Fair value measurement disclosure regulation and the manufacturing sector

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ABSTRACT

This study examines the effect of FASB Accounting Standards Codification on Fair Value Measurements (ASC 820-10) on distressed and non-distressed firms in the manufacturing sector. The manufacturing sector took a considerable hit in production aided by the decreased global liquidity caused by the major financial crisis of 2007. This study aims to shed light on the effects of corporate disclosure regulation and its effects on firms with a perceived incentive to bias financial reporting. Initial results indicate that ASC 820-10 did improve financial reporting quality however the requirement did have a differential effect on distressed and non-distressed firms.

Keywords: Corporate Disclosure, Fair Value, Financial Reporting, Manufacturing, Liquidity
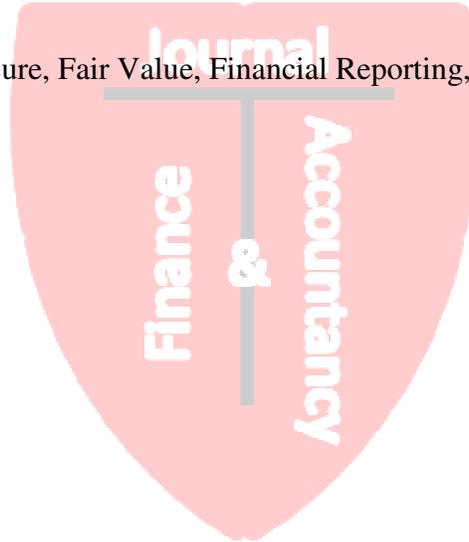
INTRODUCTION

The most salient outcome of the recent economic crisis to publicly traded companies was to the financial reporting structure, i.e. increased disclosure and enhanced reporting accountability. The three-tiered framework established by FAS 157 provides certainty for the estimated values of Level 1 and, in most cases, Level 2 fair value assets and liabilities. However, Level 3 fair value measurements generally have no established market for valuation and are primarily a function of management estimation- which can be a severe threat to objectivity and reliability. Massive losses incurred by various stakeholders at highly leveraged firms like Lehman Brothers and Bear Sterns prompted regulators to question the objectivity of fair value measurements given its potential to adversely impact the financial statements. Nissim (2003) finds that some banks overstate the disclosed fair value of loans to favorably influence the market's perception of their risk and value. This bias is likely to result in lower cost of capital and higher firm value than the true state of the firm reflects.

The sample used in this study focuses on the manufacturing sector and the effects of financial disclosure regulation. Analysis of the manufacturing sector is primarily motivated by the recent economic crisis having severely impacted this industry through decreased industrial demand. The effect of the decline was globally pervasive because of the volatility in foreign and domestic asset and currency markets. Furthermore, the manufacturing sector represents a very diverse group of industries ranging from highly specialized goods to the various components associated with real estate production.

The effects of the latitude afforded to managers surrounding the valuation of illiquid securities is likely to be more pronounced in firms that face substantial pressure to survive (distressed firms), relative to its peers. Prior academic literature is in agreement that managers of financially distressed firms manage earnings either upward or downward for reasons that are generally relative to firm-specific circumstances (DeFond and Jiambalvo, 1994; DeAngelo et al. 1994). Given that a considerable amount of latitude is afforded in valuation of illiquid securities and managers of distressed firms are more likely to utilize discretionary accounting methods to relieve the pressures of financial distress, it stands to reason that a relationship exists between the two. However, there is limited empirical evidence to the validity of the relationship between fair value estimates of illiquid securities and distressed firms, a void that this study attempts to fill.

The remainder of this paper is organized in the following way: section two discusses the relevant background, reviews relevant prior research and develops hypotheses; section three outlines the sample selection process and description while section four presents research methodology and empirical proxies; section five presents the results and section six concludes the study with a discussion of the results and implications for future research.

BACKGROUND AND HYPOTHESES DEVELOPMENT

The findings in the academic literature on the discretion of fair value measurements of illiquid securities and its relation to financial reporting is consistent but limited (Nissim, 2003; Aboody et al., 2006; Bartov et al., 2007; Dechow and Shakespeare, 2009). Nissim (2003) examines the disclosed fair value of loans and finds that the estimated extent of the fair value overstatement is negatively related to regulatory capital, asset growth, liquidity and book value of loans. These findings imply that the financial condition of the firm is significantly related to the use of discretionary valuation techniques and its application. Aboody et al. (2006) identify

four option pricing inputs that significantly affect valuation: (1) expected option life; (2) expected dividend yield; (3) expected stock price volatility; and (4) expected risk-free interest rate and find that firms understate option value estimates. The pervasiveness of the option value estimate bias is realized in the income statement through the understatement of stock-based compensation expense and various financial ratios and benchmarks associated with net income. Bartov et al. (2007) examine the determinants of the expected stock price volatility used in executive stock option valuation and find disclosed volatility is inversely related to their values-evidence of managerial discretion used to understate option value. Dechow and Shakespeare (2009) find that managers utilize the discretion in fair value securitization transactions to smooth earnings. The collective results suggest that managers use the discretion afforded in the fair value measurements of illiquid securities to minimize and influence the market's perception of the riskiness of the firm and its performance.

The prior academic literature on the determinants of distressed firms and management behavior is well established and extensive (Beaver, 1966; DeAngelo et al., 1994; Altman, 2001, 1999; Rosner, 2003; Saleh and Ahmed, 2005; Leland, 2004; Beaver et al., 2005; Charitou et al., 2007) Beaver (1966) found that financial ratios have the ability to predict bankruptcy while subsequent studies confirmed this finding is true at least five years prior to bankruptcy filing. Beaver et al., (2005) examine a sample of bankrupt and non-bankrupt firms for the period 1962-2002 identifying three trends that likely affects the predictive ability of financial ratios: (1) establishment and evolution of FASB and accounting standards; (2) increase in intangible and hard to value securities; and (3) increase in discretion information on the financial statements. These trends are dynamic and their consistent evolution has the potential to affect the comparability and readability of financial statements.

Results from Beaver et al. (2005) indicate that financial ratios that capture profitability, cash flow generation and leverage have significant explanatory power in identifying distressed firms and predicting bankruptcy. DeAngelo et al. (1994) examine the accounting choices made by managers of 76 financially distressed firms and found that accounting choices reflect the firms' financial difficulties rather than attempts to inflate income. Considering this finding within the context of fair value measurements is important because it implies that there is a relationship between the financial state of the firm and discretionary accounting choices- i.e. Level 3 fair value estimates and re-measurements. Taken a step further, it is also reasonable to expect a relationship between financial reporting quality and the discretionary accounting choices of firms to be exacerbated by financial distress.

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.*

Rosner (2003) examined 293 bankrupt firms and found that bankrupt firms had significantly more negative changes in cash flows from operations and net cash and a greater disparity between accrual-based net income and operating cash flows than do control firms. The findings of Saleh and Ahmed (2003) and Charitou et al. (2007) provide evidence that distressed firms have significantly more negative discretionary accruals than the control sample and that

firms shift earnings downward prior to the bankruptcy filing. Taken together the above studies suggest that the discretionary accounting choices of bankrupt and distressed firms are significantly different than non-distressed and non-bankrupt firms. Based on the above discussion, I hypothesize:

> **H1:** There is no difference in the effect of ASC on financial reporting quality for distressed and non-distressed firms.
> **H2:** There is no difference in the effect of level 3 transfers on financial reporting quality for distressed and non-distressed firms.

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 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. 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. The above procedures results in a final sample of 102 firms and 957 firm-quarter observations for the manufacturing sector only. Table 1 (Appendix) describes the final sample of 102 firms located within the manufacturing sector with material transfer activity between levels.

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). 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. Given the congruence of FAS 157 and ASC 820-10, Figure 1 (Appendix) displays the pre-ASC time period 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.

Proxies for Financial Reporting Quality

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 measure that is superior for all decision models. In this study, the proxy for financial reporting quality is motivated by Dichev et al., (2012). Dichev et al., (2012) survey 169 CFOs and interview standard setters and find that high quality earnings are

"sustainable, backed by actual cash flows…and serve as a guide to the long-run profits of the firm." Based on these findings and SFAC No. 1, this study elects to use *Smoothness* and *Consensus* as empirical proxies for financial reporting quality.

      Smoothness is a firm-specific time-series construct that captures the variability in earnings-both smoothed and artificial- and by definition is designed to capture the informativeness of the earnings number reported by firms. *Smoothness* is measured as the ratio of the standard deviation of core earnings over the previous period. Core earnings exclude one-time and special items from earnings and represent more fundamental earnings of the firm. [1] Further empirical evidence suggests that earnings adjusted for these transitory items are more informative than GAAP earnings (Bhattacharya et al., 2003; Lougee and Marquardt, 2004).

      Consensus measures the predictability of earnings by way of the agreement (dispersion) of analyst forecasts- i.e Consensus represents the markets' ability to predict the period earnings for a firm. Following Ng (2011), *Consensus* is computed as the standard deviation of EPS forecasts scaled by stock price. Given the inherent noisiness of the above proxies for financial reporting quality, an aggregate information quality proxy, *Quality*, is constructed by standardizing each firm proxy by the standard deviation of the proxy for all firms and summing the standardized proxies. This methodology is consistent with Ng (2011) whose study provides empirical evidence that this approach reduces noise and potential biases associated with each individual financial reporting quality proxy.

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
        lv3change = change in level 3 assets over the previous qtr.
        ni = net income for the quarter
        roe = return on equity for the quarter

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[1] Core earnings excludes any gains related to pension activities, net revenues from the sale of assets, impairment of goodwill charges, prior-year charge and provision reversals, and settlements related to litigation or insurance claims. Expenses related to employee stock option grants, pensions, restructuring of present operations or any merger and acquisition costs, R&D purchases, write-downs of depreciable or amortizable operating assets, and unrealized gains/losses from hedging activities are all included in the core earnings.

Table 2 (Appendix) displays the descriptive statistics for the sample of manufacturing firms with material transfer activity. As shown in Table 2, on average firms within this sample reclassified securities to level 3 from level 2 with greater frequency than reclassification from level 3 to level 2. Additionally, these firms had an average of three (3) times as many level 2 assets relative to level 1 and most utilize the auditing services of a Big Four auditor.

Models for Tests of Financial Reporting Quality

To test H1 and H2, the following model is used:

$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 size_{it} + \beta_5 growth_{it} + \beta_6 eissue_{it} + \beta_7 dissue_{it} + \beta_8 leverage_{it} + \beta_9 cashflow_{it} + \beta_{10} auditor_{it} + \beta_{11} alv1_{it} + \beta_{12} alv2_{it} + \beta_{13} alv3_{it} + \beta_{14} v3change_{it} + \beta_{15} ni_{it} + \beta_{16} roe_{it} + e_{it}$ (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.

RESULTS

Table 3(Appendix) presents the correlation coefficients for the financial reporting quality proxies and associated control variables. As shown in Table 3, there is a significant positive relationship between smoothness and total quarterly assets in levels 1, 2, and 3 (alv1, alv2 and alv3) respectively. This relationship implies that lower financial reporting quality is associated with those firms with increased activity within the various asset classes. Furthermore, the results indicate that cashflow has a significant positive relationship with alv1 but no relationship is found with alv2 and alv3. Taken together these relationships imply a direct relationship between the quality of the financial information presented by firms, their cash flow and fair value asset base.

Table 4 (Appendix) presents the results for the analysis of the relation between financial reporting quality and ASC 820-10 for the full sample of firms. The significant negative coefficient for asc,and fv3_trns when financial reporting quality is proxied by Smoothness and Frquality indicate that financial reporting quality improved. The significant positive coefficient on the interaction term, asc x fv3, indicates that post 2009 firms with transfers from level 3 have significantly lower financial reporting quality relative to pre 2009 firms without transfer activity from level 3.

The 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. To analyze how ASC 820-10 affects distressed and non-distressed firms differently, the sample was partitioned based on firms' return on assets (ROA). The firms with ROA above the ROA mean for the full sample are considered non-distressed while those firms below the mean are considered distressed firms. Table 5 (Appendix) presents the correlation coefficients for the financial reporting quality proxies and associated control variables for distressed firms only. Two interesting changes occur for the distressed firms sample relative to the full sample: (1) the relationship between size and growth inverts implying more opportunities for growth and capital

rest with larger distressed firms that are able to navigate away from distress; (2) relationship between auditor and asc inverts suggesting changes in auditors used by distressed firms from big four auditors to non-big four auditors after 2009.

Table 6 (Appendix) presents the regression results of the relation between financial reporting quality and ASC 820-10 for distressed firms only. Results indicate that the issuance of debt by a distressed firm has no effect on the financial reporting quality of the financial statements. Furthermore, the evidence suggests that the auditor is more important to the financial reporting quality of a distressed firm than a non-distressed firm. Additionally, alv2 is no longer significant indicating users may discount more subjective information as firms face financial difficulties.

Table 7 (Appendix) presents the regression results of the relation between financial reporting quality and ASC 820-10 for non-distressed firms only. The results from Table 7 support the assertion that the release of ASC 820-10 improved financial reporting quality for only a fraction of the sample tested. Additionally, the results provide evidence that subjectivity, specifically for fair value remeasurements/reclassifications, can be interpreted and discounted by financial statement users.

CONCLUSION AND EXPECTED CONTRIBUTIONS

This study aims to evaluate the effect of the fair value mandatory disclosure requirement, ASC 820-10, on financial reporting quality in the manufacturing sector. Initial results suggest that financial reporting quality improved for non-distressed firms while having no significant effect for distressed firms. This finding would seem to disagree with academic literature that finds managerial latitude is more prevalent in distressed firms because of the internal and external pressures to meet earnings and operational measures (DeFond and Jiambalvo, 1994; DeAngelo et al. 1994). It is reasonable to assume that these distressed firms may have more systematic issues or focused on sustainability where manipulation of this particular accounting choice does not produce the desired signal(s) to financial statement users. Further research is required to better fully understand the dynamics of the relationship between distressed firms and fair value reporting requirements and financial reporting quality.

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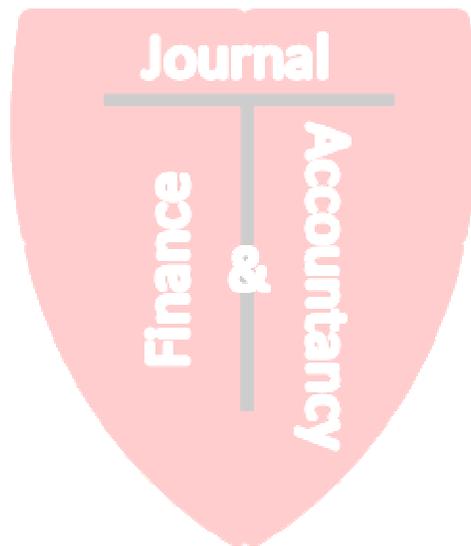
APPENDIX

Figure 1
Timeline of significant events surrounding adoption of ASC 820-10
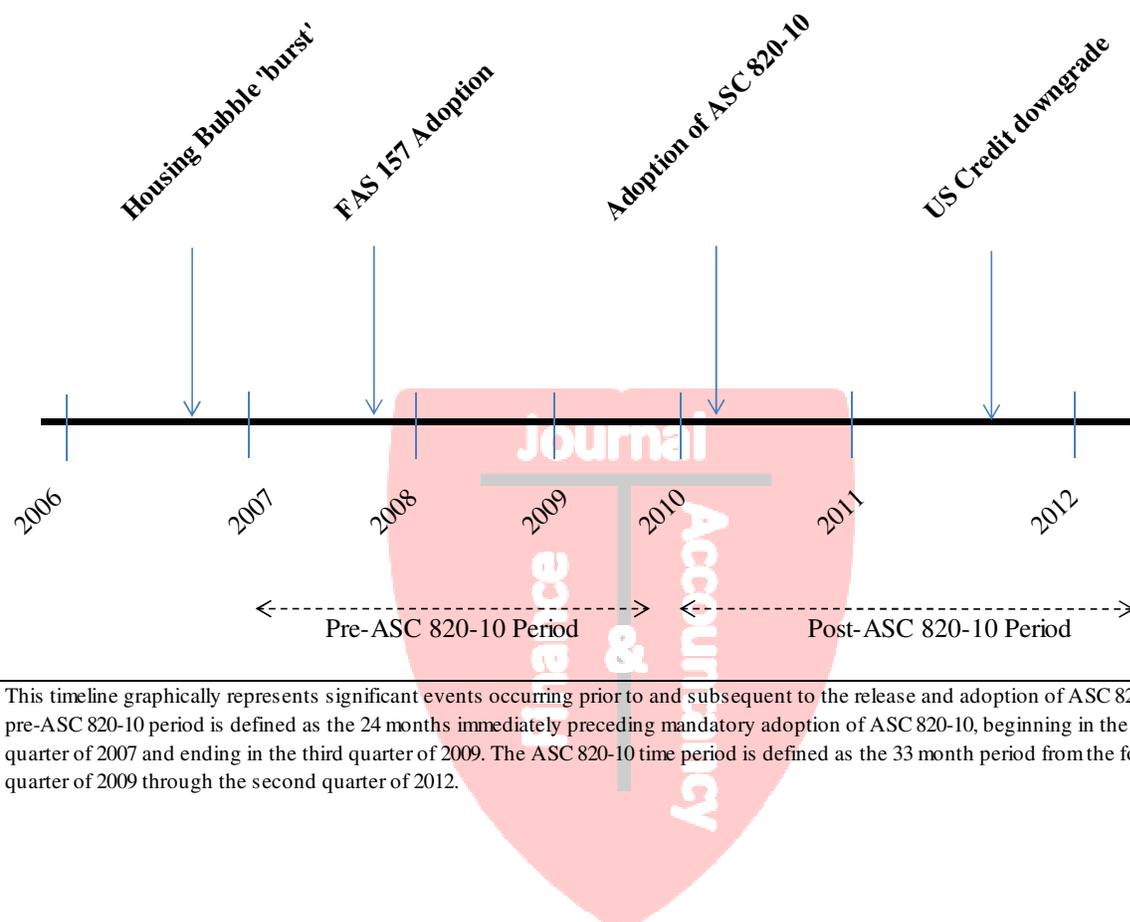
This timeline graphically represents significant events occurring prior to and subsequent to the release and adoption of ASC 820-10. The pre-ASC 820-10 period is defined as the 24 months immediately preceding mandatory adoption of ASC 820-10, beginning in the fourth quarter of 2007 and ending in the 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)
Less Non-Manufacturing firms (NAICS code 31-33 Only)	(400)
Final Sample	102

Table 1 displays the sample reconcilitation to determine final sample.
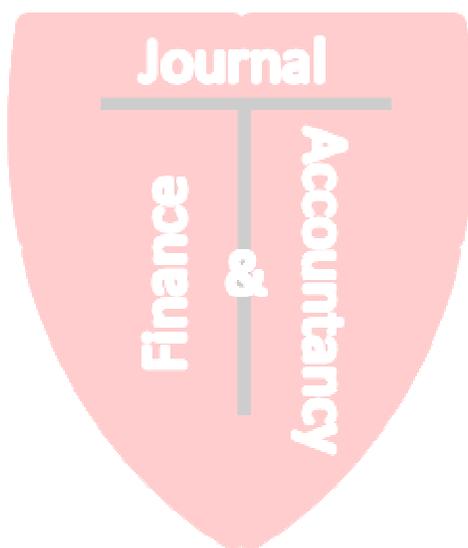
TABLE 2
Descriptive Statistics

| Variable	Mean	Std. Dev.	Min	Max
smoothness	2.157	2.455	-4.482	9.029
consensus	0.714	8.577	0	194.02
frquality	0.315	1.260	0	16.64
asc	0.520	0.500	0	1
fv3_trns	0.381	0.486	0	1
asc x fv3	0.300	0.458	0	1
size ($MM)	4038.68	8908.73	0	67320
growth	7.391	39.145	-63.323	693.47
eissue	7.331	52.513	-100	1389.50
dissue	28.102	492.01	-99.040	15049.18
leverage	60.043	424.136	0	6626.70
cashflow	0.027	0.058	-0.440	0.866
auditor	0.805	0.397	0	1
alv1 ($MM)	478.92	1369.78	0	15581
alv2 ($MM)	1296.63	4711.37	0	38390
alv3 ($MM)	62.178	215.981	0	3235
lv3change	3.158	2.452	-4.36	11.99
ni ($MM)	343.73	1157.74	-8697	16444
roe	11.54	119.99	-888.857	3221.711

Variables Defined: smoothness = standard deviation of core earnings over the previous year, log transformed; consensus = standard deviation of EPS forecasts scaled by stock price; frquality = sum of standard deviation of each financial reporting quality proxy; asc = 1 if calendar quarter is after 2009 qtr 4; 0 otherwise; fv3_trns = 1 if transfers from level 3; 0 otherwise; asc x fv3_trns = the interaction term coded 1 if both asc and fv3_trns equal 1, 0 otherwise; size = log of total assets 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 = long-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; lv3change = change in level 3 assets; ni = net income for the quarter; roe = return on equity for the quarter.

TABLE 3
Correlations between variables - Full Sample

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1)	smoothness	1																		
(2)	consensus	-0.016	1																	
(3)	frquality	**0.295**	**0.573**	1																
(4)	asc	**0.076**	0.037	**-0.064**	1															
(5)	fv3_trns	-0.025	0.007	-0.044	0.418	1														
(6)	asc x fv3	0.146	0.021	-0.041	**0.628**	0.834	1													
(7)	size	0.505	-0.019	0.371	-0.013	0.072	0.077	1												
(8)	growth	-0.007	-0.003	0.001	0.033	-0.062	-0.028	**-0.012**	1											
(9)	eissue	0.014	0.038	-0.003	0.008	0.001	0.018	-0.009	0.034	1										
(10)	dissue	**-0.055**	**0.044**	**0.017**	0.035	**-0.023**	-0.015	**-0.010**	-0.006	**0.050**	1									
(11)	leverage	-0.006	-0.006	-0.017	0.019	0.042	0.019	**-0.010**	-0.011	**-0.018**	**-0.004**	1								
(12)	cashflow	-0.085	0.015	0.003	**0.166**	0.122	0.049	-0.005	-0.073	-0.055	**-0.006**	0.029	1							
(13)	auditor	**0.017**	-0.055	0.007	**0.002**	0.051	0.024	0.000	-0.095	0.035	-0.068	-0.009	0.013	1						
(14)	alv1	**0.123**	-0.017	**0.047**	0.068	0.284	0.197	0.337	-0.040	-0.016	0.003	0.006	**0.043**	0.052	1					
(15)	alv2	**0.231**	0.001	0.088	0.140	0.231	0.229	0.312	0.019	-0.022	0.020	-0.008	0.030	0.023	0.535	1				
(16)	alv3	**0.130**	-0.007	0.044	0.015	0.200	0.117	0.197	-0.012	-0.029	-0.008	-0.006	0.054	-0.014	0.327	0.351	1			
(17)	lv3change	**0.059**	0.024	0.013	-0.077	-0.044	-0.038	-0.027	0.037	-0.005	-0.007	-0.040	-0.039	-0.045	**-0.025**	**0.026**	0.011	1		
(18)	ni	0.370	-0.007	**0.186**	0.057	0.053	0.091	0.536	0.024	-0.019	-0.002	-0.008	**-0.026**	-0.075	0.174	0.242	0.036	0.017	1	
(19)	roe	0.111	-0.173	-0.071	0.043	0.012	0.033	0.109	-0.018	-0.007	**-0.003**	**0.001**	**0.003**	-0.017	0.043	0.089	-0.019	0.010	0.153	1

Table 3 displays the Pearson correlation coefficients in bold at the 1 percent level. Variables previously defined.
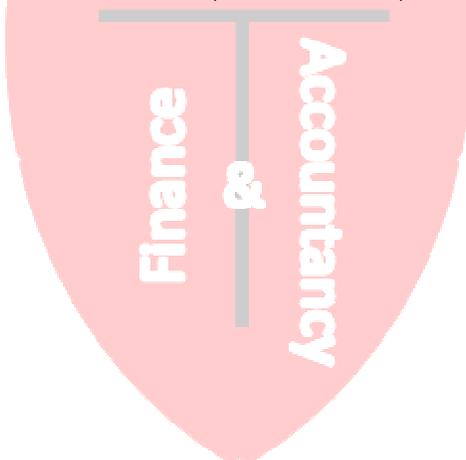
TABLE 4

Regression Analysis of Financial Reporting Quality Proxies on ASC 820-10

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

Dependent Variables

Variable	Predicted Sign	smoothness	consensus	frquality
asc	-	-0.0743	0.7463	-0.1682 *
		(0.1654)	(0.760)	(0.099)
fv3_trns	-	-2.5737 ***	-0.4038	-0.0997 *
		(0.3111)	(0.298)	(0.060)
asc x fv3_trns	+/-	2.8511 ***	0.3335	0.2035
		(0.3561)	(1.096)	(0.130)
size	+	0.0001 ***	0.0000	0.0000
		(0.0000)	(0.000)	(0.000)
growth	+	-0.0003	-0.0040	0.0004
		(0.0013)	(0.004)	(0.001)
eissue	+	0.0003	0.0061	0.0001
		(0.0006)	(0.008)	(0.001)
dissue	+	-0.0003 ***	0.0007 ***	0.0000 **
		(0.0000)	(0.000)	(0.000)
leverage	+	0.0001	0.0000	0.0000
		(0.0001)	(0.000)	(0.000)
cashflow	+	-1.8674 *	1.7571	0.4662
		(1.0378)	(4.460)	(0.532)
auditor	-	-2.8846 ***	-0.4795	-0.2666
		(0.5324)	(0.329)	(0.173)
alv1	+/-	-0.0004 ***	-0.0002	-0.0002 ***
		(0.0001)	(0.000)	(0.000)
alv2	+/-	0.0001 ***	0.0001	0.0000 *
		(0.0000)	(0.000)	(0.000)
alv3	+/-	0.0003	-0.0005	-0.0001
		(0.0004)	(0.001)	(0.000)
lv3change	+/-	0.0558 ***	0.0852	0.0053
		(0.0212)	(0.115)	(0.016)
ni	+/-	0.0000	0.0003	-0.0002 **
		(0.0001)	(0.000)	(0.000)
roe	+	0.0004	-0.0123	-0.0013
		(0.0004)	(0.015)	(0.001)
Constant		4.2194 ***	0.5645 ***	0.6101 ***
		(0.4773)	(0.220)	(0.198)
Observations		957	957	957
Adj R^2		27.97%	3.31%	9.08%
F-Stat		36.56 ***	13.68 ***	5.33 ***

*, **, *** 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 Defined: smoothness = standard deviation of core earnings over the previous year, log transformed; consensus = standard deviation of EPS forecasts scaled by stock price; frquality = sum of standard deviation of each financial reporting quality proxy; asc = 1 if calendar quarter is after 2009 qtr 4; 0 otherwise; fv3_trns = 1 if transfers from level 3; 0 otherwise; asc x fv3_trns = the interaction term coded 1 if both asc and fv3_trns equal 1, 0 otherwise; size = log of total assets 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 = long-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; lv3change = change in level 3 assets; ni = net income for the quarter; roe = return on equity for the quarter

TABLE 5
Correlations between variables - Distressed Firms

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1)	smoothness	1																		
(2)	consensus	-0.014	1																	
(3)	frquality	**0.297**	**0.602**	1																
(4)	asc	**0.039**	0.043	**-0.064**	1															
(5)	fv3_trns	-0.071	0.011	-0.053	0.384	1														
(6)	asc x fv3	0.099	0.028	-0.052	**0.611**	0.823	1													
(7)	size	0.492	-0.021	0.360	-0.057	0.024	0.014	1												
(8)	growth	0.008	-0.005	-0.001	0.029	-0.060	-0.025	**0.001**	1											
(9)	eissue	0.016	0.038	-0.001	-0.027	-0.029	-0.019	0.005	0.035	1										
(10)	dissue	**0.063**	**-0.023**	**-0.027**	-0.016	**-0.022**	0.002	**0.021**	-0.019	0.037	1									
(11)	leverage	0.002	-0.007	-0.022	0.021	0.029	0.019	**-0.029**	-0.015	**-0.019**	0.013	1								
(12)	cashflow	-0.068	0.014	-0.002	**0.159**	0.068	0.003	-0.034	-0.093	-0.088	**0.001**	0.005	1							
(13)	auditor	**0.040**	-0.069	0.002	**-0.019**	0.009	-0.016	-0.014	-0.131	0.036	-0.063	-0.025	0.029	1						
(14)	alv1	**0.067**	-0.018	**0.033**	-0.016	0.226	0.100	0.319	-0.026	-0.018	0.066	0.003	**0.003**	0.033	1					
(15)	alv2	**0.210**	0.011	0.086	0.081	0.232	0.187	0.401	0.100	-0.019	0.083	0.009	-0.007	-0.110	0.548	1				
(16)	alv3	**0.120**	-0.007	0.027	-0.025	0.176	0.066	0.175	0.002	-0.033	0.019	-0.017	0.015	-0.088	0.327	0.524	1			
(17)	lv3change	**0.085**	0.024	-0.004	-0.050	-0.029	-0.010	-0.028	0.040	0.001	-0.045	-0.056	-0.049	-0.057	**-0.012**	**0.037**	0.035	1		
(18)	ni	0.384	-0.006	**0.247**	0.014	-0.016	0.010	0.583	0.036	-0.011	0.044	-0.011	**-0.047**	-0.073	0.143	0.239	0.101	0.002	1	
(19)	roe	0.117	-0.176	-0.064	0.029	0.005	0.017	0.134	-0.012	-0.010	**-0.031**	**0.003**	**0.006**	-0.022	0.059	0.196	0.008	0.003	0.098	1

Table 5 displays the Pearson correlation coefficients in bold at the 1 percent level. Variables previously defined.
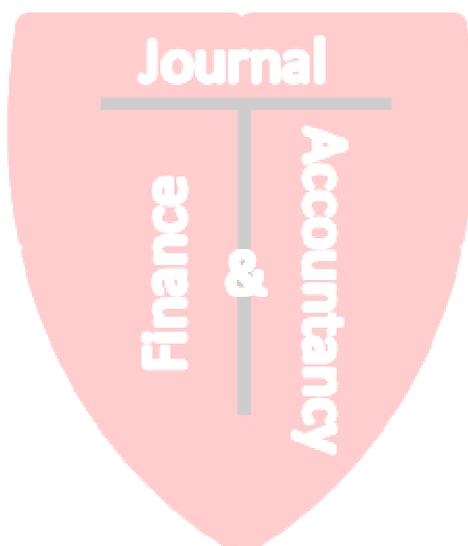
TABLE 6

Regression Analysis of Financial Reporting Quality Proxies on ASC 820-10 - Distressed Firms

$$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 size_{it} + \beta_5 growth_{it} + \beta_6 eissue_{it} +$$

$$\beta_7 dissue_{it} + \beta_8 leverage_{it} + \beta_9 cashflow_{it} + \beta_{10} auditor_{it} + \beta_{11} alv1_{it} + \beta_{12} alv2_{it} + \beta_{13} alv3_{it} +$$

$$\beta_{14} lv3change_{it} + \beta_{15} ni_{it} + \beta_{16} roe_{it} + e_{it}$$

Dependent Variables

Variable	Predicted Sign	smoothness	consensus	frquality
asc	-	-0.1202	1.4548	-0.1427
		(0.1964)	(1.4212)	(0.1604)
fv3_trns	-	-2.7542 ***	-0.2489	-0.0728
		(0.3750)	(0.5486)	(0.0830)
asc x fv3_trns	+/-	2.9698 ***	0.0667	0.1402
		(0.4392)	(1.6736)	(0.1821)
size	+	0.0001 ***	0.0000	0.0000
		(0.0000)	(0.0001)	(0.0000)
growth	+	0.0010	-0.0075	0.0001
		(0.0015)	(0.0072)	(0.0007)
eissue	+	0.0006	0.0074	0.0002
		(0.0006)	(0.0093)	(0.0008)
dissue	+	0.0031 ***	-0.0092	-0.0010
		(0.0011)	(0.0084)	(0.0008)
leverage	+	0.0001	0.0000	0.0000
		(0.0001)	(0.0001)	(0.0000)
cashflow	+	-1.8357	1.2982	0.2817
		(1.1668)	(5.0360)	(0.5774)
auditor	-	-3.0893 ***	-0.1880	-0.4468
		(1.1184)	(0.6281)	(0.3675)
alv1	+/-	-0.0004 ***	-0.0003	-0.0001 **
		(0.0001)	(0.0003)	(0.0001)
alv2	+/-	0.0000	0.0004	0.0000
		(0.0001)	(0.0002)	(0.0000)
alv3	+/-	0.0005	-0.0019	-0.0001
		(0.0005)	(0.0015)	(0.0002)
lv3change	+/-	0.0621 **	0.0520	-0.0035
		(0.0284)	(0.1697)	(0.0212)
ni	+/-	0.0000	0.0001	-0.0004 ***
		(0.0002)	(0.0002)	(0.0001)
roe	+	0.0004	-0.0133	-0.0014
		(0.0003)	(0.0164)	(0.0014)
Constant		4.3706 ****	0.3055	0.7968 **
		(0.9473)	(0.6898)	(0.3377)
Observations		656	656	656
Adj R^2		28.39%	4.02%	8.56%
F-Stat		16.57 ***	0.51	13.88 ***

*, **, *** 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 Defined: smoothness = standard deviation of core earnings over the previous year, log transformed; consensus = standard deviation of EPS forecasts scaled by stock price; frquality = sum of standard deviation of each financial reporting quality proxy; asc = 1 if calendar quarter is after 2009 qtr 4; 0 otherwise; fv3_trns = 1 if transfers from level 3; 0 otherwise; asc x fv3_trns = the interaction term coded 1 if both asc and fv3_trns equal 1, 0 otherwise; size = log of total assets 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 = long-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; lv3change = change in level 3 assets; ni = net income for the quarter; roe = return on equity for the quarter

TABLE 7

Regressions Analysis of Financial Reporting Quality on ASC 820-10 - Non-Distressed Firms

$$Y_{it} = \beta_{0it} + \beta_1 asc_{it} + \beta_2 fv3\_trns_{it} + \beta_3 asc \times fv3\_trns_{it} + \beta_4 size_{it} + \beta_5 growth_{it} + \beta_6 eissue_{it} +$$

$$\beta_7 dissue_{it} + \beta_8 leverage_{it} + \beta_9 cashflow_{it} + \beta_{10} auditor_{it} + \beta_{11} alv1_{it} + \beta_{12} alv2_{it} + \beta_{13} alv3_{it} +$$

$$\beta_{14} lv3change_{it} + \beta_{15} ni_{it} + \beta_{16} roe_{it} + e_{it}$$

Dependent Variables

Variable	Predicted Sign	smoothness	consensus	frquality
asc	-	0.4663	0.0243	-0.1692 **
		(0.3422)	(0.0561)	(0.0813)
fv3_trns	-	-1.8137 ***	-0.0408	-0.0259
		(0.5849)	(0.1261)	(0.1348)
asc x fv3_trns	+/-	2.2847 ***	0.1074	0.1765
		(0.5693)	(0.1291)	(0.1246)
size	+	0.0001 ***	0.0000	0.0000 **
		(0.0000)	(0.0000)	(0.0000)
growth	+	-0.0007	-0.0013	0.0047 *
		(0.0065)	(0.0016)	(0.0028)
eissue	+	0.0003	-0.0006 *	-0.0004
		(0.0016)	(0.0003)	(0.0005)
dissue	+	-0.0004 ***	0.0008 ***	0.0001 ***
		(0.0000)	(0.0000)	(0.0000)
leverage	+	0.0006 ***	0.0001	0.0000
		(0.0002)	(0.0001)	(0.0001)
cashflow	+	-3.2839	0.8805	0.5092
		(2.0775)	(0.6280)	(0.6190)
auditor	-	-3.2818 ***	-0.3055 ***	-0.1285
		(0.4268)	(0.0812)	(0.1261)
alv1	+/-	-0.0004 ***	0.0000	-0.0001
		(0.0002)	(0.0001)	(0.0001)
alv2	+/-	0.0000 **	0.0000	0.0000
		(0.0000)	(0.0000)	(0.0000)
alv3	+/-	0.0010	-0.0001	-0.0004
		(0.0009)	(0.0001)	(0.0006)
lv3change	+/-	0.0555	-0.0057	0.0163
		(0.0433)	(0.0113)	(0.0111)
ni	+/-	-0.0002	0.0000	-0.0003 **
		(0.0002)	(0.0000)	(0.0001)
roe	+	0.0054	0.0003	0.0018
		(0.0037)	(0.0006)	(0.0029)
Constant		4.1350 ***	0.4321 ***	0.3026 ***
		(0.4748)	(0.0916)	(0.1124)
Observations		301	301	301
Adj R^2		34.00%	32.85%	29.04%
F-Stat		118.95 ***	332.27	72.95 ***

*, **, *** 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 Defined: smoothness = standard deviation of core earnings over the previous year, log transformed; consensus = standard deviation of EPS forecasts scaled by stock price; frquality = sum of standard deviation of each financial reporting quality proxy; asc = 1 if calendar quarter is after 2009 qtr 4; 0 otherwise; fv3_trns = 1 if transfers from level 3; 0 otherwise; asc x fv3_trns = the interaction term coded 1 if both asc and fv3_trns equal 1, 0 otherwise; size = log of total assets 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 = long-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; lv3change = change in level 3 assets; ni = net income for the quarter; roe = return on equity for the quarter