Accounting & Taxation
Vol. 7, No. 1, 2015, pp. 21-37
ISSN: 1944-592X (print)
ISSN: 2157-0175 (online)

IBFR
www.theIBFR.com

VOLUNTARY FAIR VALUE DISCLOSURES BY BANK HOLDING COMPANIES: THE ROLE OF SEC DEAR CFO LETTERS

Renee Weiss, Queens College, City University of New York
John Shon, Hunter College, City University of New York

ABSTRACT

The SEC's Division of Corporate Finance sent "Dear CFO" letters to certain registrants in 2008 requesting voluntary disclosures to improve transparency of Level 3 fair value measures and valuation of financial instruments in inactive or illiquid markets. We expect these bank holding companies were among the companies that the Division of Corporate Finance targeted. We consider the discussion points from the Dear CFO letters to identify the disclosures to analyze in this study. We find that disclosures about valuation techniques and the use of broker quotes or prices from pricing services are associated with increased information asymmetry and disclosures about the use of market indices or illiquidity adjustments are associated with decreased information asymmetry. When interacted with Level 3 assets, disclosures about changes in valuation techniques intensify the positive relation between Level 3 assets and information asymmetry and disclosures about asset-backed securities mitigate the positive relation between Level 3 assets and information asymmetry. Our study provides insight about the types of disclosures that impacted information asymmetries during the financial crisis. However, this setting of uncertainty and use of a small sample size may limit the ability to generalize these inferences to other time periods or other financial firms.

JEL: G21, M41

KEYWORDS: Voluntary Disclosure, Fair Value Accounting, Information Asymmetry

INTRODUCTION

At the height of the recent financial crisis, U.S. public companies transitioned to a new fair value accounting standard, SFAS-157. The new standard provided a definition of fair value that companies would apply to measure certain financial assets and liabilities that companies had reported at fair value based on prior standards. Companies must measure fair value in a way that is consistent with the price that market participants would pay to sell the asset or transfer the liability in orderly markets. Companies must also classify fair value measures according to a hierarchy in which the least reliable category (Level 3) reflects the use of significant unobservable inputs. Application of SFAS-157 at a time when the U.S. capital market was relatively illiquid (with trading frozen for many of the complex financial instruments at the heart of the crisis) fueled opposition to and criticism of the standard.

Regulators engaged in many efforts to support lending and restore liquidity. In addition, the SEC's Division of Corporate Finance (the Division) identified registrants with relatively higher levels of fair valued financial instruments, particularly asset-backed securities, loans, and derivatives. The Division expected that such registrants would be using significant unobservable inputs in their fair value measurements of these financial instruments. The Division sent "Dear CFO" letters to these registrants during March 2008 and identified certain "discussion points" that it asked the registrants to address in the Management Discussion and Analysis section of their financial reports. The Division continued to engage these

registrants by sending them a second Dear CFO letter in September 2008, which focused on fair value measures of financial instruments that were not actively trading at the time.

In this study, we hand collect voluntary disclosures that reflect the Division's recommended discussion points from a sample of the eighteen largest U.S. bank holding companies (BHC). We expect that the Division sent the Dear CFO letters to these companies. The goal of our study is two-fold. First, we determine the frequency and extent to which these eighteen banks, in the midst of the 2007 financial crisis, adhered to the unprecedented explicit guidance from the SEC in its request for voluntary disclosures. Second, we assess whether such voluntary disclosures are associated with changes in firms' information asymmetries. We hand collect 20 individual disclosure items reflected in the Division's Dear CFO letters of March and September 2008. The items include two disclosures that the Division did not reflect in the stated discussion points; however, the Financial Accounting Standards Board (FASB) updated fair value disclosure requirements through its ASU No. 2010-06 to require these items effective January 2010.

To examine whether voluntary disclosure triggered by regulatory guidance is associated with information asymmetry, we apply factor analysis to reduce individual disclosure items to eight common factors that represent the underlying disclosure constructs: (1) use of broker quotes or prices from pricing services, (2) changes in valuation, (3) valuation techniques, (4) additional disclosures about Level 3 values that became mandatory after the sample period, (5) the significant judgment management applied, (6) asset-backed securities, (7) sensitivity analyses, and (8) market indices and illiquidity. Our main multivariate empirical model is an OLS estimation of a proxy for information asymmetry regressed on our voluntary disclosure factor variables. We control for firm characteristics. We also including the Level 1, 2, and 3 assets/liabilities, thus mitigating potential concerns that our inferences may arise from the values of the assets/liabilities themselves, rather than from the *voluntary disclosure* of them.

We find in our initial model estimate that disclosures about valuation techniques and the use of broker quotes or prices from pricing services are associated with increased information asymmetry, while disclosures about whether the determination of fair value measures reflected market indices and illiquidity are associated with decreased information asymmetry. Using an alternative specification of our main model, we also provide evidence of joint effects of SFAS-157 voluntary disclosures and the extent of Level 3 assets the entity held on information asymmetry. Disclosures about changes in valuation techniques intensify the positive relation between Level 3 assets and information asymmetry and disclosures about asset-backed securities mitigate the positive relation between Level 3 assets and information asymmetry.

Our study extends other studies that examine the association between market-to-market accounting in the banking sector and information asymmetry (Ball, Jayaraman, and Shivakumar, 2012) and SFAS-157 fair value measures in the banking sector and information asymmetry (Liao, Kang, Morris, and Tang, 2013) in that we assess the incremental effect of voluntary disclosure. We further extend the one known study that examines the relation between voluntary fair value reliability disclosures and market outcomes (Chung, Goh, Ng, and Yong, 2014) because our study identifies voluntary fair value disclosures based on explicit guidelines that the SEC provided registrants in its 2008 "Dear CFO" letters.

Our findings should be of interest to auditors and regulators, particularly as the FASB proceeds in its decision process to improve disclosures of fair value measurements. Additionally, we contribute to the academic literature that seeks to understand whether voluntary disclosure provides benefits to market participants. This literature includes studies in which the researcher applies judgment to develop a disclosure score (e.g., Botosan, 1997) or employ disclosure scores developed by market participants (e.g., Association for Investment Management and Research and the Report of the Financial Analysts Federation's Corporate Information Committee). In this study we consider disclosure items that regulators explicitly associate with improved transparency of fair value disclosure measures. We organize this paper as follows. In the next section, we discuss the role of fair value accounting during the financial crisis. In the

third section we review the related literature and state our main hypothesis. In the fourth section we discuss data and methodology. We then provide results and in the last section our concluding remarks.

Background

The period from the 1990s through 2006 in which U.S. housing prices steadily increased, fueled the expectation that housing prices would continue to rise, bringing many new buyers to the market. Buyers who would not have met traditional lending criteria could buy a home as lenders loosened mortgage loan standards and offered a new class of adjustable rate mortgage loan products. Loan originators repackaged debt into tradable securities and other financial instruments (ranging from asset-backed securities such as residential or commercial mortgage-backed securities (MBS) to more complex, tranched securities such as collateralized debt and collateralized mortgage obligations). These securitizations provided the investment funding to support subprime lending to new riskier borrowers.

The first indicators of the U.S. credit crisis emerged in early 2007. As the housing bubble burst and defaults of underlying loans increased, Freddie Mac announced that it would stop buying risky subprime MBS. Freddie Mac and other government sponsored entities had provided investors protection against default risk of these subprime loans. Ratings agencies downgraded the ratings of financial instruments backed by subprime mortgages. Countrywide Financial, a leading issuer of MBS, reported a 54 percent year over year decline in its 2007 second quarter pre-tax earnings due to increased credit costs and increased provision for credit losses. As the value of subprime MBS declined significantly, the investment funds and other entities holding these securities suffered severe declines in the value of their assets, spreading the problems in the housing market throughout the financial sector, both domestic and global.

Entities began complying with SFAS-157, prospectively to their first fiscal year beginning after November 15, 2007 (for recurring financial assets and liabilities). The new fair value guidance established one consistent definition of fair value for entities to apply to any balance sheet element that had already required fair value measurement under existing standards. This fair value definition is market-based and requires entities to measure fair value from the perspective of market participants as a current exit price. The guidance also established a fair value hierarchy in which management classifies recognized financial assets and liabilities based upon the degree of observability of the significant inputs management applies to determine the fair value measure. Level 1 of the hierarchy consists of asset/liability valuations in which the significant input to the valuation is directly observable market trading prices. Level 2 reflects asset/liability valuations in which the significant input is indirectly observable (e.g., market prices for similar assets/liabilities). Level 3 consists of asset/liability values in which the significant input is unobservable (the entity uses a valuation model). The intent of this hierarchy is to provide market participants with more information about the relative reliability of fair value measures, with the potential for market participants to assess Level 3 measures using unobservable inputs as the least reliable.

There had been ongoing debate about fair value measurement but the criticisms intensified as entities began complying with SFAS-157 at the height of the credit crisis and related to three main issues. One issue is that of procyclicality; as BHCs apply an exit price in disorderly and inactive markets, BHCs would be required to reduce asset values to lower fair values, producing losses that would reduce their regulatory capital. To increase capital, banks would need to sell assets in a depressed market, creating additional downward pressure on the prices of their assets. However, Laux and Leuz (2010) point out that banks which operate primarily in the lending business may classify loans as held-for-investment, which they report on their balance sheets at amortized cost. In addition, under SFAS -115, entities are also required to report loans held to maturity at amortized cost. The authors note that "for the 31 bank holding companies that failed and were seized by U.S. bank regulators between January 2007 and July 2009 loans accounted for roughly three-quarters of their balance sheets." The authors conclude that fair value accounting did not contribute to the plummeting values of BHCs financial assets.

A second issue is the contention that the decreases in fair value likely reflected the lack of liquidity in an inactive market rather than the present value of future cash flows if the entity could hold the asset until market conditions improved. A third main issue relates to the significant judgment that management must apply to determine the significant unobservable valuation inputs, classify financial instruments as Level 3, and apply the most appropriate valuation model to arrive at Level 3 fair value estimates. Management judgment may be biased and management may measure Level 3 financial instruments opportunistically to manage earnings or to remain within regulatory capital requirements. Kothari and Lester (2013) consider this issue as they assert that accounting for securitizations (including fair value measures of mortgage servicing rights, interest only strips, and residual interests) contributed to the financial crisis.

They state: "In effect, the financial statements for originators and securitizers likely reflected overstated net income due to securitization gains; overstated asset balances due to incorrectly estimated MSRs, IO interests, and residual interests; and understated liability balances for repurchase obligations and loan loss reserves. Economically, this accounting implies that the value of the various parts when securitized exceeded the value of the original loan." Of particular interest to this study is the effort by regulators to restore investor confidence in reported financial instrument asset and liabilities values of entities in the financial sector and restore liquidity through expanded (voluntary) disclosure—particularly that of SFAS-157 recognized fair value measures. In March and again in September 2008, the Division of Corporation Finance of the SEC, via what are now commonly referred to as its "Dear CFO" letters, contacted certain public companies whom it determined had reported significant amounts of Level 3 financial instruments (e.g., asset-backed securities, fair valued loans, and derivative instruments). In its March 2008 letter, the Division requested voluntary disclosure about Level 3 fair value measurements, particularly if the entity deemed its reported Level 3 valuations to be material. In its September 2008 letter, the Division requested voluntary disclosure related to fair value measures of financial instruments in inactive markets.

In its December 2008 Report to Congress pursuant to Section 133 of the Emergency Economic Stabilization Act, the SEC opposed the suspension of SFAS-157 or SFAS-159 (the fair value option). A suspension would have removed access to information at a time when investors likely found the information to be most useful. In preparing its report, the SEC conducted numerous forums to elicit feedback on fair value accounting from investors and other financial statement users (e.g., FASB Exposure Draft comment letters, SEC roundtables, and other public statements). The SEC concurred with market participants' calls for more comprehensive fair value disclosures particularly with respect to the inputs used, underlying assumptions employed by management to arrive at Level 3 estimates, and sensitivity of those estimates to changes in the assumptions used. In this section, we have addressed key aspects of the financial crisis and the manner in which the concurrent implementation of SFAS-157 may have influenced critical outcomes. The SEC actions and its 2008 Report to Congress clearly illuminate the importance of expanded voluntary disclosure as a means to reduce investor uncertainty and information asymmetry related to the risk of complex financial instruments. In the next section we discuss the findings of academic literature with respect to the role of voluntary disclosure to reduce information asymmetry, and the relative transparency of recognized or disclosed fair value measures prior to and post compliance with SFAS-157.

RELATED LITERATURE AND EMPIRICAL PREDICTION

Information asymmetries between the firm and outside investors create the classic adverse selection or lemons problem. Credible disclosure enables investors to discern good assets from lemons which reduces information asymmetry and improves liquidity of firms' securities (Akerlof, 1970, Diamond and Verrecchia, 1991, Balakrishnan, Billings, Kelly, and Ljunqvist, 2014). Several empirical studies find evidence consistent with this theory. They document that higher quality disclosures improve analyst forecast accuracy, reduce analyst forecast dispersion and forecast revision volatility, and attract a greater analyst following (e.g., Lang and Lundholm, 1996, Botosan, 1997). Brown and Hillegeist (2007) find that the quality of firms' disclosures reduces the incentives investors have to search for private information.

However, disclosures do not unambiguously decrease information asymmetry in that informed investors have superior ability to process and apply disclosures to judgments about the value of the firm's assets compared to that of uninformed investors (e.g., Kim and Verrecchia, 1994, Amiram, Owens, and Rozenbaum, 2012). Several studies examine the value relevance of estimated fair values disclosed by banks under SFAS-107 which required the entity to disclosure fair value estimates in addition to current carrying values of the financial instruments. Barth, Beaver, and Landsman (1996) document that disclosed fair value loan measures are value relevant, but do not fully reflect loan default and interest rate risk.

Eccher, Ramesh, and Thiagarajan (1996) provide evidence of the value relevance of investment securities but in limited settings, while Nelson (1996) fails to find support for her hypothesis that SFAS 107 estimates have incremental explanatory power for securities prices. Ball, Jayaraman, and Shivakumar (2012) examine the information asymmetry effects of SFAS-115 fair value accounting for investments by banks. The standard reflects a mixed attributes model in that trading investments are marked-to -market with both realized and unrealized gains or losses recognized in income, available for sale investments are marked to market but unrealized gains or losses are deferred to accumulated other comprehensive income, while loans held to maturity are valued at amortized cost over the term of the loan. The authors document a significant increase in information asymmetry related to trading securities but not available for sale investments. The increase in information asymmetry relates to recognition rather than information effects of investors having more timely information about gains and losses on trading investments.

Post compliance with SFAS-157, Song, Thomas, and Yi (2010), Kolev (2008), and Chung, Goh, Ng, and Yong (2014) examine the value relevance of the Levels 1, 2, and 3 of the fair value hierarchy, generally finding that value relevance decreases as the relative opacity of the financial instruments increases (from Level 1 to Level 3). Riedl and Serafeim (2011) document that non-diversifiable information risk (the firm's equity beta) increases monotonically from Level 1 to Level 3 as does information asymmetry (Liao et al., 2013). While these studies examine all financial instruments at fair value in a specific level of the fair value hierarchy, in contrast, Altamuro and Zhang (2013) focus on the differential impact of Level 2 compared to Level 3 fair value measures of mortgage servicing rights only.

The authors find that for this particular asset, the valuation multiple of Level 3 (Level 2) fair values is positively related (not related) to the persistence of future servicing fee cash flows. In addition, the valuation multiples of Level 3 (Level 2) mortgage servicing rights are negatively (unrelated) to measures of prepayment and default risk. The authors conclude that Level 3 measures more appropriately reflect the underlying economic characteristics of mortgage servicing rights. Chung, Goh, Ng, and Young (2014) examine the value relevance of voluntary disclosures of the controls and processes managers employ to provide reliable fair value disclosures, and find that such disclosures increase the value relevance of Level 3 but not Level 1 or Level 2 assets. Similarly, reliability disclosures mitigate information risk of Level 3 assets but not Level 1 or Level 2 assets. In the background section above, we discuss that the SEC considered voluntary disclosure to be an important measure to restore investor confidence in fair value measures, particularly Level 3 model estimates and fair value measures derived from illiquid markets. As part of its report pursuant to the Emergency Economic Stabilization Act, the SEC stated:

"Considering the available evidence regarding the usefulness of fair value information to investors, the suspension of fair value to return to or introduce historical cost-based measures would likely increase investor uncertainty and reduce investor confidence. This greater uncertainty would likely adversely impact the values of debt and equity securities. In addition, this greater uncertainty would potentially increase the degree of information asymmetry among market participants, further adversely affecting market liquidity." However, these benefits are not a foregone conclusion. In this literature review, we find that scholars have yet to reach a consensus on whether fair value accounting, in general, provides a net benefit to investors or whether SFAS-157 exacerbated the financial crisis. The value relevance studies prior to SFAS-157 provide mixed evidence on the value relevance of disclosed fair values, while Ball et al., 2012 document that fair

values of recognized trading securities are related to increased information asymmetries (although not excluding that disclosure could reduce the unexplained information asymmetry) . While Chung et al. (2014) provide evidence that voluntary disclosure increases value relevance and reduces information risk of Level 3 assets, the particular disclosures examined were based on researcher choice and their disclosure measure is an indicator variable which may reflect noise or measurement error. Though the SEC called for disclosure to reduce information asymmetry and improve financial reporting transparency, this remains an empirical question. We therefore state our main empirical prediction in null form:

There is an association between voluntary fair value disclosures related to SFAS-157 fair value measures and information asymmetries.

DATA AND METHODOLOGY

We select the 18 largest BHCs as our sample firms since we expect that the SEC targeted these firms through their "Dear CFO" letters by virtue of the BHCs size, importance to U.S. capital markets, and the materiality of their Level 3 financial instruments. We examine the time series of nine consecutive quarters starting with Q1 of 2007 through Q1 of 2009. We start with Q1 of 2007 because 5 of the entities voluntarily adopted SFAS-157 early. We require Compustat and CRSP data to measure the variables we include in our models. Our final sample consists of 162 firm-quarter observations. In Table 1, we provide a list of the sample firms.

Table 1: Sample Firms

1	JP Morgan Chase
2	Citigroup
3	Bank of America (not including Merrill Lynch)
4	Wells Fargo
5	Goldman Sachs
6	Morgan Stanley
7	MetLife
8	PNC Financial Services
9	U.S. Bancorp
10	Bank of New York Mellon
11	Sun Trust Banks
12	State Street
13	Capital One Financial Corp.
14	BB&T
15	Regions Financial Corp.
16	American Express
17	Fifth Third Bancorp
18	KeyCorp

This table provides a list of the 18 largest bank holding companies that are included in the sample. We hand collect the voluntary disclosures from the 10-Q's and 10-K's of these companies starting with the first quarter of 2007 and ending with the first quarter of 2009. We identify voluntary disclosures based upon explicit guidance from the SEC taken from their 2008 "Dear CFO" letters. The BHCs that chose to adopt SFAS -157 early are JP Morgan Chase, Citigroup, Bank of America, Morgan Stanley, and Goldman Sachs.

BHCs Voluntary Disclosure Data

We provide a list of the individual disclosure items in Table 2, using text taken directly from the Division's "Dear CFO" letters. The March 2008 "Dear CFO letter" was primarily concerned with the significant judgment management must apply in the use of unobservable inputs to determine fair value measures and the possible impact of such measures on the entities' operating results, liquidity and capital resources.

Table 2: Individual Disclosure Items

Item No.	Description of Disclosure Item
1	The nature and type of assets underlying any asset-backed securities, for example, the type of loans (sub-prime, Alt-A, or home equity lines of credit) and the years of issuance, as well as information about the credit ratings of the securities, including changes or potential changes to those ratings.
2	A general description of valuation techniques or models you used with regard to your material assets or liabilities (regardless of how you have classified your assets and liabilities within the SFAS-157 hierarchy).
3	Discuss any material changes you made during the reporting period to those techniques or models (item 2 above), and why you made them.
4	To the extent possible, provide the quantitative effect of those changes (item 3 above).
5	A discussion of how you validate the techniques or models you use. For example, you may wish to discuss whether and how often you calibrate the technique or models to market, back-test, or otherwise validate it.
6	A discussion of how sensitive the fair value estimates for your material assets or liabilities are to the significant inputs the technique or model uses. For example, consider providing a range of values around the fair value amount you arrived at to provide a sense of how the fair value estimate could potentially change as the significant inputs vary. To the extent you provide a range, discuss why you believe the range is appropriate, identifying the key drivers of variability, and discussing how you developed the inputs you used in determining the range.
7	To the extent material, a discussion of the extent to which, and how you used or considered relevant market indices, for example ABX or CMBX, in applying the techniques or models you used to value your material assets or liabilities. Consider describing any material adjustments you made during the reporting period to the fair value of your assets or liabilities based on market indices and your reasons for making those adjustments.
8	An explanation of how credit risk is incorporated and considered in the valuation of assets or liabilities.
9	The significant judgments you made in classifying a particular financial instrument in the fair value hierarchy.
10	Explain how your credit risk affected your valuation of derivative liabilities and the resulting gain or loss that you included in earnings relating to the changes in that credit risk
11	Explain how counterparty credit risk affected your valuation of derivative assets and the resulting gain or loss that you included in earnings relating to the changes in that credit risk.
12	When financial instruments are affected by the lack of market liquidity (i.e. inactivity), how the lack of liquidity impacted the valuation technique you used, and how you factored illiquidity into your fair value determination of those financial instruments.
13	The nature and amount of assets you valued using broker quotes or prices you obtained from pricing services, along with the classification in the fair value hierarchy.
14	The number of quotes or prices you generally obtained per instrument, and if you obtained multiple quotes or prices, how you determined the ultimate value you used in your financial statements.
15	Whether, and if so, how and why, you adjusted quotes or prices you obtained from brokers and pricing services.
16	The extent to which the brokers or pricing services are gathering observable market information as opposed to using unobservable inputs and/or proprietary models in making valuation judgments and determinations.
17	Whether the broker quotes are binding or non-binding.
18	The procedures you performed to validate the prices you obtained to ensure the fair value determination is consistent with SFAS-157, *Fair Value Measurements*, and to ensure that you properly classified your assets and liabilities in the fair value hierarchy.
	Additional disclosures requirements imposed after the sample period.
19	Disaggregation of items (i.e., purchases, sales, issuances, and settlements) in Level 3 tabular reconciliation.
20	Policy to determine when transfers between levels are recognized.

This table provides a description of the individual voluntary disclosure items (items 1 through 18) using text taken directly from the SEC Division of Corporate Finance "Dear CFO" letters. The list of disclosure items includes items 19 and 20. Though not requested by the Division, the FASB updated fair value disclosure requirements through its ASU No. 2010-06 making disclosure of these items mandatory effective January 2010. These items were voluntary during the period of this study.

The requested disclosures sought more information about matters including the nature of assets underlying asset-backed securities, descriptions of valuation techniques, the use of market indices, and validation and sensitivity analyses. The September 2008 "Dear CFO letter" was primarily concerned with managements' judgments, assumptions, and valuation inputs related to fair value measurement of financial instruments

not actively traded that are likely to have an effect on the entity's operating results and financial condition. The Division requested information related to management's judgment in applying the fair value hierarchy, the effect of credit risk on derivative valuations, and the determination fair value measure of financial instruments for which markets were inactive or illiquid.

Table 3 provides an example of each voluntary disclosure item collected from the sample firms' 10-Q's and 10-K's over the sample period. To collect the disclosure items, we search the financial reports for each quarter examining the Management's Discussion & Analysis section and fair value footnote disclosures to identify the occurrence of individual voluntary disclosure items. For each occurrence of an individual item that we identify, we assign a value of one. Our initial measure is the frequency of each disclosure item by firm and firm-quarter.

Table 3: Examples of Actual Voluntary Disclosure Items

Item No.	Bank Holding Company	Quarter Ending	Disclosure Text
1	JP Morgan Chase	9/30/2008	The Firm had exposure of $5.2 billion to Alt-A mortgages carried at fair value through earnings at September 30, 2008, which consisted of $1.3 billion of securities, largely rated AAA, and $3.9 billion of first lien mortgages. Net exposure to Alt-A mortgages decreased 38% in the quarter, principally due to asset sales and, to a lesser extent, declines in asset values.
2	Citigroup	6/30/2007	More specifically, for fixed income securities and derivatives, the Company's alternative approach when market prices are not available is to discount the expected cash flows using market interest rates commensurate with the credit quality and duration of the investment. For loans carried at fair value, there is no related allowance for loan losses.
3	Bank of America	6/30/2008	Disclosure relating to loans held for sale: In light of market conditions, we implemented a change in our valuation approach for these loans, basing the valuation on pricing models including discounted cash flow methodologies. Previously, these loans were valued based on quoted prices from market participants.
4	Citigroup	12/31/2008	The valuation as of December 31, 2008, assumes a cumulative decline in U.S. housing prices from peak to trough of 33%. This rate assumes declines of 16% and 13% in 2008 and 2009, respectively, the remainder of the 33% decline having already occurred before the end of 2007.
5	Wells Fargo	12/31/2008	Trading assets and liabilities are typically valued using trader prices that are subject to independent price verification procedures.
6	Bank of America	3/31/2009	Key economic assumptions are used in measuring the fair value of certain residual interests that continue to be held by the Corporation in municipal bond securitizations. The carrying amount of residual interests for municipal bond securitizations was $370 million and the weighted-average discount rate was 4.07 percent at March 31, 2009. A 10 percent and 25 percent adverse change to the discount rate would have caused a decrease of $71 million and $177 million to the residual interests at March 31, 2009.
7	Citigroup	3/312009	In addition, the discount rates were based on a weighted average combination of the implied spreads from single name ABS bond prices, ABX indices and CLO spreads, depending on vintage and asset types. To determine the discount margin, the Company applies the mortgage default model to the bonds underlying the ABX indices and other referenced cash bonds and solves for the discount margin that produces the current market prices of those instruments.
8	Bank of NY Mellon	3/31/2009	Most derivative contracts are valued using internally developed models which are calibrated to observable market data and employ standard market pricing theory for their valuations. An initial "risk-neutral" valuation is performed on each position assuming time-discounting based on an AA credit curve. Then, to arrive at a fair value that incorporates counterparty credit risk, a credit adjustment is made to these results by discounting each trade's expected exposures to the counterparty using the counterparty's credit spreads, as implied by the credit default swap market. We also adjust expected liabilities to the counterparty using the Company's own credit spreads, also implied by the credit default swap market. Accordingly, the valuation of our derivative position is sensitive to the current changes in our own credit spreads as well as those of our counterparties.
9	Wells Fargo	9/30/2008	While MSRs and our asset-backed securities collateralized by auto leases and cash reserves do not have observable market data and therefore are classified as Level 3, significant judgment may be required to determine whether certain other assets measured at fair value are included in Level 2 or Level 3. For example, we closely monitor market conditions involving assets that have become less actively traded, such as MHFS, non-agency mortgage-backed securities and certain other debt securities, including collateralized debt obligations. If fair value measurement is based upon recent observable market activity of such assets or

			comparable assets (other than forced or distressed transactions) that occur in sufficient volume, and do not require significant adjustment using unobservable inputs, those assets are classified as Level 2; if not, they are classified as Level 3. Making this assessment requires significant judgment.
10	MetLife	9/30/2008	The credit risk of both the counterparty and the Company are considered in determining the fair value for all over-the-counter derivatives after taking into account the effects of netting agreements and collateral arrangements. Credit risk is monitored and consideration of any potential credit adjustment is on a net exposure by counterparty basis due to the existence of netting agreements and collateral arrangements. The Company values its derivative positions using the standard swap curve which includes a credit risk adjustment. This credit risk adjustment is appropriate for those parties that execute trades at pricing levels consistent with the standard swap curve. As the Company and its significant derivative counterparties consistently execute trades at such pricing levels, additional credit risk adjustments are not required in the valuation process. It should be noted that the Company's ability to consistently execute at such pricing levels is in part due to the netting agreements and collateral arrangements that are in place with all of its significant derivative counterparties. Such agreements serve to effectively mitigate credit risk.
11	U.S. Bancorp	3/31/2009	Derivatives are subject to credit risk associated with counterparties to the derivative contracts. The Company measures that credit risk based on its assessment of the probability of counterparty default and includes that within the fair value of the derivative. The Company manages counterparty credit risk through diversification of its derivative positions among various counterparties, by entering into master netting agreements and by requiring collateral agreements which allow the Company to call for immediate, full collateral coverage when credit-rating thresholds are triggered by counterparties.
12	Bank of NY Mellon	12/31/2008	Upon evaluating the uncertainty in valuing financial instruments subject to liquidity issues, we make an adjustment to their value. The determination of the liquidity adjustment includes the availability of external quotes, the time since the latest available quote and the price volatility of the instrument.
13	PNC Financial Services	9/30/2008	Securities include both the available for sale and trading portfolios. We use prices sourced from pricing services, dealer quotes or recent trades to determine the fair value of securities. Approximately half of our positions are valued using pricing services provided by the Lehman Index and IDC. The Lehman Index is used for the majority of our assets priced using pricing services. Lehman Index prices are set with reference to market activity for highly liquid assets such as agency mortgage-backed securities, and matrix priced for other assets, such as CMBS and asset-backed securities. IDC primarily uses matrix pricing for the instruments we value using this service, such as agency adjustable rate mortgage securities, agency CMOs and municipal bonds.
14	Sun Trust Banks	9/30/2008	Pricing services and broker quotes to assist in estimating the fair value of level 2 or level 3 instruments: The number of quotes we obtained varied based on the number of brokers following a particular security, but generally two to four quotes were obtained.
15	American Express	12/31/2008	The pricing services do not apply any adjustments to the pricing models used, nor does the Company apply any adjustments to prices received from the pricing services.
16	State Street	12/31/2007	In developing their quotations, the independent pricing services seek to utilize observable inputs, including trade and market information. However, because many fixed-income securities do not trade regularly, the pricing services' quotations may also be based on proprietary financial models that incorporate available information, such as benchmarking to similar securities, sector groupings or matrix pricing.
17	American Express	6/30/2008	The Company has three other asset-backed securities included in AEIDC's trading investment portfolio that are classified within Level 3 because observable market prices were limited. The pricing for each of these securities was obtained from non-binding, single broker quotes.
18	KeyCorp	3/31/2008	Key corroborates these inputs periodically through a pricing service, which obtains data about actual transactions in the marketplace for identical or similar assets.
20	Morgan Stanley	3/31/2009	For assets and liabilities that were transferred into Level 3 during the period, gains or (losses) are presented as if the assets or liabilities had been transferred into Level 3 as of the beginning of the period; similarly, for assets and liabilities that were transferred out of Level 3 during the period, gains or (losses) are presented as if the assets or liabilities had been transferred out as of the beginning of the period.

This table provides an illustrative example of each individual disclosure item that was hand collected from the 10-Q's and 10-K's of the eighteen largest bank holding companies based upon explicit discussion points that the Division provided in its Dear CFO letters. Disclosure item 19 is not included in this table because it is an indicator yes or no if the entity disaggregates purchases, sales, issuances, and settlements in its Level 3 tabular reconciliation.

The actual disclosures do not strictly match the Division's discussion points as shown in the item 1 disclosure from JP Morgan Chase, in which the company provided information about the credit ratings of its asset-backed securities, but did not provide its expectation of changes to that credit rating. Bank of NY Mellon provides a fairly detailed disclosure about incorporating credit risk in its valuations as per disclosure item 8. This is also the case in the discussion by Wells Fargo with respect to the significant management judgment applied to determine the classification of financial instruments in the fair value hierarchy per disclosure item 9. Interestingly, State Street's disclosure of item 16 is not definitive in terms of whether the

pricing services' quotations reflect unobservable or observable inputs. This is a key matter given the earlier discussion of the existing literature documenting that Level 3 fair value measures are less value relevant and related to increased information asymmetry.

In Table 4, we present the frequency distribution of each voluntary disclosure item by quarter. Untabulated results reveal that the average number of quarterly disclosures during our sample period is 165.2 disclosures, which is an average of 13.5 disclosures per firm-quarter. Disclosure frequency for the early adopters (JP Morgan Chase, Citigroup, Bank of America, Morgan Stanley, and Goldman Sachs) is an average of 40.3 items per quarter in the first three quarters of the sample period, and the early adopters increase disclosure frequency by 151% (to n=113) from Q3 to Q4 of 2007. The first quarter of 2008 represents the disclosure frequencies of all 18 sample firms. Disclosure frequency increases throughout 2008 (notably 42% from Q2 to Q3 and 46% from Q3 to Q4). Disclosure frequency peaks in Q4 of 2008 (n=384), and levels off in the last quarter of our sample, Q1 of 2009 (n=254). The individual disclosure item with the highest frequency of occurrence during our nine-quarter sample period is item 2, which is a general description of valuation techniques or model used to measure fair value (n= 825). The disclosure frequency of this item steadily increases across quarters. The frequency peaks in Q4 of 2008 (n=186), and then decreases in Q1 of 2009 (n=144). The second most frequently disclosed item is that of item 1, which is the nature and type of assets underlying asset-backed security holdings, including credit ratings (n=149). There are no disclosures of item 1 in the first two quarters, disclosures then occur in Q3, 2007 and the frequency increases until its highest incidence in Q3 of 2008 (n=35).

Table 4: Distribution of Voluntary Disclosure Items by Quarter

Disclosure Item	Q1, 2007	Q2, 2007	Q3, 2007	Q4, 2007	Q1, 2008	Q2, 2008	Q3, 2008	Q4, 2008	Q1, 2009
1	0	0	4	5	20	29	35	25	31
2	34	33	30	70	98	106	124	186	144
3	0	0	0	1	2	2	2	6	3
4	0	0	0	0	0	0	1	1	0
5	1	1	2	7	10	7	11	21	10
6	0	0	0	1	5	2	5	4	4
7	0	0	0	2	4	5	3	6	5
8	0	0	0	0	1	2	6	5	3
9	1	1	2	1	2	1	7	6	5
10	1	2	4	6	4	5	15	22	8
11	0	2	3	8	6	6	10	30	6
12	0	0	0	4	1	3	1	8	4
13	0	0	0	3	7	5	14	16	10
14	0	0	0	0	0	0	2	6	1
15	0	0	0	0	1	0	4	3	1
16	0	0	0	0	1	1	3	7	3
17	0	0	0	0	0	1	7	5	4
18	0	0	0	1	2	2	5	15	5
19	0	0	0	2	3	3	3	6	3
20	0	0	0	2	2	4	4	6	4
Total	37	39	45	113	169	184	262	384	254

This table provides the frequency of each disclosure item collected from the Management Discussion & Analysis section and fair value footnote within the reported 10-Q's and 10-K's of the 18 bank holding companies during the sample period. A listing of the individual disclosure items requested by the SEC's Division of Corporate Finance in their "Dear CFO" letters is provided in Table 2.

METHODOLOGY

We estimate the following OLS regression model to test our hypothesis about the association between SFAS-157 voluntary disclosures and information asymmetries:

$$LNSPREAD = \alpha_0 + \alpha_1 DISCL1 + \alpha_2 DISCL2 + \alpha_3 DISCL3 + \alpha_4 DISCL4 + \alpha_5 DISCL5 + \alpha_6 DISCL6 + \alpha_7 DISCL7 + \alpha_8 DISCL8 + \alpha_9 LNTURN + \alpha_{10} LNMVE + \alpha_{11} LNPR + \alpha_{12} STDRET + \varepsilon \quad (1)$$

where:

LNSPREAD = bid-ask spread, our proxy for information asymmetry, which we define as the natural log of the percentage change in spread measured as the difference between the average bid-ask spread for a 3-day window including the earnings announcement date, and the average bid-ask spread for a 3-day window prior to the earnings announcement date as follows:

$$\left\{\frac{1}{t}\sum_{t-1}^{t+1}\frac{ASKt-BIDt}{(ASKt+BIDt)/2}-\frac{1}{t}\sum_{t-4}^{t-2}\frac{ASKt-BIDt}{(ASKt+BIDt)/2}\right\}*100$$

DISCL1 through DISCL8 are disclosure variables derived from conducting factor analysis on the disclosure items we collected. We employ an unweighted least squares (ULS) approach, in which we hypothesize the number of common factors that would explain the observed correlations between the individual variables based upon the general classifications we assessed. The ULS approach extracted eight common factors in nine iterations that cumulatively explain 74.84% of the variance. In Table 5, we detail individual disclosure items that are included in the eight common factors.

Table 5: Disclosure Variables

Discl1	**Broker Quotes Or Prices From Pricing Services**
	Item 14. Number of quotes or prices per instrument. Item 16. Whether quotes or prices are based on observable market information. Item 18. Validation procedures for quotes or prices.
DISCL2	Changes in valuation Item 3. A discussion of changes in valuation techniques, if any. Item 4. Quantitative effect of changes in valuation techniques, if any. Item 11. Explanation of how counterparty credit risk affected the valuation of derivative assets.
DISCL3	Valuation techniques Item 2. General description of valuation techniques or models used (i.e., market, income or cost approach). Item 5. Discuss whether and how often the firm validates (calibrates) the techniques or models used. Item 13. Nature, amount, and level in the fair value hierarchy valued using broker quotes or prices from pricing services.
DISCL4	January 2010 FASB Update 06 Item 19. Disaggregation of items (i.e., purchases, sales, issuances, and settlements) in Level 3 tabular reconciliation. Item 20. Policy to determine when transfers between levels are recognized.
DISCL5	Management judgment Item 8. Explanation of how credit risk is incorporated in the valuation of assets or liabilities. Item 9. Significant judgment applied to determine the level within the fair value hierarchy. Item 10. Explanation of how the entity's own credit risk affected derivative liabilities valuation.
DISCL6	Asset-backed securities Item 1. The nature and type of assets underlying any asset-backed security, the years of issuance, information about the credit ratings of the securities, including changes or potential changes to those ratings. Item 17.Whether broker quotes are binding.
DISCL7	Sensitivity Item 6. Sensitivity of fair value estimates to the significant inputs the technique or model used (other than sensitivity analysis required under SFAS-140). Item 15. Any adjustments to brokers' quotes or prices from pricing services.
DISCL8	Market indices and illiquidity Item 7. To the extent material, how relevant market indices (e.g., ABX or CMBX) were used to value material assets/liabilities; describe any material adjustments made during the reporting period to the fair value of assets/liabilities based on market indices and reasons for making those adjustments. Item 12.Explain how the illiquidity was factored into the fair value determination.

This table details the composition of the eight common factors. We measure the 8 disclosure variables as the mean frequency of the disclosure items that comprise each common factor. We employ ULS approach, in which we hypothesize the number of common factors that would explain the observed correlations between the individual variables based upon the general classifications we assessed. The ULS approach extracted eight common factors in nine iterations that cumulatively explain 74.84% of the variance.

We measure the 8 disclosure variables as the mean frequency of the disclosure items that comprise each common factor. We include several control variables based on related studies (e.g., Balakrishnan et al., 2014, Amiram et al. 2012). LNTURN = share turnover which we define as the natural log of the ratio of total number of shares traded during the quarter to total number of shares outstanding at the end of the quarter. STDRET= the volatility of returns which we define as the standard deviation of daily returns accumulated over the quarter. LNMVE = the natural log of the end of quarter market value of equity. LNPR = the natural log of the end of quarter closing price. Model 1 provides a test of an association between voluntary SFAS-157 fair value disclosures for the sample of the largest 18 BHCs starting with the first quarter of 2007 in which only 5 of the 18 companies adopted the standard early (with their first quarter of 2007). The remaining 13 companies in our sample that did not adopt SFAS-157 early do not have reported values for Levels 1, 2, or 3, assets or liabilities. In our next model, we modify our sample to start with the first quarter of 2008 to control for Level 1, 2, and 3 assets/liabilities, thus mitigating potential concerns that our inferences may arise from the values of the assets/liabilities themselves, rather than from the *voluntary disclosure* of them. We therefore estimate the following model:

$$\text{LNSPREAD} = \alpha_0 + \alpha_1 \text{DISCL1} + \alpha_2 \text{DISCL2} + \alpha_3 \text{DISCL3} + \alpha_4 \text{DISCL4} + \alpha_5 \text{DISCL5} + \alpha_6 \text{DISCL6} + \alpha_7 \text{DISCL7} + \alpha_8 \text{DISCL8} + \alpha_9 \text{AL1TA} + \alpha_{10} \text{AL2TA} + \alpha_{11} \text{AL3TA} + \alpha_{12} \text{L12TA} + \alpha_{13} \text{L3TA} + \alpha_{14} \text{LNTURN} + \alpha_{15} \text{LNMVE} + \alpha_{16} \text{LNPR} + \alpha_{17} \text{STDRET} + \varepsilon \quad (2)$$

RESULTS

Table 6 provides descriptive statistics of the dependent variable (LNSPREAD, our proxy for information asymmetry), the voluntary disclosure variables (DISCL1-DISCL8) and the control variables. The mean (median) value of LNSPREAD is -2.7677 (-2.7989). LNSPREAD is a logarithmic value. More negative log values represent smaller spreads (lower information asymmetry).

Table 6: Descriptive Statistics of Regression Variables

	Mean	Q1	Median	Q3	Stdev
Dependent Variable					
LNSPREAD	-2.7677	-3.4728	-2.7989	-2.0409	0.7867
Explanatory Variables					
DISCL1	0.1111	0	0	0	0.2972
DISCL2	0.1831	0	0	0.3333	0.3880
DISCL3	1.9547	0	1.3333	2.6667	2.2265
DISCL4	0.1296	0	0	0	0.3228
DISCL5	0.2263	0	0	0.3333	0.4499
DISCL6	0.5124	0	0	0.5000	1.0748
DISCL7	0.0926	0	0	0	0.2686
DISCL8	0.1420	0	0	0	0.3920
Control Variables					
AL1TA	0.0669	0.0051	0.0396	0.1281	0.0694
AL2TA	0.3462	0.1445	0.2564	0.4716	0.2610
AL3TA	0.0360	0.0149	0.0278	0.0573	0.0262
L12TA	0.2175	0.0082	0.0575	0.3787	0.2800
L3TL	0.0099	0.0001	0.0029	0.0186	0.0126
LNMVE	10.4446	9.8007	10.3555	11.1654	1.0092
LNTURN	2.6923	2.1202	2.6578	3.1948	0.7176
STDRET	0.0473	0.0225	0.0348	0.0675	0.0327
LNPR	3.5837	3.3127	3.6342	4.0325	0.7475

LNSPREAD is the natural log of the percentage change in bid-ask spread measured as an average 3 day window including the earnings announcement date, and an average 3 day window prior to the earnings announcement date. DISCL1 to DISCL8 are voluntary disclosure scores obtained through factor analysis of the individual disclosure items. See Table 5 for a more detailed explanation of the DISCL variables. AL1TA, AL2TA and AL3TA are fair value assets Levels 1, 2, and 3 scaled by total assets respectively. L12TA is the sum of the fair value liabilities Level 1 and Level 2 scaled by total assets. L3TA is the fair value liabilities Level 3 scaled by total assets. LNTURN is the natural log of the average ratio of daily trading volume to shares outstanding over the quarter. LNMVE is the natural log of the market value of equity at the end of the quarter. STDRET is the standard deviation of returns over the quarter. LNPR is the natural log of the daily price at the end of the quarter.

The mean LNSPREAD measure is considerably smaller than the value of -4.309 noted by Liao et al. (2013) in their sample of 2,856 firm-quarter observations of banks in the SIC codes of 6000 to 6100 during Quarter 1 2008-Quarter 4 2009. This is not surprising in that our sample consists of the largest bank holding companies, likely to have the lowest information asymmetry.

We find that the DISCL3 variable (valuation techniques) is the most common form of disclosure that arises from the factor analysis procedure, with a mean (median) 1.9547 (1.333) items disclosed. The other disclosure variables vary in frequency from 0.0926 to 0.5124 on average. For Levels 1, 2, and 3 asset holdings (as a percentage of total assets), we find that Level 2 assets (AL2TA) are the largest component of total assets, representing a mean (median) 34.6% (25.6%) of total assets. Level 3 assets (AL3TA) represent the smallest proportion; a mean (median) 3.6% (2.8%) of total assets.

In preparation for our main empirical tests, we winsorize all continuous variables at the 1% and 99% levels to limit the influence of outliers. We cluster standard errors by firm and year-quarter. We test for mulicollinearity and find that the sum of Levels 1 and 2 fair values of liabilities (L12TA) is highly correlated with Level 3 fair value of liabilities (L3TA); VIF in the regressions significantly exceeds the threshold of 10. Since our primary interest is whether disclosure mitigates information asymmetry related to relatively opaque level 3 valuations, we re-estimate the regressions omitting L12TA and we report the results accordingly. Table 7 provides the results of Model 1. We find that DISCL3 (valuation techniques and the use of brokers quotes or prices from pricing services) and DISCL6 (asset-backed securities and whether brokers quotes are binding) are positively associated with information asymmetry (at the 1 percent level), while DISCL8 (market indices and illiquidity) is negatively associated with information asymmetry.

Table 7: Model 1 Multivariate Regression Results

Variable	Estimate	Stderr	t-value
Intercept	-2.6664	0.5386	-4.951***
DISCL1	-0.0976	0.1231	-0.792
DISCL2	0.0559	0.1142	0.489
DISCL3	0.0446	0.0164	2.717***
DISCL4	0.1123	0.1461	0.768
DISCL5	-0.0032	0.0570	-0.057
DISCL6	0.0759	0.0159	4.766***
DISCL7	0.0105	0.0835	0.126
DISCL8	-0.1695	0.0601	-2.823***
LNMVE	-0.1135	0.0361	-3.139***
LNTURN	0.4079	0.0885	4.608
STDRET	7.5399	2.0474	3.683***
LNPR	-0.1360	0.0435	-3.127***
n	162		

*This table provides the results of an OLS regression estimate of Model 1. ***, **, and * indicate significance at the 1, 5 and 10 percent levels respectively. All variables are defined as in Table 6.*

With respect to the controls and information asymmetry, size is negative and significant, return volatility (STDRET) is positive and significant and price (LNPR) is negative and significant (all at the 1 percent level). In Table 8, we provide results of Model 2 in which we control for Levels 1, 2, and 3 of assets, and Level 3 of liabilities. We find that when controlling for the classification of financial instruments within the fair value hierarchy, DISCL3 remains positive and significantly associated with information asymmetry, however, DISCL6 is no longer significant. DISCL8 also remains negative and significantly associated with information asymmetry. Consistent with the value relevance studies discussed in the literature review and the relation between fair value levels and information asymmetry (Liao et al., 2013), we find that Level 1 assets (AL1TA) and Level 3 liabilities (L3TL) are associated with lower information asymmetry (significant at the 1 percent level), while Level 3 assets are associated with higher information asymmetry (significant at the 1 percent level). In Table 8 we provide an alternative specification of Model 2 that includes an interaction between each of the voluntary disclosure variables and Level 3 assets (AL3TA).

We mean center the explanatory variables in the model estimate before measuring the interaction terms to address multicollinearity (Aiken and West, 1991). Untabulated measures of variance inflation of each of the explanatory variables are below the threshold of 10. Studies document that Level 3 assets are relatively more opaque, have lower value relevance and are related to greater information asymmetry (Liao et al. 2013). We find that the interaction between DISCL2 and Level 3 assets is positively associated with information asymmetry while that of DISCL6 and Level 3 assets is negatively associated with information asymmetry (at the 5 and 10 percent levels respectively). Disclosures about changes in valuation techniques (DISCL2) intensify the positive association between Level 3 assets and information asymmetry, while disclosures about asset-backed securities (DISCL6) reduce information asymmetry when Level 3 assets are relatively higher (AL3TA).

Table 8: Model 2 Multivariate Regression Results

	Model 2			Alternative Specification of Model 2		
Variable	**Estimate**	**Stderr**	**t-value**	**Estimate**	**Stderr**	**t-value**
Intercept	-2.4026	0.4925	-4.878***	-2.2327	0.0835	-26.754
DISCL1	0.0137	0.0874	0.157	-0.1059	0.0635	-1.669
DISCL2	-0.0583	0.1633	-0.357	-0.1379	0.1500	-0.920
DISCL3	0.0547	0.0184	2.970***	0.0481	0.0229	2.102
DISCL4	0.0785	0.1725	0.455	-0.0439	0.2593	-0.169
DISCL5	0.0757	0.0567	1.335	0.3017	0.1769	1.706
DISCL6	0.0186	0.0237	0.787	-0.0297	0.0129	-2.298
DISCL7	-0.1650	0.1521	-1.084	-0.2588	0.2477	-1.045
DISCL8	-0.1067	0.0372	-2.870***	-0.0161	0.2498	-0.065
AL1TA	-3.8367	0.6281	-6.108***	-4.3239	0.7761	-5.571***
AL2TA	0.0367	0.2077	0.177	0.0655	0.4069	0.161
AL3TA	9.4608	3.9814	2.376**	7.3570	2.1566	3.411***
L3TL	-8.7416	1.3454	-6.498***	-9.4096	4.9871	-1.887*
DISCL1xAL3TA				-6.0544	9.1944	-0.659
DISCL2xAL3TA				3.8813	1.7675	2.196**
DISCL3xAL3TA				-0.3694	0.8568	-0.431
DISCL4xAL3TA				-5.8845	7.2529	-0.811
DISCL5xAL3TA				-6.9379	4.7845	-1.450
DISCL6xAL3TA				-1.7926	1.0617	-1.689*
DISCL7xAL3TA				-8.1633	5.0838	-1.606
DISCL8xAL3TA				-4.9121	9.8046	-0.501
LNMVE	-0.0449	0.0861	-0.522	0.0034	0.1247	0.027
LNTURN	0.1040	0.0751	1.386	0.1665	0.0215	7.734***
STDRET	8.3251	2.8948	2.876***	8.1989	2.7472	2.985***
LNPR	-0.1541	0.0925	-1.665*	-0.2302	0.1643	-1.401
n						90

*This table provides the results of an OLS regression estimate of Model 2. ***, **, and * indicate significance at the 1, 5 and 10 percent levels respectively. All variables are defined as in Table 6.*

CONCLUSION

We hand collect the voluntary SFAS-157 disclosures of the largest 18 BHCs that we expect the SEC's Division of Corporate Finance targeted in its efforts to improve investor confidence and market liquidity, particularly related to relatively opaque Level 3 asset/liability valuations. We identify the voluntary disclosures to collect using the discussion points described in the Division's "Dear CFO" letters that it sent in 2008 to certain registrants as benchmarks. We collect and tabulate these disclosures and create 8 common factors using factor analysis. These factors relate to (1) broker quotes or prices from pricing services, (2) changes in valuation techniques, (3) valuation techniques, (4) additional disclosures about Level 3 components that became mandatory after the sample period, (5) the significant judgment management applied, (6) asset-backed securities, (7) sensitivity analyses, and (8) market indices and illiquidity.

We first estimate our main model to examine whether such voluntary disclosures are associated with changes in information asymmetry using a sample from the first quarter of 2007 through the first quarter of

2009. This allows us to consider the impact of the requested disclosures on information asymmetry using an earlier time period as a benchmark. We find that disclosures about validation techniques and the use of broker or price service quotes are associated with increased information asymmetry. The most frequent disclosure item relates to valuation techniques, making it possible that any potential benefit to lesser informed traders is muted. In addition a detailed examination of disclosures related to the use of broker quotes or prices from pricing services revealed that such quotes or prices were not binding, limiting the potential benefit of prices from independent sources. In contrast, disclosures about the use of market indices and adjustments for illiquidity are associated with decreased information asymmetry. We obtain equivalent results when controlling for the fair value levels within the fair value hierarchy.

Using an alternative specification of our model that includes controls for the fair value levels, we also provide evidence of joint effects of SFAS-157 voluntary disclosures and the extent of Level 3 assets the entity held on information asymmetry. When the model includes interactive effects, disclosures about changes in valuation techniques intensify the positive association between Level 3 assets and information asymmetry, while disclosures about asset-backed securities mitigate the positive association between Level 3 assets and information asymmetry. Taken together, this study provides insight about the types of disclosures that through main effects or interactions can impact information asymmetries in a period of tumultuous volatility and uncertainty. However, it is just this setting and small sample size that may limit the ability to generalize these inferences to other time periods or other financial firms. We also note that even in a time period of tremendous uncertainty, the information asymmetry for this sample of the largest 18 BHCs was considerably lower than that of another study in the same time period. Further study is needed to assess the benefits/costs of the type of disclosures examined herein, particularly as the FASB deliberates on the effectiveness of fair value measurement disclosures.

REFERENCES

Aiken, L.S., and West, S.G., 1991. Multiple Regression: Testing and Interpreting Interactions. Newbury Park, CA: Sage Publications.

Akerlof, G.A., 1970. "The Market for "Lemons": Quality Uncertainty and the Market Mechanism," *The Quarterly Journal of Economics,* vol. 84, p.488-500

Altamuro, J., and Zhang, H., 2013. "The financial reporting of fair value based on managerial inputs versus market inputs: evidence from mortgage servicing rights," *Review of Accounting Studies,* vol. 18, p. 833-858

Amihud, Y., 2002. "Illiquidity and stock returns: cross-section and time-series effects," *Journal of Financial Markets,* vol. 5, p. 31-56

Amiram,D., Owens, E.L., and Rozenbaum,O., 2012. "Do Information Releases Increase or Decrease Information Asymmetry? New Evidence from Analyst Forecast Announcements," Working Paper. Columbia University.

Balakrishnan, K., Billings, M.B., Kelly, B., and Ljungqvist, A., 2014. "Shaping Liquidity: On the Causal Effects of Voluntary Disclosure," *The Journal of Finance,* forthcoming.

Ball, R., Jayaraman, S., and Shivakumar, L., 2012. "Mark-to-Market Accounting and Information Asymmetry in Banks," Chicago Booth Working Paper No. 12-35.

Barth, M.E., Beaver, W.H., and Landsman, W.R., 1996. "Value-Relevance of Banks' Fair Value Disclosures under SFAS No. 107," *The Accounting Review*, vol. 71, p. 513-537

Bonsall, S.B., and Miller, B.P., 2014. "The Impact of Financial Disclosure Complexity on Bond Rating Disagreement and the Cost of Debt Capital," Kelley School of Business Research Paper No. 2014-12.

Botosan, C. A., 1997. "Disclosure Level and the Cost of Equity Capital," *The Accounting Review,* vol. 72, p. 323–50.

Brown, S., and Hillegeist, S.A., 2007. "How disclosure quality affects the level of information asymmetry,"*Review of Accounting Studies,* vol. 12, p. 443-447.

Chung, S.G. Goh, B.W., Ng, J., and Young, K.O., 2014. "Fair Value Disclosures beyond SFAS 157's Three-level Estimates," Working Paper, Singapore Management University.

Diamond, D., and Verrecchia, R., 1991. "Disclosure, liquidity, and the cost of capital," *The Journal of Finance,* vol. 66, p.1325-1355.

Eccher, A., Ramesh, K., and Thiagarajan, S.R., 1996. "Fair value disclosures by bank holding companies," *Journal of Accounting and Economics,* vol. 22, p. 79-117.

Financial Accounting Standards Board (FASB), 1993. Statement of Financial Accounting Standards No. 157 Fair Value Measurements. Norwalk, CT: FASB.

Financial Accounting Standards Board (FASB), 2010. Accounting Standards Update No. 2010-06. Fair Value Measurements and Disclosures, Improving Disclosures about Fair Value Measurements. Norwalk, CT: FASB.

H.R. 1424 110th Congress: Emergency Economic Stabilization Act of 2008. www.GovTrack.us. 2007. July 1, 2013 http://www.govtrack.us/congress/bills/110/hr1424

Kim, O., and Verrecchia, R., 1994. "Market liquidity and volume around earnings announcements" *Journal of Accounting and Economics,* vol.17, p. 41-67.

Kim, O., and Verrecchia, R., 2001. The Relation among Disclosure, Returns, and Trading Volume Information, *The Accounting Review,* vol. 76, p.633-654.

Kolev, K. 2009. "Do Investors Perceive Marking-to-model as Marking-to-myth? Early Evidence from FAS No. 157 disclosure," Working paper, New York University.

Kothari, S.P. and Lester, R., 2013. "The Role of Accounting in the Financial Crisis: Lessons for the Future," *Accounting Horizons,* vol. 26, p. 335-351

Kothari, S.P., Li, X., Short, J.E., 2009. "The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analysis," *The Accounting Review*, vol. 84, p.1639-1670

Lang, M.H., Lundholm, R.J., 1996." Corporate Disclosure Policy and Analyst Behavior," *The Accounting Review,* vol. 71, p.467-492

Laux, C., and Leuz, C., 2010. "Did Fair-Value Accounting Contribute to the Financial Crisis?," *Journal of Economic Perspectives,*vol. 24, p. 93-118

Liao, L., Kang, H., Morris, R.D., and Tang, Q., 2013." Information asymmetry of fair value accounting during the financial crisis," *Journal of Contemporary Accounting & Economics,* vol. 9, p. 221-236.

Nelson, K.K., 1996. "Fair value accounting for commercial banks: An empirical analysis of SFAS 107," *The Accounting Review* vol.2, p.161-182

Riedl, E.J., and Serafeim, G., 2011. "Information Risk and Fair Values: An Examination of Equity Betas," *Journal of Accounting Research,* vol. 49*,* p.1083-1122

Song, C. J., Thomas, W. B., and Yi H., 2010, "Value Relevance of FAS 157 Fair Value Hierarchy Information and the Impact of Corporate Governance Mechanisms," *The Accounting Review* vol. 85, p.1375-1410.

Tully, Shawn. "Wall Street's Money Machine Breaks Down." Fortune Magazine Nov. 12, 2007. Electronic.

United States Securities and Exchange Commission (SEC), 2008. Report and Recommendations Pursuant to Section 133 of the Emergency Economic Stabilization Act of 2008: Study on Mark-To-Market Accounting. Washington, D.C.

United States Securities and Exchange Commission (SEC), 2008 (March) Sample Letter to Public on MD&A Disclosure Regarding the Application of SFAS 157 (Fair Value Measurements) http://www.sec.gov/divisions/corpfin/guidance/fairvalueltr0308.htm

United States Securities and Exchange Commission (SEC), 2008 (September) Sample Letter Sent to Public Companies on MD&A Disclosure Regarding the Application of SFAS 157 (Fair Value Measurements) http://www.sec.gov/divisions/corpfin/guidance/fairvalueltr0908.htm

BIOGRAPHY

John Shon is an Associate Professor of Accounting at CUNY Hunter College. His scholarly work includes the effect of voluntary disclosures, corporate governance mechanisms, and auditing issues, and he has articles appearing in the Journal of Accounting, Auditing, and Finance and the Journal of Accounting and Public Policy among other academic journals. Professor Shon can be contacted at john.shon@gmail.com.

Renee Weiss is an Assistant Professor in the Department of Accounting & Information Systems at Queens College, City University of New York. Her research interests relate to the impact of auditor attributes, governance, and disclosure on financial reporting quality. Professor Weiss has published in such journals as Research in Accounting Regulation and Accounting Perspectives. She can be contacted at Queens College, CUNY, 65-30 Kissena Boulevard, Queens, New York 11367-1597 U.S.A, or by Email: Renee.Weiss@qc.cuny.edu.