

Fair Value Measurements, Information Asymmetry, Liquidity, and Firm Value

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This study examines whether the implementation of FASB Accounting Standards Codification on Fair Value Measurements (ASC 820-10) impacts information asymmetry, liquidity, and firm value. ASC 820-10 was designed and implemented under the premise it would improve financial reporting quality and comparability of fair value measurements in financial reports by requiring firms to disclose activity within and between fair value measurement levels. Increased disclosure that reduces information asymmetry (risk) will increase financial statement readability and increase liquidity. If the disclosed information lacks precision, the value of the information is discounted and its effect on investor perception becomes ambiguous. This study examines 10-K and 10-Q filings of firms with level 2(3) fair value activity from 2007 through 2012. Initial results reveal ASC 820-10 did decrease liquidity for firms with material transfers furthermore some investors and analysts assign value to financial statement information based on relevancy and understandability. Taken together these results signal to standard setters the increased mandatory disclosures around the measurement of unobservable inputs (level 3 securities) are value relevant and economically significant. This study extends the literature on the relationship between fair value relevance, information asymmetry, and information precision and contributes to the debate on the efficacy of unobservable units in fair value measurements.

Keywords: Fair value, Liquidity, Information asymmetry, Disclosure, Valuation, Financial reporting quality

Introduction

The Financial Accounting Standards Board (FASB) increased the disclosure requirements related to Fair Value Measurements & Disclosures, Accounting Standards Codification 820-10 (ASC 820-10), in 2010 to improve financial reporting transparency in financial reporting.¹ The new disclosures required by the FASB require that firms disclose: (1) transfers in and out of Levels 1 and 2; and (2) activity in Level 3 fair value measurements. This disclosure requirement is significant because

¹ The new disclosures and clarifications of existing disclosures are effective for interim and annual reporting periods beginning after December 15, 2009, except for the disclosures about purchases, sales, issuances, and settlements in the roll forward of activity in Level 3 fair value measurements. Those disclosures are effective for fiscal years beginning after December 15, 2010, and for interim periods within those years (FASB, 2006, 2010).

it attempts to reduce information risk associated with fair value measurements, a contemporaneous and economically relevant issue.

Prior literature establishes a link between information risk and market liquidity (Greenstein & Sami, 1994; Welker, 1995; Collier & Yohn, 1997; Healy et al., 1999; Leuz & Verrecchia, 2000; Rajgopal & Venkatachalam, 2011). Information risk refers to an investor's ability to accurately ascertain the valuation parameters for a particular asset (Riedl & Serafeim, 2011). Theoretically, the increased disclosure mandated by the revised standard will reduce information risk and improve the financial reporting transparency of financial statements (Diamond & Verrecchia, 1991; Botosan, 1997). In turn, the improved transparency of financial statements will increase liquidity and reduce the cost of capital, subsequently affecting firm value (Affleck-Graves et al., 2002). The relationship detailed above is still an open empirical question within the context of fair value measurements, specifically those measurements involving unobservable inputs.

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 404 firms with disclosed transfer activity and 371 firms, serving as the control group, without material transfer activity. The overall results reveal that information risk increased 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. Additionally, results further reveal that firm value increased for firms as a result of ASC 820-10 however, firm value decreased for firms with material transfers relative to firms not materially affected by ASC 820-10.

ASC 820-10 was adopted with the intent to increase financial statement transparency by reducing information asymmetry surrounding fair value measurements. However, additional disclosures do not necessarily result in additional useful information for the reader. FASB member and leader of the FASB's Disclosure Framework project believes that:

"Some of this information becomes boilerplate, or it may not be material to the reporting entity...that makes it harder for the reader to find information even if they know what they're looking for. And it may cause them to miss information that they did not know how to look for. (*Journal of Accountancy*, 2012)"

The fundamental research objective of this study is to determine whether the increased disclosure mandated by ASC 820-10 decreases information risk and its subsequent relation to firm value.

Overall, the results of this study conclude that the mandatory disclosure requirement of ASC 820-10 does increase information asymmetry as the reliability and relevance of the information provided to investors about fair values is in question. The uncertainty about the disclosed information has a significant negative impact on liquidity and firm value. Investors likely view the disclosure required by ASC 820-10 as superfluous and its meaning ambiguous and thus is viewed negatively. These results have significant policy implications as the FASB and IASB currently debate effectively streamlining disclosures. Furthermore, this study highlights that the relationship between information asymmetry and disclosure is directly affected by the precision and relevance of information released.

Background and Hypotheses Development

Prior studies have established the link between information risk and market liquidity (Diamond & Verrecchia, 1991; Greenstein & Sami, 1994; Welker, 1995; Collier & Yohn, 1997; Healy et al., 1999; Leuz & Verrecchia, 2000; Rajgopal & Venkatachalam, 2011). Information risk refers to an investor's ability to accurately ascertain the valuation parameters for a particular asset (Riedl & Serafeim, 2011). Therefore, information risk is partially determined by the degree of information asymmetry, informational advantage, between informed and less-informed investors. Diamond and Verrecchia (1991) analytically show that disclosure policies that reduce information asymmetry will increase the liquidity of a firm's securities by inducing traders to take larger current positions in securities. Greenstein and Sami (1994) examined the impact of the SEC's segment disclosure

requirement and found that increased disclosure had a significant impact on the bid-ask spread, a proxy for information asymmetry. Welker (1995) directly examines the relation between disclosure policy and liquidity by departing from the traditional event study methodology approach and focusing on the nondisclosure period. After controlling for return volatility, trading volume and share price results reveal a significant negative relation between disclosure and bid-ask spread. Results indicate that the effects of increased disclosure occur beyond the initial information release period. Leuz and Verrecchia (2000) analyze the economic consequences of increased disclosure for a sample of German firms and finds that firms that commit to increased disclosure experienced lower bid-ask spreads and share turnover. Affleck-Graves et al. (2002) show that firms with more predictable earnings show decreases in the adverse selection component of the bid-ask spread. These results further substantiate the link between information risk and liquidity. All other things being equal, decreased information risk (e.g., more predictable earnings) increases market liquidity. A more recent study by Rajgopal and Venkatachalam (2011) examines returns from 1962 to 2001 and shows that higher idiosyncratic return volatility is significantly negatively related to information quality. An increase in idiosyncratic return volatility is related to information risk and is effectively priced - influencing the cost of equity capital and liquidity (Goyal & Santa-Clara, 2003; Easley & O'Hara, 2004).

Overall, the studies above support the link between liquidity and information risk however a more subtle, yet equally important point is present. Valuation is theoretically linked to market liquidity through information risk. At its core, firm valuation reflects the underlying value of the assets and liabilities of a firm in addition to the expected future cash flows discounted for appropriate risk. If investors (analysts) are unable to accurately forecast expected future cash flows because of heightened information risk or accurately value assets or liabilities because of illiquidity, firm value is ultimately affected. This study seeks to analyze the relationship between liquidity, information risk, and firm value in the fair value context.

The association between liquidity and information risk is important for Level 3 fair value measurements, measured using unobservable inputs to measure fair value to the extent that observable inputs are not available, because investors appear to demand compensation for firms that carry illiquid securities (Amihud & Mendelson, 1986; Brennan & Subrahmanyam, 1996). Firms with transfers between fair value measurement categories signal to investors an increase (decrease) in the objectivity and comparability of the transferred securities. Theoretically, transfers from (to) level 3 decrease (increase) information risk and increase (decrease) liquidity. Information risk can be directly linked to market liquidity 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 arises when investors are uncertain about the return distribution parameters which leads investors to demand higher required rates of return (Barry & Brown, 1984). Information asymmetry risk (Easley & O'Hara, 2004) arises when informed investors exploit their informational advantage to earn trading gains at the expense of less-informed investors.

Ng (2011) finds that higher information quality is negatively associated with liquidity risk and that relationship between information quality and cost of capital is economically significant. Additional analysis reveals that unexpected changes in market liquidity exacerbate the negative relationship between information quality and liquidity risk. Ng defines liquidity risk as “the sensitivity of the stock's return to unexpected changes in market liquidity” while a liquid market is one with narrow bid-ask spreads in which large trades can be absorbed without significantly moving market prices (Black,

1971).² When investors buy shares of a stock, the broker quotes an asking price (the “ask”). Conversely, if the investor attempts to sell the same shares, the broker quotes a lower bid price (the “bid”) with the difference between the two prices being the “bid-ask spread” (Callahan et al., 1997). The spread between the bid and ask prices is the market maker’s source of gross profit and must be wide enough to cover the market maker’s operating costs including adverse selection costs (Stoll, 1978). Prior research (Amihud & Mendelson 1986; Copeland & Galai 1983; Glosten & Harris 1988; Stoll 1989) suggests that the spread is comprised of three types of costs facing the dealer: order processing costs, inventory holding costs, and adverse selection costs. The order-processing costs are the dealer’s costs of arranging trades and clearing transactions and include such items as the exchange seat, floor space rent, informational service costs, labor costs, and the opportunity cost of the market maker’s time.³ The inventory holding costs are the dealer’s costs of carrying the necessary inventory of stock to be able to trade on demand. Lastly, the adverse selection costs are the losses the market maker sustains when trading with investors who are privy to more precise private information about the true worth of the security⁴ and is commonly referred to in the literature as “information asymmetry.” In response to information asymmetry and related adverse-selection costs, a market maker will reduce market depth (Kyle, 1985) and widen spreads (Glosten & Milgrom, 1985).⁵ Specifically, 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 firm value. In summary, the aforementioned theories predict that 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, this study hypothesizes:

H1: *Fair value disclosure requirement ASC 820-10 has a positive effect on firm liquidity.*

H2: *Fair value disclosure requirement ASC 820-10 has a positive effect on firm value.*

Sample Selection and Description

The sample was compiled using a combination of hand-gathered procedures and available data from Compustat and CRSP 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 41 as corresponding data to compute liquidity and firm value proxies were incomplete for these firms. The above procedures result in a final sample of 775 firms and 6,853 firm-quarter observations.

²In this study the distinction between liquidity risk and liquidity is made strictly for definitional purposes with respect to different streams within the finance and accounting academic literature. The empirical findings in Pastor and Stambaugh (2003) and Ng (2011) imply that the effect of financial reporting quality on the cost of capital and market liquidity is significant.

³ Bollen et al. (2004) finds that in the short run, order processing costs are largely fixed and their contribution to the size of the bid-ask spread should be minimal. Also, in a highly competitive market, bid-ask spreads should equal the expected marginal cost of supplying liquidity, in which case order-processing costs may be irrelevant.

⁴ “The adverse selection component of the spread is closely related to information flows in capital markets and is, therefore, of the most potential interest to accountants.” (Callahan et al, 1997)

⁵ Accounting theory of disclosure states that value relevant disclosure mitigates resource misallocation on the capital market by reducing information asymmetries between insiders and investors and the associated cost of capital. However, the existence and magnitude of this effect depends on the perceived credibility of the disclosure (Gu and Li, 2007).

To gather disclosure data on selected firms, the 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 404 firms with transfers between level 2 and level 3 and 371 firms that reported “no material activity between levels” and/or “adoption of ASC 820-10 does not materially affect the financial statements.”

Table 1 – Description of Sample Firms and Transfer Activity Type

Panel A: Sample Reconciliation					# of Firms	
All Firms in Compustat database with Level 2/Level 3 fair value activity					816	
Firms with missing financial data					41	
Final Sample					775	
Firms reporting no material activity between levels					371	
Firms reporting material activity between levels					404	
Panel B: Type of Transfer Activity						
	Assets		Liabilities		Total	
Level 3 Activity	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Transfer In	2,508	90%	1,476	53%	3,984	71%
Transfer Out	294	10%	1,326	47%	1,620	29%
Totals	2,802	100%	2,802	100%	5,604	100%

Panel A of Table 1 describes the final sample of 775 firms and subsample of firms with (404) and without (371) transfer activity while Panel B of Table 1 reports level 3 transfer activity. Panel B shows that a considerable majority (71%) of the transfer activity was reclassifications of assets/liabilities into level 3 fair value category.

Research Methodology and Empirical Proxies

Proxies for Liquidity

Liquidity is captured via three measures- the bid-ask spread, share turnover, and price impact. The bid-ask spread (BA) represents the market maker’s profit including inventory, processing, and adverse selection costs. A wider spread indicates a higher degree of information asymmetry and information risk which results in decreased liquidity. Following Fu et al. (2012) the bid-ask spread is calculated daily as $(\text{Ask}-\text{Bid}) / ((\text{Ask}+\text{Bid})/2)$. The second proxy, share turnover (ST), is a common measure of liquidity and is calculated as the daily total of shares traded divided by the average shares outstanding. A higher share turnover indicates a more liquid security. Following Daske et al.(2008) and Fu et al.(2012) the third and final proxy, price impact (PI), captures the ability to trade a security without an impact on price. Price Impact is calculated as the daily absolute return divided by trading volume in dollars (\$).

Following prior literature (Fu et al., 2012), the following control variables are used to test the relation between liquidity and ASC 820-10:

Size = Total assets at the end of the previous period, log-transformed

Turnover = median daily turnover ratio in a quarter, log-transformed

Volatility = standard deviation of daily return in a quarter, log-transformed

Nasdaq = 1 if traded on the NASDAQ exchange; 0 otherwise

Proxies for Firm Value

Firm value is measured via two proxies-Tobin's Q and Enterprise Value ratios. Tobin's Q (TQ) is a well-established proxy for firm value in the accounting and finance academic literature and is calculated as the sum of the equity market value of assets and book value of liabilities divided by the sum of equity book value and the book value of liabilities. Enterprise Value (EV) represents the value of a firm inclusive of the company's debt and therefore represents a more accurate measure of valuation when compared to other measures of firm value (i.e., market capitalization). Enterprise value is calculated as the sum of quarterly market capitalization, long-term debt, minority interests, and preferred stock reduced by total cash and cash equivalents.

Following prior literature (Dang et al. 2019), the following control variables are used to test the relation between firm value and ASC 820-10:

Growth = (Sales Revenue_t – Sales Revenue_{t-1})/Sales Revenue_t

Size = Total assets at the end of the previous period, log-transformed

Leverage = Total Debt/Total Assets

ROA = Net Profit/Total Assets

ROE = Net Income/Total Equity

Table 2 – Descriptive Statistics

Panel A: Descriptive Statistics by Time Period						
Pre-ASC Adoption (n = 3,997)						
Variable	Mean	Std. Dev	Q1	Median	Q3	n
BA	1.593	4.047	0.119	0.280	1.027	3,997
ST	547.34	708.90	114.92	356.87	718.14	3,997
PI	-0.088	0.983	-0.024	-0.001	0.006	3,997
TQ	1.385	0.996	0.979	1.040	1.343	3,997
EV	8.495	6.680	0.000	12.160	13.253	3,997
Size	12.905	1.853	11.665	12.872	13.891	3,997
Turnover	3.103	1.283	2.236	3.099	3.908	3,997
Volatility	0.208	0.127	0.118	0.182	0.270	3,997
Nasdaq	0.626	0.484	0.000	1.000	1.000	3,997
Growth	12.822	3.661	11.670	12.752	13.113	3,997
Leverage	0.162	0.065	0.000	0.607	1.125	3,997
ROA	2.059	5.082	0.000	0.600	2.400	3,997
ROE	1.283	0.881	0.224	1.323	1.417	3,997
Post-ASC Adoption (n = 2856)						
BA	1.028	2.683	0.074	0.182	0.649	2,856
ST	483.44	1847.98	100.38	278.03	572.94	2,856
PI	0.008	0.642	-0.010	0.000	0.013	2,856
TQ	1.395	1.039	0.978	1.031	1.337	2,856
EV	9.026	6.850	0.000	12.297	13.425	2,856
Size	12.873	1.923	11.654	12.803	13.869	2,856
Turnover	3.084	1.232	2.223	2.963	3.792	2,856
Volatility	0.156	0.083	0.097	0.140	0.195	2,856
Nasdaq	0.628	0.483	0.000	1.000	1.000	2,856
Growth	11.98	2.754	11.24	12.545	13.003	2,856

Leverage	0.266	0.118	0.000	0.484	0.980	2,856
ROA	1.929	4.794	0.000	0.600	2.700	2,856
ROE	1.017	1.281	0.000	1.303	1.439	2,856

Panel B: Descriptive Statistics by Sub-Sample

<u>Firms Without Level 3 Activity</u> <u>(n = 4,051)</u>			<u>Firms With Level 3 Activity (n = 2,802)</u>		<u>Diff.</u>
<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	
BA	1.326	0.238	1.403	0.241	***
ST	501.869	318.453	547.946	317.723	***
PI	-0.049	0.000	-0.047	-0.001	**
TQ	1.402	1.036	1.370	1.037	*
EV	8.630	12.160	8.841	12.257	**
Size	12.881	12.823	12.907	12.875	*
Turnover	3.098	3.050	3.089	3.022	*
Volatility	0.185	0.159	0.188	0.162	*
Nasdaq	0.633	1.000	0.618	1.000	ns
Growth	12.000	12.550	13.300	13.010	***
Leverage	2.002	0.567	2.121	0.513	***
ROA	1.971	0.600	2.054	0.600	**
ROE	1.120	1.190	1.290	1.210	***

*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Panel A displays descriptive statistics for sample firms by time period. Panel B displays the mean and median for the two time periods by firm activity. Variables Defined: BA = bid-ask spread (i.e. Ask-Bid)/((Ask+Bid)/2); ST = share turnover (i.e. daily volume shares traded divided by average shares outstanding for the quarter); PI = price impact (i.e. daily absolute return divided by average trading volume); TQ = Tobin's q ratio (i.e. market value of equity divided by book value of equity); EV = enterprise value (i.e. sum of market capitalization, long-term debt, minority interests and preferred stock reduced by cash and cash equivalents); Size = market value at the end of the previous period, log transformed; Turnover = median quarterly turnover ratio, log transformed; Volatility = standard deviation of quarterly return in a year, log transformed; Nasdaq = 1 if listed on the nasdaq stock exchange, 0 otherwise; Growth = percentage change in sales growth from previous period (i.e. (Current Period Sales Revenue - Prior Period Sales Revenue)/Current Period Sales Revenue); Leverage = Total Debt/Total Assets; ROA = Net Profit/Total Assets; ROE = Net Income/Total Equity.

Panel A of Table 2 displays the descriptive statistics for sample firms by time while Panel B of Table 2 provides descriptive statistics by category of transfer activity. Firms with material level 3 transfer activity generally had larger bid-ask spreads and higher share turnover than firms without material transfer activity. The difference in the firm value proxies (i.e. *tq* and *ev*) for the two categories are significant and show that firms with material activity have significantly higher enterprise value but significantly less value as measured by Tobin's q. Further analysis reveals that the differences noted in the firm value proxies are likely driven by total debt as evidenced by the significantly higher leverage for firms with material transfer activity. Overall, Panel B of Table 2 indicates that firms with material transfers have less turnover, more volatility, and higher ROA when compared to firms without material transfer activity.

Models for Tests of Liquidity (H1) and Firm Value (H2)

To test H1, the following model is used:

$$X_{it} = \beta_0 + \beta_1 asc_{it} + \beta_2 fv3_trns_{it} + \beta_3 asc \times fv3_trns_{it} + \beta_4 size_{it} + \beta_5 turnover_{it} + \beta_6 volatility_{it} + \beta_7 nasdaq_{it} + e_{it} \quad (1)$$

where X_{it} indicates one of the proxies for liquidity, *bid-ask spread*, *share turnover*, and *price impact*, 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.

To test H2, the following model is used:

$$Z_{it} = \beta_0 + \beta_1 \text{asc}_{it} + \beta_2 \text{fv3_trns}_{it} + \beta_3 \text{asc} \times \text{fv3_trns}_{it} + \beta_4 \text{growth}_{it} + \beta_5 \text{size}_{it} + \beta_6 \text{leverage}_{it} + \beta_7 \text{roe}_{it} / \text{roa}_{it} + e_{it} \quad (2)$$

where Z_e indicates one of the proxies for firm value, *Tobin's Q* and *Enterprise Value* referenced 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 presents the correlation coefficients for the liquidity and firm value proxies and associated control variables. The results follow expectations and prior literature with the liquidity proxies being significantly related to *size*, *turnover*, *volatility*, *nasdaq*, *leverage*, and *roa* variables. The firm value proxy, *ev*, is negative and significantly related to *turnover*, *volatility*, and *roa* while being positive and significantly related to *nasdaq* and *leverage*.

Table 3 – Correlation Matrix

	<u>BA</u>	<u>ST</u>	<u>PI</u>	<u>EV</u>	<u>Size</u>	<u>Turnover</u>	<u>Volatility</u>	<u>Nasdaq</u>	<u>Growth</u>	<u>Leverage</u>	<u>ROA</u>	<u>ROE</u>
BA	1											
ST	-0.100	1										
PI	-0.125	0.022	1									
TQ	-0.261	0.204	0.054									
EV	0.298	-0.108	-0.034	1								
Size	-0.040	0.048	-0.012	0.010	1							
Turnover	-0.252	0.355	0.060	-0.149	0.018	1						
Volatility	0.208	0.108	0.080	-0.035	0.020	0.377	1					
Nasdaq	0.161	-0.116	-0.039	0.177	-0.003	-0.214	-0.073	1				
Growth	0.022	0.010	0.001	0.007	0.003	0.006	0.031	-0.019	1			
Leverage	0.237	-0.066	-0.093	0.307	0.004	-0.061	0.007	0.086	0.006	1		
ROA	-0.125	0.059	0.037	-0.123	-0.040	-0.014	-0.115	-0.035	-0.006	-0.113	1	
ROE	-0.013	0.013	0.005	-0.018	0.018	0.028	-0.002	0.013	-0.01	-0.007	0.039	1

Table 3 displays correlation coefficients. Bold indicates significance at the 5 percent level. Variables previously defined.

Table 4 presents the results for the analysis of the relationship between liquidity and ASC 820-10. The significant negative coefficient for *asc*, when liquidity is proxied by *ba* indicates that bid-ask spreads decreased, and information asymmetry decreased as a result of ASC 820-10 however the coefficients for *asc* when liquidity is proxied by *st* and *pi* imply a different interpretation. The significant negative coefficients for *asc* when proxied by *st* and *pi* indicate that share *turnover* decreased and price impact increased, a result of increased information asymmetry. The explanation for this may be in that the increased requirements imposed by ASC 820-10 increased the available information, but investors discounted this data embedding the uncertainty in increased price impact and decreased share turnover. The marginally significant and insignificant coefficients for *fv3_trns* suggest that investors may view transfers to/from level 3 similarly and disclosure of this information provides no informational advantage. The interaction term, *asc* x *fv3_trns*, is significant at the 1% level when

liquidity is proxied by pi . Relative to firms without transfer activity, firms with transfers experienced a 0.119% decrease in price impact. Collectively these results suggest that the increased disclosure requirement, albeit increases the information provided to investors, decreases liquidity (increases information asymmetry) and transfers between fair value categories do not provide additional relevant and reliable information and thus H1 is not supported.

Table 5 presents the results for the analysis of the relation between the proxies for firm value and ASC 820-10. When the firm value is measured using *Tobin's q*, none of the coefficients on the variables of interest are significant. This is not surprising given that the value of *Tobin's q* is susceptible to speculation and market momentum. Given that enterprise value is a more precise measure of firm value, I draw inferences about information asymmetry from the enterprise value regression results. When the firm value is proxied by enterprise value asc , $fv3_trns$ and $asc \times fv3_trns$ are all significant at the 1% level. Likely, the significance difference found on the coefficients for the respective proxies is driven by the conceptual difference in *Tobin's q* and enterprise value. Enterprise value is a more precise and comprehensive measure of firm value as it represents the takeover price of a firm and includes preferred equity and unfunded pension liabilities. Overall, the results support H2.

Table 4 – Analysis of Liquidity (H1)

Variables	Predicted Sign	Dependent Variables				
		ba	Significance	st	Significance	pi
asc	-	-0.480	***	-84.908	***	0.150
		-0.105		-21.981		-0.030
fv3_trns	-	0.036		25.713		0.050
		-0.115		-27.515		-0.029
asc x fv3	+/-	0.135		72.380		-0.119
		-0.155		-62.283		-0.042
size	-	-0.721	***	84.850	***	0.034
		-0.034		-26.055		-0.009
turnover	-	-0.684	***	354.415	***	0.037
		-0.048		-76.455		-0.014
volatility	+	3.323	***	-139.463	***	0.061
		-0.451		-360.428		-0.204
nasdaq	-	-0.232	***	-37.226		0.003
		-0.091		-46.143		-0.022
Constant		12.682	***	-1600.703	***	-0.877
		-0.669		-212.707		-0.151
Observations		6,853		6,853		6,853
Year Fixed Effects		Yes		Yes		Yes
Adj R ²		21.56%		14.08%		4.21%
*, **, *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Robust standard errors with clustered standard errors are in parentheses. Variables previously defined.						

Table 5 – Analysis of Firm Value (H2)

Variables	Predicted Sign	Dependent Variables			
		tq	Significance	ev	Significance
asc	-	1.760		0.731	***
		(1.410)		(0.200)	
fv3_trns	-	0.403		0.488	***
		(1.410)		(0.192)	
asc x fv3	+/-	2.110		-0.706	*
		(3.380)		(0.313)	
growth	+	0.778	***	24.549	***
		0.034		6.043	
size	-	10.800	***	-1.745	***
		(1.110)		(0.066)	
leverage	+	0.005	***	0.000	**
		(0.001)		(0.000)	
roe/roa	-	-1.120	***	-0.067	***
		(0.113)		(0.015)	
Constant		-132.000	***	31.100	***
		(15.800)		(1.066)	
Observations		6,853		6,853	
Year Fixed Effects		Yes		Yes	
Adj R ²		23.11%		16.55%	
*, **, *** indicate significance at the 10 percent, 5 percent and 1 percent levels, respectively. Robust standard errors with clustered standard errors are in parentheses. Variables previously defined.					

In an additional untabulated analysis of firms with material transfers, the sample was bifurcated by type of transfer activity (i.e assets and/or liabilities transferred in or out of level 3). The results reveal that the type of transfer activity is not significantly related to either of the proxies for firm value however assets transferred into level 3 are positive and significantly related to the bid-ask spread, while liabilities are not. This finding suggests that transfers of assets between level 2 and level 3 categories play a significant role in the increase or decrease of information asymmetry while liabilities do not. In an additional analysis, the study tests the sensitivity of these results following the model employed in Esqueda et.al (2019), and with the inclusion of additional controls; I find that the results are similar and statistical inference unchanged.

Conclusion

This study evaluates the effect of the fair value mandatory disclosure requirement, ASC 820-10, on liquidity and firm value. Initial results conducted on a broad sample of 6,853 firm-quarter observations for 775 firms suggest that liquidity decreased, and transfer activity has a significant effect on firm value for firms affected by the standard, relative to those firms unaffected. Overall, the results of this study suggest investors assign value to financial statement information based on relevancy and understandability. Theoretically, transfers between categories signal a firm's certainty about valuation inputs however investors generally interpret this signal as insignificant irrespective of the transfer orientation. The above findings provide policymakers with empirical evidence of "information

overload” and contribute to the motivation to effectively streamline financial disclosures, a priority for the IASB and FASB.

References

- Affleck-Graves, J., Callahan, C. M., & Chipalkatti, N. (2002). Earnings Predictability, Information Asymmetry Market Liquidity. *The Journal of Accounting Research*, 40(3), 561-583.
- Amihud, Y. & Mendelson, H.(1986). Asset pricing and the bid–ask spread. *Journal of Financial Economics*, 17(3), 223–249.
- Barry, C. & Brown, S. (1984). Differential information and the small firm effect. *Journal of Financial Economics*, 13, 283–294.
- Black, F. (1971). Towards a fully automated exchange, Part 1, *Financial Analysts Journal*, 27, 29–34.
- Bollen, N. P. B., Smith, T., & Whaley, R. E. (2004). Modeling the bid/ask spread: Measuring the inventory-holding premium. *Journal of Financial Economics*, 72(1), 97-141.
- Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, 72(3), 323-349.
- Brennan, M. J., & Subrahmanyam, A. (1996). Market microstructure and asset pricing: On the compensation for illiquidity in stock returns. *Journal of Financial Economics*, 41(3), 441-64.
- Callahan, C., C., Lee, M., & Yohn, T., L.(1997). Accounting Information and Bid-Ask Spreads. *Accounting Horizons*, 11(4), 50-60.
- Coller, M. & Yohn, T. L. (1997). Management forecasts and information asymmetry: An examination of bid-ask spreads. *Journal of Accounting Research*, 35(2), 181-191.
- Copeland, T. E. & Galai, D. (1983). Information effects on the bid-ask spread. *The Journal of Finance*, 38(5), 1457-1469.
- Dang, H.N., Vu, V.T.T., Ngo, X.T., & Hoang, H.T.V. (2019). Study the Impact of Growth, Firm Size, Capital Structure, and Profitability on Enterprise Value: Evidence of Enterprises in Vietnam. *Journal of Corporate Accounting & Finance*, 30, 144-160.
- Daske, H, L. H., Leuz, C., & Verdi, R. (2008). Mandatory IFRS Reporting around the World: Early Evidence on the Economic Consequences. *Journal of Accounting Research*; 46(5), 1085-1142.
- Diamond, D. & Verrecchia, R. (1991). Disclosure, Liquidity, and the Cost of Capital. *The Journal of Finance*, 46(4), 1325-1359
- Easley, D. & O'Hara, M. (2004). Information and the cost of capital. *The Journal of Finance*, 59(4), 1553-1583.
- Esqueda, O. A., Ngo, T., & Susnjara, J. (2019). The effect of government contracts on corporate valuation. *Journal of Banking & Finance*, 106, 305-322
- Financial Accounting Standards Board, (2006). *Statement of Financial Accounting Standards No. 157*. FASB: Norwalk, Connecticut.
- Financial Accounting Standards Board, (2010). *Improving Disclosures about Fair Value Measurements. An Amendment of the FASB Accounting Standards Codification*. FASB: Norwalk, Connecticut.
- Fu R, A. Kraft, & Zhang, H. (2012). Financial reporting frequency, information asymmetry, and the cost of equity. *Journal of Accounting and Economics*, 54(2–3), 132-149.
- Glosten, L. R. & Lawrence, E. H. (1988). Estimating the components of the bid/ask spread. *Journal of Financial Economics*, 21(1), 123-42.
- Glosten, L. R. & Milgrom, P. R. (1985). Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. *Journal of Financial Economics*, 14(1), 71-100.

- Goyal, J., & Santa-Clara, P. (2003). Idiosyncratic risk matter! *Journal of Finance* 58, 975-1008.
- Greenstein, M. M. & Sami, H. (1994). The impact of the SEC's segment disclosure requirement on bid-ask spreads. *The Accounting Review*, 69(1), 179-199.
- Gu, F. & Li, J. Q. (2007). The credibility of voluntary disclosure and insider stock transactions. *Journal of Accounting Research*, 45(4), 771-810.
- Healy, P.M., Hutton A., & Palepu, K. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research*, 16, 485-520.
- Kyle, A. S. (1985). Continuous auctions and insider trading. *Econometrica*, 53(6), 1315-1335.
- Legoria, J., Boone, J., & Stammerjohan, W., W. (2008). The economic benefits of FASB's recommended disclosures: Evidence from the pharmaceutical industry. *Advances in Accounting*, 24(2), 202-12.
- Leuz, C. & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, 38(Supplement: *Studies on Accounting Information and the Economics of the Firm*), 91-124.
- Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *The Journal of Finance*, 42(3), *Papers and Proceedings of the Forty-Fifth Annual Meeting of the American Finance Association*, New Orleans, Louisiana, 483-510.
- Ng, J. (2011). The Effect of Information Quality on Liquidity Risk. *Journal of Accounting and Economics*, (52), 126-143
- Pastor, L. & Stambaugh, R.(2003). Liquidity risk and expected stock returns. *Journal of Political Economy*, 111, 642-685.
- Rajgopal, M. & Venkatachalam, M. (2011). Financial reporting quality and idiosyncratic return volatility. *Journal of Accounting and Economics*, (51), 1-20.
- Riedl, E. J. & Serafeim, G. (2011). Information risk and fair values: an examination of equity betas. *Journal of Accounting Research*, 49(4), 1083-1122.
- Stoll, H. R. (1978). The pricing of security dealer services: An empirical study of Nasdaq stocks. *The Journal of Finance*, 33(4), 1153-1172.
- Stoll, H. R. (1989). Inferring the components of the bid-ask spread: Theory and empirical tests. *The Journal of Finance*, 44(1), 115-134.
- Welker, M. (1995). Disclosure policy, information asymmetry, and liquidity in equity markets. *Contemporary Accounting Research*, 11(2), 801-827.