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Past Financial Reporting Credibility: Does it Influence Market Perceptions of Fair Value Assets?

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PAST FINANCIAL REPORTING CREDIBILITY: DOES IT INFLUENCE MARKET PERCEPTIONS OF FAIR VALUE ASSETS?

SUBMITTED TO

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Abstract

During the financial crisis, many assets became illiquid and ceased trading on the open market, thus classifying them as level three assets. This study attempts to determine whether fair value asset disclosures, especially level three assets, were viewed by the market as valued correctly, given the amount of subjectivity involved. This paper will discuss prior literature on the topics of fair value accounting, various earnings quality measures, and corporate governance impact on fair value disclosures. Using models similar to prior papers, many of the coefficients of interest proved insignificant. However, the models improved when examining only the least credible firms.

Historical cost accounting versus fair value accounting has been argued for many years, especially with the possibility of United States Generally Accepted Accounting Principles (GAAP) converging with International Financial Reporting Standards (IFRS). When the Financial Accounting Standards Board (FASB) issued Financial Accounting Standard (FAS) 157, the argument only intensified as the FASB declared its position for the United States in favor of fair value accounting. FAS 157 mandated certain assets to be disclosed at fair value and broken up in different levels. During the financial crisis of the mid-2000's, many financial securities lost much or all of their value, and banks took a huge hit. Certain assets, more specifically level three assets, use subjectivity in determining their fair value. Firms had a huge incentive to overstate these assets to improve the bottom line. However, this would decrease the usefulness of the financial statements. Firms who historically manipulate earnings with higher deviations in accruals can be considered poor financial reporting credibility firms. The market could either view firms' poor financial reporting credibility as a hindrance and discount fair value assets, know about poor financial reporting credibility but not factor it in by believing that all firms overstate assets, or not understand which firms have poor earnings quality.

Background

A widespread accounting debate began in September 2006 when the FASB issued FAS 157, *Fair Value Measurements*. FAS 157 clarifies the definition of fair value accounting while assigning three separate buckets for financial assets. Furthermore, FAS 157 altered disclosure requirements and explained that changes in credit risks must be included in valuation models. First, fair value is defined as the price that a firm would

receive for an asset or pay for a liability in the open market on a certain measurement date. This differs from the previous understanding because values were based on exit prices, the price at which the asset could be sold, rather than the entry price, the price that the asset can be bought, no matter if the firm intended to hold the asset or sell it on a later date. This definition causes firms to continually update the valuations of their financial assets and liabilities, which raises the argument that FAS 157 only increases auditor fees instead of achieving its primary purpose of helping investors with more financial reporting transparency. Because auditors will need to take more time to evaluate these valuations, the accounting firms will charge a higher fee to their clients. The exit price would also capture the optimistic buyer as well as the risk-adverse buyer because it is a market-based price and would be an average of both types. Additionally, FAS 157 buckets financial assets into three separate categories, which an investor can see disclosed in the financial statements. Level one assets are the easiest to value, because they have market observable prices already on exchanges. An example of a level one asset includes stock prices traded on public exchanges such as the New York Stock Exchange. Level two assets do not have market observable prices, but do have market observable inputs, which lead to fairly simple pricing. An interest rate swap is an example of a level two asset, as the value can be determined by market-based interest rates and risk premiums. The most difficult assets to value are level three assets where no market prices or inputs exist. To value level three assets, firms must use internal valuation models or best guesses to the discounted cash flows from the asset. I will discuss level three assets more fully in a moment. The last item FAS 157 requires is

inclusion of credit risk in valuation models. Because of the market price component, which includes risk, a higher discount rate will be applied to more risky assets.

If firms must mark-to-market, what happens if a market does not exist? Sometimes, especially in times of financial crisis, securities are traded so infrequently because buyers are shying away from certain securities. In cases where a thin market exists, firms must use valuation models or their best guesses to the projected discounted cash flows from that security. During the financial crisis of the late 2000's, markets fell completely apart and securities ceased trading. As the liquidity of banks fell rapidly, extremely large financial institutions collapsed and the federal government needed to step in and bail them out. This created a shock of consumer and investor confidence as the stock markets crashed, the housing market plunged further away from its high in the early 2000's, and economic activity stifled. In 2008, when this happened concurrently, the values of bank securities plummeted, and, under FAS 157, financial institutions needed to mark-to-market. These banks took huge hits to their bottom line with the losses from their securities piling up. Much of the blame for the causes of the financial crisis can be attributed to banks writing complex financial instruments, a housing market that became too large, and the excessive writing of sub-prime mortgage-backed securities; although, some have argued that FAS 157 and fair value accounting may have helped multiply the effects of the financial crisis, which will be discussed later. However, if FAS 157 will continue to be in existence, this argument only stresses the importance of correct valuation models used by firms in the absence of market prices.

In each type of model, firms use their own assumptions. This makes it especially harder, but more lucrative, for audit firms, which may be part of the reason accounting

firms continued to expand during this time of crisis. Audit firms, such as Deloitte and Touche, needed to change their auditing techniques to accommodate FAS 157 and the influx of level three assets. Deloitte issued a flow chart of three separate actions to take in order to test the client's internal valuation model.[1] The first action tests the client's model by obtaining the client's documentation, assessing the model for reasonableness and appropriateness. Once Deloitte is satisfied with the basic model, they become more detailed and test each significant assumption, the valuation model, and any underlying data involved. After, specialists in valuation/pricing evaluate the appropriateness of the model used and market inputs. The second action has Deloitte doing the same process as the client, but without any of the client's documentation or assumptions. Deloitte must develop an independent expectation itself by using the Pricing Center or appropriate Internal Fair Value specialist to develop this independent price. They then compare their price with the client's price while applying any thresholds involved. Lastly, Deloitte compares subsequent or recent transaction prices to the client's price while applying any thresholds involved. This is obviously a very arduous process, but with so many assumptions and discretions used by firms, extremely necessary. Improper and incorrect valuation models totally negate the sole purpose of FAS 157: the usefulness of financial information to investors.

To help improve the usefulness of financial information to investors, the FASB issued three final Staff Positions (FSP's) to provide additional information on the application and disclosure guidelines for fair value measurements and impairments of

[1] Appendix A: Guidance on Auditing the Fair Value of Financial Instruments. Deloitte and Touche.

securities.[2] More specifically, FSP FAS 157-4, *Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly*, attempts to provide more guidelines consistent with FAS 157. When the volume and level of activity for the asset or liability have significantly decreased, the markets become inactive. Transactions that are not orderly refer to those where the price inputs being used represent distressed prices. FSP FAS 157-4 reiterates that the fair value component of FAS 157 refers to the price the asset would be sold at in an orderly transaction, so judgment must be used to ascertain whether transactions within the market are not orderly anymore and to determine the fair values when markets become inactive. Venture capitalist Jason Mendelson writes that due to the amount of discretion and the ability to purposely game or make an honest mistake with the valuations of securities, FAS 157 is "stupid".[3] With the amount of discretion involved, a question is raised regarding investor perception of firms' valuation techniques.

Literature Review

No literature exists that has examined fair value accounting in this respect during the financial crisis. Stock price and earnings management by banks has been examined, but investor perception of fair value assets has never been looked at. Most of the research in this area piece together aspects of my question. Laux and Leuz (2009) examine the theoretical problems of FAS 157 and fair value accounting's contributions to

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[2] "NEWS RELEASE 04/09/09." *FASB: Financial Accounting Standards Board*. Web. 12 Sept. 2011. <http://www.fasb.org/news/nr040909.shtml>.

[3] Mendelson, Jason. "FAS 157 Is Stupid." *Tech News | Innovation News | Money News | VentureBeat*. Web. 13 Sept. 2011. <http://venturebeat.com/2009/01/15/why-fas-157-is-stupid/>.

the financial crisis.[4] In theory, large losses through drops in prices of financial assets can lead to big problems for banks. These losses and write-downs deplete bank capital and lead banks to sell assets at depressed prices to avoid the huge losses, setting off a spiral of even lower prices. Once a bank in trouble sells financial assets at depressed prices, the market reflects that price and affects otherwise sound banks in their mark-to-market accounting. Reasonably sound banks may begin to have capital problems due to this contagion of prices. Fortunately for advocates of fair value accounting and FAS 157, these two authors found little to no evidence suggesting that fair value accounting worsened bank problems during the financial crisis. In fact, they found that the opposite happened. Banks were able to use the discretionary valuation methods under FAS 157 to keep asset values high compared to current market prices and future expectations. This could lead to overstating of assets, and the market may discount banks' fair value assets to reflect the overstatements. On the other hand, maybe past financial reporting could be indicative as to how the market perceives the valuation models that banks employ. As these authors indicate, more research must be done to determine these theories.

Beatty, Ke, and Petroni (2002) examine earnings management in the banking industry.[5] In their study, they first observe that public banks are more likely than private banks to engage in earnings management. They conclude that public banks use accounting discretion to transform small declines in Return on Assets (ROA) into small increases. This makes sense because public banks must appeal to stockholders and meet

[4] Laux, Christian, and Christian Leuz. "Did Fair-Value Accounting Contribute to the Financial Crisis?" *Center for Financial Studies* (2009). Web. 18 Sept. 2011.

[5] Beatty, Anne L., Bin Ke, and Kathy R. Petroni. "Earnings Management to Avoid Earnings Declines across Publicly and Privately Held Banks." *The Accounting Review* 77.3 (2002): 547-70. Web. 18 Sept. 2011

analyst projections while private banks do not. They also examine direct evidence of earnings management by examining two different components of banks' earnings that researchers have shown are subject to manipulation: loan loss provisions and realized security gains and losses. Because the loan loss provision is based on management's assumptions and discretion, bank managers can avoid small declines in earnings by underestimating the loan loss provision. Bank managers can also avoid these small declines by realizing more security gains or fewer losses. In their first regression, they use a model that I will also use to estimate the nondiscretionary portion of the loan loss provision. In their second regression, they use another model to estimate the nondiscretionary portion of the realized security gains and losses.

When examining earnings management, Hribar and Nichols (2007) argue that the volatility of accruals is naturally dependent upon the volatility of the firm's underlying operating cash flows.[6] This cash flow volatility reflects the underlying volatility of a firm's operations. They also find that the volatility of sales is highly correlated with the volatility of accruals. They were the first researchers to come up with this idea, but it seems obvious now. Even the modest correlation between both volatility of operating cash flows and volatility of sales severely inflates rejection rates for tests at the 5% and 1% levels. When researchers control for these volatility variables, the test specification improves dramatically. The authors call this idea the "control variable approach." Including operating volatility and sales volatility in the regressions serve as a control for correlated omitted variables when testing for earnings management. This significantly improves any earnings management measures used in research.

[6] Hribar, P. and D. Craig Nichols (2007), The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management. Journal of Accounting Research, 45: 1017–1053.

Song, Thomas, and Yi (1995) used a modified Ohlson model, which has been used extensively in literature, to estimate the association between share prices and fair values of assets and liabilities per share.[7] These authors wanted to see if the value relevance of level one and level two fair values is greater than the value relevance of level three fair values. However, they found through their regression model that all fair value level information is value relevant. Level one and level two assets (liabilities) have valuation coefficients close to their theoretically predicted values of one (negative one). Level three assets have valuation coefficients of slightly less than one and less than the valuation coefficients of level one and level two assets. Interestingly enough, level three liabilities have a valuation coefficient less than negative one (i.e., absolute value greater than one), and also less than level one and level two liabilities. These results suggest that investors do not place as much weight on the less reliable level three assets in equity pricing as they do level one and level two. This could be due to the riskiness of the assets, errors in input estimation, and manipulation of the valuation models. They also determine that the strength of a firm's corporate governance influences the value relevance of fair value assets. The stronger a firm's corporate governance, the higher the fair value relevance for each tier of assets, especially level three assets. The coefficient attached to level three assets is close to zero and not significant with firms with low corporate governance, but much closer to one and significant with firms with high corporate governance. Due to the amount of discretion used in valuing level three assets, it makes sense that a firm with better corporate governance would be perceived to have

[7] Song, Chang Joon, Wayne B. Thomas, and Han Yi. "Value Relevance of FAS No. 157 Fair Value Hierarchy Information and the Impact of Corporate Governance Mechanisms." *The Accounting Review* 85.4 (2010): 1375. Web. 18 Sept. 2011.

better valuation numbers. For my study, instead of using corporate governance as an interaction variable, I use past financial reporting credibility.

Theory

Financial reporting credibility means investor confidence in the financial statements or other disclosures of companies. Misstatements and qualified opinions by the external auditors all could potentially impact financial reporting credibility negatively. When firms build this financial reporting credibility up through time, investors are more likely to believe the earnings in the financial statements. Prior research has proved that using a three-month lag time from a firm's year-end date to the investigation into the stock price accurately reflects a firm's earnings up until that year-end data.[8] After this three-month period in which the financial statements are released and the market can adjust its view of the firm, stock prices are said to be reflective of the firm's current state and potential growth. The fluctuations in the stock price from the beginning of the three-month period to the end are reactions to the disclosures in the financial statements. If investors perceive a particular firm as having high financial reporting credibility, the stock price should accurately reflect the firm's earnings and potential growth. However, if a firm has lower financial reporting credibility, the market would discount the stock price due to the uncertainty surrounding the disclosures contained within the financial statements.

Financial reporting credibility begins with managers at the firm level. These managers face a dilemma each and every day. Because stock price serves as a basic level

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[8] Easton, Peter D., and Mark E. Zmijewski. "SEC Form 10K/10Q Reports and Annual Reports to Shareholders: Reporting Lags and Squared Market Model Prediction Errors." *Journal of Accounting Research* 31.1 (1993): 113. Web. 27 Nov. 2011.

of executive performance, managers have a huge incentive to see that stock price increase. If the stock price stagnates or decreases, executives will be fired. If the stock price continually increases, managers will keep their jobs and earn more compensation through their stock options. Managers must decide between accounting policies and estimates that accurately reflect the underlying economics of the business and inflating earnings through accounting manipulations such as a lower loan loss provision or bad debt expense. Knowing that small misses in meeting earnings goals fluctuates stock price greatly, managers are often motivated to alter accounting numbers to meet analyst predictions. Firms who remain ethical and refuse to engage in any sort of misrepresented financial statements should have more financial reporting credibility. The more past financial reporting credibility a firm or manager has, the more likely investors will believe in the accounting estimates and earnings in the future. This has a huge impact on firms' valuation models of fair value assets during the financial crisis.

During the financial crisis, banks took enormous losses when they had to mark their financial assets to fair value. When markets crashed and consumer confidence vanished, financial instruments ceased trading and lost much of their value. Fair value accounting, as mandated by FAS 157, became an even greater nightmare for banks than ever before. Because instruments with no market observable prices or inputs became difficult to value, firms had to use valuation models to come up with a price, and the valuations firms calculated would ultimately be lower than the instruments' original values. The loss would trickle down through the income statement and materialize in net income.

Much goes into an investor believing in a firm's financial statements and other disclosures. Past financial statement releases and the current state of the economy all contribute to investor perception. If a firm has a history and reputation of conservative accounting, investors should trust their disclosures, even in times of crisis. These firms should continue releasing numbers that accurately reflect the underlying economics of the firm, especially in the case of fair value asset disclosures and the amount of discretion with level three asset valuations. The market should reflect this outlook. On the other hand, lower credibility firms would attempt to manipulate their models to take a lesser hit in net income, confirming the market's view. Combining past financial reporting credibility in discretionary accruals with the enormous amount of estimation involved in the valuation models of financial instruments with no market observable inputs, it is reasonable that my hypothesis for this paper is as follows:

H_0: The market discounts the fair value assets of firms with less credible financial reporting.

Ultimately, the market is going to maintain its perception of these firms as before the financial crisis. Investors will not believe the accounting estimates of these lower credibility firms. Higher credibility firms have two options: they can potentially capitalize on this by cashing in on their credibility and having faulty inputs to their models, or they can continue behaving the way they historically have. Either way, the market will believe higher credibility firms' valuation models, and discount the stock price of lower credibility firms. However, it may have been that the market discounted the fair value assets of all firms during the financial crisis. This is a possibility in the fact that all investor confidence could have been lost when markets collapsed. The market

may have refused to believe any sort of valuation model and discounted the stock price accordingly because of the amount of uncertainty in all markets. With the tough economic outlook and potentially disastrous losses attached to write-downs, investors could have believed that banks needed all the help that they could get and wanted a leg up against the competition by manipulating the estimation in their valuation models.

As mentioned previously, as the levels of assets increase from one to three, the amount of discretion increases. My separate hypothesis is:

H_1: The market discounts less for level one assets than level two or level three assets.

The market understands that firms have less room to manipulate level one financial assets because they are simply taking the listed prices for their valuations. However, with level two and level three assets, firms have more wiggle room and judgment to value their assets higher than the assets' true values. The market expects that firms will do so, thus discounting the stock price according to what it thinks the true values are.

Data Description

I obtained all of my data off of Wharton Research Data Services (WRDS) using The Center for Research in Security Prices (CRSP)/Compustat merged feature in the Bank Fundamentals Annual Research File. WRDS is one of the leading research services used because it has access to much data across many disciplines in one place. The Compustat database of WRDS receives its information from the financial statements of all the firms in the paper and puts it in the Bank Annual section. The CRSP database comprises its market prices and volume data from stock exchanges. CRSP has its own unique permanent identifier (PERMNO) for each company, while Compustat's unique

permanent identifier (GVKEY) allows the two databases to be merged together for seamless time series examination. WRDS provides me with the most convenient and time-saving database with most of the data I need. However, some variables are missing from the database, which forces me to leave them out of certain regressions. All of the data from Compustat is expressed in millions, while the CRSP variable of shares outstanding is expressed in thousands. To maintain consistent units, I divide shares outstanding by one thousand. After gathering my variables, I create a variable (POST3MONTH) that took the months in the data and add it by 3 to have the stock price reflect the financial statement disclosures from 3 months earlier. When I merge my data together, I use the PERMNO number and the POST3MONTH variable. Furthermore, to control for any potential outliers and influential data points, I Winsorize all variables by 1%. Summary statistics are provided in the Appendix in Table 1.

All variables are collected from the CRSP/Compustat merged database. To examine past financial reporting credibility, I must first look at various earnings management measures. In the past, researchers have shown that two components of banks' earnings are subject to manipulation: realized security gains and losses. Banks are able to manipulate earnings by realizing more security gains or fewer security losses. Banks managers can also understate the loan loss provision to overstate earnings, similar to retail companies manipulating the bad debt expense related to accounts receivable.

Using Beatty, Ke, and Petroni (2002), the following regression model estimates the nondiscretionary portion of the realized security gains and losses:

$$RSGL_{it} = \alpha_t + \beta_1 LASSET_{it} + \beta_2 UNGL_{it} + \varepsilon_{it} \quad (1)$$

where:

RSGL = realized security gains and losses as a percentage of total assets at the beginning of the year;

LASSET = natural log of total assets; and

UNGL = unrealized security gains and losses as a percentage of total assets at the beginning of the year.

I use another equation in Beatty, Ke, and Petroni (2002) to estimate the nondiscretionary portion of the loan loss provision:

$$LOSS_{it} = \alpha_t + \beta_1 LASSET_{it} + \beta_2 \Delta NPL_{it} + \beta_3 LLR_{it} + \beta_4 LOANC_{it} + LOANI_{it} + \varepsilon_{it} \quad (2)$$

where:

LOSS = loan loss provision as a percentage of the average of beginning and ending total loans;

ΔNPL = change in nonperforming loans as a percentage of the average of beginning and ending total loans;

LLR = loan loss reserve as a percentage of total loans at the beginning of the year;

LOANC = commercial and industrial loans as a percentage of total loans; and

LOANI = loans to individuals as a percentage of total loans.

For equation (2), Beatty et al. also includes variables for real estate loans, depository institutional loans, finance agricultural production loans, and foreign government loans.[9] Unfortunately, the CRSP/Compustat Merged database did not include these variables, so I could not obtain and use them.

[9] Beatty, Anne L., Bin Ke, and Kathy R. Petroni. "Earnings Management to Avoid Earnings Declines across Publicly and Privately Held Banks." *The Accounting Review* 77.3 (2002): 547-70. Web. 18 Sept. 2011

I gather data from the beginning of 2000 to 2010 to estimate these earnings management models. I then generate the residuals from the regression models to estimate abnormal accruals, with a different residual variable for each regression. Using the residuals, I generate a five-year trailing mean to eliminate unnecessary earnings quality variations and to capture the firm's true financial reporting credibility. I then use the trailing mean to create the standard deviation of each residual variable as my measure of earnings quality. To determine higher financial credibility firms and lower financial credibility firms, I create a dummy variable of $POOREQ_1$ equal to 1 if the standard deviation of residuals for each firm from equation (1) is above the median and equal to zero if the standard deviation of residuals is below the median. I also create a dummy variable of $POOREQ_2$ equal to 1 if the standard deviation of residuals for each firm from equation (2) is above the median and equal to zero if the standard deviation of residuals is below the median. The firms with a higher standard deviation of residuals means greater fluctuations in discretionary earnings, a sign for more earnings management and lower financial reporting credibility.

As soon as these variables are generated, all the variables for the final regression on price with all the fair value assets could be run. To test H_0 and H_1, I estimate the following regression similar to Song, Thomas, and Yi (1995):

$$PRC_{it} = \alpha_0 + \alpha_1 NFVA_{it} + \alpha_2 FVA1_{it} + \alpha_3 FVA2_{it} + \alpha_4 FVA3_{it} + \alpha_{2a} FVA1_{it} * POOREQ_1 + \alpha_{3a} FVA2_{it} * POOREQ_1 + \alpha_{4a} FVA3_{it} * POOREQ_1 + \alpha_5 NFVL_{it} + \alpha_6 FVA12_{it} + \alpha_7 FVL3_{it} + \beta_1 NI + \beta_2 POOREQ_1 + \varepsilon_{it} \quad (3)$$

where:

PRC: per share price for firm *i* 3 months following financial statement release

date at time *t*;

NFVA: non-fair value assets per share;

FVA1: level one fair value assets per share;

FVA2: level two fair value assets per share;

FVA3: level three fair value assets per share;

NFVL: non-fair value liabilities per share;

FVL12: combined level one and level two fair value liabilities per share;

FVL3: level three fair value liabilities per share;

NI: net income before extraordinary items per share; and

POOREQ $_1$: dummy variable equal to 1 when the firm is above the median and equal to zero when the firm is below the median for the residual model in equation (1).

I also do the same for the second earnings quality measure:

$$PRC_{it} = \alpha_0 + \alpha_1 NFVA_{it} + \alpha_2 FVA1_{it} + \alpha_3 FVA2_{it} + \alpha_4 FVA3_{it} + \alpha_{2a} FVA1_{it} * POOREQ_2 + \alpha_{3a} FVA2_{it} * POOREQ_2 + \alpha_{4a} FVA3_{it} * POOREQ_2 + \alpha_5 NFVL_{it} + \alpha_6 FVA12_{it} + \alpha_7 FVL3_{it} + \beta_1 NI + \beta_2 POOREQ_2 + \varepsilon_{it} \quad (4)$$

where:

POOREQ $_2$: dummy variable equal to 1 when the firm is above the median and equal to zero when the firm is below the median for the residual model in equation (2).

Equations (3) and (4) are essentially the same as the equation used in Song, et al. except for the fact that I replace their GOVRANK variable with the residual variable from

equations (1) and (2).[10] Because banks' balance sheets include a higher consistency of fair value assets than fair value liabilities and the fact that investors are more likely to examine assets over liabilities, I limit my design to interactions with fair value assets only. I also want to see the effect of past financial reporting credibility on fair value asset disclosures on the balance sheets, so I include the earnings quality residual variable from two separate earnings quality measures. To control for any bias in the absolute discretionary accruals approach, wherever I include interaction terms with my earnings quality measure, I also include interactions with sales volatility (interest and dividend income) and operating cash flow volatility. Because a firm's volatility of accruals is naturally dependent and therefore highly correlated upon these variables, controlling for these variables is a necessity to improve the test specification.[11]

I expect the valuation coefficients attached to level one and level two assets (liabilities) to be around one (negative one) because, in most cases, firms cannot value them incorrectly due to market observable prices or market observable inputs concerning their valuations. However, because of the subjectivity regarding the valuation of level three assets (liabilities), the valuation coefficients attached to these variables should be less than one (negative one). If my null hypothesis, that the market discounts the fair value assets of firms with less credible financial reporting, is correct, I would expect the coefficients attached to the interaction terms to be negative. However, if all consumer and investor confidence vanished during the financial crisis, which is explained in my

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[10] Song, Chang Joon, Wayne B. Thomas, and Han Yi. "Value Relevance of FAS No. 157 Fair Value Hierarchy Information and the Impact of Corporate Governance Mechanisms." *The Accounting Review* 85.4 (2010): 1375. Web. 18 Sept. 2011.

[11] Hribar, P. and D. Craig Nichols (2007), The Use of Unsigned Earnings Quality Measures in Tests of Earnings Management. Journal of Accounting Research, 45: 1017–1053.

alternative hypothesis, I would expect the coefficients related to the interactions terms to be close to zero since past financial reporting credibility would not matter. Investors may believe all firms would try to manipulate earnings to weather the storm of the financial crisis.

Results

The results from Equation (3) can be found in Table 3. Overall, the regression is a good predictor of stock price, with 58.43% of the variation in stock price being explained by the model. As expected, level two assets positively impact stock price. Interestingly enough, level one and level three assets negatively affect stock price by about $0.01 and $0.24, respectively. The coefficients, however, for both level one and level three assets are not significant, so we can take the negative relationship with a grain of salt.

In testing my hypothesis, the expectation was that all levels of assets interacting with my poor earnings quality dummy variable would be negative. Only level two assets from firms with poor earnings quality negatively impact stock price. The market further discounts level two assets for lower earnings quality firms by an additional $0.16, with this value being significant at the 1% level. This is consistent with my hypothesis. Surprisingly enough, level one and level three assets from firms with poor earnings quality increase stock price by an extra $0.03 and $0.15, respectively. However, like before, both coefficients attached to these assets are not significant, or even close to it. The 95% confidence interval is wide enough where no conclusions can be reached from the model. Perhaps the most interesting part of the results is the coefficient attached to my poor earnings quality measure. It is positive, meaning that firms with poor financial

reporting credibility receive a boost to stock price by about $0.40. Even though this is not significant, it raises questions to the validity of the model. The only explanation is that the market does might not look at earnings quality. This, however, is highly unlikely.

The results for equation (4) can be found in Table 4. Again, the model looks like a good indicator of stock price. 82.64% of the variation in stock price can be explained by the model. The coefficients attached to level two and level three assets are positive, meaning stock price is positively impacted by these asset disclosures. On the other hand, the model predicts that stock price is negatively impacted by level one asset disclosures. Keeping in mind that the only significant coefficient attached to these assets at the 10% level is the coefficient on level two assets, it might be coincidence that level one assets negatively affect stock price.

All coefficients attached to each level of assets when interacted with our earnings quality measure are not significant. However, the closest one to significance is the coefficient attached to level one assets for lower quality firms, which is negative. The model predicts that the market will further discount level one assets by $0.08 for firms with poor financial reporting credibility. On the other hand, the model predicts that the market will add approximately $0.01 and $0.30 for level two and level three assets, respectively, for lower earnings quality companies. It is hard to read into these numbers, though, since neither is close to significance. The model also predicts that the market adds $3.58 to the stock price of firms that have lower quality earnings. Unfortunately, this regression model has a low amount of observations (75), thus making it hard to gather concrete evidence.

I then decided to alter my poor earnings quality measure slightly. Instead of using the median to determine the cutoff point between good and poor earnings quality firms, I wanted to look at the extremes because of the possible uncertainty regarding the classification of financial reporting credibility of firms in the middle fifty percent. I decided to designate the top quartile of the standard deviation of residuals for both equations (1) and (2) as poor earnings quality firms and the bottom quartile firms as good earnings quality firms. The results turned out better.

The results for the equivalent of equation (3) with the different earnings quality variables were better, shown in Table 3. Again, the model is fair, with 66.41% of the variation in stock price being explained by the regression model. Both the fair value asset disclosures for level two and level three assets turned out positive, with level two being significant. Fair value asset disclosures for level two assets increase stock price by $0.25, and level three assets increase stock price by $0.05. According to the model, level one asset disclosures decrease stock price by $0.12, but this number is not significant.

In looking at the effect of poor financial reporting credibility, the model is consistent with my hypothesis. Each coefficient attached to the interaction terms for each level of assets is negative, with the value becoming more negative as the levels increase. Firms in the worst quartile generally have their level one assets discounted another $0.03, their level two assets another $0.16, and their level three assets another $0.50. The coefficient attached to level two assets is significant at the 5% level, and, though the coefficient attached to level three assets is not significant, its confidence interval contains mostly negative numbers. Level one assets interacting with the poor earnings quality variable is not significant. Firms with poor financial reporting credibility have their stock

discounted another $0.70, even though the coefficient attached to the poor earnings quality variable is not significant.

The equivalent of equation (4), with the results in Table 4, is another good model, with 93.44% of the variation in stock price being explained by the model. However, the number of observations (36) is low so it is necessary to take the results with a grain of salt. The coefficients attached to each asset level are positive, meaning each positively affects stock price. Level one asset disclosures increase stock price by $1.41, level two by $0.18, and level three by $1.59. It is interesting that level three assets have the highest influence on stock price, since it is the least reliable. It is also the most significant coefficient out of the three, with level one being the least reliable.

Poor earnings quality firms have their level one assets further discounted by $2.84, with this coefficient being significant. Both coefficients for level two and level three assets for firms with poor credibility are positive, with level two asset disclosures adding $0.29 to stock price and level three adding $0.92. However, both are not significant, with level three being the least significant. Firms with poor credibility have their stocks further discounted by $6.01, but this number is also not significant.

Unfortunately, while each of the models seem like good predictors with high R^2 values and high F-values, most of the variables I wanted to examine turned out to be insignificant. Maybe investors lost all confidence during the crisis and no differences exist between poor earnings quality firms and good earnings quality firms. The market simply viewed all firms the same. If not, there may have been problems with the data, resulting in insignificant variables.

Conclusion

It is hard to reach definitive conclusions from my results. Most of the variables I wanted to examine were insignificant. However, the ones that were significant supported my hypothesis that the market discounts the fair value assets for firms with less credible financial reporting. Perhaps the biggest conclusion drawn from this study is that financial reporting credibility matters more for the poorest earnings quality firms. The results from the models improved when we examined the extreme quartiles of earnings quality.

The biggest limitation of this study is the database I used to obtain all of my data. In the case of equation (2), I could not imitate Beatty, Ke, and Petroni (2002) fully because of various variable omissions from the database. Other variable omissions contributed to a low number of observations in both versions of equation (4), as much of the data did not go as far back in years as needed.

As years go by and more data becomes available for fair value assets, researchers can attempt this study again or another study examining the same issue presented here. The desired results may become more conclusive and firms, researchers, and the market may have a greater depth of knowledge into financial reporting credibility.

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Appendix

Figure I

Summary Statistics

variable	mean	Standard deviation	min	p25	p50	p75	max
RSGL	-1.37e-07	7.72e-07	-9.08e-06	-3.06e-08	3.26e-13	2.40e-08	1.53e-06
UNGL	4.62e-08	6.58e-07	-5.18e-06	-3.38e-08	1.49e-08	1.20e-07	5.46e-06
Lasset	7.66734	1.599523	4.909783	6.593087	7.375798	8.318289	14.93574
LOSS	.0169461	.0172357	-.0024734	.0042628	.0103022	.0247782	.0675672
ΔNPL	.0036871	.0109227	-.003897	.0000887	.0006322	.0024724	.0793109
LLR	.0186815	.0087813	.0034288	.013008	.0162039	.0225606	.0509344
LOANC	.3070997	.1328619	.0813148	.2355147	.2858891	.3622151	.7332646
LOANI	.1745977	.1113082	0	.095939	.1514851	.2719088	.4552373
PRC	14.02696	12.82869	1.21	5.025	10.44	18.33	83.48
NFVA	149.2199	118.9388	7.09244	91.66332	127.8948	175.9441	1774.226
FVA1	2.550928	18.68369	0	0	.0396389	.4973074	357.1873
FVA2	26.78032	24.40832	0	10.41959	20.1325	34.69809	180.1587
FVA3	1.014221	2.95341	0	0	.0185229	.5949324	27.34974
NFVL	12346.22	48835.81	179.207	718.052	1468.859	4134.48	415728
FVL12	.8037386	4.103527	0	0	0	.0869875	68.7064
FVL3	.0908368	.5747432	0	0	0	0	9.770352
NI	-.191618	4.105819	-67.5242	-.641684	.50977	1.380214	20.17519

[12]

[12] RSGL: Realized security gains and losses as a percentage of total assets at the beginning of the year
UNGL: Unrealized security gains and losses as a percentage of total assets at the beginning of the year
LASSET: Natural log of total assets
LOSS: Loan loss provision as a percentage of the average of beginning and ending total loans
ΔNPL: Change in nonperforming loans as a percentage of the average of beginning and ending total loans
LLR: Loan loss reserve as a percentage of total loans at the beginning of the year
LOANC: Commercial and industrial loans as a percentage of total loans
LOANI: Loans to individuals as a percentage of total loans
PRC: Per share price for firm *i* 3 months following financial statement release date at time *t*
NFVA: Non-fair value assets per share
FVA1: Level one fair value assets per share
FVA2: Level two fair value assets per share
FVA3: Level three fair value assets per share
NFVL: Non-fair value liabilities per share
FVL12: Combined level one and level two fair value liabilities per share
FVL3: Level three fair value liabilities per share
NI: Net income before extraordinary items per share

Figure II

Correlation Matrix

Observations=700

	PRC	NFVA	FVA1	FVA2	FVA3	NFVL	FVL12	FVL3	NI
PRC	1.0000								
NFVA	0.4528	1.0000							
FVA1	0.3577	0.6689	1.0000						
FVA2	0.4422	0.2953	-0.0034	1.0000					
FVA3	0.2161	0.2282	0.0800	0.1823	1.0000				
NFVL	0.2557	0.0686	0.0708	0.0998	0.2777	1.0000			
FVL12	0.2427	0.1279	0.0975	0.2036	0.2820	0.6073	1.0000		
FVL3	0.0325	0.0796	0.0171	0.0878	0.2383	0.2356	0.3985	1.0000	
NI	0.4052	-0.1224	0.1650	0.0916	0.0450	0.0888	0.0840	0.0168	1.0000

[13]

[13] PRC: Per share price for firm i 3 months following financial statement release date at time t
NFVA: Non-fair value assets per share
FVA1: Level one fair value assets per share
FVA2: Level two fair value assets per share
FVA3: Level three fair value assets per share
NFVL: Non-fair value liabilities per share
FVL12: Combined level one and level two fair value liabilities per share
FVL3: Level three fair value liabilities per share
NI: Net income before extraordinary items per share

Figure III

Results for Equation (3)

VARIABLES	(1) PRC	(2) PRC
NFVA	0.0402***	0.0435***
	(0.00692)	(0.00918)
NI	1.122***	1.022***
	(0.201)	(0.239)
FVA1	-0.0144	-0.123
	(0.0572)	(0.107)
FVA2	0.233***	0.249***
	(0.0515)	(0.0713)
FVA3	-0.237	0.0473
	(0.487)	(0.418)
NFVL	3.25e-05***	5.42e-05***
	(9.30e-06)	(1.42e-05)
FVL12	-0.176	-1.127***
	(0.202)	(0.266)
FVL3	-1.536**	0.654
	(0.719)	(0.709)
FVA1*POOREQ1	0.0256	-0.0336
	(0.0855)	(0.0879)
FVA2*POOREQ1	-0.162***	-0.163**
	(0.0479)	(0.0670)
FVA3*POOREQ1	0.154	-0.503
	(0.421)	(0.388)
POOREQ1	0.396	-0.701
	(1.180)	(1.743)
Constant	2.090	2.115
	(1.390)	(1.849)
Observations	699	320
R-squared	0.584	0.664

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
[14]

[14] Variable descriptions can be found in footnote 9 on page 30.
POOREQ1: Dummy variable equal to 1 when the firm is above the median and equal to zero when the firm is below the median for the residual model found in equation (1)

Figure IV

Results for Equation (4)

VARIABLES	(1) PRC	(2) PRC
NFVA	0.0192	-0.0246
	(0.0298)	(0.0336)
NI	6.881***	3.019
	(1.879)	(3.667)
FVA1	-0.206	1.418
	(0.282)	(1.941)
FVA2	0.248*	0.184
	(0.132)	(0.183)
FVA3	0.235	1.586
	(0.814)	(1.193)
NFVL	-1.65e-05	4.93e-05**
	(2.03e-05)	(1.91e-05)
FVL12	0.365	-2.428**
	(0.501)	(1.013)
FVL3	-3.003***	25.58***
	(1.025)	(8.551)
FVA1*POOREQ2	-0.0800	-2.840**
	(0.0615)	(1.364)
FVA2*POOREQ2	0.0114	0.289
	(0.167)	(0.201)
FVA3*POOREQ2	0.297	0.924
	(0.410)	(2.390)
POOREQ2	3.575	-6.008
	(6.325)	(5.340)
Constant	1.790	5.905
	(5.601)	(4.485)
Observations	75	36
R-squared	0.826	0.934

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

[15]

[15] Variable descriptions can be found in footnote 9 on page 30.
POOREQ2: Dummy variable equal to 1 when the firm is above the median and equal to zero when the firm is below the median for the residual model found in equation (2)