

RESEARCH ARTICLE

# Has Financial Crisis Been the Crisis of Fair Value Accounting?

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## Abstract

The recent financial crisis has led to a vigorous debate about the pros and cons of fair-value accounting (FVA). This debate presents a major challenge for FVA going forward and standard setters' push to extend FVA into other areas. In this article, we highlight four important issues as an attempt to make sense of the debate. First, much of the controversy results from confusion about what is new and different about FVA. Second, while there are legitimate concerns about marking to market (or pure FVA) in times of financial crisis, it is less clear that these problems apply to FVA as stipulated by the accounting standards, be it IFRS or US GAAP. Third, historical cost accounting (HCA) is unlikely to be the remedy. There are a number of concerns about HCA as well and these problems could be larger than those with FVA. Fourth, although it is difficult to fault the FVA standards per se, implementation issues are a potential concern, especially with respect to litigation. Finally, we identify several avenues for future research.

**Keywords:** *Fair value, Financial crisis, Relevance, reliability, Financial statements, Financial reporting.*

## Introduction

The recent financial crisis has turned the spotlight on fair-value accounting (FVA) and led to a major policy debate involving among others the US Congress, the European Commission as well as banking and accounting regulators around the world. Critics argue that FVA, often also called mark-to-market accounting (MTM), has significantly contributed to the financial crisis and exacerbated its severity for financial institutions in the US and around the world. On the other extreme, proponents of FVA argue that it merely played the role of the proverbial messenger that is now being shot [1], [2]. In our view, there are problems with both positions. FVA is neither responsible for the crisis nor is it merely a measurement system that reports asset values without having economic effects of its own.

In this article, we attempt to make sense of the current fair-value debate and discuss whether many of the arguments in this debate hold up to further scrutiny. We come to the following four conclusions. First, much of the controversy about FVA results from confusion about what is new and different about FVA as well as different views about the purpose of FVA. In our view, the debate about FVA takes us back to several old accounting issues, like the trade-off between relevance and reliability, which have been debated for decades. Except in rare circumstances, standard setters will always face these issues and tradeoffs; FVA is just another example. This insight is helpful to

better understand some of the arguments brought forward in the debate.

Second, there are legitimate concerns about marking asset values to market prices in times of financial crisis once we recognize that there are ties to contracts and regulation or that managers and investors may care about market reactions over the short term. However, it is not obvious that these problems are best addressed with changes to the accounting system. These problems could also (and perhaps more appropriately) be addressed by adjusting contracts and regulation. Moreover, the concern about the downward spiral is most pronounced for FVA in its pure form but it does *not* apply in the same way to FVA as stipulated by US GAAP or IFRS. Both standards allow for deviations from market prices under certain circumstances (e.g., prices from fire sales). Thus, it is not clear that the standards themselves are the source of the problem.

However, as our third conclusion highlights, there could be implementation problems in practice. It is important to recognize that accounting rules interact with other elements of the institutional framework, which could give rise to unintended consequences. For instance, we point out that managers' concerns about litigation could make a deviation from market prices less likely even when it would be appropriate. Concerns about SEC enforcement could have similar effects. At the

same time, it is important to recognize that giving management more flexibility to deal with potential problems of FVA (e.g., in times of crisis) also opens the door for manipulation. For instance, managers could use deviations from allegedly depressed market values to avoid losses and impairments. Judging from evidence in other areas in accounting (e.g., loans and goodwill) as well as the US savings and loans (S&L) crisis, this concern should not be underestimated. Thus, standard setters and enforcement agencies face a delicate trade-off (e.g., between contagion effects and timely impairment).

Fourth, we emphasize that a return to historical cost accounting (HCA) is unlikely to be a remedy to the problems with FVA. HCA has a set of problems as well and it is possible that for certain assets they are as severe, or even worse, than the problems with FVA. For instance, HCA likely provides incentives to engage in so-called “gains trading” or to securitize and sell assets. Moreover, lack of transparency under HCA could make matters worse during crises.

We conclude our article with several suggestions for future research. Based on extant empirical evidence, it is difficult to evaluate the role of FVA in the current crisis. In particular, we need more work on the question of whether market prices significantly deviated from fundamental values during this crisis and more evidence that FVA did have an effect above and beyond the procyclicality of asset values and bank lending.

The paper proceeds as follows. First, we provide a quick overview over FVA and some of the key arguments for and against FVA. Second, we compare FVA and HCA and shortly discuss fundamental tradeoffs involved when choosing one or the other. Third, we discuss the concern that FVA contributes to contagion and procyclicality as well as ways to address this concern, including how current accounting practices help to alleviate problems of contagion. Fourth, we consider potential implementation problems. Fifth, we take a closer look at the banks’ positions on FVA. Sixth, we conclude with suggestions for future research.

## **Fair-value Accounting: What is it and What are the Key Arguments?**

FVA is a way to measure assets and liabilities that appear on a company’s balance sheet. 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.” When quoted prices in active markets for identical assets or liabilities are available, they have to be used as

the measurement for fair value (Level 1 inputs). If not, Level 2 or Level 3 inputs should be used. Level 2 applies to cases for which there are observable inputs, which includes quoted prices for similar assets or liabilities in active markets, quoted prices from identical or similar assets in inactive markets, and other relevant market data. Level 3 inputs are unobservable inputs (e.g., model assumptions). They should be used to derive a fair value if observable inputs are not available, which is commonly referred to as a mark-to-model approach.

Fair value is defined similarly under IFRS as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arm’s length transaction. In determining fair value, IFRS make similar distinctions among inputs as FAS 157: Quoted prices in active markets must be used as fair value when available. In the absence of such prices, an entity should use valuation techniques and all relevant market information that is available so that valuation techniques maximize the use of observable inputs (IAS 39). It is recognized that an entity might have to make significant adjustments to an observed price in order to arrive at the price at which an orderly transaction would have taken place [3].

Under both US GAAP and IFRS, fair values are most frequently used for financial assets and liabilities. But even for financial assets and liabilities, there is a mixed attribute model with a multitude of rules stipulating that some items are reported at fair value and others are reported at historical cost. Moreover, unrealized gains and losses of items that are reported at fair value may or may not affect net income, depending on their classification. For instance, FAS 115, which was already implemented in 1994, requires that both trading securities and available-for-sale securities are reported in the balance sheet at fair value. But in the income statement, unrealized gains and losses, i.e., changes in these values are recognized for trading securities only. In contrast, financial instruments that are held-to-maturity are reported at amortized costs but fair values could be used in determining impairments for these items. In addition, fair values are used for disclosures in the notes to the financial statements [4].

Proponents argue that fair values for assets or liabilities reflect current market conditions and hence provide timely information, thereby increasing transparency and encouraging prompt corrective actions. Few dispute that transparency is important. But the controversy rests on whether

FVA is indeed helpful in providing transparency and whether it leads to undesirable actions on the part of banks and firms. Opponents claim that fair value is not relevant and potentially misleading for assets that are held for a long period and, in particular, to maturity; that prices could be distorted by market inefficiencies, investor irrationality or liquidity problems; that fair values based on models are not reliable; and that FVA contributes to the procyclicality of the financial system.

### Historical Cost Accounting as an Alternative

In discussing the potential problems of FVA, it is important to also consider the alternative. Naturally, the relevant alternative depends on the assets in question. Few would argue that historical cost accounting (HCA) is an alternative for liquid assets (e.g., stocks) in banks' trading books. But for many, HCA is an alternative for loans, in particular, if they are held to maturity. Similarly, if we were to suspend FVA for illiquid assets in times of crisis as many have suggested, what values would we use instead? Even if one is sympathetic to the arguments against FVA, it does not automatically follow that HCA would be better, although many opponents of FVA implicitly or explicitly assume so. At times, FVA may not provide relevant information, but in many cases, (amortized) historical costs do not provide relevant information either. Moreover, even when an investor intends to hold financial assets until her retirement, she may still have an interest in the current value of these assets. Why does this logic not also apply to disclosures about a firm's financial assets? That is, even for assets that are held to maturity (e.g., loans), investors might care about current market values, be it to evaluate past decisions in light of current market conditions or because investors have some doubts that the firm (or bank) can hold these assets to maturity. Similarly, when bank regulators set capital requirements based on *expected* future losses at the time of the transaction, we would expect them to adjust required capital when expectations about future losses change – and not just when losses are realized. It is surprising that some commentators seem to believe that HCA is a sound basis for capital requirements or that the liquidity of an asset should play no role when market values and liquidity play an important role in determining (ongoing) margin or collateral requirements. Aside from highlighting some of the shortcomings of HCA, these examples also illustrate that it is important to be explicit about the presumed goal(s) of accounting when we debate the merits of FVA and other alternatives,

such as HCA, because their relative merits likely depend on the goal(s) of accounting.

Furthermore, take the concern that observed prices may not always reflect true fundamental values and that in those cases marking-to-market is not appropriate. Clearly, it is conceivable that, at times, observed market prices deviate from fundamentals. That is, markets may not be efficient with respect to publicly available information at all times. There are transaction costs and limits to arbitrage, and market prices may be subject to behavioural biases and investor irrationality [5], [6]. Moreover, a liquidity crunch can affect market prices [7].

The important question, however, is how to deal with this problem. Potential market inefficiencies can be addressed in a variety of ways and again HCA is not the only alternative. Historical costs do not reflect the current fundamental value of an asset either. Therefore, it might be better to use market values, even if the markets are illiquid, and to supplement them with additional disclosures, e.g., about the fundamental value of the asset when held to maturity. FVA does not prevent firms from providing additional information, including management's estimates of fundamental values. One might counter this argument with the concern that investors may overlook information in the notes to the financial statements or that they would overreact to fair values based on current market prices despite the disclosure of (higher) fundamental values in the notes. However, we are not aware of any empirical evidence that investors systematically ignore or overlook information in the notes. Having said that, there is a legitimate debate over whether the market fully and correctly impounds financial information in price [8]. For instance, the market could overreact [9].

But it is also possible that market reactions are even more extreme if current market prices or fair-value estimates are not disclosed to the market. We are not aware of any empirical evidence that investors would be calmer under HCA. Investors are not naïve; they know about the problems, e.g., in the subprime-loan market, and hence will draw inferences even in the absence of fair-value disclosures (and in that case might assume the worst). Thus, lack of transparency could make matters worse. Furthermore, even if investors were to react more calmly under HCA, this may come at the price of delaying and increasing the underlying problems (e.g., excessive subprime lending). This latter point again illustrates that, to make a case against FVA, it is important to consider not only

the costs of FVA, but also the costs of the alternative(s), including their incentive effects during normal or boom times. Otherwise, we fall victim to an accounting version of the Nirvana fallacy.

Setting accounting standards always involves tradeoffs, and any accounting regime will have costs and benefits. As the tradeoffs are likely to differ across firms (or industries) and assets, it is unlikely that FVA (or HCA) is always or even generally preferred. Furthermore, it is important to remember that the reason why accounting rules are relevant is that we are living in an imperfect world. In a world of complete and perfect markets, reporting the market values of a firm's assets would be optimal but also superfluous [10]. In an imperfect world with frictions and information problems, however, the optimal solution could look very different and hence it is not clear that using market values when they are available or approximating market values with our accounting measurements is even desirable [11]. As the "Theory of the Second Best" cautions, removing one imperfection in an imperfect world does not necessarily lead to welfare improvements. For instance, it is possible that a mixed-attributes model that treats certain assets and liabilities differently is optimal, even though this model appears to be inconsistent from a measurement perspective. We need a careful economic analysis of the tradeoffs, including incentive and real effects, and have to recognize that the tradeoffs likely differ across assets, business models, and uses of accounting numbers.

### Fair-value Accounting, Illiquidity and Financial Crises

FVA and its application through the business cycle have been subject to considerable debate [12], [13], [14]. The chief concern is that FVA is pro-cyclical, i.e., it exacerbates swings in the financial system, and that it may even *cause* a downward spiral in financial markets. There are essentially two arguments why FVA can contribute to procyclicality: one in booms and one in busts.

The first argument is that FVA and asset write-ups allow banks to increase their leverage in booms, which in turn makes the financial system more vulnerable and financial crises more severe [15]. In contrast, HCA prohibits asset write-ups in booms and creates "hidden" reserves, which can be drawn upon in times of crisis. However, this argument ignores that FVA provides early warning signals for an impending crisis and hence

may force banks to take appropriate measures earlier. Thereby, FVA may actually reduce the severity of a crisis. Moreover, a key question is why a bank would hold these hidden reserves under HCA and essentially choose a lower leverage (or why it would not be willing to hold higher reserves if they are not hidden under FVA). One possibility is that a bank's leverage is driven by its book equity rather than the market value of equity because of regulatory capital requirement. HCA and a fixed regulatory capital ratio based on book values indirectly result in dynamic prudential regulation where banks have a lower leverage ratio (measured in terms of market values) in booms when fair values exceed historical costs than in recessions. However, it is important to recognize that a bank can also increase its leverage in boom periods under HCA by selling an asset and retaining only a small claim in it (or guaranteeing its performance), as banks did when they securitized loans. Thus, we do not think that the tendency of banks to expand leverage in booms is an issue that merely arises under FVA. Besides, it is not clear that pro-cyclical lending should be addressed by adjusting the accounting rules. For instance, we could combine FVA with dynamic prudential regulation, i.e., forcing banks to build up larger reserves in good times and to draw on them in bad times, in order to counter the pro-cyclical effects of capital requirements on lending. Put differently, it might be more appropriate to adjust banking regulation, rather than the accounting system, given that accounting numbers are used in many other contexts.

The second argument is that FVA can provoke contagion in financial markets. The basic idea is that banks may (have to) sell assets at a price below the fundamental value and that the price from these (forced) sales becomes relevant to other institutions that are required by FVA to mark their assets to market [16], [17]. This argument requires that there are some direct or indirect ties to the accounting system, which trigger the sale of the assets. Some studies [16] show that accounting-based regulatory capital requirements for banks can lead to contagion. Bond covenants are often also based on accounting numbers and can create contractual ties. Plantin [17] shows that a management focused on short-term accounting earnings can create similar effects, essentially because they care about current market prices which produce indirect ties. Similarly, rating agencies can create indirect ties by using accounting information and issuing ratings that are used in debt contracts or capital requirements.

The models by Allen and Carletti [16] and Plantin [17] show that FVA in its *pure* form, i.e., marking to market prices under any circumstances, can create contagion effects. The next question is how (and where) to respond to these effects. One alternative is to use HCA. Valuing assets at historical costs essentially insulates banks from market prices and therefore also from prices that are established by the trading activities of other banks and from potential negative spill-over effects. But as Plantin [17] points out, HCA may create incentives for banks to engage in inefficient asset sales to realize earnings early. The importance of this problem in practice should not be underestimated. The concern about banks' ability to engage in so-called "gains trading," i.e., selectively selling financial instruments with unrealized gains and keeping those with losses, was a major impetus for introducing FVA for financial instruments [18], [19]. Moreover, securitizations of loans, which were accounted for at amortized costs and traditionally held to maturity, could be driven by banks' desire to realize accounting earnings early. Prior to the crisis, the market for securitized loans was reasonably liquid and gave banks an opportunity to recognize substantial gains from loan origination. Thus, those who criticize FVA and call for a return to HCA have to be careful: HCA for loans coupled with banks' short-term incentives may in fact have contributed to the recent surge of securitizations. This example again illustrates our broader point in Section 'Historical cost accounting as an alternative' that even if there are potential problems with FVA such as contagion effects, it is not clear that HCA is the solution to these problems.

An alternative way to tackle the procyclicality of the accounting system is to deviate from market prices in situations when contagion is likely to occur. Both US GAAP and IFRS allow such deviations in certain circumstances. First, the standards explicitly state that market prices from forced sales should not be used, which protects against negative pullovers from distressed banks. Second, the standards allow the use of valuation models to derive fair values when markets become inactive, which should also mitigate contagion effects in a financial crisis. Third, US GAAP and, more recently, also IFRS allow for a re-classification of fair-value assets into a category to which HCA and less stringent impairment tests apply. Thus, US GAAP and IFRS have mechanisms to avoid negative pullovers in distressed markets and a downward spiral.

Yet another way to address contagion and procyclicality is not to have direct (mechanical)

regulatory or contractual ties to FVA. For instance, it would be possible to adjust the accounting numbers for the purpose of determining regulatory capital. Such adjustments already exist. For example, for the purpose of calculating regulatory capital, the Federal Deposit Insurance Corporation and the Federal Reserve adjust banks' equity as reported under US GAAP for unrealized losses and gains for available-for-sale (AFS) *debt* securities to obtain Tier 1 capital (e.g., Schedule HC-R in FR Y-9C). Thus, regulatory capital as calculated by US banking regulators is not affected by changes in the fair value of AFS debt securities, unless they are sold or the impairments are other-than-temporary. Similarly, Li [20] documents that debt contracts often exclude fair-value changes in accounting-based debt covenants. These examples demonstrate that it is not clear that contagion and procyclicality are best addressed directly in the accounting system. Perhaps these issues are better left to the prudential regulators and contracting parties, who in turn can make adjustments to the numbers reported in the financial statements as they see fit. In our view, this is an interesting issue for future research.

In summary, Allen and Carletti [16] and [17] provide illustrating potential contagion effects. However, they do not show that HCA would be preferable. In fact, Plantin [17] is quite explicit about the problems of HCA. Furthermore, they do not speak directly to the role of FVA in the current crisis because they do not model FVA as implemented in practice. As noted above, FVA as required by US GAAP or IFRS as well as US regulatory capital requirements for banks have mechanisms in place that should alleviate potential contagion effects. Whether these mechanisms work properly in practice is our next question.

### Are there Implementation Problems with Fair-value Accounting Standards?

Given the discussion in the preceding section, it is not obvious that extant accounting standards can be blamed for causing contagion effects. But it is possible that, in practice or in crises, the standards do not work as intended. Ultimately, this is an empirical question and answering it is beyond the scope of this article. But we can at least raise and discuss two important implementation issues.

First, many have argued that both the emphasis of FAS 157 on observable inputs (i.e., Level 1 and Level 2) and extant SEC guidance make it very difficult for firms to deviate from market prices,

even if these prices are below fundamentals or give rise to contagion effects [21], [22]. Consistent with these claims, the relevant standards in US GAAP and IFRS as well as guidance for these standards are quite restrictive as to when it is appropriate for managers to deviate from observable market prices. However, such restrictions should not be surprising. By allowing deviations from market price in some instances, standard setters face the problem of distinguishing between a situation in which a market price is indeed misleading and a situation in which a manager merely claims that this is so in order to avoid a write-down. Without restrictive guidance, the standards could be easily gamed. There is evidence that managers can be reluctant to take write-downs even when assets are substantially impaired. Consistent with this concern, current estimates of banks' loan losses [23] far exceed the write-downs that banks have taken so far and they also exceed the difference between the loans' carrying values and banks' fair-value disclosures for these loans according to FAS 107.

These examples illustrate a general problem. Managers have an information advantage over the gatekeepers (e.g., auditors or the SEC) and, as a result, it is difficult to write FVA standards that provide the flexibility when it is needed and constrain managers' behaviour when it is not needed. Standard setters face the classic and well-known trade-off between relevance and reliability: model-based fair values may be more relevant in certain situations but market prices are easier to verify and harder to manipulate. Thus, in a world with information asymmetry, we expect optimal FVA standards and enforcement to constrain some deviations from (distressed or misleading) market prices that would be permitted if the gatekeepers had the same information as the managers. Put differently, restrictive standards or even some contagion effects are the price for timely write-offs when assets are impaired. Again, this is a trade-off that is important to recognize and difficult to escape in practice.

While this expected feature of second-best standards is one explanation for the criticism of FVA during the crisis, it is clearly also possible that extant rules and guidance are too restrictive (even from a second-best perspective) and that we would have been better off giving managers more flexibility in the crisis. This is in essence the view that the House Financial Services Committee adopted in a hearing on MTM accounting rules on March 12, 2009. As a result of this political pressure, the FASB relaxed the conditions for moving assets into Level 3 in April 2009. However,

it is important to note that joint FASB/SEC guidance issued on September 30, 2008 and the FASB Staff Position (FSP FAS 157-3) already state that adjustments to observable inputs and market prices may be necessary and should be considered. Moreover, the financial statements of US banks for fiscal 2008 show that banks have been able to move assets into the Level 3 category as the financial crisis unfolded, so it was clearly not impossible to move to models. But it is of course possible that banks did not move enough assets into the Level 3 category to prevent contagion effects. In the end, we need more research on this issue.

A second implementation problem may arise from litigation risk. Deviations from market prices under existing FVA standards require substantial judgement by the preparers and the auditors. However, managers, directors, and auditors face severe litigation risks as well as substantial legal penalties, including prison terms, which recently have been increased by the Sarbanes-Oxley Act of 2002. In this environment, managers, directors, and auditors are likely to weigh the personal costs and risks associated with deviations from market prices differently than investors. For example, it is conceivable that a manager is reluctant to use an appropriate model-based fair value that is higher than an observable price from a very illiquid market, especially when there is substantial down-side risk for the economy or the firm, as there typically is in financial crises.

From a litigation risk perspective, guidance as to when deviations are appropriate is likely to play an important role, especially in litigious environments and when enforcement is strong. Thus, it is possible that, once we recognize the litigation aspect, improvements in the standards' implementation were (and perhaps are still) needed. However, as litigation serves as an important enforcement mechanism, there are tradeoffs as we highlighted earlier in this section for SEC enforcement. This second implementation problem also highlights that it is important to evaluate accounting standards within the context of the institutional environment in which they operate.

### **Banks' Positions on Fair-value Accounting During and before the Crisis**

In the second half of 2008 when the crisis intensified, banks raised significant concerns about FVA for any but the most liquid assets. They argued that FVA was exacerbating the crisis by creating a downward spiral and that observed market prices were significantly below the assets'

fundamental values (e.g., American Bankers Association, 2008 and Mortgage Bankers Association, 2008; US Bancorp, 2008). Many large banks in the US and Europe asked for maximum leeway in declaring transactions disorderly and switching to models to determine fair values based on the underlying fundamentals or expected future cash flows [24]. Moreover, banks, in particular in Europe, asked for the option to reclassify financial instruments from the trading category to the held-to-maturity [25], [26].

While this opposition could be viewed as (anecdotal) evidence that the concerns about FVA in financial crises are warranted, the arguments could also be self-serving, essentially passing the blame for the crisis to the accounting standards. It might therefore be informative to go back in time to see whether banks embraced FVA prior to the crisis.

Doing so reveals that banks have consistently raised concerns about FVA. For example, in 1999, when the FASB solicited comments on its "Preliminary Views, Reporting Financial Instruments and Certain Related Assets and Liabilities at Fair Value," the reaction by banks was universally negative [18]. Banks argued that fair value is not relevant for investors, does not suit the business model of most banks, and is not appropriate for illiquid assets or assets that are held to maturity. Only the US investment banks were somewhat supportive of using fair values for some financial instruments, largely because they were already using fair values for many of their assets for internal reporting and risk management purposes, and even they requested the ability to exercise judgment in valuing financial instruments [27]. When FASB issued its 2004 Exposure Draft on Fair-Value Measurements (on what later became FAS 157), banks welcomed the improved consistency, clarification and guidance, but pointed out that there were still inconsistencies and suggested that further guidance was needed. Banks also noted that reasonable judgment and flexibility is needed when determining fair values, in particular when Level 3 inputs are used [28].

Thus, banks' positions have been reasonably consistent over time and hence one could argue that their criticism of FVA during the crisis is credible given that they have raised concerns even in times when FVA may have allowed them to show higher valuations than HCA. However, as discussed above, FVA is not needed to capitalize on higher valuations during boom times when markets are liquid: banks can simply sell and repurchase an asset to recognize unrealized

valuation gains that have occurred since the asset's acquisition. In fact, unlike FVA, HCA allows banks to choose *when* to realize the gains. Moreover, impairment testing under HCA is less strict and arguably offers more discretion than FVA. This greater flexibility in both directions under HCA certainly has a value for bank managers as it shields them from capital-market scrutiny (for better or worse), allows them to accumulate hidden reserves, and lets them realize gains and losses strategically. Therefore, banks' opposition to FVA mingles potentially well-founded concerns with a general desire for flexibility and, hence, it is not obvious that banks' long-standing opposition to FVA lends credibility to their current arguments.

In contrast to the banks' views, investor interest groups and accountants are considerably less concerned about FVA, even in the current crisis, and warn against a suspension of FVA. For example, in a joint letter to the SEC in November 2008, the Consumer Federation of America, Centre for Audit Quality, Council of Institutional Investors, Investment Management Association, and CFA Institute state that "investors require an accounting standard that reports a relevant and useful value of financial instruments regardless of the direction of markets. Fair-value accounting with robust disclosures provides more reliable, timely, and comparable information than amounts that would be reported under other alternative accounting approaches." But of course, these groups also have a stake in the discussion, which likely biases their views as well.

It is also curious that European banks seem more opposed to FVA than US banks. If indeed litigation and enforcement risks give rise to significant implementation problems for FVA, it is surprising that the opposition to FVA is much stronger in Europe. Litigation risks and legal enforcement are much weaker in Europe. However, there is empirical evidence that European firms are generally less likely to take impairments and appear to smooth their earnings more [29], [30]. This evidence tells an alternative story and is more consistent with the flexibility-based explanation of most banks' long-standing support of HCA.

## Conclusion and Suggestions for Future Research

The preceding sections illustrate that the debate about FVA is full of arguments that do not hold up to further scrutiny and need more economic analysis. Moreover, it is important to recognize that standard setters face tradeoffs, and in this regard FVA is no exception. One example is the

trade-off between relevance and reliability, which is at the heart of the debate of when to deviate from market prices in determining fair values. Another example is that FVA recognizes losses early thereby forcing banks to take appropriate measures early and making it more difficult to hide potential problems that only grow larger and would make crises more severe. But this benefit gives rise to another set of tradeoffs. First, FVA introduces volatility in the financial statement in “normal times” (when prompt action is not needed). Second, full FVA can give rise to contagion effects in times of crisis, which need to be addressed – be it in the accounting system or with prudential regulation. In our view, it may be better to design prudential regulation that accepts FVA as a starting point but sets explicit counter-cyclical capital requirements than to implicitly address the issue of financial stability in the accounting system by using historical costs. It is an illusion to believe that ignoring market prices or current information provides a foundation for a more solid banking system. But we admit that the trade-off between transparency and financial stability as well as the interactions between accounting and prudential regulation needs further analysis [31]. In addition, we have several other suggestions for future research.

First and foremost, we need to make more progress on the question of whether FVA did in fact contribute to the financial crisis through contagion effects. At present, there is little research that would answer or even directly speak to this question. The SEC study mandated by Economic Stabilization Act of 2008 argues that FVA did not cause bank failures because the fraction of assets reported at fair value was small in most cases, and in those cases where the fraction of fair-value assets was larger, the share price reflected even higher losses than were reported by the bank. While this argument and the accompanying evidence point to real losses as the source of bank failures, they do not provide convincing evidence that there was no contagion. The failure of some banks could have increased market illiquidity, which in turn may have spilled over to other banks via FVA. Moreover, it is tricky to use banks’ share prices as evidence that FVA did not have any negative effects for banks with a large fraction of fair-value assets since the share price may already reflect the negative real effects of FVA (e.g., asset fire sales in illiquid market).

A first step towards making progress on the role of FVA in the crisis is to be more explicit about the mechanism of contagion. A simple reference to models that show contagion effects in pure market-to-market settings is not sufficient to explain the

role of FVA in practice. However, the main challenge in finding evidence on contagion effects related to or caused by FVA likely lies in isolating accounting effects and separating them from contagion effects due to correlated (real) risks. This is not a trivial exercise. One important step would be to show that prices were indeed distorted and deviated substantially from fundamental values, which is not an easy task either. Evidence on this issue is only just emerging [32]. Similarly, we do not have evidence that banks’ write-downs on securities were indeed excessive relative to their fundamentals. Interestingly, banks have also not put forward such evidence even though they should have strong incentives to do. As we noted earlier, banks are not constrained by the accounting standards from providing additional disclosures about the fundamental values of their assets. But it is possible that litigation risks or concerns about investor rationality inhibit such disclosures.

This brings us to a second avenue for future research. Our analysis suggests that implementation problems and, in particular, litigation risks could have played a role for the performance of FVA standards and banks’ reporting practices in the crisis. It would be interesting for future research to explore this possibility and to study the interactions between FVA and other important elements of the institutional framework (e.g., litigation system, SEC enforcement). Understanding these interactions and the role of FVA in the current crisis is also crucial for the decision of whether or not to expand the use of FVA to other assets and other areas of accounting.

Third, although most of the debate seems to be focused on the role of FVA in the crisis, it seems equally important to ask and study to what extent HCA (e.g., for loans) may have played a role. We already noted that HCA may have fed into the securitization boom. Moreover, there is evidence suggesting that banks’ loan losses exceeded fair-value losses on securities [33], [34]. It is conceivable that the opacity of banks’ loan books and the lack of strict impairment rules have considerably contributed to the current crisis and investor uncertainty. Along similar lines, it would be worthwhile to analyze the role of off-balance sheet vehicles and retained positions in asset securitizations in the crisis. The disclosures for these positions are often difficult to understand and may have been insufficient. Again, it could be that the opacity of these positions played a larger role for the sharp market reactions than the write-downs per se. Put differently, the accounting aspect of the crisis could very well be a



transparency problem, rather than an overreaction to fair-value information.

A related issue is the question of how investors respond to additional disclosures that firms provide in times of crisis. There are a few studies that examine firms' responses to transparency crises and their economic consequences [35]. The current crisis provides an interesting setting to further explore these issues. An analysis of European banks' annual reports by KPMG suggests that, in 2007, banks increased their disclosures related to financial instruments, in part due to the beginning of the crisis. It would be interesting to study what determines disclosure (or non-disclosure), how investors reacted to these

disclosures and whether there are signs that investors overreact to such disclosures.

Finally, it is important to recognize that accounting rules and changes in them are shaped by political processes (like any other regulation). The role of the political forces further complicates the analysis. For instance, it is possible that changing the accounting rules in a crisis as a result of political pressures leads to worse outcomes than sticking to a particular regime [36]. In this regard, the intense lobbying and political interference with the standard setting process during the current crisis provide a fertile ground for further study. In sum, the fair-value debate is far from over and much remains to be done.

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