

## **Fair Value Accounting within a Financial Crisis: An Examination of Implications and Perspectives**

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### **Abstract**

*The aim of this paper is to discuss the role of Fair Value Accounting (FVA) within a financial crisis. The study examines the controversial topic Fair Value use and its suspected procyclicality. It also inspects the various distorted effects created by the interaction between FVA and the economic downturn and upturn of the financial system, in order to offer solid reflections for improving the Fair Value research agenda. The study reveals that FVA played little or no role in a financial crisis and it cannot be considered the cause of it, but only a messenger. FVA provides useful information during stable market conditions, but its usefulness and reliability may become uncertain during a financial markets' turmoil. In this respect, the key question is not essentially the accounting model itself but how such accounting information is used.*

**Keywords:** Fair Value Accounting, financial crisis, procyclicality, volatility, financial stability

### **1. Introduction**

The Global Financial Crisis of 2008 (GFC) has drawn attention to the role of financial reporting in periods of financial downturn and has led to a major debate involving Regulators, Standard Setters, and academics, from the general press to policy-makers all over the world (Sikka, 2009; Cooper, 2015; Paolucci & Menicucci, 2014; 2016). During the crisis period, Fair Value Accounting (FVA) was a long debated matter as its application was frequently declared an important determinant in the series of events which contributed to the 2008 crisis. In analyzing the GFC (Gorton, 2009; Barberis, 2011), academic efforts focused on empirical and theoretical studies to determine the role played by FVA in worsening the credit crunch. At any rate, there are contrasting conclusions and, of course, different points of view. Many commentators are critical of FVA as a measurement approach for reporting financial instruments in the financial statements of banks. The focus of the heated debate surrounding FVA is whether its application could have intensified downturns and reduced financial stability, causing procyclical effects on firms' financial statements and profitability.

In this study we discuss the controversial issues related to FVA and its role in a financial crisis, attempting to outline some reasons why FVA should - should not - be blamed for a financial downturn. In particular, we analyze the influence of FVA on a financial system and its alleged procyclical effects, based on theoretical and empirical research evidence that is relevant to the debate concerning the use of FVA during a crisis period. The contribution of the paper consists in offering a comprehensive overview of the issues to answer the following question: was Fair Value just the messenger of the credit crunch or was it procyclical, contributing to financial turmoil? The paper is organized as follows. Section 2 briefly analyses the concept of FVA, also introducing the key features of its role in a financial crisis. Section 3 examines contributions that prior literature made to the research subject concerning the role of FVA in the GFC. Then, the next sections take this preliminary analysis a step further by focusing on the origin of the relationship between FVA and a financial crisis.

Sections 4 and 5 analyze the implications of using FVA in the banking sector and how this impacts on banks' financial statements and financial stability. Some valuable insights are extracted in Section 6 to draw some perspectives on the current debate concerning the potential effect of FVA on the volatility of reported earnings and procyclicality. The final section presents the main conclusions, limitations, and suggestions for future research.

## **2. Financial crisis and FVA**

The GFC has originated in dubious financial practices within a portion of the US residential mortgage market. People were allowed to obtain credit and this stimulated the economy, inspired by low interest rates and other shortcomings in credit industry regulation and governance. Credit expanded and the deregulation context endorsed financial institutions to pool and package individual mortgages into securities through a complex and opaque process, thus shifting lending risk to investors.

According to many authors (e.g., Arnold, 2009; Cooper, 2015), accounting was complicit in the process as accounting standards - through the promotion of FVA (Chabrak and Gendron, 2015) - and dubious credit rating practices perpetuated the process instead of playing a watchdog role. The GFC is the first case in which the accounting system in use calls for a serious analysis of its role in causing the credit crunch (LaCalamito, 2013) among investors, bankers, politicians, regulators and academics. Accounting has been blamed for being one of the crisis' key causal factors (e.g. Whalen, 2008; Masoud & Daas, 2014). On this issue, for example, Laux and Leuz (2010) and Barth and Landsman (2010) investigated the impact of FVA within the mix of factors alleged to be the most important causes of the crisis.

During a financial crisis, FVA can provoke contagion in financial markets since banks have to recognize a reduction in the value of some of their financial assets - generally linked to subprime loans - and have to take significant accounting write-downs because of the losses that occurred on exposures. Then, to maintain their solvency ratios at the required level, banks are forced to sell part of their assets, to raise new capital under depressed valuation conditions or to reduce lending with the resulting negative effects on the financial system. During a financial crisis, prices for mortgage related securities collapse decrease considerably and banks must mark down their financial instruments by significant amounts because Fair Value measurement allows valuation of certain assets at the amount for which they could be exchanged in an open market transaction. As a result, financial instruments valued at Fair Value are sold below "theoretical or fundamental value" (their underlying future cash flows or amount for which they would eventually be sold) (SEC, 2008) causing a downward spiral in financial markets.

Under both US GAAP and IFRSs, the term "Fair Value" is commonly referred to the current market value (i.e., an exit price from the perspective of a market participant that holds the asset or owns the liability) when available, and it comprises an estimated value when the current value is not always directly observable because the market for an asset or a liability becomes illiquid (IASB, 2008). As FAS 157, IFRS 13 provides an accurate definition of Fair Value and specific disclosure requirements for its application across IFRSs. To increase consistency and comparability in Fair Value measurements, both IFRSs and US GAAP embrace a Fair Value hierarchy based on a three-tiered valuation process. Specifically, three levels of Fair Value measurement are devised: Level 1 is applied when the current price in a liquid market for exactly the same instrument can be attained (i.e., Mark to Market), Level 2 represents the current price in a liquid market for a similar instrument, which has to be applied to assess the Fair Value of the instrument to be valued (i.e., Mark to Matrix) and finally Level 3 applies valuation models (i.e., Mark to Model).

At Level 3, estimates encompass valuation techniques (i.e., discounted cash flow model, income approach, etc.) that are based upon unobservable inputs or internal information and assumptions. Discretionary in Level 3 estimations of Fair Value introduces possible alterations of the earnings since assumptions require inputs (i.e., cash flow or income forecasts) that are themselves subjected to estimation error. Due to the deterioration of price transparency during the credit crunch, many subprime positions that were previously valued at Fair Value using Level 2 inputs unavoidably have to be measured using Level 3 inputs. In this respect, the opponents of Fair Value measurement criticize its credibility, especially in the case of valuations based on models that are influenced by outlooks and estimates coming from management.

While using FVA seems convincingly rationality when markets are functioning well, the reliability, relevance and, indeed, the credibility of this approach lessen when secondary markets do not function. Critics argue that sometimes Fair Value measurements are not related to expected cash flows or underlying economic conditions because these measurements contain “noise” ascribed to market feeling rather than to economic fundamentals. Subsequently, the use of market prices to value assets may not be beneficial when financial markets are illiquid because prices do not reflect the properly discounted value of future expected cash flows. These market circumstances affect bank asset values through FVA and encourage default contagion across financial institutions, especially for those with long-term assets. Hence, according to some authors (e.g., Allen and Carletti, 2008) market prices under situations of market illiquidity should be overlooked because they understate intrinsic values and they alter portfolio and contract choosing.

FVA is potentially unreliable in the absence of quoted market prices, resulting in a reduction of the comparability and reliability of financial statements. Assets and liabilities, for which markets become illiquid and market prices unavailable, could be valued at Fair Value using supposed market values and valuation models that the company must come up with (Bout et al., 2010). Thus, the determination of Fair Value in turbulent markets may require a significant degree of judgment. Because a number of assets and liabilities are not traded in active markets, the inputs and methods for measuring their Fair Value are more subjective and thus, the valuations are less consistent. In this regard, another consequence of the information provided by Fair Value measurement is the discretionary judgment which inevitably emerges within the valuation of assets or liabilities for which inputs are unobservable (Level 3). This subjectivity reveals itself through managerial judgment, use of reserved information, and the intrinsic uncertainty concerning the validity of the assumptions used in the valuation. Fair values are never real market values but estimates of market values which depend on critical assumptions about orderly markets (Power, 2010).

### **3. The debate on the role FVA plays in a financial crisis**

By 2007, just prior to the financial crisis, the the idea of FVA for accounting had renewed completely, becoming a quasi-philosophical principle within the financial accounting policy process led by specific members of FASB and IASB. Fair Value is much more than just a technical measurement convention for its proponents and it represents a change process which is global in aspiration (Power, 2010). Fair Value is a key topic that has garnered support in the ample and still growing accounting literature (Glavan, 2010). However, the extent to which FVA played a role in causing the Financial Crisis has not been researched extensively (Jaggi *et al.*, 2010; Jarolim and Oppinger, 2012), and there is no consensus in the conclusions drawn by researchers in the various studies conducted. In particular, the debate has, so far, focused on whether the application of FVA can cause a financial crisis and whether its procyclical effects on the economy play an active role in triggering meltdown and market volatility (Stevenson, 2012).

There are two opposing viewpoints in the existing literature regarding the influence of FVA during the GFC: on the one hand, it is believed that FVA contributes to economic distortion in the financial system (Emerson *et al.*, 2010); on the other hand, it is assumed that FVA gives an accurate representation of the market value of assets and liabilities (Veron, 2008). A number of academic and non-academic studies have argued that FVA precipitated a financial crisis and aggravated it, undermining equity positions of financial institutions. In this regard, according to opponents of Fair Value, there is no doubt that applying FVA when recognizing financial instruments in banks' financial statements (Wallison, 2008; Whalen, 2008) accelerated the financial turmoil by inducing procyclicality and the vicious cycle of asset fire sales during the crisis. Such significantly critical observations could easily be interpreted as finger-pointing because FVA is perceived to be a key player in the GFC (Mala and Chand, 2012). In particular, some opponents assert that FVA increases volatility and amplifies the effects of the business cycle. Various studies provide different perspectives on the use of FVA in times of crisis (Bezemer, 2010; Arnold, 2009; Roberts and Jones, 2009; McSweeney, 2009), while others go more deeply into certain theoretical frameworks such as the economic theory of value, sociological theories of behaviour, or jurisprudential theories of a legal interpretation of fair representation. Other scholars have provided a different perspective on Fair Value during a crisis period, e.g. Bezemer (2010), who adopts an approach based on accounting models, while other authors underlined the relationship between the auditing aspects of a financial crisis and the role of Fair Value (Arnold, 2009; McSweeney, 2009; Roberts and Jones, 2009; Sikka, 2009; Bischof *et al.*, 2014; de Jager, 2014).

However, the theoretical stream of literature is largely focused on the procyclicality of FVA (SEC, 2008; IMF, 2008; Bout *et al.*, 2010; Chouinard and Youngman, 2008; Bowen *et al.*, 2009); it has investigated how Fair Value possibly produced a negative amplification of business cycles during the GFC (Barth and Landsman, 2010; Laux and Leux, 2009, 2010; Menicucci, 2010; 2015). The criticism led by practitioners and bank regulators was followed up by some academic studies (Whalen, 2008; Plantin *et al.*, 2008a; Bignon *et al.*, 2009). Several highly reputed economists have argued that FVA overstates the intrinsic procyclicality of the financial system, resulting in larger booms and more dangerous busts. For example, Allen and Carletti (2008) and Plantin *et al.* (2008a) compared FVA to Historical Cost Accounting (HCA) and examined the implications for capital markets. They highlighted the possibility that decreasing prices cause forced sales, which depress prices even further, leading to a downward never-ending cycle in asset prices. In particular, Allen and Carletti (2008) emphasized that FVA may cause excessive bank insolvencies and contagion through distorted current prices when markets are illiquid.

In illiquid financial markets remarks against FVA are especially related to procyclical effects inducing artificial volatility on bank balance sheets (Plantin *et al.*, 2008a; Menicucci, 2010). The allegations are that the market process could be distorted in some ways, which results in financial institutions taking needless write-downs based on temporarily depressed market prices. Even within an efficient market, financial securities prices can deviate from their fundamental values due to a liquidity crunch. Although this “artificial” volatility is supposedly a consequence of the adoption of FVA, a number of studies (IMF, 2008; SEC, 2008) pointed to bad credit grant decisions and weak risk-management concerning regulatory capital requirements as certain causes of the crisis. Among the different studies, opponents of the use of Fair Value argue that it is less verifiable by investors because its measurements are subject to greater estimation errors and manipulation by management.

There are two main reasons why this circumstance could exacerbate a financial crisis. First, the recognition of distorted Fair Values in banks’ financial statements contributes to a misleading perception of the banks’ value as expressed by the market. The second reason is based on the relationship between accounting and bank capital regulation. Banks’ regulatory capital requirements are more frequently violated under FVA than under HCA, especially during a financial crisis when financial institutions are forced to sell assets in distressed markets. As Barth (2004) argued, the use of FVA - in combination with the violation of regulatory capital requirements - can increase contagion, resulting in further price falls and in the weakening of financial markets. In particular, according to Magnan (2009), FVA accentuates the disconnect between financial reporting and business reality involving a failure contagion effect among financial institutions. When markets are illiquid, it is difficult to obtain reliable estimates of market value and FVA can cause financial statements to paint a picture that does not fairly represent the economic fundamentals of a firm.

In addition to these main points, some studies (SEC, 2008; IMF, 2008) made further observations indirectly related to procyclicality. Within the body of criticism against FVA, we must also mention the study conducted by Wallison (2008) who claimed that FVA is highly procyclical and has been the principal cause of unexpected instability among financial institutions in the United States. The same remark regarding the procyclical aspect of FVA and the need to change the mark-to-market accounting based on it - especially for financial institutions - was also expressed by other academics who believed that FVA could potentially lead to a breakdown of the entire banking system. In this vein, a paper by Chouinard and Youngman (2008) stressed that FVA has the potential to amplify economic cycles, both on the upside and on the downside.

On the supportive side, there are several important opinions in favour of FVA. Within the stream of related literature some proponents of FVA believe that it does not play a significant role in amplifying a vicious circle. For example, Procházka (2011), Wallace (2008) and Bonaci *et al.* (2010) examined the actual debate on the role played by FVA (i.e., as a messenger or a mover) in the financial crunch, and they affirmed that it should not be blamed for the economic and financial downturn. In line with other studies by Barth and Landsman (2010), Ryan (2008), SEC (2008), Laux and Leuz (2010) and Pozen (2009), similar conclusions are drawn by Véron (2008) and Bout *et al.* (2010) who argued that the procyclical effects of FVA do not undermine its relevance for investors’ purposes. The same topic was also analyzed by André *et al.* (2009) who stated that the negative consequences of the crisis would have been reduced if FVA had been applied previously. Additionally, Jarolim and Oppinger (2012) asserted that a financial crisis is not caused by improper accounting or inadequate corporate disclosure in financial reporting. The IMF (2008) argued that bad credit grant decisions and weak risk management caused the procyclicality of the economic lifecycle (among others, IMF, 2008; Ryan, 2008; SEC, 2008).

On the basis of these and other theoretical findings, consistent evidence illustrated how Fair Value helps investors to identify criticalities and to quickly react, giving them more transparent financial data. In fact, under FVA all gains and losses are recognized immediately in the financial statements instead of being allocated over the entire life of the asset or liability and, consequently, accounting reports present a more faithful view of the current operations of a company.

A number of papers have also investigated FVA in normal economic conditions and some empirical evidence exists concerning the increase in value relevance that FVA provides to users of financial statements in comparison to HCA (Barth *et al.*, 2001, Barth, 2004; SEC, 2008). From the literature analysis, it first emerges - as noted by Plantin *et al.* (2008a) - that the use of market prices in accounting reports is beneficial to investors and authorities because it transmits more relevant information on the firm's current risk than Historical Cost does. From this perspective, proponents of Fair Value, including principal members of the FASB, IASB, and SEC, believe that Fair Value is the most relevant measure for financial instruments as it provides investors with more transparent, timely, and accurate information (Novoa *et al.*, 2008). At the same time, supporters of FVA argue that it conducts to more efficient markets, while HCA delays or hides the disclosure of important information and produces inefficient market decisions (Boyer, 2007). In normal economic conditions, Fair Values of assets or liabilities reflect current market conditions, improving transparency (Krumwiede, 2008) and encouraging prompt corrective actions (Barth *et al.*, 2001; Bowen *et al.*, 2009). This should induce higher market discipline and allow financial statement users to make better capital allocations.

Another important issue which arose during the debate was how FVA prevents managers' dubious practices of hiding the consequences of their actions from the sight of investors. Adopting FVA is considered an opportunity to do away with the profit-smoothing manipulation which was possible with the use of HCA (Plantin *et al.*, 2008b; Véron, 2008). The extant literature has underscored the point that, essentially, Fair Value must be correctly interpreted. Empirical studies have investigated the relationship between FVA and pro-cyclicality and some have verified that spirals of fire sales and widespread contagion during the GFC did not occur as a direct consequence of FVA.

For example, Badertscher *et al.* (2012) and Shaffer (2010) found no evidence of procyclical behavior due to FVA. They argued that the impact of unrealized Fair Value write-downs on regulatory capital is minimal and there is uncertain evidence of any subsequent selling behaviour implying procyclical effects. Specifically, Badertscher *et al.* (2012) investigated whether FVA encourages procyclicality by using a sample of bank holding companies and saw no evidence in support of this during the GFC. Moreover, the analysis conducted by Shaffer (2010) also suggested that FVA did not trigger the Financial Crisis. In line with this study, there is no evidence to claim that FVA promotes banks to sell assets at distressed prices and causes a procyclical effect, thus accelerating the decrease in investment asset prices. According to the comprehensive study by Laux and Leuz (2010), in fact, the possible downward spirals of fire sales are not the consequence of FVA, and there is little support for the belief that FVA leads to excessive write-downs of bank assets. The majority of bank holding companies' assets are not carried at Fair Value on the balance sheet and, moreover, when FVA is applied, its model differs from pure mark-to-market accounting.

#### **4. The implications of FVA during a financial crisis**

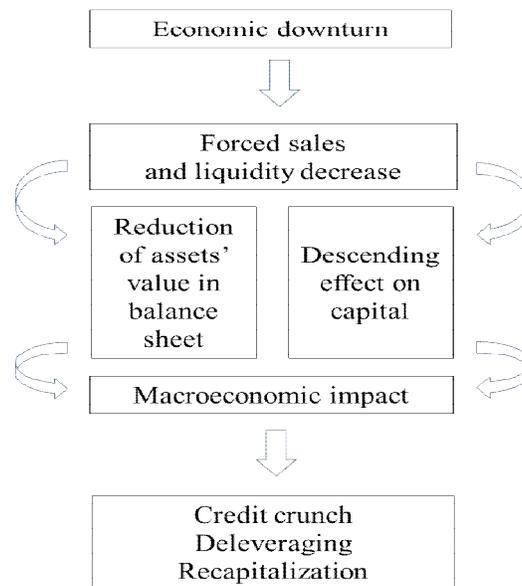
In order to obtain a balanced assessment of the arguments discussed above, it would be essential to understand how the Fair Value paradigm impacts the behavior of banks and their stakeholders. In this regard, FVA can affect public confidence and negatively impact on economic stability by increasing income volatility. Another matter of debate, concerning the impact of Fair Value on the financial system and on financial institutions, in particular, is the potential effect of FVA on the volatility of reported earnings in accounting. More precisely, the volatility of bank income could significantly increase as a result of the adoption of FVA. The first strong opposition to FVA is that it could induce instability in the markets. As most assets and liabilities are evaluated at Fair Value, the valuations of complex financial instruments come to be more and more inaccurate as markets are becoming increasingly more illiquid and the values reported on the balance sheets are showing growing volatility. The use of market values can change a critical economic cycle in a real financial shock. The IAS/IFRSs permit some deviations from market prices under certain conditions, but excessive managerial intercession in measuring Fair Values may transform into manipulation for managers' own ends (Aboody *et al.*, 2006; Bartov *et al.*, 2004).

Market price fluctuations can occur due to a great number of factors. The beginning of downward cycles and the spreading of a crisis can occur when bank management is focused on short-term objectives (i.e., short term profits). Once the decision prospects of market participants are abbreviated because of various market problems (e.g. agency problems or other market deficiencies), short term price movements influence the trades of these market participants and thus will impact on their decisions. For instance, short term sales that speculate on more future fall-downs in market prices can lead up to an unusual surplus of supply over demand of financial instruments on the market during the crisis. If the changes in market prices impact on assets to which FVA is applied, banks are forced to write-down those assets. This reduction leads to capital draining and it forces financial institutions to sell their financial instruments in the market at lower (fire sale) prices, in order to acquire more capital. These lower (fair) prices in the market and new write-downs - with difficulties in maintaining obligatory capital reserves and liquidity problems - become relevant for other banks, as well.

When the consequences of such reactions are sizable, then companies' decisions are based on the deductions drawn from others' decisions rather than on the basis of supposed fundamentals. This circumstance implies an extra endogenous cause of volatility that is merely a result of the accounting regime rather than something that reflects the underlying fundamentals. Hence, the accounting regime adopted could spread panic in the financial sector as a result of higher losses related to the selling of assets at even lower prices. How does FVA manifest procyclical effects both in booms and in busts in practice? Is it likely that FVA will further aggravate the severity of a financial crisis, either by increasing banks' leverage in a boom or by intensifying banks' deleverage in a slump?

There are principally two arguments to explain why FVA can contribute to procyclicality both in booms and in busts. The first is that FVA can cause contagion in financial markets due to the fact that financial institutions must trade assets at a lower price than the fundamental value - their underlying future cash flows or amount for which they would eventually be sold - (SEC, 2008) because the prices from these forced sales become significant to other institutions that are prescribed by FVA to mark to market their assets. The second argument is that FVA and asset write-ups let banks increase their leverage in booms (Adrian and Shin, 2008a), which, in turn, make a financial crisis stronger and the financial system more instable.

According to Sapra (2010), FVA turns into over-leveraging when reference prices increase, and into a "death spiral" when they significantly decrease. In busts, FVA sets a downward pricing spiral which outcomes in further declines of market prices. In order to neutralize the write-down caused by the application of FVA, financial institutions have been compelled to sell securities in illiquid markets even though the earlier purposes were to hold those investments to maturity. The use of mark-to-market accounting in a time of crisis may indeed induce financial institutions to trade assets and liabilities unnecessarily so that prices become reliant on market liquidity rather than on future potential earning of the financial instruments. For example, if a large supply of financial assets tends to put downward pressure on their price, then there is the potential for more asset sales, which depress asset prices and lead to weaker balance sheets. This is what happens especially during a period of economic distress in which market values decline and assets are directly affected. This results in excessive losses, thereby affecting credit expansion (see Figure 1).



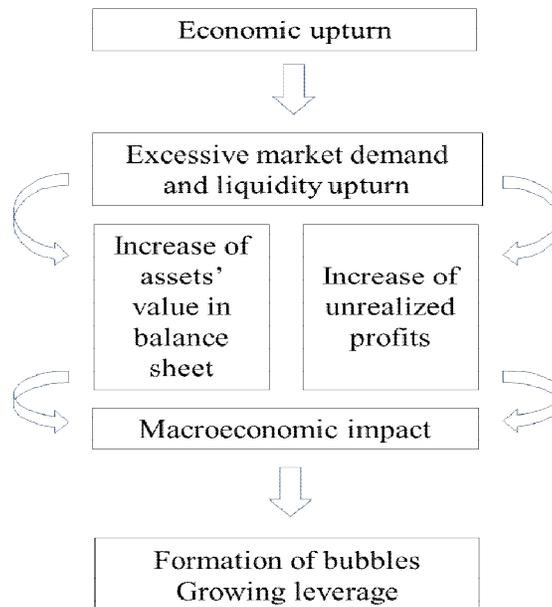
**Figure 1: The effects of Fair Value during an economic downturn**

Fair Value measurement compels banks to report losses which imply a decrease of their equity. In all circumstances, any unrealized gain (or loss) in financial instruments held by an institution turns into an increase (or decrease) in its stockholders' equity; consequently, there is an improvement (or deterioration) in its capitalization. FVA "through Profit or Loss" implicates reporting assets and liabilities on the balance sheet at Fair Value and recognizing changes in Fair Value as gains and losses in the income statement.

In the "Fair Value through Other comprehensive income" model, the revaluation of assets does not affect the profit, and the revaluation surplus fuels the equity. Subsequently, in order to preserve their solvency ratio, banks have to increase their supplementary capital and reduce their lending in depressed market conditions. Under FVA, this circumstance can trigger a downward spiral with forced sales of assets and a further decrease in their current prices, finally resulting in underestimated values in balance sheets. In other words, Fair Value can generate an increase in the procyclicality of bank lending as more accentuated decreases in bank profits and capital during downturns would support the over reduction of credit. FVA assumes that the market prices are the prime basis for measuring the value of an asset or a liability, but, during a market crisis, Fair Values inevitably fall. In the case of assets and liabilities that are not traded normally or may not have a market, Fair Values fall even though they have not lost their intrinsic value. Whether the loss is real or artificial, financial institutions need to recognize the value decrease on their income statements or report it as other comprehensive income.

It is important to underline that increasing asset prices ensure an equivalent but opposite procyclical effect. As shown in Figure 2, the mechanism of contagion is entirely the opposite in upturns. This is what happens especially during economic booms when, as asset prices continue to grow, bank assets and income valued at market price also rise, and the self-strengthening of the financial market cycle produces distorted effects in relation to the real economy.

FVA can make financial institutions appear healthier than they are and it can thus enable further asset allocation financed by debt. If we assume that high demand for the assets tends to push their price upward, the possible feedback effect is a wider demand for the assets, which in turn increases their prices still further. When a market is characterized by an economic upturn, rising financial asset prices results in overestimated asset values.



**Figure 2: The effects of Fair Value during an economic upturn**

From the perspective of financial institutions, this spiral would also be exacerbated by the effect of upward adjustments in asset valuations on bank profits and capital. Because a rise in asset values can be recognized in earnings or in equity under FVA, rising earnings and strengthening capital encourage more borrowing and the acquisition of additional assets. When market values increase, more and more credit becomes obtainable to trade financial instruments and then the upward spiral (i.e., bubble) continues.

In booms, overstatement of profits and write-ups in asset values recognized at Fair Value permit financial institutions to raise their leverage and to restrict their incentives to form reserves that may be pulled in times of crisis. The early effect of the crisis is a forced growth in leverage followed by a deleveraging phase. The deleveraging effect can be considered a coming back to previous normal conditions after a period of increased leverage. In these circumstances, financial institutions might be impelled to experience an excessive deleveraging, especially when FVA is applied extensively. However, the consequences for the financial system may be unsettling because of the procyclical nature of leverage.

In the midst of a financial crisis, the macroeconomic effects can be even worse since the major impact is a compulsory intermediation of loans on bank balance sheets, affecting capital ratios in addition to causing Fair Value losses. Financial intermediaries adjust values on their balance sheets according to asset price movements and, in so doing, they contribute to increasing leverage during booms and to reducing it during busts (Adrian and Shin, 2008b) (see Figure 1, Figure 2). Furthermore, some disadvantages concerning a more extensive application of Fair Value emerge because of its procyclical nature. The first regards the expected growth in the volatility of income. It can be contended that volatility delivers relevant information and should be reported accordingly in the financial statements. However, an undue confidence in Fair Values - especially for assets that are not actively traded in liquid markets - increases the risk that the information disclosed is artificial. In other words, the accounting values are determined by short-term oscillations in market prices and are triggered either by market deficiencies or by inadequate valuation methods. The second drawback concerns the banks' role in smoothing intertemporal financial shocks. FVA involves more positive results during good times when asset prices are increasing. This situation occurs particularly when market participants have an excessively optimistic valuation of risks during upward, which is reflected in a short-term specification of expected cash flows.

At this point, it is important to make a distinction between volatility of prices that merely mirrors the instability of the underlying fundamentals from volatility that cannot be justified by these fundamentals (i.e. "artificial" volatility). The nature of the volatility is "artificial" in the sense that it is determined by short-term "artificial" fluctuations in financial market valuations in addition to the fundamental volatility driven by oscillations in the riskiness of the financial institution's long term cash flows. Fair Value measurements are probably biased because the estimates within a financial bubble are higher than the intrinsic values, even inducing too much credit growth.

On the contrary, when the bubble bursts, valuations may be lower than the real values of the assets, thereby speeding up the liquidity crunch. In both cases of abnormal market conditions, Fair Value of financial assets and liabilities is not always “fair”.

### **5. The impact of FVA on banks' financial statements and regulatory capital**

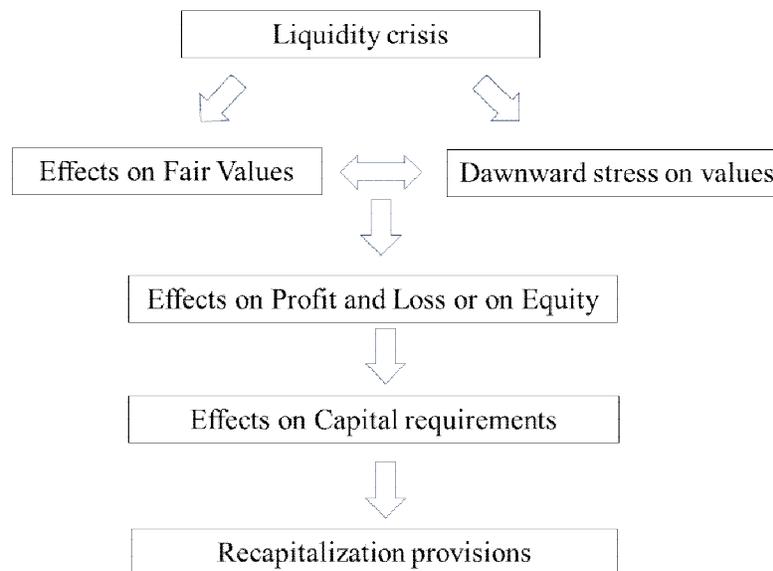
Significant concerns come to light regarding the procyclical effects that FVA could have on bank balance sheets and on the financial system at large (SEC, 2008). Moreover, FVA induces pro-cyclicality because it adds unrealized gains to reported earnings during an upward period, consequently creating a subsequent fall in earnings during a downward period (Barth et al., 1995; Laux and Leuz, 2009). In the latter case, financial institutions may be forced to deleverage and to sell further financial instruments at distressed prices, thus provoking a severe lessening of their capital ratios. As a result, since most assets and liabilities are estimated at Fair Value, even some values reported on the balance sheet and recognized earnings are also subjected to increasing volatility; this then deforms stakeholders' outlook on financial performance and stability (Magnan, 2009).

Furthermore, the enforced sales and the high volatility reduce investors' confidence in market prices even more, causing additional market illiquidity, much more financial instability, price drops, and reduced value of firm assets. Obviously, financial brokers are inclined to act cyclically, taking more risks when the economic market is trending upwards and opting for security in an economic downturn, but procyclicality is a more general issue. By assigning too much relevance to markets, FVA would thus be culpable of emphasizing both booms and busts. On this subject, observable market prices do not always give the best possible indication of value because the application of FVA magnifies the seeming healthiness of bank balance sheets at the top of the cycle and lessens it by an equal extent at the bottom. Therefore, Fair Value is believed to enhance relevance but reduce reliability (Dietrich *et al.*, 2001; Palea, 2014) distorting investors' views of financial performance and stability (Magnan, 2009) in a distressed period. Concerning the relevance of FVA and its impacts on bank balance sheets and capital requirements, it is possible to see a significant trade-off that occurs when banks are forced to write down the value of financial instruments as losses are incurred.

On the one hand, marking assets and liabilities to market prices can technically intensify downward spirals and contagion during a financial crisis. On the other hand, a timely recognition of losses encourages management to take prompt corrective actions and to confine risky lending, finally reducing the severity of a financial crisis (Barth et al., 2001). Hence, these actions could be taken earlier, preventing management from assuming a passive approach and simply waiting until the distress period has ended. From a financial stability perspective, the prompt recognition of losses under FVA is welcomed by institutions, investors, regulators, and stakeholders because it allows them to quickly detect financial risks and to become well aware of them.

In other words, under FVA the unexpected downward revision in credit quality would be instantly turned into Profit and Loss on the income statement or into equity under Other Comprehensive Income. When the illiquidity of certain financial instruments intensifies, financial institutions increasingly turn to model-based valuations and then, FVA poses reliability challenges. Especially under stressed liquidity conditions, the valuation of financial instruments is based on a wider use of unobservable inputs, which increases uncertainty regarding valuation issues among financial institutions, supervisors, and investors. In particular, the huge increase of recapitalizations is related to the use of FVA since the relationship between liquidity and valuation rules impacts directly on Profit and Loss or on equity and then on the capital as displayed in the following diagram (Figure 4.3). In fact, the most usually advocated and rightly probable mechanism through which FVA could influence a financial crisis regards the relationship between accounting rules and bank capital regulation (Strampelli, 2011).

In this respect, the case of the 2008 Financial Crisis is remarkable as well, for it showed that a liquidity crisis might very quickly affect capital levels through the vicious loop of liquidity and its influence on capital requirements.



**Figure 3: The effects of Fair Value on capital during a liquidity crisis**

The link between the prudential requirements for equity capital and the FVA can be defined as procyclical. Financial institutions must sell financial instruments to maintain their regulatory capital, but in doing so, they reinforce the downward trend of the markets. For example, if a bank writes down its assets in line with reduced prices and, consequently, the bank's regulatory capital decreases, the write-downs can require the bank to trade assets at fire sale prices, thus causing a downward spiral. In this regard, market participants, regulators, and Central Banks refer to the procyclicality of FVA. FVA may generate a feedback loop, whereas drops in asset values decrease regulatory capital, causing assets sales and declines in lending which, in turn, activate additional declines in asset values. Nevertheless, procyclicality is likely to arise in two ways. Firstly, banks are not able to find clients willing to finance new credit within a nearly illiquid and static market. Secondly, as market prices of financial instruments decrease banks need to sell them below their fundamental value in order to preserve the minimum capital requirements.

### **6. FVA and perspectives from a financial crisis**

The volatility of information reported in financial statements may affect relevance and reliability of disclosure for market participants, especially for investors. In particular, amplified volatility is evident in situations characterized by quickly varying economic conditions as during the 2008 Financial Crisis when many liquid financial markets became inactive ones. The volatility related to FVA may adversely impact investors' capacity to have or to revise expectations, reducing their ability to assess financial risk of bank operations at large. In these conditions, FVA communicates less relevant and reliable financial information because of measurements based on volatile market prices. When markets are illiquid, or when a momentary decline in risk tolerance directs investors to evade risky assets, FVA depicts values that do not reflect the economic and financial fundamentals of a company.

As a result, FVA is also to blame for introducing price bubbles into financial statements (Penman, 2007), leading financial institutions to react to market changes in an abnormal way (Foster and Shastri, 2010) and thus intensifying a financial crisis (Trussel and Rose, 2009). From this point of view, it is difficult to deny that the use of Fair Value causes some problems, especially in very complex economic periods where Fair Value measurement would thus be responsible for amplifying economic cycles and bringing additional volatility into financial reports. In turn, increased volatility leads to more uncertainty for investors, reducing their confidence in the market and causing further market illiquidity, falling prices, decreased value of firm assets, and financial uncertainty. The criticism aimed at FVA when it is applied to illiquid securities is based on the idea that the market process is faulty because Fair Value accentuates both booms and busts, amplifying values in banks' financial statements at the top of the cycle and decreasing them by the same measure at the bottom. This is the pro-cyclicality criticism concerning FVA within the debate focused on its role during the years of a crisis.

In this regard, some critics claimed that FVA intensified the severity of the 2008 Financial Crisis by contributing to excessive leverage in boom periods and leading to excessive write-downs in bust periods.

These arguments tend to ignore the fact that the recognition of assets and liabilities at Fair Value may reveal early warning signs of the severity of a crisis and the strength of price drop (FCAG, 2009). Based only on what happened during the GFC, it could be expected that FVA exposes problems in financial reporting faster than HCA because Fair Value measures are most highly associated with bank's exposures to interest rates and credit risks (Linsmeier, 2011). Nonetheless, regarding FVA and its information accuracy for investors, there are real information benefits in distressed markets as well. In these cases, the absence of organized and liquid exchanges for many assets and liabilities creates difficulties in making reliable Fair Value measurements. Hence, it becomes necessary to enhance transparency and to promote the clarity, consistency, and robustness of disclosures as the valuation approaches come to be critical in preserving the accuracy of information provided to stakeholders. The question is: does FVA really encourage transparency by providing relevant information to stakeholders?

Investors believe that banks exercise accounting discretion to overstate asset values and to write down their mortgage-related assets. Consequently, the resulting reduced transparency about bank solvency could represent a critical problem during a crisis in addition to the potential contagion effects from the application of FVA. Moreover, relaxing the rules and providing more accounting flexibility to limit potential complications of FVA in times of crisis allow for manipulation and can reduce the reliability of the accounting information. Fair Value would help to reduce the margin for manipulation in drawing up income in financial statements, providing a more truthful image of the real health of an entity. In this respect, another important issue which came up during the debate is how FVA prevents managers from engaging in the dubious practices of hiding the consequences of their actions from investors. FVA is considered an opportunity to do away with the profit-smoothing manipulation which is possible with the use of HCA (Plantin et al., 2008b; Véron, 2008).

In this respect, the key question is not the accounting model itself but how such accounting information is used. The analysis is based on the relevant theoretical aspects that identify the Fair Value paradigm. FVA is a useful accounting method for a wide group of users in their decision-making and it represents a relevant source of information for the assessment of financial position and performance since it refers to the current market situation. On the balance sheet, FVA simply records market prices suffering from the economic downturn because it just portrays reality. This means that Fair Value is a measurement model that produces negative effects only for those entities which suffer from real economic troubles. FVA only displays real economic conditions and it highlights those entities which do not display a healthy financial situation (Khan, 2010).

It is likely that FVA feedback effects can contribute considerably to market illiquidity. However, there is absolutely no doubt that a credit crunch is not triggered by accounting but is caused by firms, investors, and managers making bad financial decisions and, in some cases, committing fraud. The strictness of market illiquidity during a credit crunch and any perceived negative feedback effects are much more reasonably explained by financial institutions' risky subprime and their need to increase regulatory capital, rather than by ongoing high ambiguity and information asymmetry concerning distressed circumstances. Standard setters have contended that the use of FVA would go a long way towards decreasing the information asymmetry but it is not obvious whether eliminating information asymmetry via FVA is desirable given that financial institutions trade the assets in illiquid and incomplete markets. In fact, one crucial concern surrounding the debate on FVA for illiquid assets is how it injects artificial volatility into prices. One explanation for this could be that the fundamentals themselves are volatile and the transaction prices correctly reflect this fundamental volatility so that the behavior of financial institutions is affected by imperfections in the markets where their assets are traded. From a financial reporting perspective, we argue that accounting may have failed in adequately capturing uncertainty and assessing risks, thus potentially contributing to misguided decisions by investors, boards and executives.

## **7. Concluding remarks**

During the crisis period, academic and non-academic efforts concentrated on theoretical and empirical research concerning the role played by FVA in propagating a financial turmoil. The conclusions diverged and the findings of prior studies highlight critical issues that need further consideration. For some authors it is obvious that FVA induces procyclicality in financial markets.

The opposite opinion is that FVA does not play this significant role, because bad credit grant decisions and weak risk management seem to be the cause of a financial crisis in practice (Power, 2009). In fact, despite some acknowledged weaknesses, FVA still receives wide support from Standard Setters, accounting professionals, and financial institutions (IMF, 2008; Ryan, 2008; SEC, 2008) and the overall consensus is that the procyclical features of FVA cannot be considered the main cause of the instability of a financial system. Although Fair Value has come under scrutiny and was blamed, the main critical challenge does not lie in the Accounting Standards, but rather it consists in the fact that companies often do not completely disclose information. Financial reporting is not always prepared specifically for delivering the needed information to investors and third parties (e.g. analysts, investors, Standard Setters) and auditors may be responsible for encouraging and allowing such behavior on the part of the preparers (Sikka, 2009). The evidence is that an extensive application of Fair Value could excessively increase the volatility of bank balance sheets and could reduce their capability to respond to distressed economic conditions. We can also appreciate how FVA affects bank regulatory capital and how the use of FVA implies that any liquidity or general financial distress directly impacts on the level of prudential capital requirements in the banking sector. Based on our analysis and on the empirical evidence in the literature, some general observations emerge from the study.

Although the application of FVA may introduce undesirable volatility and procyclicality, it can be considered a faithful measurement as it provides a portrait of a bank's financial situation as correctly as possible. Therefore, the general conclusion in normal times - when markets are liquid and efficient - is that FVA is sufficiently reliable and relevant to be reflected in corporate valuations and it is considered beneficial to users in their decision-making within efficiently operating markets. If FVA refers to current market value, it provides more timely and transparent information to investors for their assessment of the financial position and performance of entities. FVA simply captures and reports the changes in the market prices; and, if market prices suffer from an economic downturn, FVA portrays the reality, encouraging prompt corrective actions. The challenge for Standard Setters is to find a suitable trade-off between the possible contagion consequences from applying FVA and stakeholders' requests for early information about losses. In this regard, the preparers of financial reports are responsible for delivering the essential information to investors to permit them to make decisions. Market speculation on upcoming price trends is an intrinsic characteristic of a market economy, along with the first signals of market turmoil and drops in asset prices. Financial reporting does not own any device for blocking market participants' behaviour (Beatty, 2007) and in this context; FVA plays no role in a financial crisis. In this respect, no accounting measurement model is protected from market price declines. In the event of a potential abandon of Fair Value measurement and a return to Historical Cost, an entity has to recognize impairment losses if the carried amounts of assets exceed their recoverable amounts in any case. Consequently, banks and other financial institutions may be forced to sell the assets to respect capital requirements under HCA, also.

Another important aspect suggested by the extant literature is that a serious financial crisis is not caused by a single concerned determinant, but it implies the failure of the entire financial system to estimate the real risk connected to the fast growth of structured risks mortgages. From the literature analysis it is possible to conclude that FVA plays little or no role in a financial crisis and it cannot be considered the cause, but only a messenger of it. FVA provides useful information during stable market conditions, but its usefulness may become uncertain during financial market turmoil. This conclusion is in contrast to the view proposed by a number of critics of Fair Value but it is consistent with other scholarly analyses which assert that FVA did not exacerbate the GFC (Ryan, 2008; Shaffer, 2010; Laux and Leuz, 2010). However, our suggestions should be interpreted carefully because more research is needed to understand the real effects of FVA in booms and busts. The significant issue is that the prerequisite of Fair Value measurement changes during a financial crisis as an active trading market does not exist. FVA loses many of its attractive properties when prices from active markets are no longer available and models have to be used, instead. Despite some of the disadvantages mentioned above, Fair Value remains the best available accounting model for reporting certain items on financial statements and it is surely possible that it and the conditions of its implementation could be further improved. We believe that it remains basically unproven that FVA worsens a financial crisis, but it is certainly true and possible that Fair Value rules and their implementation could be further enhanced. However, our conclusions should not be interpreted as supporting an extension of FVA but as guiding efforts to reform some of its rules. We conclude our study with some proposals for future research. Based on existing empirical evidence, it is difficult to assess the role of FVA in the GFC.

We require more work on the question of whether market prices significantly diverge from fundamental values during a crisis and we need more evidence on the impact of FVA above and beyond the procyclicality of asset values and bank lending. Thus, a possible research agenda could be proposed as follows:

- There is the need for a more detailed analysis of the effects of Fair Value application within a financial crisis in order to understand how the accounting implications should be managed during a turmoil period;
- A further and more in-depth examination of specific accounting characteristics of Fair Value appears to be of interest for research and professional purposes since Fair Value provides more transparent information to investors and it requires firms to recognize real troubles earlier, making it possible for them to take measures and provide solutions. A knowledge of these issues would also help Standard Setters to devise improved accounting regulation;
- Defending the use of Fair Value does not mean that this measurement is a perfect one but additional efforts are needed to accurately determine a series of amendments that will need to be realized in the future;
- Because the effects of FVA application during a financial crisis have been undertested empirically, future investigations can be focused on more empirical analyses which have theoretical as well as practical relevance.

This paper can be of great importance for both researchers and practitioners interested in analyzing the relationship between FVA and a financial crisis. In particular, this study suggests essential insights for additional research through a critical discussion of whether FVA induces a procyclical behaviour in the financial system. Within the context of the crisis, our paper adds to prior research on FVA (Laux and Leuz, 2010; Sapra, 2010; Barth and Landsman, 2010; Badertscher et al., 2010), auditing (Sikka, 2009), accounting research (Arnold, 2009) and regulations (Humphrey et al., 2009). The paper does not allude to the debate surrounding FVA only, but extends the analysis of the crisis to issues such as reliability and transparency. Most prior papers published on the financial crisis often polarized the debate on Fair Value. We put forward the view that arguments against Fair Value automatically translate into arguments for HCA and we argue that the use of Fair Value is neither responsible for the Financial crisis non entirely innocent (Laux and Leuz, 2009). Accounting is merely an uninvolved messenger (e.g. Badertscher et al., 2012; Véron, 2008; SEC, 2008), an innocent bystander (Magnan & Markarian, 2011), a mere recorder of events, and the stability of financial markets rests on bankers and regulators, not accountants.

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