04	0.09	0.12	0.10	0.05	0.07	0.11
rgls	0.11	0.04	0.09	0.12	0.11	0.05	0.08	0.12
alv1	1.00	8.52	0.00	0.32	1.04	14.31	0.02	0.34
alv2	0.33	1.41	0.02	0.14	0.25	1.40	0.04	0.13
alv3	0.11	0.03	0.09	0.12	0.12	0.05	0.11	0.14
llv1	0.11	0.07	0.07	0.12	0.13	0.07	0.10	0.14
llv2	0.11	0.04	0.09	0.12	0.12	0.07	0.09	0.13
llv3	0.11	0.05	0.09	0.13	0.13	0.07	0.10	0.14
lv3change	3.17	2.45	1.18	4.64	3.15	2.41	1.18	4.55
growth	7.23	28.06	-3.19	12.53	15.45	24.69	-2.10	11.69
eissue	34.53	143.00	0.00	2.27	16.05	2.98	0.00	3.07
dissue	11.51	52.14	-3.75	14.47	76.86	215.00	-3.82	12.29
leverage	0.15	0.58	0.01	0.32	0.13	0.34	0.01	0.31
cash flow	0.02	0.04	0.00	0.04	0.03	0.05	0.00	0.04
auditor	0.77	0.42	1.00	1.00	0.78	0.42	1.00	1.00
ubeta	0.57	0.51	0.14	0.87	0.64	0.62	0.15	0.96
sdocf	3.89	2.13	2.21	5.40	4.12	2.02	2.62	5.52
sdbeta	0.22	0.43	0.08	0.25	0.06	0.20	0.02	0.06
oigrowth	0.61	5.67	0.65	1.16	0.79	7.35	0.77	1.21
size	7.06	2.28	5.56	8.63	7.07	2.26	5.57	8.64
ni	2.29	0.03	0.00	4.46	2.91	0.05	0.00	4.65
roe	0.15	0.68	0.00	0.33	0.13	0.29	0.00	0.39

Panel A of Table 2 displays descriptive statistics for sample firms by time period. Variables Defined: smoothness = std dev. of core earnings over the previous year, log transformed; consensus = std dev of EPS forecasts scaled by stock price; frquality = sum of std dev. of each FRQ proxy; ravg = average of three measures of implied cost of capital (ICC); rgdn = ICC based on Gordon and Gordon (1997); rmpeg = ICC based on Easton (2004); rgls = ICC based on Gebhardt et al. (2001); alv1 (alv2, alv3) = total quarterly assets in levels 1, 2 and 3 respectively; llv1 (llv2, llv3) = total quarterly liabilities in levels 1, 2 and 3 respectively; lv3change = total quarterly change in level 3 fair value measurements; growth = % change in sales; ni = net income for the quarter; eissue = percentage change in common stock; dissue = percentage change in total liabilities; leverage = long-term debt divided by market value of equity; cash flow = quarterly net cash flow from operating activities divided by end of quarter total assets; auditor = 1 if audited by a big four firm, 0 otherwise; ubeta = unlevered beta based on a single factor model; sdocf = standard deviation of operating cash flows over previous five years plus 1, log transformed; sdbeta = standard deviation of beta values over previous year plus 1, log transformed; oigrowth = operating income this quarter divided by operating income in previous quarter; size = log of market value of equity at the end of the previous period; ni = net income for the quarter; roe = return on equity for the quarter.

TABLE 2
Descriptive Statistics
Panel B: Descriptive Statistics by Sub-Sample

	Firms Without Level 3 Activity		Firms With Level 3 Activity		
Variable	**Mean**	**Median**	**Mean**	**Median**	**Diff.**
smoothness	4.647	2.059	6.771	2.156	***
consensus	1.234	0.129	0.841	0.127	**
frquality	0.306	0.040	0.259	0.038	**
ravg	0.105	0.100	0.105	0.0995	ns
rgdn	0.105	0.091	0.105	0.092	ns
rmpeg	0.102	0.097	0.101	0.097	*
rgls	0.108	0.102	0.109	0.101	*
alv1	3.128	2.950	3.180	2.996	ns
alv2	2.901	3.121	2.865	3.222	*
alv3	2.664	2.596	2.542	2.550	**
llv1	0.990	1.465	1.213	1.548	***
llv2	0.085	0.901	0.099	1.001	*
llv3	0.074	0.087	0.070	0.071	ns
lv3change	0.556	0.501	0.696	0.690	***
growth	9.031	3.883	13.137	4.066	***
eissue	39.455	0.240	15.398	0.250	***
dissue	19.798	3.345	63.156	3.674	***
leverage	0.222	0.203	0.231	0.324	ns
cash flow	0.022	0.019	0.023	0.019	ns
auditor	0.783	1.000	0.769	1.000	ns
ubeta	0.633	0.511	0.593	0.474	*
sdocf	3.923	3.713	4.081	3.986	ns
sdbeta	0.137	0.067	0.146	0.071	ns
oigrowth	0.703	0.993	0.705	0.978	ns
size	7.079	7.223	7.048	7.174	ns
ni	3.211	3.456	3.001	3.396	*
roe	0.221	0.200	0.232	0.314	*
n	1,701		2,483		

*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Panel B displays the mean and median for the two time periods by firm activity.Variables Defined: smoothness = standard deviation of core earnings over the previous year, log transformed; consensus = standard deviation of EPS forecasts scaled by stock price; quality = sum of standard deviation of each financial reporting quality proxy; ravg = average of three measures of implied cost of capital (ICC); rgdn = ICC based on Gordon and Gordon (1997); rmpeg = ICC based on Easton (2004); rgls = ICC based on Gebhardt et al. (2001); alv1 (alv2, alv3) = total quarterly assets in levels 1, 2 and 3 respectively; llv1 (llv2, llv3) = total quarterly liabilities in levels 1, 2 and 3 respectively; lv3change = total quarterly level 3 fair value measurements; growth = percentage change in sales; ni = net income for the quarter; roe = return on equity for the quarter; eissue = percentage change in common stock; dissue = percentage change in total liabilities; leverage = long-term debt divided by market value of equity; cash flow = quarterly net cash flow from operating activities divided by end of quarter total assets; auditor = 1 if audited by one of the big four firms, 0 otherwise; ubeta = unlevered beta based on a single factor model; sdocf = standard deviation of operating cash flows over previous five years plus 1, log transformed; sdbeta = standard deviation of beta values over previous year plus 1, log transformed; oigrowth = operating income this quarter divided by operating income in previous quarter; size = log of market value of equity at the end of the previous period; ni = net income for the quarter; roe = return on equity for the quarter.

TABLE 3
Correlations Between Variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1)	smoothness	1																					
(2)	consensus	-0.015	1																				
(3)	frquality	**0.285**	**0.705**	1																			
(4)	asc	**-0.061**	-0.019	**-0.071**	1																		
(5)	fv3_trns	-0.023	-0.011	-0.009	0.001	1																	
(6)	asc x fv3	**-0.048**	-0.017	**-0.043**	**0.555**	**0.676**	1																
(7)	size	0.016	0.009	0.007	**0.052**	-0.015	0.023	1															
(8)	growth	0.006	-0.008	-0.006	0.030	0.013	0.030	-0.002	1														
(9)	eissue	0.002	0.000	-0.003	-0.028	-0.023	-0.015	0.011	0.000	1													
(10)	dissue	-0.019	0.002	-0.001	0.019	0.016	0.027	-0.032	0.007	0.000	1												
(11)	leverage	-0.003	-0.002	-0.004	-0.010	0.022	0.005	**-0.090**	-0.002	-0.001	0.000	1											
(12)	cashflow	-0.019	0.032	0.020	**-0.191**	0.031	-0.069	-0.008	-0.026	0.004	0.007	-0.001	1										
(13)	auditor	**0.464**	-0.011	**0.068**	0.003	-0.009	-0.007	0.016	0.011	0.011	0.002	-0.021	0.011	1									
(14)	alv1	**0.257**	-0.011	**0.251**	**-0.035**	-0.001	-0.022	0.002	0.008	-0.003	-0.002	-0.001	-0.033	**0.082**	1								
(15)	alv2	**0.237**	-0.009	**0.304**	-0.024	-0.002	-0.011	-0.002	-0.001	-0.003	-0.002	-0.002	-0.013	**0.071**	**0.846**	1							
(16)	alv3	**0.279**	-0.009	**0.369**	**-0.047**	-0.005	-0.030	0.007	0.005	-0.003	-0.002	-0.002	-0.024	**0.080**	**0.757**	**0.809**	1						
(17)	llv1	**0.243**	-0.009	**0.302**	**-0.049**	0.007	-0.021	-0.006	0.000	-0.002	-0.002	-0.001	-0.036	**0.065**	**0.841**	**0.839**	**0.717**	1					
(18)	llv2	**0.205**	-0.007	**0.273**	-0.021	-0.002	-0.009	-0.002	-0.003	-0.002	-0.001	-0.002	-0.012	**0.058**	**0.827**	**0.987**	**0.744**	**0.825**	1				
(19)	llv3	**0.235**	-0.007	**0.301**	**-0.053**	0.006	-0.025	0.003	0.001	-0.001	-0.001	-0.002	-0.017	**0.069**	**0.840**	**0.800**	**0.783**	**0.798**	**0.796**	1			
(20)	lv3change	0.012	0.000	**0.069**	**-0.052**	-0.017	-0.031	0.009	-0.001	0.001	0.000	0.000	0.000	0.001	**0.113**	**0.062**	0.077	**0.148**	**0.080**	**0.169**	1		
(21)	ni	**0.180**	-0.005	-0.016	**0.045**	-0.010	0.031	-0.016	-0.003	-0.002	0.000	-0.003	-0.007	0.086	**0.241**	**0.145**	0.014	**0.175**	**0.149**	**0.117**	0.035	1	
(22)	roe	0.012	0.001	0.003	0.020	0.016	0.011	0.024	0.007	0.000	0.001	0.000	-0.012	-0.007	0.002	0.002	0.002	0.002	0.002	0.002	0.000	0.006	1

Table 3 displays the Pearson correlation coefficients. Bold text indicate significance at the 5 percent and 1 percent levels, respectively. Variables previously defined.

TABLE 4
Regression Analysis of Financial Reporting Quality on ASC 820-10 (H1)

$$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 size_{it} + \beta_5 growth_{it} + \beta_6 eissue_{it} + \beta_7 dissue_{it} + \beta_8 leverage_{it} + \beta_9 cashflow_{it} + \beta_{10} auditor_{it} + \beta_{11} alv1_{it} + \beta_{12} alv2_{it} + \beta_{13} alv3_{it} + \beta_{14} llv1_{it} + \beta_{15} llv2_{it} + \beta_{16} lv3_{it} + \beta_{17} lv3change_{it} + \beta_{18} ni_{it} + \beta_{19} roe_{it} + e_{it}$$

Dependent Variables

Variable	Predicted Sign	smoothness	consensus	frquality
asc	-	-0.2025 **	-0.7049	-0.0956 *
		(0.1021)	(0.5420)	(0.0565)
fv3_trns	-	0.0002	-0.3855	0.0061
		(0.1114)	(0.5917)	(0.0617)
asc x fv3	+/-	-0.0988 **	0.3488	-0.0131
		(0.1336)	(0.7092)	(0.0740)
size	+	0.0122	0.0603	0.0048
		(0.0128)	(0.0682)	(0.0071)
growth	+	-0.0005	-0.0006	0.0000
		(0.0003)	(0.0018)	(0.0002)
eissue	+	0.0000	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)
dissue	+	0.0000	0.0000	0.0000
		(0.0000)	(0.0002)	(0.0000)
leverage	+	0.0000	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)
cashflow	+	-0.8818	6.9176 *	0.8251 **
		(0.6976)	(3.7041)	(0.3863)
auditor	+	2.3442 ***	-0.3142	0.0828 **
		(0.0724)	(0.3842)	(0.0401)
alv1	+/-	0.0000 **	0.0000	0.0000 ***
		(0.0000)	(0.0000)	(0.0000)
alv2	+/-	0.0000 ***	0.0000	0.0000 ***
		(0.0000)	(0.0000)	(0.0000)
alv3	+/-	0.0000	0.0000	0.0000 ***
		(0.0000)	(0.0001)	(0.0000)
llv1	+/-	0.0000 ***	0.0000	0.0000 ***
		(0.0000)	(0.0000)	(0.0000)
llv2	+/-	0.0000 ***	0.0000	0.0000 ***
		(0.0000)	(0.0000)	(0.0000)
llv3	+/-	0.0001 ***	0.0000	0.0001 ***
		(0.0000)	(0.0001)	(0.0000)
lv3change	+/-	0.0000	0.0000	0.0000 ***
		(0.0000)	(0.0001)	(0.0000)
ni	+/-	0.0006 ***	-0.0001	0.0000
		(0.0000)	(0.0002)	(0.0000)
roe	+	0.0000	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)
Constant		0.0975	1.1837 *	0.1251 *
		(0.1369)	(0.7270)	(0.0758)
Observations		4,184	4,184	4,184
Adj R^2		30.79%	2.20%	15.21%

*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Robust standard errors adjusted for intrafirm correlation with clustered standard errors are in parentheses.Variables previously defined.

TABLE 5
Fourth Quartile Analysis of Financial Reporting Quality on ASC 820-10 (H1)

$$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 size_{it} + \beta_5 growth_{it} + \beta_6 eissue_{it} + \beta_7 dissue_{it} + \beta_8 leverage_{it} + \beta_9 cashflow_{it} + \beta_{10} auditor_{it} + \beta_{11} alv1_{it} + \beta_{12} alv2_{it} + \beta_{13} alv3_{it} + \beta_{14} llv1_{it} + \beta_{15} llv2_{it} + \beta_{16} lv3_{it} + \beta_{17} lv3change_{it} + \beta_{18} ni_{it} + \beta_{19} roe_{it} + e_{it}$$

	Predicted Sign	Dependent Variables: smoothness	consensus	frquality
asc	-	-0.1617 *	-4.8666 **	-0.1632
		(0.0960)	(2.6704)	(0.1498)
fv3_trns	-	0.0494	-5.8549 **	-0.2451 *
		(0.1029)	(2.9372)	(0.1641)
asc x fv3	+/-	-0.0286	7.3865 **	0.2959 *
		(0.1262)	(3.4815)	(0.1949)
size	+	-0.0107	-0.0313	0.0089
		(0.0126)	(0.3391)	(0.0184)
growth	+	-0.0008	0.0071	0.0000
		(0.0007)	(0.0145)	(0.0003)
eissue	+	0.0000	-0.0017	0.0000
		(0.0000)	(0.0075)	(0.0001)
dissue	+	0.0004 *	-0.0001	0.0000
		(0.0002)	(0.0012)	(0.0001)
leverage	+	-0.0001	-0.0002	0.0000
		(0.0001)	(0.0014)	(0.0000)
cashflow	+	0.4888	46.4299 ***	2.0032 **
		(0.5996)	(17.637)	(1.0449)
auditor	+	0.4186 ***	-1.6941	-0.0748
		(0.1719)	(1.6861)	(0.0938)
alv1	+/-	0.0000 ***	0.0001	0.0000
		(0.0000)	(0.0003)	(0.0000)
alv2	+/-	0.0000 **	-0.0001	0.0000
		(0.0000)	(0.0002)	(0.0000)
alv3	+/-	0.0000 *	-0.0002	0.0000
		(0.0000)	(0.0012)	(0.0001)
llv1	+/-	0.0000 ***	-0.0006	0.0000
		(0.0000)	(0.0018)	(0.0001)
llv2	+/-	0.0000 **	0.0002	0.0000
		(0.0000)	(0.0007)	(0.0000)
llv3	+/-	0.0000 **	0.0009	-0.0001
		(0.0000)	(0.0032)	(0.0001)
lv3change	+/-	0.0000	0.0000	0.0000
		(0.0000)	(0.0007)	(0.0000)
ni	+/-	0.0001 **	0.0003	0.0001
		(0.0000)	(0.0037)	(0.0002)
roe	+	0.0005 ***	0.0000	0.0000
		(0.0002)	(0.0000)	(0.0000)
Constant		4.5843 ***	5.6208 *	0.2205
		-0.2049	(3.4263)	(0.1930)
Observations		972	577	1,069
Adj R^2		26.55%	0.77%	0.90%

*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Robust standard errors adjusted for intrafirm correlation with clustered standard errors are in parentheses.
Variables previously defined.

TABLE 6
Correlations Between Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) ravg	1																	
(2) rgdn	**0.671**	1																
(3) rmpeg	**0.483**	-0.015	1															
(4) rgls	**0.551**	0.003	-0.010	1														
(5) asset	0.061	0.003	**0.084**	0.048	1													
(6) transin	-0.060	-0.044	0.017	**-0.070**	**-0.068**	1												
(7) alv1	-0.009	-0.006	0.014	-0.022	**0.342**	-0.030	1											
(8) alv2	0.002	-0.006	0.020	-0.009	**0.263**	-0.057	**0.833**	1										
(9) alv3	-0.014	-0.011	-0.001	-0.011	0.144	-0.104	**0.756**	**0.823**	1									
(10) llv1	0.003	-0.013	0.026	-0.003	**0.326**	-0.070	**0.854**	**0.826**	**0.726**	1								
(11) llv2	0.002	-0.006	0.019	-0.006	**0.271**	-0.040	**0.810**	**0.989**	**0.764**	**0.798**	1							
(12) llv3	-0.012	-0.011	0.006	-0.013	0.166	-0.031	**0.816**	**0.796**	**0.811**	**0.775**	**0.788**	1						
(13) leverage	0.032	0.003	0.029	0.028	-0.024	-0.042	-0.003	-0.003	-0.004	-0.002	-0.003	-0.004	1					
(14) ubeta	**-0.058**	-0.027	-0.030	**-0.046**	**-0.145**	**-0.330**	-0.026	-0.027	-0.019	-0.030	-0.028	-0.009	**-0.039**	1				
(15) sdocf	0.011	-0.012	0.010	0.024	-0.013	-0.055	0.047	0.029	0.014	**0.043**	0.029	0.008	**0.064**	**-0.343**	1			
(16) sdbeta	0.016	0.008	0.020	0.002	0.019	0.003	0.011	0.002	0.005	0.011	0.002	0.015	-0.003	**-0.066**	-0.003	1		
(17) oigrowth	-0.008	-0.006	-0.002	-0.006	**0.075**	0.032	0.002	0.013	0.006	0.008	0.013	0.004	-0.002	0.008	-0.007	-0.005	1	
(18) size	0.003	-0.017	0.019	0.009	**0.090**	0.011	0.003	-0.002	0.001	-0.001	-0.005	-0.003	**-0.105**	**0.381**	-0.001	0.002	0.017	1

Table 6 displays the Pearson correlation coefficients. Bold text indicate significance at the 5 percent and 1 percent levels, respectively. Variables previously defined.

TABLE 7
Analysis of Implied Cost of Capital on ASC 820-10

$$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 alv1_{it} + \beta_5 alv2_{it} + \beta_6 alv3_{it} + \beta_7 llv1_{it} + \beta_8 llv2_{it} + \beta_9 llv3_{it} + \beta_{10} highfrq_{it} + \beta_{11} lowfrq_{it} + \beta_{12} asc \times highfrq_{it} + \beta_{13} asc \times lowfrq_{it} + \beta_{14} leverage_{it} + \beta_{15} ubeta_{it} + \beta_{16} sdocf_{it} + \beta_{17} sdbeta_{it} + \beta_{18} oigrowth_{it} + \beta_{19} size_{it} + e_{it}$$

		Dependent Variables							
Variable	Pred. Sign	ravg		rgdn		rmpeg		rgls	
asc	+/-	-0.003		-0.003		-0.006	**	-0.001	
		(0.002)		(0.005)		(0.003)		(0.003)	
fv3_trns	+/-	0.001		-0.002		0.003		0.001	
		(0.002)		(0.004)		(0.003)		(0.003)	
asc x fv3	+/-	-0.001		-0.001		-0.003		0.001	
		(0.003)		(0.006)		(0.004)		(0.004)	
alv1	+/-	0.000	*	0.000		0.000		0.000	**
		(0.000)		(0.000)		(0.000)		(0.000)	
alv2	+/-	0.000		0.000		0.000	*	0.000	*
		(0.000)		(0.000)		(0.000)		(0.000)	
alv3	+/-	0.000	*	0.000		0.000	**	0.000	
		(0.000)		(0.000)		(0.000)		(0.000)	
llv1	+/-	0.000		0.000		0.000		0.000	***
		(0.000)		(0.000)		(0.000)		(0.000)	
llv2	+/-	0.000		0.000		0.000	*	0.000	*
		(0.000)		(0.000)		(0.000)		(0.000)	
llv3	+/-	0.000		0.000		0.000		0.000	
		(0.000)		(0.000)		(0.000)		(0.000)	
highfrq	+/-	-0.001		0.000		-0.003		-0.001	
		(0.003)		(0.008)		(0.004)		(0.003)	
lowfrq	+/-	-0.006	**	-0.016	**	-0.004		0.004	
		(0.003)		(0.007)		(0.004)		(0.004)	
asc x high	+/-	0.002		0.000		0.002		0.005	
		(0.004)		(0.010)		(0.007)		(0.006)	
asc x low	+/-	0.005		0.014	**	0.006		-0.007	
		(0.003)		(0.008)		(0.005)		(0.006)	
leverage	+	0.000	***	0.000		0.000	***	0.000	***
		(0.000)		(0.000)		(0.000)		(0.000)	
ubeta	+	-0.005	***	-0.009	***	-0.002		-0.004	**
		(0.001)		(0.002)		(0.001)		(0.002)	
sdocf	+	0.000		-0.001	*	0.000		0.000	
		(0.000)		(0.001)		(0.000)		(0.001)	
sdbeta	+	0.001		0.004		0.002		-0.004	**
		(0.002)		(0.005)		(0.004)		(0.002)	
oigrowth	-	0.000		0.000		0.000		0.000	
		(0.000)		(0.000)		(0.000)		(0.000)	
size	-	0.000		0.000		0.000		0.000	
		(0.000)		(0.001)		(0.000)		(0.000)	
Constant		0.109	***	0.119	***	0.101	***	0.109	***
		(0.002)		(0.006)		(0.003)		(0.004)	
Observations		2,998		2,998		2,998		2,998	
Adj R^2		1.32%		0.92%		1.03%		0.73%	

*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Robust standard errors adjusted for intrafirm correlation with clustered standard errors are in parentheses. Variables previously defined.

TABLE 8
Analysis of Implied Cost of Capital on Firms with Transfer Activity

$$Y_{it} = \beta_{0it} + \beta_1 asset_{it} + \beta_2 transin_{it} + \beta_3 asset \times transin_{it} + \beta_4 highfrq_{it} + \beta_5 lowfrq_{it} + \beta_6 asset \times highfrq_{it} + \beta_7 asset \times lowfrq_{it} + \beta_8 transin \times lowfrq_{it} + \beta_9 alv1_{it} + \beta_{10} alv2_{it} + \beta_{11} alv3_{it} + \beta_{12} llv1_{it} + \beta_{13} llv2_{it} + \beta_{14} llv3_{it} + \beta_{15} leverage_{it} + \beta_{16} ubeta_{it} + \beta_{17} sdocf_{it} + \beta_{18} sdbeta_{it} + \beta_{19} oigrowth_{it} + \beta_{20} size_{it} + e_{it}$$

Dependent Variables

Variable	Predicted Sign	ravg	rgdn	rmpeg	rgls
asset	+/-	-0.0138	-0.0594 **	-0.0130	0.0050
		(0.0099)	(0.0256)	(0.0098)	(0.0109)
transin	+/-	-0.0214 ***	-0.0733 ***	-0.0148 ***	-0.0057
		(0.0088)	(0.0259)	(0.0057)	(0.0068)
asset x transin	+/-	0.0143	0.0616 **	-0.0156	-0.0032
		(0.0126)	(0.0331)	(0.0153)	(0.0133)
highfrq	+/-	-0.0007	0.0148	-0.0001	-0.0167
		(0.0083)	(0.0249)	(0.0092)	(0.0106)
lowfrq	+/-	0.0090	0.0288	-0.0032	0.0013
		(0.0163)	(0.0463)	(0.0070)	(0.0135)
asset x highfrq	+/-	-0.0040	-0.0263	-0.0061	0.0203
		(0.0122)	(0.0273)	(0.0158)	(0.0237)
asset x lowfrq	+/-	-0.0010	-0.0215	0.0114	0.0070
		(0.0206)	(0.0453)	(0.0270)	(0.0244)
transin x lowfrq	+/-	0.0112	-0.0071	-0.0124	0.0533
		(0.0156)	(0.0299)	(0.0318)	(0.0371)
alv1	+/-	0.0000 *	0.0000 ***	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
alv2	+/-	0.0000	0.0000	0.0000 **	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
alv3	+/-	0.0000	0.0000	0.0000 *	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
llv1	+/-	0.0000 *	0.0000 *	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
llv2	+/-	0.0000	0.0000	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
llv3	+/-	0.0000	0.0000	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
leverage	+	0.0000 ***	0.0000 ***	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
ubeta	+	-0.0008	-0.0065	-0.0004	0.0044
		(0.0114)	(0.0295)	(0.0134)	(0.0125)
sdocf	+	0.0009	0.0062 **	-0.0030 *	-0.0006
		(0.0012)	(0.0030)	(0.0016)	(0.0015)
sdbeta	+	0.0183 *	0.0320	0.0059	0.0172 ***
		(0.0118)	(0.0285)	(0.0097)	(0.0064)
oigrowth	-	-0.0003 *	-0.0012 ***	0.0001	0.0000
		(0.0002)	(0.0004)	(0.0002)	(0.0005)
size	-	-0.0016	-0.0001	-0.0018	-0.0027
		(0.0014)	(0.0032)	(0.0018)	(0.0020)
Constant		0.1191 ***	0.1244 ***	0.1099 ***	0.1230 ***
		(0.0101)	(0.0239)	(0.0122)	(0.0134)
Observations		148	148	148	148
Adj R^2		17.54%	19.63%	20.60%	16.15%

*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Robust standard errors adjusted for intrafirm correlation with clustered standard errors are in parentheses. Variables previously defined.

Chart 1
Implied Cost of Capital Measures

Gebhardt et al. (2001) employs a version of the residual income model that assumes the abnormal earnings growth rate reverts to the industry mean after the fifth year.

$$P_t = B_t = \frac{FROE_{t+1} - r_e}{(1+r_e)} B_t + \frac{FROE_{t+2} - r_e}{(1+r_e)^2} B_{t+1} + TV$$

where P_t equals the market price, B_t equals book value per share, r_e is the cost of equity capital, FROE equals the forecasted return on equity and *TV*, the terminal value, is estimated as:

$$TV = \sum_{i=3}^{T-1} \frac{\mathrm{FROE_{t+i}} - \mathrm{r_e}}{(1+\mathrm{r_e})^{\mathrm{i}}} B_{t+i-1} + \frac{FROE_{t+T} - r_e}{(1+r_e)^{T-1}} B_{t+T-1}$$

The second proxy used to calculate the cost of equity capital was developed by Easton (2004) and is as follows:

$$\mathrm{r_e} = \sqrt{(eps_2 - eps_1)/price_0)}$$

where eps_1 and eps_2 are earnings per share forecasts of eps at the end of each calendar quarter for fiscal years *t+1* and *t+2*, respectively and P_0 equals market price at the end of the quarter.

The third proxy for cost of equity capital was developed by Gordon and Gordon (1997):

$$M_t = \frac{E_t(E_{t+1})}{r}$$

where M_t equals market value at the end of each calendar quarter, r is the implied cost of capital, and E_t is earnings expectations in year *t* while E_{t+1} are expectation in year *t + 1*.