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The 2008 Financial Recession and Fair Value Accounting

Anthony Hurlburt

ABSTRACT. The recent U.S. housing bubble was correlated with lax underwriting standards, flawed housing policies, and Wall Street innovation. At the peak of the housing bubble, the Financial Accounting Standards Board issued standard 157, which provided guidance on fair value accounting. Once the housing market deflated, the standard led many to believe that it was the sole reason asset values collapsed, creating a liquidity crunch and prolonging the financial recession. This paper investigates the causes of the housing bubble and Financial Accounting Standard's relevance in the aftermath. It finds that fair value accounting simply exposed the poor underwriting standards, bad public policy, and Wall Street's gross underestimation of risk.

I. Introduction

The 2008 financial crisis unraveled the world economy as both private and public miscues led to the most severe economic downturn since the Great Depression. The precise cause of the crisis been debated in the media and among scholars without reaching a consensus. Wall Street financial innovations paired with U.S housing legislation reduced mortgage underwriting standards nationwide making credit accessible for low-to-middle income households. Households were unable to repay their debt and defaulted – leading to write-offs for both public and private lenders. Rarely mentioned are accounting standards' effects on financial markets during the years 2007-2009. These standards are drafted by the Financial Accounting Standards Board to ensure accountability and disclosure under Generally Accepted Accounting Principles (GAAP). One standard, *Financial Accounting Standard 157*, refers to mark-to-market accounting and requires firms to measure assets and liabilities at market value. During the financial crisis, markets were extremely volatile, or in some cases, nonexistent -- resulting in firms recording assets at depressed values. *Was the implementation of Financial Standard 157 the sole reason US capital markets deteriorated during the financial recession of 2008?* Interpretation and awareness of financial reporting regulations will give insight in to how financial markets reacted during this period. Understanding the effect they had on U.S. financial markets may help us improve them.

A. DEFINITION/CONCEPTS

Securitization was an important component of the financial crisis. Securitization is the process of turning illiquid assets (e.g. loans, mortgages) into investment instruments such as common stock, bonds, or mortgaged backed securities. For instance, Bank XYZ approves a mortgage, adding an asset to its balance sheet. To issue more mortgages, XYZ will sell this mortgage to a larger company, ABC, Inc. ABC, Inc. will subsequently set up a special purpose entity with the sole purpose of collecting payments on the mortgage. The special purpose entity issues stock or bonds, called mortgaged back securities. The securities allow investors to earn a return on the underlying mortgage. Through securitization, simple transactions had the ability to create a credit bubble by allowing banks to approve mortgages with little regard to performance, as long as investors in special purpose entities prospered.

Collateralized debt obligations were another financial innovation correlated with the housing bubble. A collateralized debt obligation is like a mortgage backed security, except, it pools various assets such as account receivables, automobile loans, and student loans into tranches of varying risk. The asset pool would be broken down in terms of crediting rating such as AAA, AAA-, BBB, BB, etc. As the assets in a tranche became riskier its credit rating would decrease, but potentially more profitable. The collection of principal and cash flows (interest payments) is the same as a mortgaged backed security, but disbursements from the special purpose entity are based on the hierarchy of credit ratings. Thus, as the underlying assets became worthless, the tranches rated the worst saw the most significant losses. If an investment firm or commercial bank failed to sell the complete offering of a collateralized debt obligation, it would package the remaining securities into another collateralized debt obligation – creating a collateralized debt obligation squared. The cash flow assumptions are identical to that of a regular collateralized debt obligation, but now the assets that would have been a BB-, or lower, create a collateralized debt obligation of a collateralized debt obligation, an extremely risky practice.

A third component of the financial crisis was the emergence of a credit default swap. A credit default swap is designed to transfer credit exposure of fixed income products between two or more parties (Investopedia 2017a). For example, Bank of America issues collateralized debt obligations, mortgages, or personal loans to generate revenue for its

operations. Depending on the level of risk within those assets, Bank of America may be willing to purchase an insurance package allowing it to collect the principal and interest payments even if borrowers were to default on their debt.

These investment instruments typically occur over-the-counter, meaning that there is no active market such as the New York Stock Exchange to determine the value. Therefore, it is largely up to the individual commercial or investment bank to determine the value of such securities and the appropriate risk and return factors. Such transactions are typically held-to-maturity investments meaning that the investors expect to generate a return for the duration of the mortgage. However, as mortgages and other subprime fixed income products began to default, the market turned to fair value accounting to determine the value of these investments.

Both public and private entities funneled mortgages into the market, allowing financial innovations to prosper. Government-sponsored entities, such as the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) quasi-represented the United States Government in the mortgage market. The purpose of these two agencies is to provide stability in the secondary market for residential mortgages, respond appropriately to capital markets and provide ongoing assistance to the secondary market for residential mortgages (Federal Housing Finance Agency 2017). A key characteristic, exemplified by Fannie Mae and Freddie Mac's strategic objectives, was to influence the secondary market for securitized mortgages. While they were not under direct control of the government, Congress enacted legislation expanding subprime lending such as the Community Reinvestment Act as well as increased affordable housing goals for Fannie Mae and Freddie Mac, all of which correlated with the housing bubble.

The Financial Accounting Standards Board, overseen by the Securities and Exchange Committee, develops and implements the generally accepted accounting principles which all companies in the United States must follow. This paper will focus on fair value accounting. Fair value accounting requires companies to report assets and liabilities at the price at which they would be sold or bought in an active market, thus writing up or down assets and liabilities in terms of market conditions. One argument against fair value market accounting is the excessive write-up of assets during economic booms, and subsequently, excessive write-offs during economic slowdowns.

Leverage is borrowed capital used to increase potential investment or working capital (Investopedia 2017b). For instance, if a financial institution has \$1 million in equity it has issued one million dollars' worth of the company's shares to outside investors. It can increase the amount of its capital by obtaining a long-term note or loan from another bank, bringing its total assets and liabilities to two million. During economic booms, firms use leverage to finance operations, invest, or increase its cash on hand with the idea of generating a higher rate of return than interest expense. Leverage can increase profits when the investment is performing well, but when the investment flops it will destroy shareholder value and increase write-offs (Investopedia 2017b).

II. Blowing Up the Bubble

A. MORTGAGES

Mortgages, specifically subprime mortgages, built the foundation of the largest housing bubble in history. When determining the quality of a mortgage, professionals analyze credit scores, loan-to-value ratio, and debt-to-income ratios to determine if a mortgage is prime or subprime (Wallison 2016, 724). Credit scores measure an individual's ability to meet their financial responsibilities in terms of credit card transactions, rent obligations, or even a utility payment. Loan-to-value ratio is the size of the loan relative to the value of the home. A larger down payment reduces this ratio. Finally, underwriting professionals use the debt-to-income ratio, defined as the portion of a homebuyers' income consumed by debts (Wallison 2016, 725). A study conducted by Fannie Mae in 1992 determined that loans with delinquency rates of less than one percent were considered a prime mortgage. Fannie Mae conducted the study on 26,000 random loans and found that 94% of these loans had at least a 10% down payment, 85% had a debt to income ratio less than 38%, and only 2% had more than one late payment (Wallison 2016, 719). The study gave an insight as to how mortgages, particularly prime mortgages, were characterized before underwriting standards deteriorated.

Subprime mortgages are often associated with late payments, minimal or zero down payment at origin, and a debt to income ratio well above 38% (Wallison 2016, 788). The Federal Reserve conducted a study on characteristics of loans originated during 1993 and determined the

following: loan to value mortgages greater than 81% were more than three times as likely to default or become delinquent. Also, households with median FICO scores (621-660) or less, were 15 and 47 times greater of becoming delinquent or defaulting (Avery and Brevoort 2015, Table 6). This shows that not only are loan-to-value ratios a factor in determining the quality of mortgage, but also that FICO scores are predictive in determining whether a borrower will default. Another interesting statistic the study found was that borrowers with more than 120% of area median income, as well as high FICO scores, were only 1.1 times more likely to default than those with prime mortgage characteristics, while borrowers with income 80% to 120% of median income or below were 10.3 and 33.9 times more likely (Avery and Brevoort 1996, Table 6). The mortgage meltdown can be attributed to underwriting professionals lending to borrowers who were likely to default.

B. GOVERNMENT LEGISLATION AND ENTITIES

The Community Reinvestment Act was enacted to “establish an affirmative obligation on the part of depository institutions to meet the credit needs of their communities, including lower income borrowers” (Avery and Brevoort 2014, 352). A misconception of the Community Reinvestment Act is that banks must meet strict quotas of loans to low-to-moderate income borrowers within its deposit area. Banks are examined and granted credits or points on their ability to invest in special purpose development entities which facilitate investment in low to moderate income communities (Getter 2015, 3). Such a system simply shows investigators and congress the overall effectiveness of a bank’s operations in serving low-to-moderate income borrowers. The reporting and assignment of these credits or points is granted by passing a lending, investing, and service test. Under the investment test, banks can purchase secondary mortgages originated for public welfare investment such as housing services or jobs. Further, banks are granted credit for promoting community development projects such as affordable housing and financing to small business in low-to-moderate income areas (Getter 2015, 6). By allowing banks to earn such credits through secondary markets, the Community Reinvestment Act encouraged depositories to lend to low-to-moderate income neighborhoods with little repercussion to the originators’ books. In all, Community Reinvestment Act depositories accounted for

nearly \$4.5 trillion in commitments in 2007 alone, with \$1.6 trillion allocated toward single family mortgages (Pinto 2011, 22).

Apart from its internal objectives, Fannie Mae and Freddie Mac were under considerable pressure to fulfill initiatives established by Congress and the Department of Housing and Urban Development. Such objectives include the National Homeownership Strategy, affordable housing goals, and the Fair Lending Best Practices Initiative. The Fair Lending Best Practices Initiative, designed by the Department of Housing and Urban Development, was a major stepping stone in the formation of Fannie Mae's partnership with the private sector. In a 2001 newsletter, the department said "since 1994, the Department of Housing and Urban Development has made agreements with lenders across the nation that are individually tailored to public-private partnerships that are considered on the leading edge. The Agreements offer an opportunity to increase low-income and minority lending incorporating equal opportunity principles into mortgage standards" (U.S. Department of Housing and Urban Development 2001). The Best Practices initiative signed on 117 companies, one of which, Countrywide, made over \$789 billion worth of loans towards the program (Wallison 2016, 2480). The Best Practices initiative was one of the first times the Department of Housing and Urban Development intervened with Fannie Mae and Freddie Mac. It would not be the last as the department raised low to moderate income housing goals yearly from 40% in 1996 to 56% in 2008 – the first-year Fannie and Freddie did not surpass such goals (Federal Housing Financing Agency 2010, 22). Essentially, what this means is that the Department of Housing and Urban Development was gradually increasing the share of loans to low-to-moderate income borrowers, which was extremely risky. As Fannie and Freddie were constantly feeling pressure from HUD, they became increasingly exposed to the subprime mortgage market. This continued until they could not meet the 56% goal required by HUD.

The National Homeownership strategy was developed under the Clinton Administration during 1996. It called for all-time high homeownership rates within 6 years of its implementation (Wallison 2016, 2500). The initiative increased affordable housing goals to low-to-moderate income households from 30% to 40% in 1996, reduced down-payment requirements, cut transactions costs, and increased the availability of alternative financing throughout the country (Wallison 2016, 2500). The most notable component of the National Homeownership strategy was the reduction of down payment requirements. Private

mortgage companies issued mortgages with as little as a 5% down payment, Fannie Mae and Freddie Mac developed products that only require 3%, and the Veterans' Administration guaranteed no-down payment mortgages for qualified households (U.S. Department of Housing and Urban Development 1996).

During the last quarter of the 20th century, the United States Government made it extremely clear that owning a home was an essential part of the American Dream, illustrated by the vast numbers of mortgages on the books of various government agencies. As of June 30, 2008, the United States Government had nearly 24 million mortgages on its books, \$1.4 trillion and \$1.1 trillion in outstanding balances for Fannie and Freddie, \$537 billion for the Federal Housing Association and Veteran Affairs, and \$312 billion related to the Community Reinvestment Act (Pinto 2011, 30). In addition, it encouraged home ownership through the mortgage interest tax deduction, worth 420 billion in 2009 alone (Stansel and Randazzo 2011, 1).

C. WALL STREET'S ROLE

Wall Street's significant role in the financial crisis is engraved into many Americans' minds. Financial innovations such as collateralized debt obligations and credit default swaps added to housing bubble of the late 1990s and early 2000s. During the financial crisis, investment banks focused on the securitization of mortgage backed securities, meaning they targeted subprime mortgages entering the market due to the reduction of underwriting standards, affordable housing policies, and initiatives for low-to-moderate income borrowers allowed higher interest rates –leading to higher yields. The secondary market typically handled securitized transactions consisting of refinancing or debt consolidations. The secondary market saw exceptional growth from 2002 to 2006 in terms of securitized mortgages entering the market, rising from 9% in 2001 to 40% in 2006 (Park 2009, 127). Investment firms such as Lehman Brothers, Merrill Lynch, Goldman Sachs, and others were increasingly aware of the profitability of subprime mortgages, so long as default and delinquency rates stayed low. The Cordell paper, an analysis of collateralized debt obligation markets between 1999-2007, concluded that 727 pools of collateralized debt were issued totaling \$641 billion, of which \$241 billion consisted of CDOs (Wallison 2016, 1967). Comparatively, mortgage backed securities had an estimated market value of roughly \$5.8 trillion

during that same timespan, with \$299 billion collateralized with ratings of BBB or less (Wallison 1967, 2016). This confirms that Wall Street investment firms had high demand for mortgaged back securities because of their profitability and the ability to put them into collateralized debt obligations, essentially profiting twice off the same asset.

In practice, credit default swaps are a form of insurance on underlying assets with the potential to default. Credit default swaps were very profitable as the housing market continued to grow. Once those underlying securities began to default, it was clear that credit default swaps would be an extreme burden on those who provided the insurance, such as American Insurance Group (AIG) and Bear Stearns. When such loans defaulted, Wall Street's irresponsibility became clear.

Mortgage backed securities, collateralized debt obligations, and credit default swaps were sound in theory if used responsibly. But as the proportion of subprime loans increased, they were sound only if housing prices kept rising. Once the housing market peaked and subsequently deflated, it was evident that the speculation surrounding the underlying assets had failed to properly evaluate the risk.

D. DEFLATION

The Case-Shiller index measures national housing prices from small towns to large metropolitan areas. The base year index is 2000, when it equaled 100. Housing prices peaked in 2006 at 184.62 (Federal Reserve Bank of St. Louis 2017). The increase in price can be explained by the vast number of consumers willing and able to buy a home due to the reduction of underwriting standards and affordable housing goals. As underwriting standards deteriorated, borrowers could borrow more and more, raising demand and so increasing the price of a home by nearly 85% over a six-year period. Once the housing market began to collapse in early 2007, borrowers with subprime characteristics were unable to make mortgage payments and were unable to refinance their mortgage because the value of their asset had decreased. For the most part, it was a result of variable interest rates that coaxed borrowers in while interest rates were low, but as the federal reserve raised interest rates, borrowers were unable to afford their payments.

As default and delinquency rates began to increase, investment firms and commercial banks began to see mortgage-backed securities' cash flows decline. This led to a decline in the value of the securities; thus,

banks began to write down mortgage backed assets, capital levels began to fall, and ultimately banks began to fail. The combination of these things led to a liquidity crunch, putting credit markets and the national economy into shambles. market participants strained to evaluate investments which significantly declined almost overnight.

III. Fair Value Accounting

A. FINANCIAL STANDARD 157

Prior to the issuance of Financial Accounting Standard 157, fair market value accounting was loosely defined with little guidance from accounting pronouncements on how to value an asset or liability. In 2006, the Financial Accounting Standards Board issued Financial Accounting Standard 157, setting the groundwork for modern fair value accounting. The standard defines fair value as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date”(Financial Accounting Standard Board 2006, 8). Fair value is the price that would be received to sell the asset, not the price originally paid. An example will clarify the rationale: BCD, Inc is willing to sell mortgage backed securities initially acquired for \$100 for \$50, their current market value. The underlying reason for the write-down of the asset would be attributed to factors such as increased default and delinquency rates, leading BCD’s management to believe that only \$50 will be collected on the securitized mortgages. The fair value would not be the initial \$100 because market conditions deteriorated and caused the value of the asset to decrease. Financial Accounting Standard 157 established three levels at which fair value measurement can be attained. Level 1, the most observable and reliable valuation method, is a quoted price in an active market for identical assets or liabilities that the reporting entity can access at the measurement date (Financial Accounting Standard Board 2006, 12). Quoted prices can be obtained from the New York Stock Exchange, Nasdaq, Standard and Poor’s 500 (S&P 500) and other sources. This is the most accurate and unbiased level of evaluation under Financial Accounting Standard 157 as the markets in which information is gathered are extremely active and

transparent. Because of the accuracy and reliability quoted prices attain, when such prices are available, they are required for the measurement of the asset or liability.

The second level of the fair value hierarchy is defined as market to model, which means some market inputs are available, but not enough to determine the fair value. This requires some judgement. Level 2 inputs are observable inputs for the asset or liability, either directly or indirectly and include interest rates, yield curves, credit risks, default rates, and others derived principally from or corroborated by observable data (Financial Accounting Standard Board 2006, 12). As mentioned, level 2 inputs are not directly quoted from an active market, requiring firms to use their own judgement when determining the fair value of an asset. The standard requires that firms include risk and nonperformance risk. It states “a fair value measurement includes an adjustment for risk if market participants would include one in pricing the related asset or liability, even if the adjustment is difficult to determine “(Financial Accounting Standard Board 2006, 12). An example of a failure to do so would be collateralized debt obligations issued by commercial and investment banks. By assuming the housing market would continue to rise, the issuers of such securities failed to assess the risk of delinquent and default mortgages issued to subprime borrowers, and thus acquired securities that were extremely overvalued once the housing bubble began to deflate. Nonperformance risk affects liabilities’ fair measurement as a company’s credit rating improves or decreases. As a firm’s credit rating increases, it is more likely that it can repay debt and other liabilities with ease; as it decreases, the opposite is true. During the liquidity crunch, commercial banks and others faced extreme pressure as write-offs decreased the bottom-line leading to the decreased probability they could repay debt.

Level 3 inputs measure the fair value using unobservable inputs, in markets that are non-existent or with few transactions. The standard says, “unobservable inputs shall be used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date (Financial Accounting Standard Board 2006, 15).” Because there is little, if any, available information in such a market, it is completely up to the discretion of the company to value the

asset or liability. When determining the fair value measurement, observable inputs should be developed with “the best information available under the circumstance” and the reporting entity should “not ignore information about market participant assumptions that are reasonably available without undue costs and effort” (Financial Accounting Standard Board 157, 15). As the housing market was deflating, financial intuitions were confused as to how to value financial securities backed by mortgages. Thus, write-downs became frequent and the market for mortgage backed securities and collateralized debt obligations ceased to exist as market participants were afraid to purchase deflated securities.

The final component of Financial Accounting Standard 157 relates to the disclosure of fair value measurement computations. The standard says, “assets and liabilities measured at fair value on a recurring basis in periods after initial recognition, the reporting entity shall disclose information that enables users of its financial statements to assess inputs for the development of those measurements” (Financial Accounting Standard Board 157, 16). To adequately fulfill that objective, reporting entities must disclose the fair value measurements at the reporting date including the level of inputs and report all level three inputs with a reconciliation of the beginning and ending balances. Also, reporting entities must show a calculation of total gains and losses as well as any purchases, sales, issuances and transfers from or to level 3. Finally, the reporting entity must show the valuation technique used to measure the fair value with a description of changes in related inputs during the period (Financial Accounting Standard Board 2006, 16).

A study conducted by Christian Laux and Christian Leuz on measurement inputs among major investment firms (Goldman Sachs, Morgan Stanley, and Merrill Lynch) as well as major banks (JP Morgan, Bank of America, Citigroup and Wells Fargo) shows how assets were measured during the first quarter of 2007 to the first quarter of 2009. The study concluded that between the first quarter of 2007 and the first quarter of 2009, an average of 23.71% of major investment bank assets were measured using level one inputs. Level 1 inputs were relatively stable between 25-27% during 2007, but in 2008 the inputs dropped from 23.3% during the first quarter, to 15.5% at the end of the 2008 fiscal year (Laux

and Leuz 2010, 112). During that same fiscal year, level 2 inputs increased from 65.9% to a peak of 70.9% well above its average of 65.86% through the two-year period (Laux and Leuz 2010, 112). Level 3 inputs saw the most exceptional growth in this portion of the study. Major investment banks used such inputs to measure its assets only 7% of the time in 2007. In the last quarter of 2008, however, that number more than doubled to 14.3% (Laux and Leuz 2010, 112).

A similar story is found within major bank companies. Major bank companies used level one inputs at a rate of 33.5% during the first quarter of 2007, but that number steadily decreased after the second quarter of 2007. Beginning during the second quarter of 2007, level one inputs for major bank holding companies steadily decreased every quarter from 36.4% (Q2 2007) to 19.3% by the end of first quarter of 2009. Level two and three inputs both increased as level one inputs declined rapidly throughout the period 2007-2009. Level two inputs remained relatively stable throughout the 2007 and the third quarter of 2008 ranging from 60.2 to 57.7% (Laux and Leuz 2010, 112). During the fourth quarter of 2008 level two inputs jumped considerably from 57.7% to 68.2%, a 10.5-point increase. Level three inputs accounted for 9.2% of measurement inputs in 2007; by the third quarter of 2008, that number increased to 14.6% (Laux and Leuz 2010, 112).

As the study shows, major commercial banks and Wall Street investment firms lacked direct market prices of their assets throughout the financial crisis. The lack of quoted prices made fair value measurement rely on the discretion of the financial institution reporting the asset or liability. The use of observable inputs such as interest rates, yield curves, default rates as well as lack of transactions concerning over-the-counter collateralized debt obligations, mortgage backed securities, and credit default swaps frustrated firms as write-offs and realized losses were abundant on income statements.

B. ADVOCATES FOR FAIR VALUE

The Financial Accounting Standards Board issued Financial Accounting Standard 157 to improve the transparency of financial markets, allowing investors and creditor's alike to make informed decisions. Advocates for

Financial Accounting Standard 157 believe it improves the usefulness of accounting information, removes inconsistencies, and unifies fair value measurement and disclosure requirements (Bikki et al 2010, 488). Fair value accounting improves the usefulness of accounting information by reporting and disclosing the price at which an asset or liability can be sold, using input levels already described (Bikki et al 2010, 448). In terms of market volatility and reliability, the financial fraud of the early 2000s (e.g Enron and WorldCom) shows how misinterpreted assets harmed capital markets. Proponents argue that Financial Accounting Standard 157 eliminates the inconsistencies of fair value measures. This is true, as the standard sets forth the rules for measuring assets and liabilities with either level one, two, or three inputs. Further, the standard applies to all reporting entities. Before its implementation, fair value was different for every sector of an industry. For example, a bank would measure fair value differently than a mutual fund, while both have similar assets and liabilities. By removing all the inconsistencies in fair value measurement, the standard logically brings uniformity to both how to measure and disclose assets and liabilities. Supporters of the standard believe all firms must use similar methods when determining the value of an asset as it will provide transparency for market participants, leading to improved decision making.

C. CRITICS OF FAIR VALUE ACCOUNTING

The volatility that followed the bursting of the housing bubble is at the forefront of the criticism of fair value accounting. Banking professionals believe that such rules caused excessive bank write-offs by affecting management decisions. The criticism regarding the usefulness of fair value accounting includes a contagion effect on financial markets, reliability of methods to estimate fair value, loss on other-than temporary investments, and leverage and volatility (Bikki et al 2010, 484). The contagion effect can be explained through basic economic principles of supply and demand. As the default rate of underlying assets of collateralized debt obligations and mortgage backed securities increased, the cash flows and thus the entire investment lost substantial value – decreasing the demand and price. Because mortgaged backed securities and collateralized debt obligations

were over the counter, there was not an active market for these investments, so financial firms increased the amount of level two and three inputs. Once a firm wrote down the price of the investment, it was clear other participants would have to do it too, creating a domino effect for holders of subprime mortgage backed securities' and collateralized debt obligations.

Critics of fair value market accounting argue that one of the main weaknesses lies in the valuation methods require under the standard. Critics argue that the standard requires reporting entities to write assets down to market levels even when they intend to hold them to maturity, unjustly decreasing their value in times of economic hardship. In addition, critics argue that because market write offs decreased the demand and price, transactions were infrequent and the price may not be representative of the underlying long-term value of the asset (Bikki et al 2010, 485). Opponents of fair value accounting also argue that market values suffer from inherent risk of volatility. They believe that mark to market results in artificial volatility in income because deviation from the cost of long-term assets such as collateralized debt obligations and mortgaged backed securities will occur throughout the term of the assets. For example, a mortgaged backed security during the financial crisis saw a substantial decrease in value as default and delinquency rates rose. In hindsight, the housing market recovered in years after the bubble burst, which would have allowed mortgaged backed securities and collateralized debt obligations to begin to recover as well. Critics were concerned, and rightly so, that because such economic hardship had occurred because of the housing bubble, that the market overreacted, causing a liquidity crunch as investment and commercial banks write-offs increased. Finally, critics of fair value accounting argue that fair value accounting increases leverage during booms, creating vulnerability in the financial system. However, during economic hardship, it is hard to repay a debt because of the deflated prices in financial market – increasing the risk of insolvency and a liquidity crunch throughout the entire financial system.

D. FINANCIAL ACCOUNTING STANDARD 157-4

During the peak of the financial crisis, the Financial Accounting Standards Board observed market participants' complaints surrounding the

methods of valuation required by Financial Accounting Standard 157 by issuing a staff position. The staff position emphasizes that even if there has been a significant decrease in the volume and level of activity for the asset or liability, regardless of the valuation technique used, the object of fair value measurement remains the same as in Financial Accounting Standard 157 – meaning fair value is the price that would be received to sell an asset or paid to transfer a liability in an *orderly transaction* (Financial Accounting Standard Board 2009, 5). As mentioned, one of the major concerns surrounding the opponents of Financial Accounting Standard 157 was the quoted prices in a market that is not active, therefore not qualifying as an *orderly transaction*. The staff position provided guidance on determining when there is a significant decrease in the volume and level of activity. The staff position states a reporting entity should evaluate specific factors to determine whether there has been a significant decrease in the volume and level of activity for the asset or liability compared to normal market conditions. The factors include: few recent transactions, price quotations not based on current information, price quotations vary substantially over time or among market makers, indexes highly correlated with fair values of the asset are demonstrably uncorrelated with recent indications of fair value, significant increase in implied liquidity risk premium, yields, and finally, there is a significant decline or objective of market issuances for the asset or liability (Financial Accounting Standard Board 2009, 5). If the reporting entity concludes there has been a significant decrease in the level of activity for the asset or liability in relation to normal market activity, transactions may not be determinative of fair value – therefore requiring further analysis of the transactions of quoted prices needed in accordance with Financial Accounting Standard 157 (Financial Accounting Standard Board 2009, 6).

The issuance of the Financial Accounting Standard Board's staff position is clearly aimed towards enhancing the clarity within the level two and three inputs, especially level three inputs. The response of the Financial Accounting Standard Board shows that such inputs within the fair value hierarchy were in fact causing havoc in financial institutions throughout the financial crisis – begging the question if in fact the interpretation of Financial Accounting 157 further harmed capital markets prolonging the financial recession of 2007-2009.

IV. Analysis

As shown thus far, the financial recession was correlated with housing policies, underwriting standards and Wall Street's appetite for high yielding securities. In an analysis of Financial Accounting Standard 157's relevance in the 2007-2009 recession, the first question that must be answered is whether fair value market accounting is justified in financial markets. The answer, based on my interpretation of financial markets throughout the time, is yes. First, if mark-to-market accounting was not enforced and regulated, fraudulent activities would steadily increase, reducing investor confidence. This would discourage investment in the United States, causing an economic slowdown. Second, if United States capital markets were not transparent, business would be reluctant to lend to each other, harming not only national corporations, but also to local businesses. Third, if the United States did not implement some form of fair value accounting, inconsistencies between national firms would vary so much that investors and decision makers would be misinformed --- leading to bad decisions and write-offs. Imagine if during the financial crisis investment banks such as Lehman Brothers and Bear Stearns were not required to implement some form of market component to their financial statements. If this were the case, both could still be operating today -- finding new subprime borrowers to issue subprime mortgage backed securities, while investors were provided with healthy financial statements when in fact they were materially misstated; such a result could have destroyed the entire financial industry. Inconsistent financial statements and the potential for foreign investment to flee the country provides support for fair value accounting's relevance to the United States.

The second question that arises is simply: is there another way to define fair value? Financial Accounting Standard 157 defines fair value as "the price that would be received to sell an asset or paid to transfer an asset or liability in an orderly transaction between market participants." The Financial Accounting Standards Board staff position further gives firms the ability to determine whether the market is producing *orderly transactions* justifying depressed price levels as the true financial position of the asset. I believe this is the best way to define fair value as if it were defined another way, it would not truly be the fair value of the asset or

liability at stake. By this, I mean, transactions cannot be labeled “projected discounted cash flow value” giving premium price to an asset or liability above or below its true fair value. For example, if an asset was going to produce \$75 worth of return, the company purchasing the asset would not purchase it for \$75 as it would not make financial sense. However, if the firm selling the asset believes the asset is only going to be worth \$55, and it purchased it for \$50 it would make logical sense for both firms to find common ground. This is how markets work. The willingness of sellers to accept a price and the willingness of buyers to offer a price establishes an equilibrium and true fair value.

Does the hierarchy provided in Financial Accounting Standard 157 provide the best method for such reporting? Level one inputs (from active markets) are extremely relevant in determining the true market value of securities and other assets. Level two inputs include observable and unobservable inputs, meaning that there is somewhat of an active market, but not enough information to justify the valuation using only those inputs. Further, financial reporting entities should include an analysis of performance and nonperformance risk within the respective asset or liabilities. This is where the ignorance of commercial and investment banks during the financial crisis got them into trouble, causing them to believe that fair value accounting itself was the cause of extreme write-offs. Allowing unobservable inputs to justify the valuation of an asset or liability pool in the hundreds of millions of dollars does not make logical sense to me. Financial institutions could look at interest rates, delinquency rates, and general economic activity that pointed towards the mortgaged backed securities and collateralized debt obligations becoming worthless during the financial crisis – leading to extreme write-offs and ensuing credit crunch. Once economic hardship began to decrease and consumers were spending more and housing prices rebounded, those assets regained their value-begging the question of why such excessive write-offs occurred.

Financial institutions cannot blame the standard itself as most of them knew and understood the increased risk of subprime mortgages and packaging them into mortgaged backed securities and collateralized debt obligations. They simply failed to recognize the performance risk associated with level two inputs. Level three inputs involve unobservable

inputs with little or no market activity, giving the reporting entity essentially freedom as to what and how the valuation of liabilities and assets are derived. Again, this does not make much sense to me as financial firms would be allowed to use their own models and inputs to determine the value of assets and liabilities. As mentioned, such inputs are usually interpreted from inactive and non-existence markets such as the market for collateralized debt obligations. As market participants realized that the underlying assets in their investments (CDOs) were worthless, they tried to unload them as fast as possible – taking any price they would receive. However, once it was evident that the housing bubble did indeed burst, it was impossible to unload such assets, further depressing the price as one firm followed another. Unobservable inputs in a nonexistent or nonactive market should not be allowed in the short term when determining the value of long-term assets or liabilities. There is a reason that such a market has dried up or does not exist – because such assets and liabilities are essentially worthless in current market conditions.

It is clear, with the issuance of staff position 157-4, that the fair value hierarchy established by Financial Accounting Standard 157 had some flaws, as I have argued, specifically within the level two and three levels of the hierarchy. Overall, the analysis shows reporting entities should not be allowed to use unobservable inputs and should be very limited on the indirect inputs allowed through the level two. One general fix to this problem is to eliminate level three entirely, while compiling a list of standardized indirect inputs varying from industry to industry to determine the fair value of assets and liabilities. This would allow the inputs to remain consistent throughout industries, while eliminating unobservable inputs that are largely up to the discretion of the reporting entity.

The purpose of this paper was to answer the question: *Was the implementation of Financial Standard 157 the sole reason US capital markets deteriorated during the 2008 recession?* The answer is no. Although it did affect the market correction following the burst of the housing bubble, my analysis shows that it did not in-of-itself deteriorate US capital markets; it simply corrected errors in judgement of the United States Government, Wall Street, and underwriting professionals.

First, the housing bubble was ballooning well before Financial Accounting Standard 157, as subprime mortgages were entering the market

because of reduced underwriting standards. FICO scores, loan-to-value ratios, and debt-to-income ratios are extremely relevant in determining the performance of a loan. Underwriting professionals did not follow due-diligence as they were aware of the risks associated with subprime lending, but everyone was becoming wealthy so they did not care. The flaw in such lending is obvious – everyone does not have a right to own a home if they are not financially capable of doing so. The fact that local banks continued to issue subprime mortgages knowing the implications of subprime lending proves their ignorance. *The failure of mortgages throughout the financial crisis was due to a fundamental flaw in contemporary underwriting standards and nothing else.*

Second, United States housing policies encouraged underwriting professionals to lend to various subprime borrowers who were unable to pay their mortgages. The Department of Housing and Urban Development was constantly putting pressure on government sponsored entities such as Fannie Mae and Freddie Mac who searched for, and found, subprime mortgages from banks to fulfill strict requirements such as the low-to-moderate income housing goals. Such goals increased by nearly 2% increments per year after starting in 1996 all the way to 2008. Further, the Community Reinvestment Act and Best Practices initiative opened the flood gates for low-to-moderate income borrowers to receive mortgages with high loan-to-value ratios paired with poor FICO scores and high debt-to-income ratios, which is a recipe for disaster.

Third, investment and commercial banks constantly bought subprime mortgages and securitized them into mortgaged backed securities and collateralized debt obligations. Investment banks who packaged such securities undoubtedly knew the risk associated with subprime positions. Once the housing bubble deflated, their aggressive search for short-term yield on long-term investments was exposed. As a result, a liquidity crunch ensued, discouraging banks and other financial institutions from lending to one another, causing firms such as Lehman Brothers and Bear Stearns to close operations. As mentioned, the securities backed by subprime mortgages were intended to be held-to-maturity investments and accounted for as such. Yet financial institutions were constantly trading them during the active bubble while profits were increasing and investors were happy – leading to the common investment mistake of “it will last forever.” Wall

Street got caught in the moment and continued to issue subprime mortgages simply because they did not believe the bubble would burst (or at least while they held the asset). So while the fundamental cause was local and regional lenders issuing and subsequently selling off mortgages to investment firms, Wall Street facilitated and magnified the mistake.

Finally, the implementation of Financial Accounting Standard 157 cannot be blamed for the ultimate collapse of US capital markets because it was implemented well after the largest subprime housing bubble ballooned housing prices. It was implemented during the 2006 fiscal year, the year housing prices peaked. When the standard was issued, the Financial Accounting Standard Board believed the market to be healthy, which in hindsight was false. But because of the timing, the implementation of Financial Accounting Standard 157 was blamed for disastrous housing policies and fundamentally flawed underwriting practices. The combination of lax underwriting standards paired with Wall Street's increased appetite for high yields added fuel to an already flaming housing market. Further, the continued pressure from national housing policies and the Department of Housing and Urban Development for low-to-moderate income lending pushed the market to the brink. Therefore, the standard is not the sole reason that US capital markets collapsed causing the worst economic downturn since the Great Depression; it was simply another element to an already complex and fundamentally flawed economic circumstance.

V. Conclusion

The most recent economic recession, called the Great Recession, was the most severe economic decline seen around the world since the Great Depression. The recession was due to the deflation of the housing bubble, brought about by lax underwriting standards, government low-to-moderate income housing goals, and Wall Street financial innovations. Some believe the implementation of fair value accounting, specifically Financial Accounting Standard 157 is the sole reason why the recession and liquidity crunch occurred. While the timing and initial implementation of the standard caused excessive write-offs, it is not the sole reason as to why the market corrected – it was simply the correcting agent needed for a more

transparent and accurate depiction of macroeconomic conditions. That alone justifies the Standard's relevance during the financial recession and for years to come.

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