

## **Role of Accountants and Fair Value Accounting Leading Towards the Global Financial Crisis**

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### **ABSTRACT**

Since the 2007 market turmoil surrounding complex structured credit products, fair value accounting and its application through the business cycle has been a topic of considerable debate. As the illiquidity of certain products became more severe, financial institutions turned increasingly to model-based valuations that, despite increased disclosure requirements, were nevertheless accompanied by growing opacity in the classification of products across the fair value spectrum. In this study, we make an attempt to review an analysis regarding implications of the subprime crisis for accounting. These implications depend on the interplay among attributes of subprime mortgages and other positions, the evolution of market prices and illiquidity during the crisis, and the requirements of the applicable accounting standards, while credit losses on subprime positions are recorded under various standards. We focus on losses recorded based on the fair value measurement guidance provided in FAS 157, *Fair Value Measurements*. First, we overview the institutional and market aspects of subprime mortgages and other positions, focusing on those with the greatest relevance for accounting. Second, we discussed the critical aspects of FAS 157's definition of fair value and guidance for fair value measurements. We focus on practical difficulties that have arisen in applying that definition and guidance to subprime positions in the current illiquid markets. We also raise potential Criticisms of Fair Value Accounting during the Credit Crunch.

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*Keywords: subprime crisis; credit crunch; fair value accounting; securitization*

## I. INTRODUCTION

Fair value accounting is a financial reporting approach in which companies are required or permitted to measure and report on an ongoing basis certain assets and liabilities (generally financial instruments) at estimates of the prices they would receive if they were to sell the assets or would pay if they were to be relieved of the liabilities. Under fair value accounting, companies report losses when the fair values of their assets decrease or liabilities increase. Those losses reduce companies' reported equity and may also reduce companies' reported net income. Some parties have strong opinion that fair value accounting has a major contribution in strengthen credit crises, specially pointing to the obvious difficulties of measuring the fair values of subprime positions in the current illiquid markets and the feedback effects noted above. This is untenable. The subprime crisis was caused by firms and households making bad operating, investing, and financing decisions, managing risks poorly, and in some instances committing fraud. The best way to stem the credit crunch and damage caused by these actions is to speed the price adjustment process by providing market participants with the most accurate and complete information about subprime positions. While imperfect, fair value accounting provides better information about these positions and is a better platform for mandatory and voluntary disclosure than alternative measurement attributes, including any form of cost-based accounting.

This is not to say that guidance for the measurement of fair values in illiquid markets cannot be improved. While FAS 157 provides a clearer definition of fair value and considerably expanded guidance specifying how fair value should be measured than prior GAAP, the current market illiquidity has raised significant challenges for the interpretability of this definition and guidance. FAS 157's definition of fair value reflects the idea that there can be "orderly" transactions based on the conditions that exist at the "measurement date." During the subprime crisis, this idea has become increasingly difficult to sustain even in thought experiments and, more importantly, practically useless as a guide to preparers' estimation of fair values. FAS 157's fair value measurement guidance includes a hierarchy of inputs that favours observable market inputs over unobservable firm-supplied inputs, but that ultimately requires preparers to employ "the assumptions that market participants would use in pricing the asset or liability." This hierarchy provides little help to preparers who have to decide whether to base their fair valuations on the poor quality signals currently being generated by markets versus highly judgmental firm-supplied inputs such as forecasts of house price depreciation. For the duration of the crisis, preparers will need to exercise considerably more than the usual professional judgment to apply FAS 157's language to their specific circumstances.

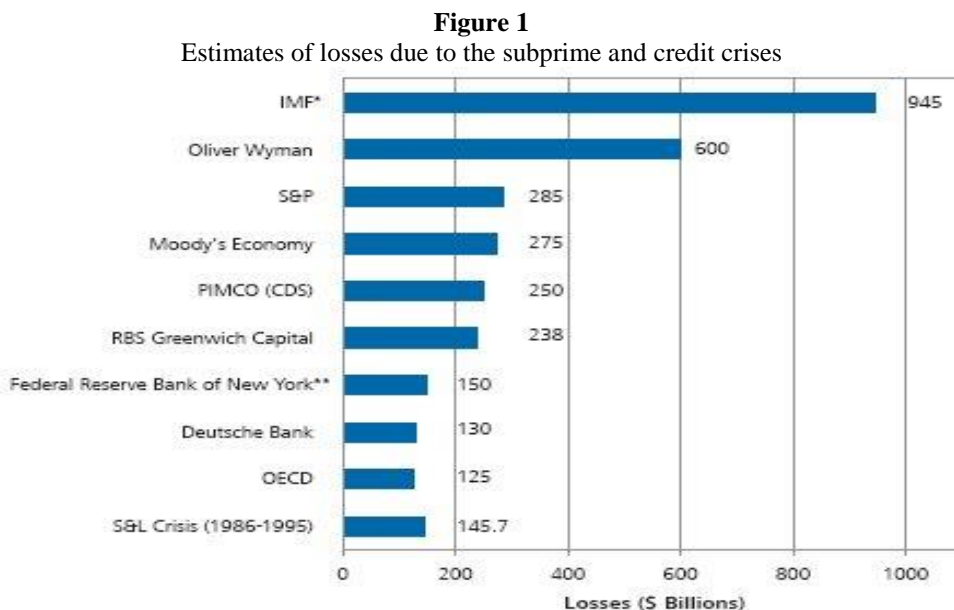
As the successive waves of the subprime crisis have hit, firms have repeatedly and sharply revised upward their estimates of credit losses. These revisions are inevitable consequences of how the subprime crisis evolved, and they do not imply there have been any problems either with accounting standards or how preparers have applied them. However, these revisions and the high potential for further upward revisions have contributed to the aforementioned feedback effects between reported losses and market illiquidity. Needless to say, this market illiquidity is damaging our real estate and credit markets and overall economy, and it needs to be cured through means that do not simply push the problem into the future. As always, essential

components of such a cure are for firms to provide relevant, reliable, and understandable financial report information and for users to conduct careful and dispassionate analysis of that information.

The remainder of the essay is structured as follows. In Section II, we overview the short synopsis of credit crises. In Section III, we describe the critical aspects of FAS 157's definition of fair value and guidance for fair value measurements. We describe the practical difficulties that have arisen in applying that definition and guidance to subprime positions in the current illiquid markets. We also discuss a potential issue regarding the application of FAS 159, *The Fair Value Option for Financial Assets and Financial Liabilities*, during credit crunch. Section IV reveals our findings regarding potential Criticisms of Fair Value Accounting during the Credit Crunch Section V contain my concluding remarks.

## II. SHORT SYNOPSIS OF CREDIT CRISES

The International Monetary Fund (2008) estimates that the credit crisis will cost about \$945 billion dollars, the latest in a long list of estimates presented in Figure 1 below. No one knows the ultimate cost of the crisis, but it certainly will exceed the costs of the last major financial crisis presented by the collapse of the savings and loan industry. This problem began in the subprime mortgage market and then quickly spilled over into other areas of the mortgage industry and the capital markets, culminating in a liquidity and credit crisis that is still unfolding. Unsurprisingly, litigation has been on the rise.



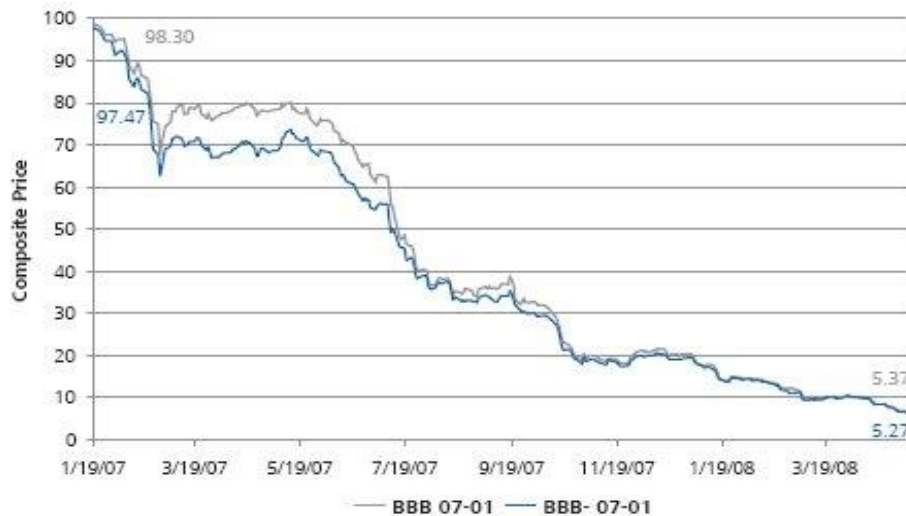
\* Estimate is for the entire financial sector.

\*\* Estimate is \$100-200 billion.

Just as in the credit crisis, the lawsuits initially started in the mortgage industry. For the most part, these were suits against mortgage lenders. The subjects of litigation then moved on to the issuers and underwriters of securities whose cash flows are backed by the principal and interest payments of mortgages. Now, the litigation has also engulfed investors who either purchased these securities or packaged them into other securities. As the liquidity crisis intensifies, areas that are not directly related to the subprime mortgage sector are starting to suffer losses, including the commercial paper market, the leveraged buyout industry, and auction-rate securities, to name a few examples. As the write-downs continue to accumulate, additional types of lawsuits are expected to emerge.

The value of asset-backed securities (ABS) backed by subprime products has fallen as the performance of the subprime loans has continued to worsen. Figure 2 illustrates the value of two indices tracking the BBB rated and BBB- rated tranches of home equity deals based on loans from the last six months of 2006. An initial investment of \$100 (on January 19, 2007) in the BBB index would have been worth only \$5.46 by May 8, 2008; both indices showed a decline of almost 95% as of May 8, 2008.

**Figure 2**  
Index values of subprime home equity ABS deals from the second half of 2006  
January 19, 2007 to May 8, 2008



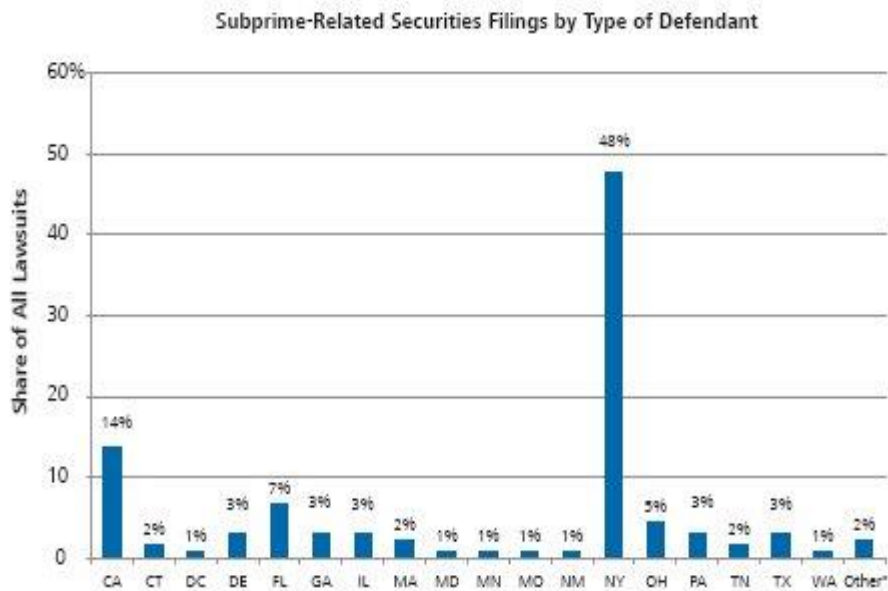
Source: Markit

### III. SUBPRIME MORTGAGE-RELATED SECURITIES LAWSUITS

Almost every market participant in the securitization process—which transforms illiquid assets such as mortgages, auto loans, and student loans into tradable securities—has been named as a defendant. The list of defendants includes lenders,

issuers, underwriters, rating agencies, accounting firms, bond insurers, hedge funds, CDOs, and many more. As of April 21, 2008, there had been 132 securities lawsuits related to subprime and credit issues, of which 56 were filed since January 2008. New York has the most filings, with 48%, while California follows with 14% and Florida wraps up the top three with 7%. Filings in other states range between 1% and 5% (lawsuits by state are shown in Figure 3 below). This is consistent with recent trends in shareholder class actions, where the US circuit courts encompassing New York (Second Circuit), California (Ninth Circuit), and Florida (Eleventh Circuit) have seen the most activity in recent years.

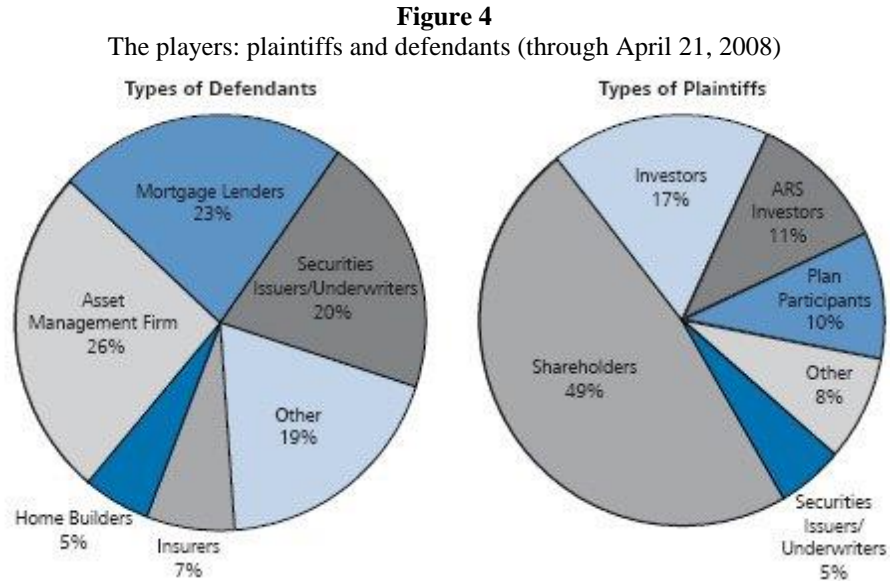
**Figure 3**  
Partial count of subprime-related lawsuits by state (through April 21, 2008)



Notes & Sources: NERA collected lawsuits from various sources, including Factiva, Bloomberg, AP News, Securities Law360, Wall Street Journal, and BusinessWeek.

\* "Other" represents lawsuits filed outside the United States.

The majority of the early lawsuits have been against mortgage lenders. As various other market participants reveal the extent of their losses and exposure, they too are being dragged into litigation. The plaintiffs include shareholders, investors, issuers and underwriters of securities, plan participants, and others. Figure 4 gives a breakdown of securities defendants and plaintiffs.



Notes & Sources: NERA collected lawsuits from various sources, including Factiva, Bloomberg, AP News, *Securities Law360*, *Wall Street Journal*, *BusinessWeek*, and others.

#### IV. SCOPE OF FAIR VALUE ACCOUNTING

As depicted in Figure 5, the valuation attributes required by the accounting standards governing the accounting for subprime positions can be subdivided into the following broad categories. Some of these standards require or allow subprime positions to be fair valued on the balance sheet (e.g., FAS 115 for trading and AFS securities, FAS 133 for derivatives, FIN 45 for guarantees at inception, and FAS 159 for positions for which the fair value option is chosen). When fair value is the valuation attribute, unrealized gains on the positions may be recorded either on the income statement (e.g., FAS 115 for trading securities, FAS 133 for non hedge and fair value hedge derivatives, and FAS 159 for financial instruments for which the fair value option is elected) or in other comprehensive income (FAS 115 for AFS securities and FAS 133 for cash flow hedge derivatives).

Other of these standards requires subprime positions to be recorded at amortized cost (possibly zero) on the balance sheet. Assets accounted for at amortized cost generally are subject to impairment write-downs if criteria specified in the standards are met. Assets deemed impaired based on the relevant criteria are required to be written down to fair value under some standards (e.g., FAS 115 for HTM securities and SOP 01-6 for held-for-sale loans) and to other valuation attributes that generally are higher than fair value under other standards (e.g., FAS 5 and FAS 114 for held-for-investment loans). Similarly, under FAS 115 unrealized gains and losses on AFS securities that previously were recorded in other comprehensive income are recorded in income when the AFS are deemed impaired.

**Figure 5**  
Schemes of approaches to recording losses on subprime positions under the governing accounting standards

Approach	Governing Accounting Standards and Positions
Fair valued	FAS 115 (trading securities and available-for-sale securities) FAS 133 (derivatives) FIN 45 (guarantees at inception) FAS 159 (positions for which fair value option is elected)
Not fair valued (but subject to impairment write-downs)	<u>Write down to fair value:</u> FAS 115 (held-to-maturity securities) <u>Write down to another basis:</u> FAS 5 and FAS 114 (held-for-investment loans)

Notes: Unrealized gains and losses on available-for-sale securities and cash flow hedge derivatives are recorded in other comprehensive income until they are realized or the position is impaired.

## V. CRITICAL ASPECTS OF THE DEFINITION OF FAIR VALUE

FAS 157 define 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.” In this section, we unpack and discuss the constituent elements of this definition, indicating the practical difficulties involved in applying each element and the slippage among the elements given the current market illiquidity for subprime positions. The definition reflects an optimal “exit value” notion of fair value, that is, the highest values of assets and the lowest values of liabilities currently held by the firm. This notion corresponds to firms’ solvency more than do the possible alternative fair value notions of “entry value” (the price that would be paid to buy an asset or received from issuing a liability) or “value in use” (the entity-specific value to the current holder of an item). In particular, if all assets and liabilities on a firm’s balance sheet were perfectly measured at exit value, then owners’ equity would equal the cash expected to remain if the firm liquidated all of those items in orderly transactions between market participants at the measurement date, that is, not in fire sales. Given the paramount importance of maintaining solvency during the subprime crisis, this element of the definition of fair value is well suited to users of financial reports’ current informational needs.

“At the measurement date” means that fair value should reflect the conditions that exist at the balance sheet date. If markets are illiquid and credit spreads are at historically high levels, as is now the case, then the fair values should reflect those conditions. In particular, firms should not incorporate their expectations of market liquidity and credit spreads returning to normal over some horizon, regardless of what historical experience, statistical models, or expert opinion indicates. While one can question this element of the fair value definition, it has considerable precedent in the accounting literature—notably FAS 107, *Disclosures about Fair Value of Financial*

*Instruments*, and SEC enforcement actions—20 and it is hard to imagine the FASB proposing a definition of fair value without it.

An “orderly transaction” is one that is unforced and unhurried. The firm is expected to conduct usual and customary marketing activities to identify potential purchasers of assets and assumers of liabilities, and these parties are expected to conduct usual and customary due diligence. Each of these activities could take months in the current environment, because of the few and noisy signals about the values of subprime positions currently being generated by market transactions and because of parties’ natural scepticism regarding those values. Hence, the earliest such an orderly transaction might occur could easily be a quarter or more after the balance sheet date. At that time, market conditions almost certainly will differ from those that exist at the balance sheet date, for better or, as been the case lately, worse.

## VI. THE FAIR VALUE HIERARCHY

FAS 157 create a hierarchy of inputs into fair value measurements, from most to least reliable. Level 1 input is unadjusted quoted market prices in active markets for identical items. While some accounting academics, bank regulators, and others worry that market values might be incorrect or their use in accounting might have undesirable incentive or feedback effects, in our opinion pure mark-to-market measurements using such maximally reliable inputs are the rough equivalent of accounting nirvana. Even in times of normal market liquidity, this nirvana does not exist for most subprime positions, however, and so we can safely ignore such philosophical disputes in this essay. Level 2 inputs are other directly or indirectly observable market data. There are two broad subclasses of these inputs. The first and generally preferable subclass is quoted market prices in active markets for similar items or in inactive markets for identical items. These inputs yield adjusted mark-to-market measurements that are less than ideal but usually still pretty good, depending on the nature and magnitude of the required adjustments. The second subclass is other observable inputs such as yield curves, exchange rates, empirical correlations, et cetera. These inputs yield mark-to-model measurements that are disciplined by market information but that can only be as good as the models employed. In our view, this second subclass usually has less in common with the first subclass than with better quality level 3 measurements described below.

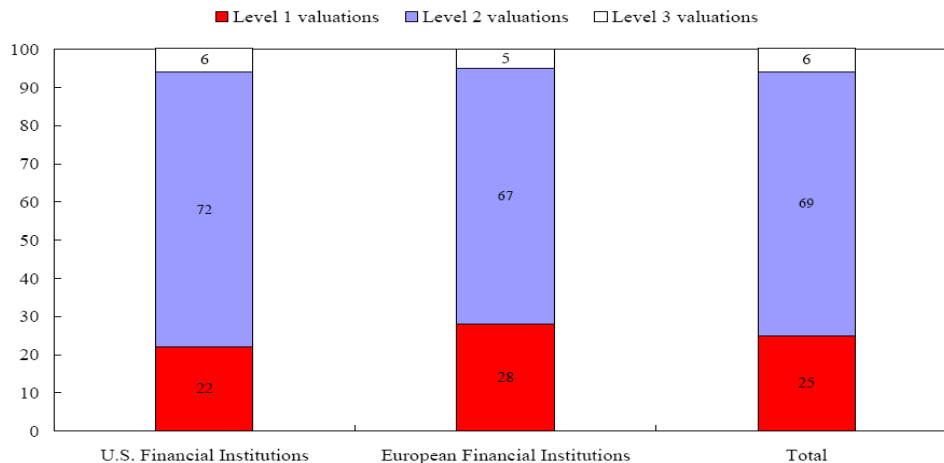
In times of normal market liquidity, many subprime positions would be fair valued using level 2 measurements. For example, while most subprime MBS trade over-the-counter and rarely, in normal markets dealers generally do their best to provide bid and ask prices for these securities. There are also price and yield indices for portfolios of subprime positions available from Market and other sources. The price transparency offered by these sources has substantially evaporated during the subprime crisis, however. Dealers are reluctant to provide bid and ask quotes for subprime positions, and when they do the bid-ask spread is very wide. Very few truly orderly transactions are occurring, and those that do occur typically are privately negotiated principal-to-principal transactions for which the terms and positions involved are largely opaque to market participants. Market has announced that there will be no indices for the first half of 2008 vintage, due to an insufficient number of securitizations.



Level 3 inputs are unobservable, firm-supplied estimates. While these inputs should reflect the assumptions that market participants would use, they yield mark-to-model valuations that are largely undisciplined by market information. Due to the declining price transparency described above, many subprime positions that previously were fair valued using level 2 inputs must now be fair valued using level 3 inputs. While many firms have been criticized in the popular press for this migration of fair value measurements down the hierarchy, this migration is an inevitable result of the deterioration of price transparency in the subprime crisis.

Level 3 inputs usually are based on historical data in some fashion. Historical data is only useful for fair valuation purposes to the extent that the future is expected to be similar, or at least capable of being related, to the past. For subprime positions, a critical level 3 input is house price depreciation. Most of the historical data to date (and a fortiori up to earlier points in the subprime crisis) reflect a period in which house price appreciation was robust and so defaults were few, uncorrelated, and yielded small percentage losses given default. Hence, this historical data is of little use for the purposes of determining this input and thus the fair values of subprime positions. Instead, firms must forecast future house price depreciation, as well as other primitive variables such as future interest rates and the time when subprime mortgagors will be able to refinance again. These variables are critical determinants of the future number and correlation of defaults and the percentage magnitude of losses given default.

**Figure 6**  
Aggregate fair value hierarchy, end 2007 (in percent)



Source: Fitch Ratings.

## VII. REQUIRED DISCLOSURES

Subprime positions are subject to the disclosure requirements of the governing accounting standards (e.g., FAS 115 for securities) that we do not mention here.<sup>22</sup>

Instead, we discuss three overarching disclosure requirements of particular relevance to subprime positions during the subprime crisis.

First, FAS 157 requires disclosures of fair value measurements by level of the hierarchy. The required disclosures are considerably more detailed for level 3 fair value measurements than for level 1 or 2 measurements. In particular, for level 3 measurements firms most provide quantitative reconciliations of beginning and end-of period fair values, distinguishing total (realized and unrealized) gains and losses from net purchases, sales, issuances, settlements, and transfers. The line-item location of gains and losses on the income statement must be indicated. Qualitative descriptions of measurement inputs and valuation techniques must be provided. These disclosure requirements make the effects of level 3 measurements on the financial statements considerably more transparent than they would have been under prior GAAP, and users of financial reports are fortunate to have them available during the subprime crisis.

Second, SOP 94-6, *Disclosure of Certain Significant Risks and Uncertainties*, requires disclosures regarding an uncertain estimate such as a fair value when it is reasonably possible the estimate will change in the near term (one year or less) and the effect of the change would be material to the financial statements. The disclosure should indicate the nature of the uncertainty. Disclosures of the factors that cause the estimate to be sensitive to change are encouraged but not required. Neither FAS 157 nor SOP 94-6 requires quantitative disclosures of the forecasted values of the primitive variables that underlie level 3 fair valuations or of the sensitivities of the fair valuations to movements in those primitive variables. In the absence of such quantitative disclosures, during the subprime crisis I have found level 3 fair values to be very difficult to interpret for a given firm and to compare across firms. To enhance the interpretability of level 3 fair values, I suggest the FASB consider requiring disclosures of firms' forecasts of primitive variables when those forecasts have material effects on their level 3 fair valuations.

Third, SAS 1 requires disclosures of type 2 subsequent events, i.e., events that occur between the balance sheet date and the financial report filing date, if these events render the financial statements misleading as of the filing date. Very significant type 2 subsequent events occurred for many firms holding large subprime positions in the third and fourth quarters of 2007. Specifically, the third and fourth waves of the subprime crisis described above hit after the end of the third and fourth fiscal quarters of many firms, respectively, but before the filing dates for those quarters. Citigroup's previously discussed third quarter 2007 subsequent events disclosure is a good example.

### VIII. FAIR VALUE OPTION

FAS 159 allow firms to elect to fair value individual financial instruments upon the adoption of the standard or at the inception of the instruments. One type of exercise of the fair value option with particular salience in the subprime crisis is the decision by many securities firms to fair value the liabilities of their consolidated securitization entities. Securities firms have made this choice primarily because they are required by industry or other GAAP to record the entities' assets at fair value, and so electing the fair value option for the entities' liabilities yields symmetric accounting. In general, such symmetry is a desirable thing, as offsetting gains and losses on these economically matched positions are recorded in the same period.

A concern, however, is that these firms may have the incentive to provide moral recourse to the securitization entities. When this is the case, the firms may bear the losses on the entities' assets without benefiting from offsetting gains on the entities' liabilities. At a minimum, the fair values of the entities' liabilities would have to be adjusted for any expected provision of moral recourse, a problematic valuation exercise given the non contractual nature of moral recourse.

## **IX. POTENTIAL CRITICISMS OF FAIR VALUE ACCOUNTING DURING CREDIT CRUNCH**

### **A. Unrealized Gains and Losses Reverse**

There are two distinct reasons why unrealized gains and losses may reverse with greater than 50% probability. First, the market prices of positions may be bubble prices that deviate from fundamental values. Second, these market prices may not correspond to the future cash flows most likely to be received or paid because the distribution of future cash flows is skewed. For example, the distribution of future cash flows on an asset may include some very low probability but very high loss severity future outcomes that reduce the fair value of the asset.

### **B. Bubble Prices**

The financial economics literature now contains considerable theory and empirical evidence that markets sometimes exhibit "bubble prices" that either are inflated by market optimism and excess liquidity or are depressed by market pessimism and illiquidity compared to fundamental values. Bubble prices can result from rational short horizon decisions by investors in dynamically efficient markets, not just from investor irrationality or market imperfections. Whether bubble prices have existed for specific types of positions during the credit crunch is debatable, but it certainly is possible.

In FAS 157's hierarchy of fair value measurement inputs, market prices for the same or similar positions are the preferred type of input. If the market prices of positions currently are depressed below their fundamental values as a result of the credit crunch, then firms' unrealized losses on positions would be expected to reverse in part or whole in future periods. Concerned with this possibility, some parties have argued that it would be preferable to allow or even require firms to report amortized costs or level 3 mark-to model fair values for positions rather than level 2 adjusted mark-to-market fair values that yield larger unrealized losses. If level 1 inputs are available, then with a few narrow exceptions FAS 157 requires firms to measure fair values at these active market prices for identical positions without any adjustments for bubble pricing. However, if only level 2 inputs are available and firms can demonstrate that these inputs reflect forced sales, then FAS 157 (implicitly) allows firms to make the argument that level 3 mark-to-models based fair values are more faithful to FAS 157's fair value definition.

If we agree with the FASB's decision in FAS 157 that the possible existence of bubble prices in liquid markets should not affect the measurement of fair value. It is very difficult to know when bubble prices exist and, if so, when the bubbles will burst. Different firms would undoubtedly have very different views about these matters, and

they likely would act in inconsistent and perhaps discretionary fashions. To be useful, accounting standards must impose a reasonably high degree of consistency in application. It should also be noted that amortized costs reflect any bubble prices that existed when positions were incepted. In this regard, the amortized costs of subprime-mortgage related positions incepted during the euphoria preceding the subprime crisis are far more likely to reflect bubble prices than are the current fair values of those positions.

### **C. Future Cash Flows**

Fair values should reflect the expected future cash flows based on current information as well as current risk-adjusted discount rates for positions. When a position is more likely to experience very unfavourable future cash flows than very favourable future cash flows, or vice-versa—statistically speaking, when it exhibits a skewed distribution of future cash flows—then the expected future cash flows differ from the most likely future cash flows. This implies that over time the fair value of the position will be revised in the direction of the most likely future cash flows with greater than 50% probability, possibly considerably greater. While some parties appear to equate this phenomenon with expected reversals of unrealized gains and losses such as result from bubble prices, it is not the same thing. When distributions of future cash flows are skewed, fair values will tend to be revised by relatively small amounts when they are revised in the direction of the most likely future cash flows but by relatively large amounts when they are revised in the opposite direction. Taking into account the sizes and probabilities of the possible future cash flows, the unexpected change in fair value will be zero on average.

Financial instruments that are options or that contain embedded options exhibit skewed distributions of future cash flows. Many financial instruments have embedded options, and in many cases the credit crunch has accentuated the importance of these embedded options. Super senior CDOs, which have experienced large unrealized losses during the credit crunch, are a good example. At inception, super senior CDOs are structured to be near credit riskless instruments that return their par value with accrued interest in almost all circumstances. Super senior CDOs essentially are riskless debt instruments with embedded written put options on some underlying set of assets. Super senior CDOs return their par value with accrued interest as long as the underlying assets perform above some relatively low threshold (reflecting the riskless debt instruments), but they pay increasingly less than this amount the more the underlying assets perform below that threshold (reflecting the embedded written put options). As a result of the embedded written put options, the fair values of super senior CDOs typically are slightly less than the values implied by the most likely cash flows. During the credit crunch, the underlying assets (often subprime mortgage-backed securities) performed very poorly, increasing the importance of the embedded put option and decreasing the fair value of super senior CDOs further below the value implied by the most likely outcome, which for some super seniors may still be to return the par value with accrued interest. To illustrate this subtle statistical point, assume that the cash flows for a super senior CDO are driven by home price depreciation, and that the distribution of percentage losses is modestly skewed with relatively small probability of large losses, as indicated in the following Table 1.

**Table 1**  
Estimated loss on the value of super senior CDO as a percentage of par value

Home price depreciation	Probability occurs	Estimated loss on the value of super senior CDO as a percentage of par value
<10%	20%	0% (100%)
<15%	40%	5% (95%)
<20%	25%	20% (80%)
<25%	10%	40% (60%)
<30%	5%	80% (20%)

In this example, the most likely percentage loss on the super senior is 5%, which occurs 40% of the time. The expected percentage loss is a considerably larger 15% =  $(40\% \times 5\%) + (25\% \times 20\%) + (10\% \times 40\%) + (5\% \times 80\%)$ , because it reflects the relatively small probabilities of large losses. The fair value of the super senior is reduced by the expected percentage loss and so is 85% of face value. Over time, this fair value will be revised upward with 60% probability, to either 95% of face value (with 40% probability) or 100% of face value (with 20% probability). The fair value will be revised downward with only 40% probability, to 80% of face value (with 25% probability) or 60% of face value (with 10% probability) or 20% of face value (with 5% probability). The expected change in fair value is zero, however, because the lower probability but larger possible fair value losses are exactly offset by the higher probability but smaller possible fair value gains. The difference between the most likely and expected change in fair value would be larger if the distribution of cash flows was more skewed.

**Table 2**  
Q4 - US banking industry

	2007	2006	2005	2004	2003	2002	2001
Return on assets (%)	0.86	1.28	1.28	1.28	1.38	1.3	1.14
Return on equity (%)	8.17	12.3	12.43	13.2	15.05	14.08	13.02
Core capital (leverage) ratio (%)	7.98	8.22	8.25	8.11	7.88	7.86	7.79
Noncurrent assets plus OREO (%)	0.94	0.54	0.5	0.53	0.75	0.9	0.87
Net charge-offs to loans (%)	0.59	0.39	0.49	0.56	0.78	0.97	0.83
Net operating income growth (%)	-23.72	8.5	11.39	4.02	16.39	17.58	-0.48

Source: FDIC – Quarterly Banking Profile

According to our findings it is more informative to investors for accounting to be right on average and to incorporate the probability and significance of all possible future cash flows, as fair value accounting does, than for it to be right most of the time but to ignore relatively low probability but highly unfavourable or favourable future cash flows. Relatedly, by updating the distribution of future cash flows each period, fair value accounting provides investors with timelier information about changes in the probabilities of large unfavourable or favourable future cash flows. Such updating is particularly important in periods of high and rapidly evolving uncertainty and information asymmetry, such as the credit crunch.

#### **D. Market Illiquidity**

Together, the “orderly transaction” and “at the measurement date” elements of FAS 157’s fair value definition reflect the semantics behind the “fair” in “fair value.” Fair values are not necessarily the currently realizable values of positions; they are hypothetical values that reflect fair transaction prices even if current conditions do not support such transactions. When markets are severely illiquid, as they have been during the credit crunch, this notion yields significant practical difficulties for preparers of firms’ financial statements. Preparers must imagine hypothetical orderly exit transactions even though actual orderly transactions might not occur until quite distant future dates. Preparers will often want to solicit actual market participants for bids to help determine the fair values of positions, but they cannot do so when the time required exceeds that between the balance sheet and financial report filing dates. Moreover, any bids that market participants might provide would reflect market conditions at the expected transaction date, not the balance sheet date.

When level 2 inputs are driven by forced sales in illiquid markets, FAS 157 (implicitly) allows firms to use level 3 model-based fair values. For firms to be able to do this, however, their auditors and the SEC generally require them to provide convincing evidence that market prices or other market information are driven by forced sales in illiquid markets. It may be difficult for firms to do this, and if they cannot firms can expect to be required to use level 2 fair values that likely will yield larger unrealized losses. In our view, the FASB can and should provide additional guidance to help firms, their auditors, and the SEC individually understand and collectively agree what constitutes convincing evidence that level 2 inputs are driven by forced sales in illiquid markets. The FASB could do this by developing indicators of market illiquidity, including sufficiently large bid-ask spreads or sufficiently low trading volumes or depths.

These variables could be measured either in absolute terms or relative to normal levels for the markets involved. When firms are able to show that such indicators are present, the FASB should explicitly allow firms to report level 3 model-based fair values rather than level 2 valuations as long as they can support their level 3 model-based fair values as appropriate in theory and with adequate statistical evidence. Requiring firms to compile indicators of market illiquidity and to provide support for level 3 mark-to-model valuations provides important discipline on the accounting process and cannot be avoided. Relatedly, we also believe that the FASB should require firms to disclose their significant level 3 inputs and the sensitivities of the fair values to these inputs for all of their material level 3 model-based fair values. If such

disclosures were required, then level 3 model-based fair values likely would be informationally richer than poor quality level 2 fair values.

### **E. Adverse Feedback Effects and Systemic Risk**

By recognizing unrealized gains and losses, fair value accounting moves the recognition of income and loss forward in time compared to amortized cost accounting. In addition, as discussed in Section IV.A.1 unrealized gains and losses may be overstated and thus subsequently reverse if bubble prices exist. If firms make economically suboptimal decisions or investors overreact because of reported unrealized gains and losses, then fair value accounting may yield adverse feedback effects that would not occur if amortized cost accounting were used instead. For example, some parties have argued that financial institutions' write-downs of subprime and other assets have caused further reductions of the market values of those assets and possibly even systemic risk.

These parties argue that financial institutions' reporting unrealized losses has caused them to sell the affected assets to raise capital, to remove the taint from their balance sheets, or to comply with internal or regulatory investment policies. These parties also argue that financial institutions' issuance of equity securities to raise capital have crowded out direct investment in the affected assets. It is possible that fair value accounting-related feedback effects have contributed slightly to market illiquidity, although he is unaware of any convincing empirical evidence that this has been the case. However, it is absolutely clear that the subprime crisis that gave rise to the credit crunch was primarily caused by firms, investors, and households making bad operating, investing, and financing decisions, managing risks poorly, and in some instances committing fraud, not by accounting. The severity and persistence of market illiquidity during the credit crunch and any observed adverse feedback effects are much more plausibly explained by financial institutions' considerable risk overhang<sup>10</sup> of subprime and other positions and their need to raise economic capital, as well as by the continuing high uncertainty and information asymmetry regarding those positions. Financial institutions actually selling affected assets and issuing capital almost certainly has mitigated the overall severity of the credit crunch by allowing these institutions to continue to make loans. Because of its timeliness and informational richness, fair value accounting and associated mandatory and voluntary disclosures should reduce uncertainty and information asymmetry faster over time than amortized cost accounting would, thereby mitigating the duration of the credit crunch.

Moreover, even amortized cost accounting is subject to impairment write-downs of assets under various accounting standards and accrual of loss contingencies under FAS 5. Hence, any accounting-related feedback effects likely would have been similar in the absence of FAS 157 and other fair value accounting standards.

## **X. CONCLUDING REMARKS**

Financial history contains many examples of the cycle characteristic of the subprime market discovery of profitability, expansion of credit activity, weakening of credit standards as competitive pressures to maintain volumes increase, followed by subsequent collapse. The subprime cycle is unique mainly in the lack of clarity

regarding the distribution of mortgage default risks, especially in the failure to recognize that even the mortgage trusts might suffer enough write offs that their own securities could be wholly or partially defaulted. The principal lesson from each of these cycles is that risk control needs to be tougher during the upswing of the cycle, just when everyone believes it to be unnecessary. If the industry cannot control risks on its own – regardless of how confusing the allocation of the risks might be – then regulators must ensure they do so. Sadly, in the many cycles where the foregoing effects have been observed, regulatory corrective action is almost always too little and too late to offset some painful losses.

Like all of the severe crises that have periodically be set our remarkably flexible economy, the subprime crisis is not and could not be the fault of any one set of parties. The entire economic system failed to appreciate the risks of the rapid growth in risk-layered subprime mortgages, the inevitable end of house price appreciation, and unprecedented global market liquidity. These factors combined to enable all-too-human undisciplined behaviours in lenders, borrowers, and investors, all of whom were unquestioningly optimistic for as long as the sun shined upon home equity. Economic policy, bank regulation, corporate governance, financial reporting, common sense, fear of debt and bankruptcy, and all of our other protective mechanisms were insufficient to curb these behaviours. This passage also captures how divorced the process was from the economic and statistical concepts, such as fair value, that underlie accounting.

Accounting, fair value or otherwise, will never eliminate such behaviours. It can only play two roles. It can provide periodic financial reports that inform relatively rational and knowledgeable market participants on an ongoing basis, thereby mitigating the adverse effects of these behaviours. It can provide a common information set upon which market participants can recalibrate their valuations and risk assessments when the economic cycle turns. In my view, fair value accounting plays an essential part in both of these roles, but especially in allowing such recalibrations to occur as quickly and efficiently as possible, as it is now doing in the subprime crisis. By comparison, any form of historical cost accounting would drag out these recalibrations over considerably longer period, likely worsening the ultimate economic cost of the crisis.

This is not to say that fair value accounting and other aspects of GAAP have worked perfectly during the subprime crisis. The crisis has made clear that financial statement preparers need additional guidance regarding how to calculate fair values in illiquid markets. Users of financial reports need better disclosures about the critical estimates underlying level 3 fair values and how sensitive fair values are to those estimates. Accounting standard setters need to consider what guidance and disclosures to require. Preparers need to provide these disclosures in an informative fashion, and users must analyze them carefully and dispassionately. Accounting researchers and teachers can contribute to all of these processes. Indeed, for all of us who care about accounting and its role in our economy, there is much work to be done.

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