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FAIR VALUE ACCOUNTING

Key Issues Arising from the Financial Crisis

Elisa Menicucci

Palgrave Macmillan Studies in Banking and Financial Institutions

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DOI: 10.1057/9781137448262000i

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Fair Value Accounting: Key Issues Arising from the Financial Crisis

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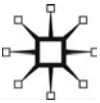
DOI: 10.1057/9781137448262000l



Softcover reprint of the hardcover 1st edition 2015 978-1-137-44825-5

First published 2015 by
PALGRAVE MACMILLAN

Palgrave Macmillan in the UK is an imprint of Macmillan Publishers Limited, registered in England, company number 785998, of Houndmills, Basingstoke, Hampshire, RG21 6XS.

Palgrave Macmillan in the US is a division of St Martin's Press LLC, 175 Fifth Avenue, New York, NY 10010.

Palgrave Macmillan is the global academic imprint of the above companies and has companies and representatives throughout the world.

ISBN: 978–1–137–44826–2 PDF
ISBN: 978-1-349-49638-9

A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

www.palgrave.com/pivot

DOI: 10.1057/9781137448262

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Preface

The global financial crisis (GFC) of 2008 has turned attention to the role of financial reporting in periods of economic downturn. In analyzing this crisis, many commentators attribute blame to fair value accounting (FVA), especially because of pro-cyclical effects it could introduce in banks' financial statements.

This book discusses how FVA affects financial reporting during a financial crisis, in order to highlight the main issues on which FVA is likely to have a significant effect. An analysis of the theoretical and empirical foundations of FVA suggests some observations about its potential role in a financial turmoil. It has been during a crisis that the pro-cyclical impact of FVA on banks' financial statements and, more specifically, on the valuation of financial instruments in illiquid markets, came to the fore. FVA has been subject to severe criticism during the financial crisis despite its perceived merits. This book explains these criticisms, indicating where they are correct and where they are misplaced or overstated. This book also summarizes the divergent views of parties in a major policy debate involving, among others, banking and accounting regulators around the world on the pros and cons of FVA.

The first part of this book briefly introduces the key issues of FVA and discusses the controversial topic of trade-off with historical cost accounting (HCA). Then the book reviews the application of FVA, the implications of its features, and the impact of these on banks' financial statements, with particular emphasis on the merits and the risks underlying FVA during financial distress. As a result,

DOI: 10.1057/10.1057/9781137448262.0002

we discuss some implementation problems (measurement and valuation challenges) that arise from the use of FVA in financial reporting, and we conclude this analysis by explaining in more detail how FVA can cause very significant effects on balance sheet items during a financial crisis and a credit crunch.

The second part of this book deals with the empirical evidence about the role that FVA may have played in times of financial stress in the banking sector. The book presents an investigation of how FVA affects volatility in earnings and regulatory capital of banks and whether any incremental volatility is reflected in bank share prices.

DOI: 10.1057/10.1057/9781137448262.00020001

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Financial Crisis and Fair Value Accounting (FVA)

Abstract: *The global financial crisis (GFC) has drawn attention to the role of financial reporting and to the implications for accounting in times of financial downturn. Many critics attribute blame to the fair value measurement approach, especially for reporting financial instruments in the balance sheets of financial institutions. The focus of the intense debate on fair value accounting (FVA) is whether it is or is not the cause of the financial crisis and whether its pro-cyclical effects towards the economy have played an active role in the financial crisis. The application of FVA would have caused a pro-cyclical consequence on firm's balance sheet and on profitability, intensifying downturns and decreasing financial stability during the financial crisis.*

Menicucci, Elisa. *Fair Value Accounting: Key Issues Arising from the Financial Crisis.* Basingstoke: Palgrave Macmillan, 2015. DOI: 10.1057/9781137448262.0003.

1.1 Introduction

Historically, there have been many arguments in the area of corporate financial reporting, and critics judged especially its performance in providing information to value firms. Financial reporting is of great importance to investors and to other financial market participants in allocating resources. The confidence of all these users (e.g., stakeholders) in transparency and reliability of financial reporting is critical to global financial stability and economic growth. In fact, financial reporting plays a central role in the financial system by trying to deliver fair, transparent and relevant information about the economic performance and the state of businesses.[1]

In particular, the objective of financial reporting is to provide information that is useful to present and potential investors and creditors in making investments and credit decisions. As is well known, financial reporting achieves two important functions in market-based economies in this regard. First, financial reports reduce information asymmetry (Bischof et al., 2010) and permit capital providers to value firms, thereby ensuring the transparency necessary for capital markets to operate efficiently (the evaluation role of accounting information). Second, financial reports allow external capital suppliers to display the performance of management (the stewardship role of accounting information).[2]

Effective financial reporting depends on high quality accounting standards as well as their reliable and faithful application, independent audit and rigorous enforcement. Accounting standards try to attain a consistent and significant assessment of the financial condition of a firm, and the entire accounting profession is responsible for providing the information needed to stakeholders to decide correctly about their investments. Of course, accounting standard setters have always strained to fulfil these goals, and they continuously try to keep standards up to date with the ever-developing markets to encourage the diffusion of high quality information.

The global financial crisis of 2008 (GFC) has drawn attention to the role of financial reporting and to the significant implications for accounting in periods of financial downturn (Pinnuck, 2012), both for practice and for the research community. This financial crisis of unusual size and negative consequences represents a real concern among academics, regulators, and standard setters, and more generally, in societies all over the world. In the areas of financial reporting, auditing and management accounting, the financial crisis raised significant concerns based

DOI: 10.1057/9781137448262.0003

on several problems and failures. More than that, in the academic and research community, the financial crisis has also highlighted issues that require serious research attention.

In analyzing the GFC, in fact, many critics attribute blame to financial reporting, especially to the fair value measurement approach for reporting financial instruments in the balance sheets of financial institutions. Thus, fair value accounting (further also FVA) is already being fiercely debated, involving not only national accounting regulators but also the ever more concerned International Accounting Standards Board (IASB). The use of FVA has received a growing attention rarely perceived in the history of accounting practice, and one of the driving forces is the belief (endorsed by some) that FVA originated and intensified the 2007 credit crisis (then turned up in the GFC of 2008).

In effect, in the long series of financial crises, the most recent one is the first of exceptional magnitude and large consequences in which the accounting systems in force have encompassed a fair value approach on a worldwide scale. The extent of this recent crisis requires a severe analysis to determine whether the introduction of the new accounting framework just corresponds with the crisis or is a cause of it. This makes the study of FVA extremely relevant, and the use of it has gained much more impulse and traction.

The application of FVA may have a number of different impacts. On one hand, market price changes affect financial statement faster, thus adding to volatility. On the other hand, through the quick reporting and disclosure of risks, FVA helps to increase transparency. The last is a critical matter actually because greater transparency is surely a constant key objective pursued by regulators and policymakers since the beginning of the financial crisis.

This book analyses some of the particular links that can be drawn between FVA and the financial crisis. FVA is neither guilty for the crisis, nor it is merely a measurement system that reports asset values without having economic effects of its own. In this work, we attempt to make sense of the current fair value debate, and we discuss whether many of the debated arguments support further scrutiny. After briefly introducing the concept of fair value into the background of financial reporting at the international level, our investigation focuses on the origin of the relationship between FVA and the financial crisis.

Most importantly, we clarify some of the underlying arguments, merits and challenges posed by the fair value approach, and we examine

DOI: 10.1057/9781137448262.0003

also what the fair value model attempts to achieve. This insight is helpful to better appreciate some of the issues discussed in the debate on the role played by FVA within the financial crisis. To that end, this book intends to increase awareness of the effects of the application of FVA during a financial crisis and their impacts on financial stability in such a context.

1.2 Background information about the financial crisis

The end of 2008 and the beginning of 2009 were characterized by a historical event: the international economy was affected by a severe crisis, which was amplified by a dangerous collapse of developed financial markets. The United States was the epicenter of the global turmoil, which highlighted a number of challenges for central bankers, supervisors and global regulators (Allen and Faff, 2012).

At first, the crisis revealed very traditional features. Financial institutions had made loans using poor quality standards, and then these bad loans were recycled in a very complex and extended chain of securitization (Martin, 2009) whose intermediaries were not able, or sometimes not willing, to evaluate the underlying risks (Matherat, 2008).

This credit crisis appeared in 2007 and caused the collapse or sale of many prestigious financial institutions[3] and the loss of jobs for many financial managers. The failure of these financial institutions and the following shock of the financial sector qualified this crisis as a remarkable point among modern crises and indisputably as the most strong one with negative consequences for the real economy.

The 2008 financial crisis was also marked by extreme volatility in financial markets as well as by the significant fall of prices for mortgage related securities. Thus, markets for these financial instruments became illiquid, and the result was banks marking down their assets by significant amounts. Because of this, distress challenged banks' capital requirements, and the amounts they were allowed to lend were reduced by billions of dollars.

Critics argue that those amounts could have aided the economy further, but instead, the financial institutions sold the assets for cash, which led to the extension of assets getting marked down, and the economic downward spiral became a certainly never-ending cycle.

From a financial stability viewpoint, it is interesting to underline that a specific trouble of the United States extended to the rest of the world

DOI: 10.1057/9781137448262.0003

through financial markets. The financial collapse due to the bankruptcy of the mortgage market (produced by the subprime mortgage market shock in the United States in August 2007) led to the alarming downturn of global economic growth (a decrease of 6.3% in the last trimester of 2008, as compared to growth of 4.0% in the previous year). The financial distress spread rapidly all over the world thanks to the globalization of financial systems and became the first global economic contraction since the Second World War.

Such a financial crisis developed from the subprime crisis into the credit crisis, then into a financial crisis and finally into a global financial crisis. This sequence produced unprecedented circumstances which gathered cumulatively over the last decade, undermining the trust in free markets. In any case, the uniqueness of the crisis in question has lead to an attempt to detect its causes and solutions to deal with it. In order to find explanations at the moment, it is essential to explore the causes and not the signs of the crisis because more systematic and global measures are needed than those applied thus far.

1.3 Features of the financial crisis

The GFC was activated by a severe drop in house prices, and it is frequently attributed also to credit bubbles in the United States, but such a complex situation has shown a multidimensional feature. A bursting housing bubble, it seems, caused the crisis, principally, but not exclusively, in the United States. In any case, the collapsing housing bubble cannot be considered the single event which has generated the financial crisis.

We can mention a set of factors contributing to the crisis, such as, for example, the booming house-buying activity, the easy accessibility of loans in developed countries, the complexity of the financial instruments related to mortgage activity, and market agents' behaviour – overly optimistic in boom periods and too pessimistic during bursts. To this list of macro and micro causes leading up to the unprecedented extent of the crisis can be added the undue leverage and excessive managers' risk-taking attitude, which was incorrectly measured by rating agencies.

An important aspect underlined by specialized literature is the fact that such a severe crisis is not and cannot be caused by a single event, but it implies the failure of the whole financial system in assessing the

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risks linked to the fast growth of structured risks of mortgages and the exceptional lack of market liquidity (Ryan, 2008a).

From a very general point of view, the principal issue that reinforces most discussions on the origins of the GFC is a real estate bubble and then a crash.[4] In the years immediately preceding the GFC, there was a real estate bubble that by 2006, due to both the resistance in the lending system and the irrationally valuation of real estate and subprime securities, forced the real estate process to unsustainably high levels.

Over the course of several years, banks built up large holdings of subprime mortgages and subprime securities (Shiller, 2008). These securities were overvalued because rating agencies and banks underestimated the level of future subprime defaults. It is widely agreed that this may have occurred because both households and banks acted irrationally in believing housing process would grow (Barberis, 2010). When house prices decreased, the bubble burst and carried out widespread defaults on subprime loans, which dropped the value of banks' subprime-linked holdings and triggered an abnormal cycle in the banking system (Shiller, 2008; Martin, 2009; Gorton, 2009).

All of these factors demonstrated the inadequate conduct of financial institutions, especially of those lacking in sufficient reserves to withstand the shocks without restricting lending.[5] Too many were overexposed because of their careless purchase of 'toxic assets', as well as their imprudent and excessively speculative behavior, light conformity with regulations on risk constraints (i.e., required reserve ratios) and disposal of huge amounts of cash as bonus payments.

These circumstances led to immense mortgage defaults and exposed enormous levels of the toxic assets, especially as a result of largely overvalued complex composites of unreliable mortgages, credit card and store loans, whose growth has been encouraged by confidence in still-increasing house prices. The outcome was enormous losses by financial institutions in many countries, including the United States and a number of European countries, as financial liberalization had enabled the international buying and selling of these toxic assets.

Moreover, in the years preceding the financial crisis, institutions built up large exposures to risky subprime and structured credit instruments. Subsequently, during the crisis years, prices for mortgage-related securities reduced considerably, and markets for them became illiquid. Banks had to recognize a decrease in the value of some of their financial assets, usually connected to subprime loans, and then fulfilled huge

DOI: 10.1057/9781137448262.0003

accounting write-downs because of the losses that occurred on exposures. Consequently, banks marked down their assets by considerable amounts and sold them to realize cash. Hence, during the crisis, the economic downturn became a vicious and seemingly never-ending cycle.

To enhance their financial position and to meet regulatory capital requirements, these institutions began to sell securities or shut down positions on some financial instruments in markets that were progressively illiquid during the crisis. These forced sales overstated and made the market still more volatile and illiquid, thus bringing additional depreciations and resulting in further price drops. Moreover, the sale of assets during the crisis depressed their market value even more. With ever-falling market prices, financial instruments were sold below their fundamental value[6] (SEC, 2008) in order to conform to regulatory capital requirements, causing market prices to fall even more. Further falling market prices resulted in additional devaluations of financial instruments contributing to the downward ('fire sale') spiral.

Because of the dropping prices, and therefore the reducing value of firm's financial instruments in combination with regulatory capital requirements, companies may have been compelled to sell securities in illiquid markets. The drop in the price of many categories of financial instruments led financial institutions to adjust to lower levels the asset values reported on their balance sheets, thus reducing shareholders' equity and failing their capitalization ratios. In order to uphold their solvency ratios at the obligatory level, banks had to choose from the following solutions: to sell part of their assets, to raise new capital under dejected valuation conditions or to reduce lending with the subsequent negative effects on the entire financial system.

Losses, exposures and distress caused overleveraged financial institutions to limit lending to each other and to non-financial institutions, creating further declines in asset prices. A vicious spiral of deleveraging and capital restricting began, creating a self-strengthening downward cycle, more losses, more fragility and so on in financial and other markets.

As mentioned above, financial institutions accumulated huge exposures to risky subprime and structured credit instruments, and then during the crisis years of 2007 and 2008, they marked large accounting write-downs because of the losses that arose on these exposures. Hence, from an accounting measurement viewpoint, the key aspect relevant to financial reporting was the difficulty of valuing subprime-related securities because the markets for these securities declined during the crisis.

DOI: 10.1057/9781137448262.0003

1.3.1 Features of the financial crisis and FVA

The GFC is the outcome of the convergence of numerous factors, and apart from the features stated below, the introduction of FVA was another distinctive aspect often mentioned as a key determinant of the financial crisis. Since the 2008 market disorder, fair value and its application in financial reporting during the crisis have been an issue of extensive debate. The financial crisis determined the rapid expansion of global financial bankruptcy upon the world and was the first crisis of the accounting term 'fair value' under the light of a number of standards which demand to the companies to evaluate at the market value much of the assets they possess.

There are a lot of views regarding the key role played by accounting, especially FVA, in causing or at least in worsening the crisis. FVA and its adverse impact were criticised during the financial crisis because as asset prices dropped, these losses had to be reported by banks, thus decreasing their asset strength and overall creditworthiness. That made it difficult to borrow, so banks had to fire sell assets, which ended in interbank liquidity gridlock and collapse. In this respect, most said FVA was one factor – among many others – that caused the financial crisis.

At the extreme root of this view point is the opinion held by some accounting researchers that FVA was the main cause of the disruption of financial system in 2008. Some critics argue that FVA instigated the financial crisis because financial instruments were fair valued in spite of concerns that the current market prices were not a true expression of the product's underlying cash flows or of the price at which the financial product might eventually be sold. Sales decisions based on fair value pricing in a frail market already characterized by falling prices resulted in more declines in market prices, reflecting a market illiquidity premium. In addition, falling prices can activate additional sale triggers, further contributing to downward tendency. In effect, amplified volatility – as a result of the recognition of FVA in the financial statements – led to more uncertainty for investors reducing their reliance on the market and caused further market illiquidity, falling prices, a decrease of value of firms' assets and worsening financial stability (OIC, 2008).

1.4 The debate on the role of FVA in the financial crisis

Since 2007, market disorder surrounding complex structured credit products, FVA and its application have been a topic of considerable debate in

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accounting studies. In particular, the investigation of the responsibility of FVA in the GFC has come to be a theme discussed by many who connect it directly to the financial crisis, reopening a dispute that started more than a decade ago. Therefore, with the advent of the crisis in early 2007, fair value once again has become a hot topic because the financial crisis has turned the spotlight on its application. Actually, the use of fair value is a long-debated issue, especially in past years, and its introduction is frequently mentioned as an important factor in the sequence of events which lead to the recent financial crisis.

It is unusual that an accounting regime becomes the subject of a public debate. However, the role of FVA in the financial collapse that began in the US subprime mortgage market has come under close scrutiny. The protracted duration of the 2007 financial crisis drew attention to the various weaknesses of the global financial system and also highlighted the failings of a number of previously accepted norms and accounting standards. Among these, the valuation of assets and liabilities – particularly securities held by financial institutions as investments – and their disclosure in financial statements according to the established accounting standards have been a question of constant debate.

Before the GFC, people generally trusted the implementation of the international accounting standards, considering the fair value a proper accounting measurement basis to better reflect economic reality in financial statements. Nevertheless, since the beginning of the crisis, this move to FVA has been over-discussed. Effectively, even before the 2008 financial crisis, there was a series of critical studies about the IFRS moving up, especially from the European continental doctrine.

Then, after the financial crisis began, the interest of the academic community in the consequences of FVA intensified, and the debate focused on whether or not and how the current distress in financial system could be imputed to the application of fair value rules in accounting standards. As huge losses can evidently cause problems for financial institutions, the question is whether reporting these losses under FVA creates additional problems. Would the market has responded in a different way if banks had applied a different set of accounting standards or an accounting model different from FVA?

The debate concerning the role played by this accounting regime in the financial turmoil has becoming an important matter for researchers, financial press and policymakers around the world (Paolucci and Menicucci, 2014). Despite its almost universal adoption by accounting

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standard setters, the FVA has continued to stoke up deep discussions among academics, businesspeople, regulators and investors, and it has also led to a major policy debate involving the US Congress, the European Commission, and banking and accounting regulators, among others.

In other words, the financial crisis has intensified the debate further because since the 2008 global economic and financial crisis, the fair value measurement has acquired a controversial position both within accounting regulatory committees and accounting studies. However, with the occurrence of the subprime mortgage crisis, the focus of the intense debates on FVA in the theory community, in financial sectors, and even among practitioners is whether fair value is or is not the cause of the financial crisis and whether its pro-cyclical effects towards the economy have played an active role in the financial crisis.

The assumption over whether FVA exacerbated the meltdown and enhanced market volatility was of great interest. Politicians, economists, business leaders and professional associations have expressed opinions in a matter that appears to have long-term implications for auditors, financial controllers and company directors as they carry out their respective corporate responsibilities.

The debate concerned various claims such as that FVA was to blame for 'exacerbating the credit crunch',[7] that 'mark-to-market accounting has helped to destabilize markets for illiquid assets',[8] or that FVA is in 'urgent need of revision'.[9] In the mix of elements supposed to contribute to the financial crisis, many have called for a suspension or a substantial reform of FVA because it is assumed to have affected the severity of the financial crisis (Barth and Landsman, 2010; Laux and Leuz, 2010). In analyzing the GFC, many commentators have attributed blame to financial reporting, and one of the primary issues of disagreement between practitioners, regulators and theoreticians is the use of fair value in reporting financial instruments in the balance sheets of financial institutions (American Bankers Association (ABA), 2009; Wallison, 2008; Whalen, 2008).

The early adoption of IAS 39[10] (and its corresponding FAS 133[11]) and recently the adoption of IFRS 9[12] (the replacing Standard of IAS 39), which encompasses the use of fair value for a large number of financial assets (including derivatives), has been particularly discussed. A primary element of these discussions is the opposing positions assumed by some participants against or in favor of FVA. The fair value model poses two opposing views: on one hand, it is believed that FVA contributes

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to economic distortion in the financial system; on the other hand, it is assumed that FVA gives an accurate representation of the market value of underlying assets and liabilities.

For example, the US Securities and Exchange Commission (SEC) conducted a survey into FVA's role in the 2008 financial crisis, and in its final report, it validated the application of FVA, concluding that FVA did not cause or contribute to the crisis. Nevertheless, the SEC endorsed the Financial Accounting Standard Board's (FASB) issuing additional implementation guidance for financial statements' preparers and auditors.[13] In 2009, the FASB and other standard setters delivered more guidance concerning the accounting of securities in distressed and illiquid markets, but despite these endorsements, some subjects regarding the measurement and the recognition of fair values in financial statements continue to be inconclusive.

The role of FVA in triggering the financial crisis has not been investigated widely, although FVA still obtains extensive general support from the standard setters, the accounting profession and institutions. Consequently, it remains unclear whether the supposed pro-cyclical effect of FVA could have aggravated the financial crisis.

1.4.1 Studies on FVA in the financial crisis

A vast amount of literature relates to both general implications on financial reporting and specific measurement issues of fair value, but the role of FVA in causing the financial crisis has not been researched extensively (Jaggi et al., 2010; Jarolim and Oppinger, 2012). However, the overall consensus is that not FVA but bad credit grant decisions and weak risk management are the cause of the financial crisis (among others, FSF, 2009; IMF, 2008; Ryan, 2008b; SEC, 2008).

As the existing literature review shows, fair value is a crucial issue on which the large and still developing accounting research literature expressed serious consideration (Glavan, 2010). In the last few years, the debate on the FVA, particularly in the academic literature, has been further intensified by the extensive but so far unsettled dispute over the positive and negative effects to be estimated. Academic efforts focused on empirical and theoretical studies to define the role played by FVA in spreading the credit crunch, but the conclusions differ, and there are of course divergent points of view.

Theoretical studies regarding fair value developed in the accounting research literature over the last 20 years, and they implied a vast and

DOI: 10.1057/9781137448262.0003

careful categorization of conceptual delimitations. Only recently studies have been accompanied by a sequence of empirical analyses that explore links between evaluation options, market values and other related parameters. The mentioned literature comprises a series of different investigations highlighting both positive and negative aspects. Some papers defended the concept of fair value and its application within the current financial crisis (Turner, 2008; Veron, 2008); others criticise FVA (Emerson et al., 2010) and its role in the financial crisis.

Although a lot of journals have no paper on this particular research topic, researchers approaching FVA and the financial crisis still seem highly interested. The debate surrounding fair value and the financial crisis has led researchers and regulatory institutions to form opinions about a probable pro-cyclicality of FVA. Even if not empirical, these studies can provide the necessary insight for further research and they can assess critically whether a potential for pro-cyclicality of FVA exists.

In connection with the financial crisis, many opinions seemed to accuse fair value measurements in financial statements of being one – or even the main – driver of the crisis. There are, of course, dissenting points of view. So far, there is no consensus in the conclusions drawn from the different studies. In fact, there are two opposing viewpoints in the existing literature about the influence of FVA during the financial crisis. According to fair value's opponents, there is no doubt that the application of FVA has exacerbated the financial crisis (Novoa et al., 2009). For some authors, it is obvious that FVA accelerated the financial turmoil, inducing pro-cyclicality and contributing to enforce the vicious cycle of asset fire sales during the crisis. On the contrary, fair value's proponents believe that this accounting regime doesn't play a direct role in the mentioned crisis.

The use of FVA in recognizing assets and liabilities has been subject to much criticism, perhaps as noted by the International Monetary Fund in the report on global financial stability.[14] Also, the American Bankers Association, in its letter to the SEC in September 2008, stated that the crisis in financial markets has been worsened by the implementation of FVA.[15] Similar concerns were also shared by the US Congress, which set up robust pressure on FASB to change the accounting rules.

In connection with the cited crisis, many other opinions appeared to impute fair value measurements in financial statements as one or rather the major cause of the crisis. In the search of culprits after the financial crisis, bank failures and the subprime market meltdown have been

DOI: 10.1057/9781137448262.0003

attributed to FVA, and some political and industry commentators have blamed fair value for these reasons. As stated above, many people believe that FVA was one of the most important causes of the global financial crisis, especially exacerbating its severity for financial institutions in the United States and around the world. In particular, these conclusions are self-evident for most critics of FVA.

1.5 Concluding remarks

Certainly the financial crisis introduced the fall of normally liquid secondary markets, the subprime market meltdown, bank failures, descending spirals in asset prices and a contagious diffusion of shocks across the financial system. But on closer inspection, it is unclear whether FVA simply communicated the effects of bad decisions and unfortunate risk management or if it intensified the crisis. In any case, additional efforts are needed to accurately determine the role of FVA during the crisis period and such information would also help standard setters to devise improved accounting regulation. About this, the recurring assertion is that FVA contributes to excessive leverage in boom periods and leads to overblown write-downs in busts. One consequence which critics advance is that financial institutions are forced to sell distressed securities at fire-sale prices, reducing bank capital and guiding asset values through the bottom of the financial cycle. This can lead to a downward spiral that hurts banks and investors. The bubble's explosion can give rise to panic, and the financial system can experience distress. The fall of prices of some assets can lead to concern that asset prices will drop further, inducing a rush to sell these assets before prices decline more.

FVA is also cited 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 aggravating an existing financial crisis (Trussel and Rose, 2009). In fact, some opponents assert that FVA increases volatility and amplifies the effects of the business cycle on the net value of financial institutions also enlarging doubts about how exactly institutions could price some of their illiquid assets. The use of those values has been alleged to be pro-cyclical, feeding unlikely overpricing in boom times and then exacerbating downward forces when prices decline in illiquid markets.

DOI: 10.1057/9781137448262.0003

It is difficult to reject the view that the use of fair value implies some problems, mainly in very difficult periods for the market. By assigning too much importance to markets, fair value measurement would thus be guilty of magnifying economic cycles and increasing volatility in financial reports. This criticism – questioning FVA when it is applied to illiquid securities – relies on the idea that the market process is at fault because fair value stresses both booms and busts, amplifying values in banks' balance sheets at the top of the cycle and decreasing them by the same measure at the bottom.

The reason for this debate and the severe criticism of FVA during the financial crisis lies with the alleged pro-cyclical effect fair value could introduce in firms' financial statements. Pro-cyclicality implies that a firm's economic lifecycle expands larger, both in times of economic growth and economic downturn (Bout et al., 2010). Under FVA, entities are obliged or permitted to measure particular assets and liabilities at their fair values at the reporting dates and to recognize changes in fair values' gains and losses in income statements.

The use of FVA would have caused a pro-cyclical impact on firm's balance sheets and on profitability, amplifying downturns and decreasing financial stability during the financial crisis.

Despite some weaknesses, FVA still obtains extensive support from the accounting profession, standard setters and financial institutions. Many analysts reject the idea of fair value as a cause of credit's crisis in the United States because they argue that only a distorted financial system can determine a downward trend of prices by encouraging institutions to sell the assets rapidly and consequently to account at fair lower prices their assets and liabilities reported according to the fair value model.

Proponents of FVA claim that it just played the well-known role of the messenger who is now being shoot. Some argue that this is merely a case of blame because FVA only communicates the effects of a financial crisis. Anyhow, shareholders have gone even further, stating that FVA is even more necessary in today's financial context because the alternative (i.e., historical cost accounting (HCA)) reports loans at their original amounts and in doing so it is like to ignoring reality. In that sense, it is particularly critical that fair value information is accessible to investors and other users of financial statements, especially in periods of market turmoil attended by liquidity crunches.

DOI: 10.1057/9781137448262.0003

Notes

1 In a real environment, financial reporting has the possibility of playing a number of roles, both in perspective (in terms of capacity to estimate the value moment and the probability of future cash flows) and in retrospective (in terms of stewardship, contract signing capacity, employee selection, resource consumption decisions, distribution, etc.). Accounting information can be beneficial in offering needed motivations for lessening the impact of the managers' private information and in supporting the company's value development.

2 Kothari et al. (2009) define stewardship as performance measurement and control of management. Regarded generally, stewardship comprises management's performance in running a business: that is, how efficiently a firm's resources are used to produce profits (Penman, 2007).

3 Many prestigious financial institutions, such as the Bear Stearns Companies, Inc., Lehman Brothers Holdings, Inc., Merrill Lynch & Co. Inc., Citicorp Center, The Royal Bank of Scotland, Wachovia and Dexia.

4 Bubbles and crashes are usually characterized by extraordinarily huge price growth, followed by unusually large falls. See the definition of bubble given by Kindleberger (2005): 'an upward price movement over an extended range that then implodes'. See also the definition accepted by Barberis (2010): 'A bubble is an episode in which irrational thinking or a friction causes the price of an asset to rise to a level that is higher than it would be in the absence of the friction or the irrationality'.

5 Times of financial pressure have not always been followed by downturns or even by economic recessions (International Monetary Fund, 2008).

6 According to SEC (2008), 'theoretical or fundamental value' is the underlying future cash flows or amount for which a financial instrument would eventually be sold.

7 Allegation expressed by the US presidential candidate, John McCain (*The Economist*, September, 2008).

8 Allegation expressed by B. Bernanke (Reuters, Bernanke: mark-to-market accounting challenging, 10 April 2008).

9 Allegation according to a G20 Summit (G20 London Summit, 2009)

10 Statements of Financial Accounting Standards No. 133, *Accounting for Derivative Instruments and Hedging Activities*, commonly known as FAS 133.

11 International Accounting Standard IAS 39, *Financial Instruments: Recognition and Measurement*.

12 International Financial Reporting Standard IFRS 39, *Financial Instruments* (replacement of IAS 39). The International Accounting Standards Board (IASB) completed the final element of its comprehensive response to the financial crisis with the publication of IFRS 9 *Financial Instruments* in July 2014.

DOI: 10.1057/9781137448262.0003

13 Additionally, earlier in 2008, key standard setters, such as Canada's Accounting Standard Board, the FASB and the International Accounting Standard Board (IASB), introduced temporary provisions waiving some aspects of FVA for financial institutions.

14 'Since the 2007 market turmoil surrounding complex structured market products, fair value accounting and its application through the business cycle has been a topic of considerable debate' (IMF, 2008).

15 For example, in the letter to the SEC, the American Bankers Association states, 'The problems that exist in today's financial markets can be traced to many different factors. One factor that is recognized as having exacerbated these problems is FVA.' (ABA, 2008).

DOI: 10.1057/9781137448262.0003

2

Fair Value Accounting (FVA): An Overview of Key Issues

Abstract: *Most of the debates of accounting studies focus on the differences between two alternative accounting methods: the approach based on fair value (FVA) and the model based on historical cost (HCA). Both FVA and HCA are in wide use and have their supporters and critics. Proponents of FVA assert it delivers more timely and relevant market information despite the improved use of estimates and judgments, while opponents argue it provides unreliable market information that can misinform investors. Anyway, FVA is considered a good accounting model to assure more reliable financial information, but the reliability of the FVA measurement depends on the availableness of an active market. When markets are severely illiquid, as they are during a credit crunch, FVA implies significant practical difficulties for preparers of financial statements.*

Menicucci, Elisa. *Fair Value Accounting: Key Issues Arising from the Financial Crisis.* Basingstoke: Palgrave Macmillan, 2015. DOI: 10.1057/9781137448262.0004.

2.1 Introduction

The controversy about fair value (FVA) belongs to a wider one of the risks and opportunities that the 2008 financial crisis brought for accounting. From this period, much current research has studied how the crisis has affected accounting in theory and practice. In this perspective, most of the debates of accounting studies focuses on the differences between two alternative approaches to accounting: the model based on the principle of FVA (often called 'mark to market accounting')[1] and the model based on the principle of historical cost (HCA). As is well known, the introduction of IAS/IFRS amended by the International Accounting Standards Board (IASB)[2] has substantially changed the accounting measurements through the FVA, while European legislation has concentrated on the HCA before IAS/IFRS adoption.

Thus, in recent years, one of the most significant public policy debates has been just the reform of accounting standards towards FVA, assuming that the Financial Accounting Standards Board (FASB) and the IASB moved forward rules that increase the use of FVA measurements. In this context, the recent financial crisis has given much attention to FVA for financial instruments, as ruled in both primary sets of accounting standards applied by listed companies around the world (i.e., the United States generally accepted accounting principles – US GAAP – and International Financial Reporting Standards – IFRS).

In particular, since the credit crunch has initiated, what is called FVA is becoming at the core of the debate. In the broad variety of argument which has been concerned with the analysis of the 2008 financial crisis, FVA was accused of being one of the most important causes of the crisis, contributing to the global meltdown. Some prominent critics even considered FVA and the connected extensive application of mark to market accounting (Gwilliam and Jackson, 2008) as the major blame for the crisis.

Now, because of the financial crisis, more than ever FVA must be properly understood. Considering the globalization of capital markets and the advent of complex financial instruments in use today, the FVA regime represents an evolving accounting system which has now permeated the global regulatory environment, and it is of greater interest for investors.

FVA was introduced officially in 1993 by FASB to make financial statements easier to compare and balance sheets more representative of real

DOI: 10.1057/9781137448262.0004

values. Nevertheless, during the years of the crisis, FVA hasn't lived up to expectations that it would increase transparency in financial reporting (Krumwiede, 2008; Laux and Leuz, 2009) in spite of its imposing purpose. Hence, FVA has received some of the worst criticism and highest attention among financial reporting matters in recent times since subsists a number of FASB and IFRS standards which order to evaluate at the market value much of the assets and liabilities reported in balance sheets. Moreover, as employed by accountants in the current credit crunch, FVA has been also considered one of the causes of both an unprecedented deterioration in asset values and an exceptional growth in instability among financial institutions.

In these conditions, some lessons should be forgotten because beyond the concept of FVA itself, it should be assumed yet the aspect of its implementation for the ensuring of a financial stability, as the Banking Supervision Committee from Euro system showed even before the first signs of crisis's appearance (ESCB, 2006). The accounting model of FVA has to be reassessed because of its potential contribution to financial instability and its pro-cyclical nature, which tends to produce asset bubbles and to worsen the effects of their bursts. The use of market values can convert an unfavourable monetary trend in a real financial turmoil, making prices more difficult to identify because of the lack of liquidity and valuations more likely to be biased by psychological factors.

2.2 Fair value in contemporary accounting standards

As with other accounting paradigms, FVA is ruled by a set of accounting standards.[3] In the past, most European countries developed their own jurisdictional 'generally accepted accounting principles' (GAAP) governing the preparation of financial statements. However, in the late 1990s and the early 2000s, a rapid move began: from using local specific accounting principles to adopting a globally accepted set of standards – i.e., International Financial Reporting Standards (IFRS).

Thus, two main sets of accounting standards are adopted in the world capital markets: in the United States, 'generally accepted standards' (US GAAP) ruled by FASB, which are applied mainly in the United States, and IFRS, ruled by the IASB, which are applied in the European Union for all listed companies and in more than 100 countries around the world. These two sets of accounting standards require systematic application of

DOI: 10.1057/9781137448262.0004

FVA for measuring a lot of assets and liabilities of companies, especially financial instruments. However, fair value is neither a new concept nor a novel practice.

The concept of fair value has existed for at least 200 years in the Anglo-Saxon legal environment, whereas many early economists also supposed that the amount a firm would realize by selling an asset in the market (so called exit value) was the only proper basis to redact financial statements.

In the late 19th and early 20th centuries, it was common for firms to use the term 'fair value' to mean a price at which both buyer and seller received an appropriate advantage from a transaction – i.e., a price that was fair to both parties. Nevertheless, by the 1930s, valuation practices led to the spread of further formal accounting standards. Historical cost became the main practice for reporting most assets and liabilities even if fair value continued to be an appealing concept for many accounting academics. Then, the savings and loans crisis in the United States during the 1980s was the critical event that caused the shift towards the fair value paradigm, showing the deficiencies of accounting based on the historical cost.

The move towards FVA followed a regulatory action made by SEC to develop a standard on accounting for recognition certain debt securities at their market value. This initiative signified a key evolution in accounting because fair value measurement was rapidly celebrated as the most appropriate accounting model for financial instruments, even though at the beginning, it was introduced as a special regulation only for certain securities. Starting out as a specific remedy for the biases of the reporting model for certain items, FVA became the dominant measurement paradigm for financial instruments and, more lately, it has gradually been applied for measurement of non-financial items.

Fair value measurement has come to be prevalent for financial reporting over the last 20 years when the potential area of application has made the principle of fair value an important accounting issue. In these years, one of the affirmed long-term objectives of the accounting regulators has been to recognize all financial assets and liabilities in financial statements at fair value rather than at historical cost. Since the mid-1980s, the FASB and the IASB have systematically replaced market-based measurements for cost-based measurements. In particular, the introduction of the FVA framework consisted of extensively using the market price of financial instruments in financial statements instead of their acquisition cost.

DOI: 10.1057/9781137448262.0004

Since the 1970s, fair value has been acquiring validity within accounting standards because its application began to be released in many jurisdictions. Initially, the essential notion of fair value was adopted by FASB in FAS 115.[4] In this regard, further on the FASB issued a significant and debated new standard, namely FAS 157.[5] In truth, before FAS 157, neither a single definition for fair value nor comprehensive guidance for applying the fair value concept existed. The new accounting standard FAS 157 was established to increase consistency and comparability in fair value measurement for conforming it to a standard definition and methodology. The standard offers a single definition of fair value and a framework for measuring it in order to provide accountants and preparers with more complete guidance to support companies in estimating FVAs and to increase transparency by using disclosures about FVA measurements. FAS 157 defines fair value as an exit price that can be observed in an orderly market[6] (i.e., 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).

Also, the adoption of IAS/IFRS – which was considered one of the most remarkable accounting regulatory changes in accounting history – radically reformed the importance of the fair value concept in accounting. Just prior to the 2008 financial crisis, fair value measurement acquired an extended importance in the financial accounting policy because the concept of fair value for accounting became a guiding principle and a meta-rule (Power, 2010; Walton, 2004) within an accounting reform process led by specific participants of FASB and IASB. For its proponents, fair value is more than just a technical measurement regime, and it represents a global change process.

For example, fair value was first mentioned in IAS 1977, in the context of IAS 17 'Accounting for Leases'.[7] Several years later, another important standard required the use of FVA: IAS 39 'Financial Instruments: Recognition and Measurement' issued by the IASC (at present IASB). This standard received several criticisms, especially by the banking industry, and in this regard, the main argument against fair value concerns the increase of volatility in financial statements. Despite the criticisms against it, the shift towards a more widespread application of fair value advanced. In the early 2000s, the IASB began to sustain the use of FVA in financial reporting and to reflect it in a number of its accounting rules.

To inspect the concept of fair value, it is beneficial to look back, especially a few years prior to the crisis. In July 2002 (with effective date 1

DOI: 10.1057/9781137448262.0004

January 2005) the European Parliament adopted the accounting standards IAS/IFRS for quoted companies in Europe, orienting European accounting towards the new principle of fair value.[8] According to this accounting paradigm, the determination of the value of each asset is based on the present value of the expected profits that the asset can produce in the future.

Within the last 20 years, the concept of fair value measurement has been demanded in an increasing number of IFRS standards (Dvorakova, 2011). Although fair value played a role for many years, accounting standards that need or allow FVA have increased significantly in recent years.

In 2003, the IASB amended IAS 32 Financial Instruments: Disclosure and Presentation and IAS 39 Financial Instruments: Recognition and Measurement, and released the revised versions, providing companies with the binding option to apply fair value. These early examples show the shift towards the fair value model and the beginning of the trend of a large-scale adoption of it in ordinary accounting practices. These changes were set out mainly in IAS 39 and recently in the replacing standard, IFRS 9 Financial Instruments. Even though the reform of IAS 39 began only in the first half of 2009, the classification and measurement requirements reformed were issued by the IASB in November 2009 as IFRS 9.

IAS 39 represents a relevant switch in accounting regulation from HCA to FVA, and moreover, the classification and measurement reformed requirements issued by the IASB almost coincide with the beginning of the 2008 financial crisis, so the practical applicability of FVA has been verified by market conditions during the credit crunch.

Fair value under the existing IAS/IFRS is enclosed by a number of different accounting standards. At present, IASB standards that apply the concept of fair value consist of IAS 16 Property, Plant and Equipment, IAS 36 Impairment of Assets, IAS 37 Provisions, Contingent Liabilities and Contingent Assets, IAS 40 Investments Properties, IAS 41 Agriculture, IFRS 2 Share-based Payment, IFRS 3 Business Combinations, IFRS 7 Financial Instruments: Disclosures and IFRS 9 Financial Instruments.

Another defining standard refers to fair value as well. Recently, the IASB issued IFRS 13 'Fair Value Measurement', which establishes a unique guidance for fair value measurement where fair value is required or permitted under IFRS. The development of this standard is due to the fact that fair value measurement has not always been used consistently, and the fair value concept was discussed many years. It was also needed

DOI: 10.1057/9781137448262.0004

to combine the concept of fair value and its use in the various IFRSs and finally to unify the accounting approaches to fair value in IFRS and US GAAP through a convergence process. On the basis of FAS 157 – issued in late 2006 – followed by FAS 159 – issued in early 2007– the result of the convergence process was the draft 'Fair Value Measurement' amended by the IASB in November 2006, and then the adoption of the IFRS 13 in 2011 (with an effective date of 1 January 2013).

2.3 Theoretical foundations underlying FVA

The accounting evolution towards the fair value measurement is often characterized as being a change of paradigm (Barlev and Haddad, 2003; Hitz, 2006). This change in paradigm is determined by the assumed decisional relevance of market based valuation, and in this respect, both the FASB and the IASB highlight the ability of market-based valuation in replicating efficiently the agreement concerning market prospects of future cash flows.

A paradigm can be defined as a set of values and theories that are shared by a specific community. On this basis, in the context of financial reporting, an accounting paradigm represents a set of common values on the objectives of financial reporting and on the accounting principles by which these objectives can be achieved. Furthermore, a measurement paradigm represents an agreement on the measurement attributes required to achieve objectives of financial reporting. In this sense, an accounting paradigm is based on elaborated assumptions which impose a theoretical validation and foundation. As a result, when regulators assume a financial reporting paradigm, it becomes the guiding principle for the standard setting.

The paradigm of fair value is grounded in the paradigm of 'decision usefulness', which was recognized as the official objective of the FASB's accounting standard setting regulations. Fair value measurement has been introduced referring to the clear objective of financial reporting: that is, the capacity to deliver information useful to investors to assess the amounts, timing and uncertainty of future cash flows from an investment in a firm's shares or debt securities. Investigation of the relevant assertions identifies one theoretical assumption that seems to be a fundamental pillar of the fair value paradigm. According to this hypothesis, market prices collect the expectation of investors concerning the

DOI: 10.1057/9781137448262.0004

cash flow configuration of the asset or liability in an efficient and almost impartial way in the market.

Particularly, the foundation of fair value measurement appears theoretically usable only for prices of organized and liquid markets. When market prices are used, further concerns stand up because such measurement of assets and liabilities is based on publicly accessible information not specific to the entity. In relation to these considerations on the adoption of FVA, academic research analyzed how relevant market efficiency is in defining fair value for financial reporting purposes from a conceptual viewpoint (Milburn, 2008). Fair value is considered a good accounting model to guarantee more reliable financial information, but the reliability of the fair value measurement depends on the availability of an active market. Active and well-regulated capital markets usually reveal a reasonable level of efficiency, but the relation between fair value and market efficiency fails when assets and liabilities are measured using Level 3 inputs, which are not based on real or observable market prices.

However, fair values – or mark to market values – have been found to be more relevant measures of firm value than traditional historical cost-based records. In this respect, there is an extensive empirical evidence suggesting that FVA provides significant and helpful information to investors as they effort to value firms. As consistent empirical research has shown, a firm's stock price is more closely related to the market value of its underlying financial or real asset than with its historical cost (i.e., its purchase price plus related expenses) (Barth et al., 2001; Landsman, 2006). Also for these reasons, standard setters carry on a defined plan at international level with regard to FVA, which is expected to outcome in financial statements further reflecting fair value-based information.

Regulators require greater use of fair value measurements in financial reporting because it is perceived that information based on fair value is more relevant to investors than historical cost information. It is also contended that the use of fair value lessens the complexity of accounting rules and subsequently improves transparency in financial reporting. In this regard, the objective of fair value measurement is to estimate operating prices on the basis of current information and conditions about future cash flows and current risk-adjusted discount rates.

In brief, the shift towards FVA represents the major change in the essential principles of financial reporting, and it advances many application issues because it modifies how management and other stakeholders value a firm also likely affecting their decisions and actions. It is assumed

DOI: 10.1057/9781137448262.0004

that fair value measurement and recognition in the financial statements, accompanied by ample disclosures, provide needed information to assess appropriately an enterprise's exposures to financial risks as well as rewards. This is because fair value reporting reflects the economic reality by showing the intrinsic volatility in the values of assets and liabilities on the basis of changes in market conditions and operations of the enterprise.

2.4 Definition of fair value

FVA is an accounting measurement model broadly used in both IAS/IFRS (Cairns, 2006) and US GAAP. Under both these two sets of accounting standards, not only is the definition of 'fair value' the same, but the essential accounting framework is very comparable. This is an apparently variance basically due to different expressions. In fact, the meanings of the term 'fair value' are essentially equivalent in FASB and IASB statements.

First it is necessary to define FVA and then to differentiate it from mark to market accounting; FVA is more complex than the latter, but the two are closely related, and for brevity, we will treat the two as equivalent.

The FASB defines fair value as 'the price at which an asset or liability could be exchanged in a current transaction between knowledgeable, unrelated willing parties'. In more technical wording, FAS 157 defines fair value quite strictly 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.'[9] Hence, regardless of the management intent to hold or sell the asset or transfer the liability, the definition of fair value is generally referred to as an 'exit price' (AICPA, 2010).

This definition of fair value focuses on an ideal 'exit value' notion, according to which firms close the positions they currently hold through orderly transactions with market participants at the measurement date, not through forced sales (Barth and Landsman, 1995). According to this definition, the transaction price for an asset or a liability does not measure its initial fair value because fair value is not based on what you pay for something; it is now based on what you can sell for it – its exit price.

The US GAAP definition comprises 'the measurement date', which means that fair value should reflect the existing circumstances at the balance sheet. In other words, fair value is measured at a specific moment

DOI: 10.1057/9781137448262.0004

in time, and it is subject to daily fluctuations, as market prices can change every day. Fair value should replicate market conditions at the measurement date, even if markets are illiquid, and credit risk premium is at unusually high levels.

The board states that the operation to sell the asset or to transfer the liability is an orderly transaction, that is a hypothetical unforced and unhurried[10] transaction at the measurement date. The word 'orderly' underlines that a forced transaction cannot be used as a basis to measure fair value (Bout et al., 2010). The exchange price of an asset in a forced transaction is usually lower than the underlying cash flows of the asset or than the available value when the asset is sold in an orderly or normal transaction.

The firm is expected to conduct normal marketing actions to find potential purchasers of assets and assumers of liabilities, and these parties are expected to conduct usual due diligence. During a credit crunch, these activities could become very difficult because of scarce information about the values of positions being generated by market transactions, and because of parties' natural uncertainty regarding those values.

When a market is no longer active, it is not correct to declare that all market activities represent forced transactions. Fair values are hypothetical values that reflect fair transaction prices even if current conditions do not support such transaction. When markets are severely illiquid, as they have been during the credit crunch, this concept implies significant practical difficulties for preparers of firms' financial statements. Preparers must envision hypothetical orderly exit transactions, even if actual orderly transactions might not occur soon. That said, it is not appropriate to automatically conclude that any market transaction price is itself representative of fair value.

The notion of fair value is well defined since the FASB notes that the objective of a fair value measurement is to assess an exchange price for the asset or liability being measured in the absence of an actual transaction for that asset or liability. An asset or liability's exchange price fully captures fair value, and this price at which an asset can be exchanged between two parties does not depend on the market participants involved in the exchange because the price is the value in use to the entity.[11] Anyway, the parties to the transaction are assumed to be knowledgeable, willing and unrelated.

FAS 157 presumes that market participants are knowledgeable, aware of market conditions, and able to price any remaining information

DOI: 10.1057/9781137448262.0004

asymmetry. The standard does not consider the existence of information asymmetry between the current holders of positions and potential purchasers or assumers of positions. However, during the credit crunch, the asymmetry effectively occurred so severe for some positions that markets collapsed altogether.

As well, fair value is defined 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, other than in a forced or liquidation sale. Actually, the IFRS 13[12] defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e., an exit price). On the basis of this definition, fair value permits certain assets to be valued at the amount for which they could be traded in an open market transaction. Therefore, when market prices are used to measure fair value, FVA is also called mark to market accounting.

Although with some small variations in wording in different standards, the definitions of fair value always emphasize the market-based measurement. The concept of fair value is based on the recognition of assets and liabilities at their market value at balance sheet date rather than at historical cost. The use of market value is justified by the fact that it delivers more comprehensive, relevant and reliable information for business decision-making by financial reports' users.

In its pure application, FVA demands to report assets and liabilities at fair values and to recognize changes in fair values as gains or losses in income statements. Gains and losses are recognized directly in the financial statements rather than being smoothed over the life of an instrument. In this sense, accounting for assets at fair value can be appreciated as a general application of the financial login that considers the business as a portfolio of assets whose value depends on their expected cash flows and risk.

Under FVA, a company is perceived as a combination of assets and liabilities, not very different from an investment stock: what the shareholders could earn by selling the firm at any particular moment, i.e., what matters is the net asset value. The emphasis is on the investors' (above all, the shareholders') view, in the confidence that the main function of a financial statement is to provide correct information on which they can found their decisions. Thus, the starting point for measuring fair value is the marketplace.

In determining fair value, IFRS 13 and FAS 157 refer to similar inputs which must be used to measure fair value. First, quoted prices in active

DOI: 10.1057/9781137448262.0004

markets, when available, should be used. In the absence of such prices, the standards mention the application of valuation techniques and all relevant market information that is obtainable, so that valuation techniques maximize the use of observable inputs. Anyway, an entity might have to make significant adjustments to a detected price in order to attain the price at which an orderly transaction would have taken place.

Fair value is a hypothetical market price requiring the consideration of what other market participants might pay for something. In other words, the measurement of fair value is based on the assumptions that market participants would use when they price the asset or the liability under current market conditions, including expectations about risk. As a result, an entity's intention to hold an asset, or to settle or else fulfill a liability, is not relevant for fair value measurement. Fair value measurement can be based theoretically on either the entry or the exit price.[13] However, the definition mentioned above indicates that fair value should be determined as the exit price that is from the perspective of the seller. This explanation joins the existing approaches to fair value measurement under IFRS and US GAAP, but it may be uncertain in some situations.

If there is a perfectly operative market, exit price and entry price are the same (e.g., this situation may stand up for financial instruments traded in active markets). The prices at the market in which the trader sells and at the market in which the trader buys are different (depending on the gross profit margin). In such case, fair value defined as the entry price will be different from fair value defined as the exit price.

IFRS 13 applies both to the initial and subsequent measurement. When fair value measurement is used upon initial recognition, it is suited to found the measurement of non-financial assets on the entry price at an active and relevant market if possible. The application of the exit price for non-financial assets would mean to incorporate in the measure the anticipated sales margin, which is very risky. Currently, the use of fair value is required upon initial recognition only for financial instruments, biological assets, and agricultural production.

The FASB and the IASB definitions are very similar, even if limited differences remain; they may be resumed as follows:

- The definition enclosed in FAS 157 is clearly identified as an exit (selling) price, suggesting that the prospects of future economic benefits related to assets and liabilities are measured by selling price. The IFRS's definition, in turn, is neither explicitly an exit

DOI: 10.1057/9781137448262.0004

price nor an entry (buying) price, and it recognizes that entry and exit prices may differ if the buying and selling transactions takes place on different markets.

- FAS 157 explicitly refers to market participants (i.e., buyers and sellers participating in the main market for the asset or liability). The IFRS definition, in turn, mentions to knowledgeable and willing parties. Greater emphasis is set on the fact that the buyer/seller is interested but not forced to come into the transaction. Concerning liabilities, in FAS 157 the definition of fair value relies on the idea that the liability is transferred (the liability to the counterparty continues), while in IFRS the definition of fair value refers to the amount at which a liability could be settled between knowledgeable and willing parties in an arm's length transaction.

2.5 The use of FVA: fair value hierarchy

Under FVA, companies are obliged or permitted to evaluate particular assets and liabilities at their exchange value in an idealized market as at the reporting dates. Fair value is a current market-based hypothetical value, and it is set up on the availability of market inputs for valuation. The significant quality of market prices is based on the active market criterion according to which regular trading of the item qualifies a market price as an estimate of fair value in a liquid market.

Fair value is normally referred to the market value when obtainable, and it incorporates the assessed value, using models, when the financial instrument is not traded in an active market. However, this market value is not always directly observable, so that the difficult with the application of fair value stands up when the market for an asset that a company measures at fair value becomes illiquid. In brief, the notion of fair value encompasses the market value when it is available (i.e., marking to market technique) and the estimated value using models (i.e., marking to model), when the financial instrument is not traded in an active market.

Therefore, when market prices quoted in an active market are not available, the holder of the asset or liability should provide the best available evaluation of a current market price by using methods and assumptions. This implies that assets and liabilities (e.g., financial instruments) are valued using market pricing (if there is a market), using market

DOI: 10.1057/9781137448262.0004

pricing of a similar instrument if there is no market for this specific instrument, or using model-based valuation techniques (with or without market inputs depending on their availability). All these different inputs represent the different levels in the so-called fair value hierarchy. To summarize, the fair value hierarchy is a grading of inputs – from most to least reliable – to derive the fair value of an asset or liability. All assets and liabilities are classified into one of three levels according to the grade of judgment (subjectivity) related to the inputs used to evaluate their fair value.

In particular, FASB and IASB established a fair value hierarchy with the objective to list into three general levels the market inputs used to measure fair value. The term 'input' is intended to refer generally to the assumptions that market participants would use in pricing the asset or liability. As a basis for considering market participant assumptions in fair value measurements, fair value hierarchy distinguishes between

- inputs that reflect market participants' assumptions developed on the basis of market data obtained from independent sources of the reporting entity (i.e., observable inputs);
- inputs that reflect the reporting entity's own assumptions about market participants' assumptions developed on the basis of the best information available in the particular situation (i.e., unobservable inputs). The idea of unobservable inputs is designed by FASB to apply in situations characterized by little, if any, market activity for the asset or liability at measurement date. In pricing an asset, unobservable inputs are disfavoured because they shall be used to assess fair value to the extent that observable inputs are not available.

2.5.1 Fair value hierarchy in US GAAP

FAS 157 is dedicated to fair value measurements, and it comprises principally all of the current US GAAP guidance concerning how to determine fair values. FAS 157 does not need FVA for any asset or liability because its framework is applicable only when other accounting standards require or permit positions to be recognized at fair value.

The objective of FAS 157 is to define how the fair value of assets or liabilities is to be determined in order to improve consistency and comparability in fair value measurements. FAS 157 prescribes a framework for implementing fair value measurements using a three-tiered

DOI: 10.1057/9781137448262.0004

hierarchy of inputs.[14] The standard describes a hierarchy of preferences for fair value measurement.

The preferred level estimate of fair value is based on quoted prices (unadjusted) for identical assets and liabilities that the reporting entity has the ability to access at the measurement date. This level is the most applicable to those assets or liabilities that are actively traded (e.g., trading investment securities), and it is designated 'Level 1' in the US GAAP hierarchy. In other words, when a financial instrument is exchanged in an active market,[15] fair value results from the market prices (e.g., the offer price for an asset and the offer price for a liability). As well, Level 1 embodies observable inputs based upon quoted market prices in a liquid market for exactly the same assets and liabilities, and if such prices are available from orderly transactions, they have to be used to determine fair value. This means that the asset or the liability is marked to market at the exit price.

For instance, a financial instrument is considered traded in an active market when quoted prices that reflect current and frequently occurring transactions are willingly and commonly available from an agent such as an exchange, a dealer/broker, a pricing service, or a regulatory intermediary. Hence, Level 1 regards those assets and liabilities for which there is a quoted price in the market and for which FAS 157 clearly requires the measurement of fair values using Level 1 inputs when they are available.

However, for many debt and asset backed securities, there may not be a liquid and operating market for identical assets and liabilities. As a result, when there is no market for the instruments to be valued, Level 2 of the hierarchy is applied. Level 2 inputs are quoted prices from sources other than Level 1 which are observable either directly or indirectly. This category describes how to use quoted prices for similar assets in active markets or other observable prices such as yield curves for the same or similar assets.

In the absence of observable quotes from an active market, fair value is estimated using a valuation technique that relies as much as possible on the use of inputs observed in markets. If such information is not available, fair value can be measured with a valuation model that reflects how market participants would reasonably be expected to value the instrument. Examples of such models are discounted cash flow analysis or option-pricing models. Any valuation technique must incorporate all the factors that market participants would consider in setting a price, and the model inputs required to accurately signify market prospects of

DOI: 10.1057/9781137448262.0004

the risk-return elements intrinsic in pricing the instrument. Valuation techniques based on models using observable inputs are labelled in the Level 2 category, while those relying on unobservable inputs are categorized as Level 3. Level 3 estimate is the last preferred based on company evaluations, and it is applicable if Level 1 or Level 2 estimates are not available.

As outlined by FAS 157, Level 3 encompasses assets for which there is little, if any, market activity. Level 3 inputs are used when observable inputs are not available, and they provide fair value prices that entirely depend upon management's assumptions. Thus, Level 3 inputs are unobservable assumptions, such as an entity's internal valuation model, incorporating management assumptions that cannot be verified with observable market data. Therefore, Level 3 is more subjective than Level 1 and Level 2 inputs, and sometimes it is referred as 'mark to model' accounting.

Then, although FAS 157 permits the use of a model of some kind under Level 3, it disfavours this method if market process is available. With the emphasis on market, the FASB highlights estimates based on market prices as model inputs wherever likely. If other models applying market inputs are not accessible, fair value measurements can be made using entity-supplied inputs (e.g., discounted cash flow evaluations). There are many circumstances in which observable inputs are not available in any sense, and in these cases, companies use cash flow estimations and outlooks to value their asset portfolios.

The leading principle is preeminence of market-based measures in the valuation process. Market prices or market data are considered more informative and reliable than internal estimates, and they represent the best estimations of fair value if market conditions fulfil the fair value definition. The grade of confidence is lower when the measurement of fair value is based on similar or related assets and liabilities, while the grade of subjectivity of valuation is extreme when the estimates are based on firm specific models. In this sense, FASB was trying to fashion a type of descending scale on which larger weight in valuation would be given to market prices when they are available than to any other method of assets' valuation.

The determination of the fair value hierarchy is certainly a move towards the unification of methodologies to measure fair value, but it does not modify the risk of fair value evaluations. The absence of consistent estimates for the value of an assumed financial instrument

DOI: 10.1057/9781137448262.0004

advances relevant concerns with regard to the reliability of the financial statements. In fact, if the valuation models or observable inputs used for measurement are inadequate, fair value can cause informational biases and eventually suboptimal economic decisions. Firms need to demonstrate the credibility of their valuations by disclosing information about their valuation process and related control.

Without a market exchange to base fair value, the value of the asset is measured through the use of complex models that the firm must come up with. For example, there are measurement concerns in the case of complex instruments that are rarely traded and for which there is no a proven valuation technique with an established recording. Moreover, when models are used without observable prices, there is a potential for management to introduce prejudice into the valuation process through judgment.

Anyway, measurement concerns are mainly significant during periods of market distress. Under worried liquidity conditions, financial institutions make extensive use of unobservable inputs in their valuations, developing uncertainty among stakeholders regarding the valuation of financial instruments under such circumstances. As the illiquidity of certain financial products become more severe, financial institutions turn progressively to model-based valuations which hence are supplemented by increasing opacity in the reporting through the fair value measurement, despite better disclosure requirements. By the way, the American standard FAS 157 is considered by the IASB to be the basis for developing its own standard IFRS 13 concerning fair value measurement.

2.5.2 Fair value hierarchy in IAS/IFRS

Like FAS 157, the aim of IFRS 13 is to explain how to measure fair value. In fact, IFRS 13 does not expand the application of FVA, but it provides guidance on how fair value should be applied where its use is already suggested by other standards.

IFRS 13 applies to accounting standards that require or permit fair value measurements (including the application of fair value under specific circumstances such as in IFRS 5), except in IFRS 13 specified cases. A number of the IFRSs include restricted regulation about how to assess fair value, especially those established previously. On the contrary, other standards contain a wide guidance in this regard, but it is not always consistent across the IFRSs that refer to fair value.

DOI: 10.1057/9781137448262.0004

As FAS 157, IFRS 13 provides an accurate definition of fair value and a single source of fair value measurement and disclosure requirements for application across IFRSs. Of course, the main advantage of the IFRS 13 is increasing comparability and neutrality of accounting information, thereby improving reliability of market information and their decision usefulness.

To increase consistency and comparability in fair value measurements and related disclosures, also IFRS 13 embraces a fair value hierarchy that categorizes the valuation inputs into three levels. Each asset or liability is comprised in one of the three levels on the basis of the lowest level input that is significant to its valuation. Disclosures based on this hierarchy are already required for financial instruments under IFRS 7,[16] but IFRS 13 applies them to all assets and liabilities within its scope. The measurement techniques used in IFRS 13 should maximize the use of relevant observable inputs and minimize unobservable inputs. Moreover, the assessment of the fair value hierarchy excludes the possibility of a free determination of the measurement behaviour and thus management's discretion in manipulating earnings.

The IASB's approach to fair value emphasizes firstly quoted prices in active markets that are the Level 1 inputs. A quoted price in an active market provides the most reliable evidence of fair value and should be used to measure it when available. For these reasons, Level 1 lies at the top of the hierarchy, whereas inputs are fully observable such as the unadjusted quoted prices in an active market for identical assets and liabilities that the entity can assess at the measurement date. This is the simplest case in which a firm can find the prices or values of instruments in a newspaper or in other quotation systems.

As well, at Level 1, assets and liabilities are recognized in a firm's balance sheet and income statement at their market value, which typically reflects the quoted price for identical assets or liabilities in active markets. It is assumed that the quoted price for an identical asset and liability in an active market provides the most reliable basis for fair value measurement because the quoted price is directly observable by market participants, and it represents the best proxy for the price that would be received, assuming a decision to sell the asset. Technically, this means that all the relevant information is integrated into the quoted prices, but this does not suggest that markets deliver an estimate of the fundamental value of an asset (e.g., the value calculated from its expected returns, given a long term interest rate). A possible divergence does not always

DOI: 10.1057/9781137448262.0004

originate from market imperfections or an information asymmetry, since it is especially a direct effect of the fact that financial markets – compared to other markets – are intrinsically volatile, because they are driven by prospects about the future.

Moreover, in some cases, an asset will not trade or will not have an active market. For these particular cases, if a quoted price for fair value is not available, the valuation is then based on market observations. This means that the estimate for an asset or liability would consider prices for similar assets or similar liabilities with essentially the same characteristics, including the same expected cash flows.

In this regard, Level 2 applies to cases for which there are observable inputs, such as 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.[17] The current price in a liquid market for a similar instrument can be adjusted to obtain the fair value of the instrument being valued in order to find the price at which an orderly transaction would have taken place. In other words, the Level 2 inputs are those other than quoted prices within Level 1 that are directly or indirectly observable. However, published prices are not available for all financial instruments. In this case, a valuation is often needed to assess fair value. Companies apply valuation models that consider a variety of relevant data, such as current economic estimates, general market conditions and the price of similar financial instruments.

If the markets in which close substitutes operate are illiquid, then the asset is classified as Level 3. This valuation is commonly referred to as a mark to model approach because it is often the outcome of a mathematical modeling implementation with several assumptions about economic, market or firm-specific conditions. In Level 3, the objective is to deduce what the price of the asset would be if the market existed. If a market for assets and liabilities does not exist, an explicit modeling should be adopted and of course this alternative introduces a lot of discretionary power and uncertainty, by comparison with the much more objective financial market valuation.

At Level 3, estimates are based on valuation models that require the application of unobservable inputs or assumptions generated by the entity itself (e.g., a financial forecast developed using the reporting entity's own data). In fact, significant assumptions or inputs used in the valuation technique are based upon inputs that are not observable in the market and, therefore, valuation demands the use of internal information. The

DOI: 10.1057/9781137448262.0004

models by which assets are valued may comprise market data, but they also give substantial occasion for managerial discretion in using other inputs.

Different valuation techniques can be applied all at once, including a discounted cash flow model based on management's estimates of future cash flows (using a proper discount factor). Anyway, the valuation should place more weight on the approaches that use observable inputs, which market participants would consider. Founding fair value on an approach primarily based on management's estimates of future cash flows would not be appropriate because it ignores factors such as illiquidity and credit risk, and, therefore, it does not represent the price at which a transaction would happen between market participants at the measurement date. For example, the capital asset pricing model (CAPM) is explicitly suggested by FASB and IASB as valuation method because it exemplifies the ideal character of resulting estimates and the foundation of present value calculations.

Certainly, an asset or a liability may be shifted from one level to another if secondary market conditions change. For instance, during the financial crisis, in which the liquidity in many secondary markets declined evidently, a considerable number of assets were moved from Level 1 to Level 2 and particularly to Level 3. 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 had to be measured using Level 3 inputs.

Of course, the shift from one level to another protects a financial institution from an illiquidity shock, but it is also true that this change increases concerns about the right value of the asset since, at least with regard to Level 3 assets, the asset is valued more than anyone is willing to pay. While FVA has a convincing rationality when markets are well functioning, therefore the reliability, relevance and indeed the credibility of this approach moderate when secondary markets do not function. 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 belonging to the management.

Both the FASB and the IASB endorse the attention on the trade-off between cost and benefit related to relevance and reliability when determining the best evaluation methodology for certain issues. In particular, it is important to analyze if the evaluation has adequate credibility to be recognized in financial reporting. Evaluating the costs and the benefits

DOI: 10.1057/9781137448262.0004

of FVA within financial reporting is a challenging task for investors and other users of accounting information in specific reporting systems (Matis and Bonaci, 2008). The presumed cost of fair value measurement consists in the likelihood that assets and liabilities might not be estimated exactly to help users in their estimations regarding the financial position of the company and its capacity to produce future profits. The relevance of this cost relies on the fact that in the absence of active markets for certain financial instruments, the estimation of fair value can be characterized by subjectivism and manipulation of management.

To sum up, fair value symbolizes a specific current value that is an exit value under realized conditions. Valuation relies on a three-tiered process, with a predilection for market-based estimates. Strictly, 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). The three level fair value hierarchy framework is adopted by both IFRS and US GAAP to differentiate between mark to market valuations and model-based valuations (i.e., mark to model valuations) of assets and liabilities (IMF, 2008). Anyway, the objective of fair value measurement is always the same: that is, an exit price from the perspective of a market participant that holds the asset or owes the liability. The following table displays the fair value hierarchy in detail.

As shown in Table 2.1, observable inputs are classified into Level 1 and Level 2. Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities at the measurement date. Level 2 inputs are other directly or indirectly observable inputs. There are two comprehensive subcategories of Level 2 inputs. The first and generally more preferable subcategory comprises quoted market prices in active markets for similar items or in inactive markets for identical items. These inputs allow adjusted mark to market measurements that are reliable enough, depending on the type and amount of the required valuation adjustments. The second subcategory includes other observable market inputs such as yield curves, exchange rates, empirical correlations, etc. These inputs allow mark to model measurements that are based on market information and can be considered as reliable as the models and inputs employed.

DOI: 10.1057/9781137448262.0004

TABLE 2.1 *Fair value hierarchy*

	Valuation approach	Valuation explanation	Input categories	Input examples
Level 1	**Mark to Market**	Using only observable prices for equal products in active markets.	Quoted prices (unadjusted) in active markets for identical assets or liabilities.	Prices from exchange-traded markets and dealer markets (over the counter markets).
Level 2	**Mark to Matrix**	Using only observable prices for similar products in active markets or observable market data.	Quoted prices for similar assets or liabilities. Or else inputs resulting from observable market data.	Interest rates and yield curves at normally quoted intervals, implied volatilities and credit spreads.
Level 3	**Mark to Model**	Using of model input assumptions because neither process for similar products nor inputs for valuation models are observable in the market.	Unobservable inputs settled using the reporting entities' estimates and assumptions, which reflect those that market participants would use.	Expected cash flows, historical volatility, forecasted prices, model parameters.

As a result, it's possible to summarize Level 2 inputs as follows:

- Quoted prices for similar assets or liabilities in active markets
- Quoted prices for identical or similar assets or liabilities in markets that are not active[18]
- Observable inputs – other than quoted prices – for the asset or liability, such as interest rates and yield curves observable at normally quoted intervals, volatilities, prepayment speeds, loss severities, credit risks, and default rates
- Inputs that are corroborated by or resulting mainly from observable market data by correlation or other means.

Unobservable Level 3 inputs, instead, should be used to assess fair value to the extent that observable inputs are not available. Unobservable inputs should be developed on the basis of the best information available in the circumstances, which might include the reporting entity's own data, such as forecasts of home price depreciation and the resulting credit loss severity on mortgage-related positions. These inputs should reflect the assumptions that market participants would use, but they yield mark to model valuations that are largely unmanageable by market information.

DOI: 10.1057/9781137448262.0004

As detected in Table 2.1, valuations drop in verifiability when moving towards Level 3. For these reasons, the Level 3 more subjective valuations require various disclosures by both IFRS and US GAAP about the methodologies used, explanations of using certain assumptions and the sensitivity of the measurement (IMF, 2008). For example, the amended IFRS 7 requires new disclosure requirements about classifications in the appropriate level, movements of products between levels and about the size and characteristics of each product.

2.6 The use of fair value in IAS/IFRS

The fair value framework in IAS/IFRS tends to substitute HCA by applying estimate of assets in line with their expected returns over their lifetime. As a result, the valuation of assets and liabilities has implications for an entity's financial position. If a market for these assets and liabilities exists, the market value of them is used in assessing the financial position of the firm. Nevertheless, when there is no market for assets and liabilities, firms adopt explicit valuation techniques based on net present value of future earnings or cash flows to measure the value of the asset or liability.

The implementation of these models to determine the value of assets and liabilities provides substantial discretionary for stakeholders and introduces uncertainty, upsetting the objectivity of measurements. In fact, fair value signifies the management's estimation of the present value of the net future cash flows of the asset or liability, discounted to represent both the current interest rate and the management's valuation of the risk related to those cash flows (Khurana and Kim, 2003).

Fair value based on the results of future cash flows, for instance, is entity specific, which means that the same asset can be valued in a different way for two companies because of diverse borrowing rates and managerial judgments: hence the reliability of fair value measurements failures with the move from items traded in liquid markets to non-traded items.

The major purpose of the fair value measurement is to lessen risks of manipulation with the cost measurement. However, this aim appears not to have been realized in some accounting standards because there are a lot of differences in the fair value measurement application primarily in the following areas:

- The obliged or permitted use of FVA;

DOI: 10.1057/9781137448262.0004

- The application of FVA merely on the balance sheet date or on initial recognition, too;
- The specification on how to determine fair value;
- The effect of FVA on profit/loss or on other comprehensive income;
- The approach of transaction costs.

Regarding these issues, the accounting standards applying fair value for measurement of assets or liabilities can be allocated into three classes:

- Accounting standards applying fair value as an alternative measurement to historical cost;
- Accounting standards allowing or requesting the fair value measurement at each balance sheet date;
- Accounting standards requesting the fair value measurement on initial recognition and at each balance sheet date.

Fair value is not the core of all the IAS/IFRS accounting standards because only some of them refer to fair value (e.g., IAS 16 Property, Plant and Equipment, IAS 38 Intangible Assets, IAS 40 Investment Property, IAS 41 Agriculture and IFRS 39 Financial Instruments). In a number of accounting standards, fair value is presented as a subordinate accounting method, while historical cost remains a benchmark method. In this sense, some accounting standards applying both fair value and historical cost usually use measurement at historical cost on initial recognition and historical cost or fair value measurement upon the balance sheet date (e.g., IAS 16, IAS 38).

For instance, according to IAS 16, items of property, plant or equipment can be recognized at historical cost or at a revalued amount, because historical cost is the fair value of the item at the date of the revaluation less any subsequent accumulated devaluation and subsequent accumulated impairment losses. Revaluations should be completed regularly so that the carrying amount does not diverge substantially from that which would be estimated using fair value at the balance sheet date. In IAS 38, measurement is similar to IAS 16 because, after initial recognition, an intangible asset should be recognized at its historical cost less any accumulated amortization and any accumulated impairment losses or at fair value.

Some accounting standards permit or demand the fair value measurement upon the balance sheet date (e.g., IAS 40) while others request fair value measurement upon initial recognition and upon the balance sheet date (e.g., IFRS 9 and IAS 41). The application of fair value is favoured in

DOI: 10.1057/9781137448262.0004

IAS 40. According to this accounting standard, an investment property should be measured firstly at its cost. Anyway, an entity should select either the fair value measurement[19] or the historical cost measurement as its accounting model and should use the selected model for all of its investment property at balance sheet date.

IFRS 9 requests financial instruments to be measured at fair value on initial recognition and at balance sheet date. A financial asset shall be measured at amortized cost only if both of the following circumstances are satisfied:

- The asset is held within a business model whose aim is to hold assets in order to accumulate contractual cash flows.
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

IAS 41 requests measurement of a biological asset and agricultural produce already on initial recognition and at each balance sheet date at its fair value less estimated point of sale costs. The standard advances a comprehensive method of FVA as well as the disclosure of gain or loss arising from the fair value measurement.

If an active market exists for a biological asset or agricultural produce, the quoted price in that market is the appropriate basis for determining the fair value of that asset. If an active market does not exist, in defining fair value, a company applies the most recent market transaction price (if there has not been a substantial variation in economic conditions between the date of that transaction and the balance sheet date) or the market prices for similar assets with adjustment to reflect differences and sector characteristics. In some circumstances, market-determined prices or values may not be available, and a company utilizes the present value of expected net cash flows from the asset discounted at a current market-determined pre-tax rate in assessing fair value.

Within the fair value paradigm, the key issue of fair value measurement is the reporting of gains and losses. There are different approaches used for the presentation of gains or losses from fair value variations (i.e., the revaluation model):

- The revaluation affects immediately the result (through profit or loss);
- The revaluation does not affect profit or loss but other comprehensive income (through other comprehensive income).

DOI: 10.1057/9781137448262.0004

In the fair value through profit or loss model, revaluation always affects the net profit. Increasing the value of asset (gain) rises the profit and decreasing the value of asset (loss) reduces the profit. This approach is used in IAS 40, IAS 41 and IFRS 9.

FVA through profit or loss is forward-looking by nature, since it requires the revaluation of an item when a variation happens in its market price or in the present value of the stream of revenues caused by the item in the absence of a market. In this model, FVA 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 all circumstances, any unrealized gain (or loss) on financial instruments held by an institution turns into an increase (or decrease) in its stockholders' equity and, consequently, an improvement (or deterioration) in its capitalization. Certainly, FVA takes expected loss into account, since a change in risk in any moment during the holding period is reflected in a variation in the current fair value.

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. The impact of revaluation at fair value to the revaluation surplus allows that the revaluation does not increase the reported profit by the possible unrealized gains. As a result, dividends from the results of the revaluation cannot be rewarded to the owners.

2.6.1 Fair value measurement for financial instruments

According to the standard setters FASB and IASB, the fair value of a financial instrument is defined, with minor differences depending on the particular accounting standards, as 'the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction', other than in a forced or liquidation sale (FASB, 1991; IASB, 2010). When market prices quoted in an active market are not available, the owner of the asset or liability should provide the best available estimate of a current market price, by exercising judgments about the methods and assumptions to be used. In fact, FVA for financial instruments is part of an extensive tendency in accounting standard setting to move towards estimating items through expected future cash flows and incorporating the resulting value into financial statements (Magnan and Cormier, 2005). This accounting treatment weakens previous accounting practices based on conservatism and verifiability and needs a complete set of valuation skills and data from

DOI: 10.1057/9781137448262.0004

accountants. In particular, the application of fair value for valuing financial instruments started to be widely considered in the 1990s, whereas the rapidly increasing use of financial instruments presented problems as to how to recognize them in the balance sheet. Moreover, there was a need to diminish management's discretion in manipulating earnings, since the use of historical cost allowed them to delay the revelation of criticalities.

Under both US GAAP and IAS/IFRS, fair value is most often used for reporting financial assets and liabilities and, even for these items, there is a mixed feature model with some accounting rules requiring that some items are recognize at fair value and others at historical cost. Moreover, unrealized gains and losses of items that are recognized at fair value may or may not impact net income, depending on their classification.

Both US GAAP (FAS 115, FAS 133) and IAS/IFRS (IAS 39) entail trading securities and derivatives (held for trading or as part of a fair value hedge) to be measured at fair value, with revaluation gains and losses fueling directly to income. Available for sale securities are also recorded at fair value, but gains beyond the historical cost upper limit are recognized as other comprehensive income until realization. This accounting approach is also applied in recording for derivatives that are part of a cash flow hedge. In both sets of accounting standards, securities classified as held to maturity, non-securitized financial assets and obligations (except derivatives) are accounted at cost. This mixed model approach reflects standard setters' reluctance to implement a full FVA, despite the general agreement on its conceptual merits, concerning especially the relevance of accounting values.

Anyway, since its beginning, the financial crisis underlined many critical issues associated with the valuation of financial instruments. This is true for complex instruments as well as for the more traditional ones that become illiquid during the financial crisis, making much more difficult the finding of market-based prices. As liquidity rapidly dissolved in the market for many complex structured products and transaction prices became unattainable, most banks and financial institutions moved from valuation methods based on observable prices to methods that relied more on model-based valuations, even if such a type of valuations needed a wide use of unobservable inputs in some cases.

The IASB acted actively in responding to the financial crisis, and the most important decision has been the completely replacement of IAS 39 on financial instruments. From the beginning of its operations about

DOI: 10.1057/9781137448262.0004

this standard, the IASB believed that incremental modifications were not enough; finally, it decided to renovate IAS 39 in three phases.

IFRS 9 Financial Instruments (issued on 24 July 2014) is the IASB's replacement of IAS 39 Financial Instruments: Recognition and Measurement. The standard includes requirements for recognition and measurement, impairment, derecognition and general hedge accounting.

The version of IFRS 9 issued in 2014 is mandatory effective for periods beginning on or after 1 January 2018 with early adoption permitted (subject to local endorsement requirements). IFRS 9 does not replace the requirements for portfolio fair value hedge accounting for interest rate risk (often discussed as the 'macro hedge accounting' requirements) since this phase of the project was separated from the IFRS 9 project due to the longer-term nature of the macro hedging project, which is presently at the discussion paper phase of the due process.

The accounting standard introduces principles-based requirements for classification and measurement of financial instruments. Classification regulates how financial assets and financial liabilities are recognized in financial statements and, in particular, how they are measured on an ongoing basis. The logical approach presented by IASB for the classification of financial assets is driven by financial asset's contractual cash flow characteristics and the entity's business model for managing the asset. This single and principle-based approach replaces existing rule-based requirements that are complex and difficult to apply.

On the basis of the only two assessments mentioned above, IFRS 9 divides all financial assets that are currently in the scope of IAS 39 into two classifications: those measured at amortized cost and those measured at fair value. Where assets are measured at fair value, gains and losses are either recognized entirely in profit or loss (i.e., fair value through profit or loss – FVTPL), or recognized in other comprehensive income (i.e., fair value through other comprehensive income – FVTOCI).

The business model assessment (depending on the particular objective of the business model under which those portfolios of assets are held) determines whether financial assets held in a portfolio must be measured at amortized cost, FVOCI or FVPL. The first two categories (i.e., amortized cost and FVOCI) only apply to portfolios of instruments which are also in compliance with the contractual cash flow characteristics test. In other words, the contractual cash flow characteristics test identifies financial assets which potentially qualify for measurement at amortized cost or at FVOCI.

DOI: 10.1057/9781137448262.0004

In essence, if a financial asset is a simple debt instrument, and the objective of the entity's business model within which it is held is to collect its contractual cash flows, the financial asset is recognized at amortized cost.

In contrast, if that asset is held in a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets, then the financial asset is classified and measured at fair value through other comprehensive income (i.e., FVOCI).

All other financial assets that are not held in one of the two business models mentioned above are measured at fair value through profit or loss (i.e., FVTPL). As such, fair value through profit or loss represents a residual category in which financial assets that are held for trading and those managed on a fair value basis are also included.

The IAS 39's treatment of financial liabilities is essentially unchanged in IFRS 9. This means that most of the financial liabilities remains to be measured at amortized cost even if IFRS 9 contains the same option as IAS 39 that allows entities to recognize financial liabilities at fair value through profit or loss in particular circumstances (i.e., fair value option – FVO).

Additionally, IFRS 9 introduces new requirements for the accounting and presentation of changes in the fair value of an entity's own debt when the entity has chosen to measure that debt at fair value under the FVO. The fair value of an entity's own debt is affected by changes in the entity's own credit risk (own credit), so that volatility in profit or loss can be caused by changes in the credit risk of financial liabilities that an entity has elected to measure at fair value. For this reason IFRS 9 requires changes in the fair value of an entity's own credit risk to be recognized in other comprehensive income rather than in profit or loss.

Moreover the accounting model of IFRS 9 results in a single impairment model that is applied to all financial instruments, removing a source of complexity related to preceding accounting requirements. Because during the financial crisis, the delayed recognition of credit losses on loans (and other financial instruments) was identified as a weakness in present accounting standards, the IASB has introduced a new expected loss impairment model as part of IFRS 9. Specifically, the new standard requires entities to account in a timely fashion for expected credit losses when financial instruments are first recognized, and it drops the threshold for recognition of full lifetime expected losses.

DOI: 10.1057/9781137448262.0004

2.7 Historical cost accounting (HCA)

In discussing the potential problems of FVA, it is important also to consider the alternative. The main alternative to FVA is HCA. The method of HCA consists in recognizing assets and liabilities on the company's balance sheet at original cost (i.e., its historical cost). Under HCA assets are recognized at the amount of cash or cash equivalents paid or the fair of the consideration at the time of acquisition. Liabilities are recognized at the amount received in exchange for the obligation.

In the beginning, historical cost generally should equal the fair value when the item is originally purchased, less adjustment (e.g., depreciation), or market price in the case of a permanently impaired item. Over time, the values of assets and liabilities are amortized to reflect the passage of time. Anyway, historical cost is adjusted for amortization and impairments, but not for increases in asset value.[20] In this way, HCA forbids asset write-ups in booms and generates 'hidden' reserves which can be drawn upon in times of financial crisis.

Impairment is a primary aspect of HCA and occurs when the fair value of an asset drops below its amortized cost. When asset values decline and impairment is unlimited, FVA and HCA are theoretically the same. However, practically, the impairment test varies across assets. Moreover, whether or not the book value of an impaired asset is written down, and the loss is recorded in the income statement, depends on the valued asset and, in many cases, on whether the impairment is considered as other than temporary.

The key difference between the recognition of an asset at fair value or at a depreciation cost is represented by the recording of some unrealized gains and losses derived from changes in the value of future generated incomes by the asset. HCA reflects only the effects of conditions that occurred when the transaction took place, and the effects of price changes are reflected only when they are realized. In this respect, since HCA does not recognize gains unless the asset is sold, it may provide incentives for banks to select assets to sell if they are traded in liquid markets, and they are very much valued. This can make it difficult for users of financial statements to sufficiently investigate an entity's economic state, and it would be probable that investors demand enlarged risk premiums as the remuneration for this uncertainty.

While fair value is the most relevant measure for financial assets and liabilities that a company actively trades, historical cost is the more right

DOI: 10.1057/9781137448262.0004

measure if management aims to hold an asset or to owe a liability until maturity. For instance, HCA can be suitable for financial instruments with a fixed maturity that are intended to be held until maturity.

Certainly, the applicable alternative depends on the valued asset. HCA would be an alternative for liquid assets (e.g., stocks) in bank's trading books and for loans, in particular if they are held to maturity. Similarly, in times of crisis, many have suggested suspending FVA for illiquid assets and using HCA instead. Even if many opponents of FVA implicitly or explicitly accept arguments against FVA, it does not automatically believe that HCA would be better. Sometimes FVA may not provide significant information, but in many cases, HCA does not deliver relevant information either. For instance, even when an investor aims to hold financial assets until maturity, there may still be an interest in the current value of these assets, and in this case, fair value can be helpful to analysts and investors if it reflects the current value of cash flows probably to be received (Fitch Ratings, 2008).

In this circumstance, the foundation for accounting on a HCA basis is that it better reflects the economic substance of the transactions. On the other hand, fair value information would reflect the effects of transactions and events in which the company would not take part, and thus it is often irrelevant. Concerning these effects, HCA masks the economic impact of various positions held in financial instruments, and it smoothes the related volatility.

From this point of view, the use of HCA can attend as a prudence tool for the safeguard of company's creditors, but unfortunately, it is not appropriate and significant for economic decision-making, thus worsening the stewardship function of accounting for the company's owners. HCA also diminishes the comparability of financial statements across entities because it is based on the usage of amounts at which the elements of financial statements were measured at the date of their initial recognition. For example, supposing that two firms are both holding a certain financial asset: under HCA, the accounting value of this asset could be diverse on the balance sheets of the two firms if they acquired it at different times.

Other limitations of HCA may be summarized as follows: Firstly, HCA does not reveal the true economic value of financial instruments because under this method, the accounting value of an asset or liability is aligned with its market only in particular situations, primarily when the company can prove that the value of the asset or liability has been

DOI: 10.1057/9781137448262.0004

changed permanently. Moreover, HCA is indifferent to fluctuations in purchasing power of the currency, exaggerating earnings in periods of growing prices and understating the grade to which capital assets uphold their value. Lastly, HCA assumes that the company will remain in existence for and beyond the predictable future (i.e., going concern principle), whereas many companies may fall into the area of exit (liquidation) values.

2.8 FVA versus HCA

In spite of the strength of the debate among practitioners, there has been surprisingly little academic research on the theoretical analysis of the trade-off between FVA and HCA. This fundamental trade-off can be described as follows: In HCA, the main emphasis is on recognizing realized earnings to measure changes in the current economic condition of the company. FVA, on the contrary, focuses on variations in the value of assets and liabilities to measure changes in the future financial condition of the firm. The emphasis is on recording the fair values of assets and liabilities on the balance sheet and recognizing changes in these values in the income statement.

The HCA regime relies on past information so that accounting values are indifferent to more recent price oscillations, and consequently, current decisions could be based on accounting values that reflect the movements in the underlying fundamentals inadequately. In this sense, the HCA regime is inefficient because it ignores price signals, and it leads to excess conservatism. FVA, instead, overcomes this excessive conservatism of the HCA by relying on current market prices – mark to market – sometimes also distorting this information. In trying to extract the informational content of current prices, the mark to market regime damages this content by adding a purely speculative component to price fluctuations.

In comparison with HCA, one of the weakness of FVA is that it permits revaluation up to current market price, which is not seeming as prudent. If a market price for an asset goes down below its original purchase cost, the difference between fair value (up to which the asset was revaluated in the last financial statement) and current fair value is higher than in HCA. Hence, the amount of impairment losses under FVA can be superior to those under HCA.

DOI: 10.1057/9781137448262.0004

Moreover, when managers and market participants shorten their decision prospects because of various agency problems, the anticipation of future prices affects firms' decisions injecting artificial volatility to prices in turn. On that basis, the managers and market participants become even more interesting to short-term price oscillations, and they tend to act, amplifying these short-term price movements. Even when the underlying fundamentals are quite stable, the fortifying effect of agents' actions can produce substantial fluctuations in prices towards the fundamentals.

Therefore, the HCA regime may sometimes dominate the mark to market model when assets have a long duration, when they are traded in a very illiquid market, or when they contain a relevant downside risk. The longer the duration of an asset, the more susceptible it is to artificial volatility. Conversely, for shorted-lived assets, a mark to market regime is superior to an HCA regime.

Similarly, the more illiquid the market for the asset is, the more vulnerable it is to artificial volatility. For those assets whose markets have a limited liquidity, a HCA regime is superior to a mark to market regime. Conversely, for those assets with adequately deep and liquid markets, mark to market model is preferable. These considerations clarify why the banking and insurance industries oppose marking to market. For these financial institutions, a large part of their balance sheets consists precisely of items that have long duration, and they are illiquid and senior.

As a result, the choice between these two accounting regimes boils down to a selection between ignoring price signals or relying on obsolete ones. Likewise, disadvantages related to both FVA and HCA can be summarized in the existence of an essential trade-off between the unreliability of current information provided by FVA for illiquid assets and the indifference of HCA to more recent price oscillations.

Anyway, both FVA and HCA are in wide use and have their supporters and detractors. Proponents of fair value claim it provides more timely and relevant market information (Bowen et al., 2009), despite the increased use of estimates and judgments, while opponents argue it delivers unreliable market information that can mislead investors. Supporters of historical cost believe it is more faithful because asset values are based on actual transactions, but critics contend that under HCA acquisition values are often outdated and may suggest little relevance to investors.

Under the HCA, the treatment of equity is asymmetric. When the price lowers under cost, a specific value adjustment of the instrument

DOI: 10.1057/9781137448262.0004

is required, and the change directly affects the profit and loss. On the contrary, growths in their market values do not affect the measurement of the instruments and do not outcome in any profits. As a result, a key difference between FVA and the HCA appears in the case of a relevant rising change in stock prices.

The fair value accounting treatment upturns a twofold concern from a financial stability perspective. Firstly, as unrealized gains roll in the profit and loss under FVA, they may be distributed, and any subsequent downward adjustment in equity markets could directly affect the capital. In addition, when profits are not distributed, the increase in regulatory capital might cause an upsurge in lending and might involve a pro-cyclical effect.

2.8.1 FVA versus HCA within a financial crisis

The financial crisis still more indicates the criticality of trade-off between relevance and reliability of accounting information in markets that are defective and imperfect. One of the main lessons of the crisis is therefore the gap between market value and real value of assets and liabilities recording on the financial statement of companies. Indeed, in the presence of these circumstances, the measurements based on fair value can compromise the consistency of accounts and inject the risk of including financial volatility into the accounts.

Moreover, the strict application of FVA is more probable to lead to a prompt decline in profits and capital than HCA. For that reason, FVA may restrict the extent of a boom by replicating changing economic realities more rapidly than HCA, which enables a delay in the recognition of losses until they are actually realized. FVA may prevent still greater losses by making it possible for financial institutions to react early to potential problems, and to act as cause for corrective actions, so that excessive lending may be limited more rapidly.

Here, another critical point regards the provisioning behaviour of the bank under the HCA. If the bank's provisioning decisions are taken in a forward-looking mode[21] (i.e., reflecting any change in the expected cash flows), the effects under the HCA would be just corresponding to those under FVA (if interest rates remain constant). If, in contrast, the bank provisions are mainly backward-looking,[22] there would be a significant variance with FVA. The HCA with perfectly forward-looking (but not regularly revised) provisioning might involve a broader adjustment of

DOI: 10.1057/9781137448262.0004

valuations than under FVA, as offsetting the interest rate effect would not be considered.[23]

We can find similar impacts in the scenario of an interest rate decline joined with asset quality deterioration. For instance, if the deterioration in asset quality concurs with a recession and a mitigation of inflationary pressures, a reduction of interest rates might lessen the effects of the value adjustments under FVA. In this situation, the HCA with forward-looking (but not regularly revised) provisioning might imply an extensive adjustment of valuations than under FVA, as offsetting the interest rate effect would not be considered.

Much more reflections can be stated with regard to a real estate crisis scenario in which a growth in interest rates is combined with an improved brittleness of the borrowers and a reduction in collateral values. In this circumstance, FVA could really contribute to faster and perhaps to extend the impact of the crisis. In fact, if interest rates decline or collateral values recuperate somewhat, the valuation impact under FVA would be reversed only after having created a capital's press that would affect noticeably in any situation its readiness to lend.

However, FVA's instant capturing of the shock and forward-looking nature may let to a rapider correction. Under the HCA, even the final effect would be more partial as the interest rate effect would not be taken. However, under the HCA, the subsequent adjustment of banks' lending behaviour would tend to be feeble than under FVA. Under HCA, no impact would appear until actual impairment or default, but when default happens, the effect would be much more restricted because the interest rate effect would be missing.

2.9 Concluding remarks

The move towards FVA represents a key amendment in the principles of financial reporting, and it presents many critical issues especially associated with the valuation of financial instruments. When markets are severely congested, as they are during a credit crunch, FVA advances important practical complications for preparers of financial statements. Nevertheless, fair value is considered a good accounting model to guarantee more reliable financial information, even if the reliability of the fair value measurement relies on an available active market.

DOI: 10.1057/9781137448262.0004

In this respect, by investigating the accounting literature, it appears that the principal criteria used to choice between FVA and HCA are the different types of economic contexts and financial reporting information. Thus, we focus on inefficient sales and distortions that occur during periods of market distress. In particular, the advent and the persistence of the financial crisis seem to further undermine the significance of market value and offer the occasion for criticism concerning FVA.

On one hand, proponents of FVA, by supposing that the market is perfect and complete, dedicate on how this model can deliver relevant information for stakeholders also in times of crisis, especially for investors and creditors. According to some researchers, the adoption of HCA instead of FVA cannot be successful in times of crisis and the critical issues on fair value measurement do not turn into issues in support of historical cost measurement (Laux and Leuz, 2009). On the other hand, the supporters of HCA, by assuming that the market is imperfect and incomplete, focus on how in times of crisis the fair value measurement can provide little relevant information and a misunderstanding of the items of the balance sheet.

More generally, the question is no more the choice between a totally imperfect accounting system based on historical cost and a much more suitable FVA, since the adoption of the later has already been decided by the European Union. The issue is now to assess the advantages and weaknesses of fair value (Whittington, 2008; Ronen, 2008) in order to avoid the next problems and sources of crises if possible.

Notes

1 FVA is wider than mark to market accounting, as the last is only one way of determining fair value. We therefore use the term FVA throughout unless we specifically mean marking to a market price.
2 International Accounting Standards Board (IASB) is an independent standards-setting body responsible for the development and harmonization of the International Financial Reporting Standards (IFRS). Accounting standards issued by IASB are branded as IAS or IFRS.
3 Accounting standards specify how transactions and other events are to be recognized, measured, presented and disclosed in financial statements. They are developed through an organized standards-setting process and issued by recognized standards-setting bodies.

DOI: 10.1057/9781137448262.0004

4 Financial Accounting Standard FAS No. 115, *Accounting for Certain Investments in Debt and Equity Securities*.
5 Financial Accounting Standards FAS No. 157, *Fair Value Measurements*.
6 The definition of 'exit price' focuses on 'the price that would be received to sell the asset or paid to transfer the liability, not the price that would be paid to acquire the asset or received to assume the liability (an entry price)' (FAS 157).
7 In IAS 17, fair value played a role in determining the classification of a lease as finance or an operating lease, as well as in the determination of profit or loss in sale and lease-back transactions.
8 European legislation is inspired from the logic of historical cost: that is, the valuation of balance-sheet assets is grounded in the depreciated historical cost of their acquisition.
9 See FAS 157, *Fair Value Measurements*, September 2006, § 5.
10 A disparity between supply and demand is not a determinant of a forced transaction every time, and transactions that happen during bankruptcy should not inevitably be expected to be forced. Generally, when there are a number of potential buyers in the market, and time is available to record the instrument, the transaction is not a forced sale.
11 For instance, the value of a swap derivative to a bank equals the price at which it can purchase or sell that derivative, and the swap's value does not depend on the existing assets and liabilities on the bank's balance sheet.
12 International Financial Reporting Standard IFRS 13, *Fair Value Measurement*.
13 The entry price is the market price at which an asset is acquired or a liability is assumed.
14 See FAS 157, §§ 22-30.
15 An active market for an asset or liability is a market in which entities have an immediate access (to exchange in current condition of the asset or liability), and transactions occur with enough regularity and amount to offer pricing information on an ongoing basis.
16 In March 2009, the IASB amended IFRS 7, *Financial Instruments: Disclosures* to correspond with American standard FAS 157. IFRS 7 requires all financial products to be classified in one of the three levels.
17 For example, an instrument may not trade, but if there is an active market for another instrument with similar terms and maturity, then the market price of the similar instrument will serve as a Level 2 input to value the instrument.
18 Not active markets are markets in which there are few transactions for the asset or liability, the prices are not current or price quotations vary substantially either over time or among market makers, or in which little information is free publicly.
19 The fair value of an investment property is typically its most probable market price reasonably available at the balance sheet date. It is the best

DOI: 10.1057/9781137448262.0004

price realistically obtainable by the seller and the most advantageous price reasonably obtainable by the buyer.

20 Under HCA, revaluations to align the accounting value of an asset or liability with its market price are possible only in certain situations. For example, it occurs when an instrument is part of the trading book of a financial intermediary, or when the holding entity can prove that its value has been changed forever.

21 The notion of forward-looking provisioning refers to the probability of default embodied in any loan. Provisions should reveal any change in the likelihood of default after taking into account recovery rates. This approach is very close to the Basel committee's view on expected losses related to the banking book, to the extent that unexpected losses should theoretically be compensated for by capital and expected losses by provisions after they have been evaluated through the internal ratings-based methods. See Basel Committee on Banking Supervision (2006), Guidance on the use of the fair value option for financial instruments by banks. Bank for International Settlements (June); Basel Committee on Banking Supervision (2008), Fair value measurement and modeling: an assessment of challenges and lessons learned from the market stress, Bank for International Settlements (June); Basel Committee on Banking Supervision (2009), Supervisory guidance for assessing banks' financial instruments fair value practices, Bank for International Settlements (June).

22 This concept of loss is connected to the idea that a financial statement should reflect events that have occurred within the reporting period and should not replicate events that have not yet happened. This concept is typically designated under the terms of 'incurred loss'. The provisions made against this risk are thus backwards-looking. One weakness of this method is that it always leads to provisions for loan losses being fashioned only after the credit quality of a borrower has already declined significantly and the loan has been assigned a very low internal credit grade, if not categorized as defaulted. This can lead to loans being overestimated and profits overstated during periods when loan quality is already deteriorating, but default rates have not yet started to rise.

23 A significant difficulty of forward-looking provisioning comes from current accounting and tax regulations. In order to restrict the possibility for management to influence financial results, in most countries regulations are inclined to give a stringent explanation of the concept of impairment: provisioning is permitted only when the losses have already materialized or when there is concrete evidence that they will materialize soon.

DOI: 10.1057/9781137448262.0004

3

The Role of Fair Value Accounting (FVA) in the Financial Crisis

Abstract: *FVA has been criticized for its role in the GFC. During the crisis, the events have proved that while markets are illiquid, financial statements can portray a state that does not reflect the intrinsic economic and financial fundamentals of a company due to FVA. In particular, the financial crisis has shed light on the consequences of fair value measurement in distressed markets and specifically on two key aspects regarding the concept of fair value: volatility and pro-cyclicality. The first strong opposition to fair value is that market values for assets and liabilities risk encouraging too much volatility in the markets under FVA. The second severe criticism is that it can persuade a pro-cyclical stress in asset prices.*

Menicucci, Elisa. *Fair Value Accounting: Key Issues Arising from the Financial Crisis.* Basingstoke: Palgrave Macmillan, 2015. DOI: 10.1057/9781137448262.0005.

3.1 Introduction

The debate about strengths and weaknesses of FVA is linked with the credit crunch and financial crisis happen in years 2007–2009. Especially at the end of 2008 and the beginning of 2009, the global economy was affected by the most severe crisis, amplified by a shocking fall down of developed financial markets. The financial crisis really provides a unique context to gain insights into the application of FVA and to assess the broader consequences deriving from its adoption. The study of FVA has become highly relevant, especially during the recent financial crisis because the application of FVA has received more negative comments than positive feedback. In fact, after the financial crisis commenced, the interest of academic literature and professional journals in the consequences of FVA improved.

The dispute over the role played by FVA in the financial turmoil is still an important issue, not only for academic researchers, but also in the financial press and on politicians' agendas. The introduction of FVA generated significant commentary, even if there is no consensus on its influence during the recent financial crisis in the conclusions achieved from the different studies. Significant remarks could really be seen as a blame shifting because FVA is perceived to have contributed to the severity of the 2008 financial crisis (Mala and Chand, 2012).

The FVA continues to produce a passionate and interesting debate about its impact on the Global Financial and Economic Crisis despite the widespread adoption of International Financial Accounting Standards (IFRS) by accounting regulatory committees in many countries. While fair value has come under scrutiny and was blamed, the main critical flaw does not lie in the accounting standards but in the fact that companies take measures to partially withhold information. Financial reporting is not always prepared specifically for delivering the needed information to investors, and third parties such as analysts, investors, standard setters and auditors may be responsible for encouraging and allowing such preparers' behaviour.

During the financial crisis, prices for mortgage related securities cut down significantly and markets for them became illiquid. The result was banks marking down their financial instruments by considerable amounts because fair value measurement allows for certain assets to be valued at the amount for which they could be exchanged in an open

DOI: 10.1057/9781137448262.0005

market transaction. The difficulty with this valuation comes when the market for an asset or a liability that a company values at fair value becomes illiquid.

In these circumstances, commentators advise against the challenges of the use of fair value measurements in financial reporting, and specifically some argues that the values reported on the financial statements of the firms are influenced by change of their market development over time when the assets are accounted for at fair value, so that these measurements can lead to contamination and misunderstanding of the asset values.

In this chapter, we start our analysis by explaining in more detail how FVA can cause problems in a crisis, and after this background information on how FVA essentially operates, we inspect possible mechanisms through which FVA could have contributed to the financial crisis. As described in the first chapter, FVA has been an issue of significant debate among regulators, standard setters, investors and accounting professionals. In order to have a balanced assessment of the arguments discussed above, it would be essential to understand how the fair value paradigm affects the behaviour of banks and banks' stakeholders. The above outline of the debate on FVA shows that the topic is complex and difficult to address, relying only on partly evidence.

3.2 FVA and implications in the financial crisis

FVA and its application through the business cycle have been subject to an extensive debate, and it has come under inspection during the financial crisis. In this regard, also national accounting regulators have raised concerns about the application of FVA, and some critics go as far as to blame the whole crisis on FVA. There have been a number of allegations about the suggestion that FVA was to blame for exacerbating the credit crunch and that mark to market accounting permitted undermining markets for illiquid assets.

Critics argue that measuring financial instruments applying fair value may have unintentional consequences, such as magnifying economic shocks. In addition, they assert that fair value estimates can sometimes stand no relationship to expected cash flows or underlying economic challenges determined by market reaction rather than by economic conditions or fundamentals. They also claim that fair value can amplify

DOI: 10.1057/9781137448262.0005

income volatility, affect public confidence, and negatively impact economic stability. In these circumstances, some key points should be leaved out. The use of market values can change a critical temporary development of the economic cycle in a real financial shock, being more difficult to come back because of the lack of liquidity and more liable valuations to be biased by psychological factors.

The GFC was meant to attract the attention of financial institutions, regulators, policymakers and finance ministers about the critical aspects surrounding the use of FVA and its impact. GFC warned standard setters and their constituents to be less preoccupied with the compound fundamental challenge of establishing global standards and more focused on some of the weaknesses in those standards.

Specially, GFC has led to a number of criticisms of IAS/IFRS, and it has been pressing the IASB to revise its regulations on FVA. Firstly, the IASB contrasted any change in the fair value rules, arguing that any mitigation in them would make unclear the information reported for investors and regulators. Nevertheless, because of the constant demands from the financial institutions, policymakers and financial ministers of major countries, the IASB has brought forward measures to improve the reporting requirements in IFRSs.

The IASB quickly underlined the valuation challenges becoming evident in the context of the financial crisis. Above all, the IASB reviewed its decisions and replied by taking first-time proposals in response to concerns about fair value measurements in illiquid markets during the crisis.[1] For this reason, in 2008, the IASB established an expert advisory panel[2] to review the accounting issues emerging from fair value reporting in illiquid markets and to identify best practices for measuring fair value and for disclosure. The intent of the expert advisory panel was to set up a single standard that estimates fair value, whereas existing standards obligate or allow the application of FVA. Based on the recommendations of the expert advisory panel, the IASB published the IFRS 7 to amend the fair value disclosures. Moreover, the IASB endorsed the demand from the European regulators and relaxed its position on FVA by allowing companies to relocate non-derivative financial assets out of categories reported at fair value into classifications that employ amortized cost to recognize assets in balance sheets.

On 30 December 2008, the SEC delivered a report on mark to market accounting standards and their application to financial institutions. Although report concluded that FVA standards should not be suspended,

DOI: 10.1057/9781137448262.0005

recommendations were made to improve their application. For example, the report recommended reconsideration of accounting for impairments and the development of additional guidance for determining fair value of investments in inactive markets, including situations where market processes are not readily available.

Then, in May 2009, the IASB published an Exposure Draft on Fair Value Measurement.[3] This proposed guidance deals with fair value measurement whereas it is required by existing accounting standards. The guidance switches fair value measurement applications contained within individual IFRS with a single and unified definition of fair value, as well as giving further regulation on the use of fair value measurement in inactive markets.

Moreover, there are valid concerns about reporting asset values to market prices in times of financial crises because they are hitched to a number of regulations (e.g., regulations regarding capital ratio for banks). Nevertheless, the standards permit some deviations from market prices under certain conditions so that the implementation of FVA enables auditors and firms to abide by certain rules or practices without using the discretion initially intended in the standards. Differently, excessive managerial judgment in measuring fair values may transform into manipulations for managers' own ends (Aboody et al., 2006; Bartov et al., 2004).

The challenge for standard setters is to realize a suitable trade-off between the possible contagion consequences from applying FVA and stakeholders' requests to obtain early information about losses. In this regard, the preparers of financial reporting are responsible for delivering the essential information to investors to make exact decisions. Thus, through this belief, the responsibility of the accounting standard setters and accounting profession is further accomplished: to promote the diffusion of high quality information.

Hence, the use of fair value based information needs to be adapted, but the underlying accounting standards do not require to change FVA but to keep up it to date with the ever-evolving markets. The aim assigned to the fair value accountancy and to valuations based on market prices doesn't appear to be an overstated one if we assimilate it in the context of fully developing financial markets. A limitation of the use of fair value would risk making wounds of present financial crisis worse, reducing the level of thrust that investors and other stakeholders have in financial situations of financial institutions (Véron, 2008).

DOI: 10.1057/9781137448262.0005

However, to draw any reasonable conclusion on the effect of FVA on the financial crisis, it is previously essential to suggest and to analyze arguments in its favour as they are described in the next paragraph.

3.3 Fair value in normal economic conditions

The fundamental purpose of financial reporting is to portray the underlying economic situation of the company and to truly replicate the real economic variation of the business cycle. This objective increases the relevance of the information included in the financial statements and improves investors' and regulators' capability to adopt knowledgeable decisions. FVA appears to be the better tool to align financial reporting to this aim, as it allows financial statements to be more relevant and more easily comparable across different companies and times. For example, under FVA, the value of financial assets acquired by two diverse firms at different times may be easily comparable, whereas under HCA, the accounting value of these assets will more probably be reported differently on the balance sheets of the two firms.

A number of users of financial reporting seem to agree this reflection. For instance, concerning FVA and its application to financial institutions, the main conclusion of the consultation conducted by the US Securities and Exchange Commission aligned with the information function of FVA. According to this report, a number of investors and other users of financial reports believe that FVA provides further insight into the risks to which the company may be exposed and into the probable liquidity concerns the company could meet if it has the need to sell securities rather than to hold them for the long-term (SEC, 2008).

Some studies investigated FVA in normal economic conditions, and the supporters of FVA describe it as a messenger who communicates information on what has really occurred (Wallace, 2008; Pozen, 2009). FVA can also count on wide support from the accounting profession, standard setters and regulators. Some claimed that FVA is only a messenger and should not be critiqued for simply reflecting the stressed economic circumstances[4] because the benefits it brings to transparency and comparability are undisputed.

Even though FVA has been widely blamed for its role in the GFC, there are nevertheless substantial advantages of its use. Proponents of fair value – including principal members of FASB, IASB and SEC – argue

DOI: 10.1057/9781137448262.0005

that it is the most appropriate measure for financial instruments, providing investors with more accurate, comparable and timely information. Proponents specifically contend that fair values for assets and liabilities reflect current market conditions and thus increase transparency and encourage quick corrective actions providing appropriate information. Few arguments come up on the importance of transparency; instead the dispute attend to whether FVA is certainly useful in providing transparency and whether it leads to unwelcome behaviours of banks and firms (Shin, 2007).

We can recognize an extensive variety of arguments to support fair value measurement, such as the comparability of market values, the reliability of market price information, the conceptual qualities of market valuation for financial instruments and the accounting for risk management policies. In this regard, a number of papers have investigated FVA in normal economic conditions, and there are several important opinions in favour of it (Rummell, 2008). The merits of FVA have been studied extensively especially over the past 20 years (Magnan, 2009), and sound empirical research findings revealed that assets and liabilities valued at market value deliver more beneficial information to users of financial statements (Barth, 2001). In other words, the application of market prices for preparing accounting reports is useful to investors and authorities, as it provides proper and consistent information on a firm's current performance and risk (Plantin at al., 2008a).

Actually, many studies have found FVA to be incrementally informative, and in particular the recent accounting research literature (FCAG, 2009; IMF, 2008) indicated the preferred option of stakeholders for the use of fair value as accounting regime for financial reporting because it endorses a higher level of information comparability.

Supporters of FVA admit that it is not ideal, but they also contend that FVA is better than any existing accounting alternatives. It offers much needed information for investor, and it is the most effective method to reflect economic reality of such items such as derivatives and other financial assets. In particular, the level of relevance achieved through the application of fair value is superior to that of historical cost regime, due to the fact that assets or liabilities valued at market value are more strongly associated with stock prices than when valued at historical cost. Also, professional bodies are certain that the measurement of some assets and liabilities (e.g., derivatives) at the fair value gives better decision-useful financial information than historical cost.

DOI: 10.1057/9781137448262.0005

Even though FVA is not perfect, it signifies the value of financial instruments (e.g., assets for trading) to users of financial reporting in a more relevant and timely way than figures based on HCA (Linsmeier, 2011). FVA enhances market discipline and leads to more efficient markets. On the contrary, the alternative measurement model (i.e., historical cost) hides or delays the disclosure of important information and induces inefficient market decisions (Boyer, 2007). These arguments advance a number of important questions regarding the information carried by financial statements.

Proponents of FVA do not reject that truly mark to market accounting reflects market fluctuations, but they sustain that the use of FVA provides prompt warning signs by exposing inflated asset values. In their view, this supports a more early recognition and appropriate mitigation of the crisis's effects. Fair value increases a company's transparency, and thus through it, investors can get necessary information on which to base their decisions earlier (Bischof et al., 2014).

Anyhow, FVA is not new, and it did not cause managers to take up speculative derivative contracts or to purchase risky investments. Preceding and during the financial crisis, the fair value regime attended to rapidly identify complications, giving policymakers and management more timely and more transparent financial information to react to the crisis. It is also suggested that the world's current financial crisis might be worse in the absence of FVA because the extent of the financial troubles would not have been reported as fast under traditional accounting methods. Furthermore, according to some analysts, if FVA had been introduced before, and if the financial risk had been detected properly in the market values, the financial crisis would have been impeded, or at least the negative consequences of it would have been reduced (Michael, 2004; Andrè et al., 2009).

Another considerable issue is the reduced opportunity for earnings management as a result of the use of FVA. It is said that FVA can lessen the practice of accounting-motivated transaction intended to achieve chances for earnings management shaped by the mixed model of historical cost and fair value. In stressed economic times, management can have an impact on reported income under HCA through the sale of assets, for example, whereas a profit has to be reported because the net selling price of the asset is importantly superior to the book value reported under historical cost. This practice should not be possible under FVA, as the underlying asset is reported at fair value, and the effect is recognized

DOI: 10.1057/9781137448262.0005

in the income statement, thus reducing the opportunity for income leveling.

Hence, the controversy rests on whether FVA is indeed helpful in providing transparency and more useful information (Beatty and Harris, 1999) to investors than alternative accounting approaches. In summary, the most relevant question is whether FVA benefits investors. The reply to that question is yes, and some of the key reasons follow:

- FVA requires or permits firms to report values that are more accurate, timely, and comparable than those that would be recognized under existing alternative accounting approaches, and during risky market conditions.
- FVA reflects current market conditions and thus offers up-to-date flow of relevant information, thereby increasing transparency and encouraging confidence in the capital markets.
- FVA requires or permits companies to report amounts that are updated on a regular and ongoing basis.
- FVA bounds companies' capability to manipulate their net income because gains and losses on assets and liabilities are reported in the period they happen, not when they are realized as the consequence of a transaction.

Within the last but not least arguments for the assessment of whether FVA played the role of a messenger or a cause in the financial crunch and subsequent economic crisis, the main advantages associated with fair value measurement in normal economic conditions are listed in brief:

- FVA comprises increased relevance of information offered to investors.
- FVA reduces the likelihood for earnings management, and it confines the practices of gains through the discretionary trade of assets and liabilities.
- FVA is a market-based measurement that is not influenced by specific aspects of a particular entity, and consequently, it represents a neutral measure that is reliable across entities and from period to period.
- FVA is based on market prices and it provides up-to-date information about the value of assets, whereas HCA becomes irrelevant in assessing an entity's current financial position with the passage of time.

DOI: 10.1057/9781137448262.0005

- FVA reflects the real economic substance of assets and liabilities and reports these items in the manner that an economist would refer for them.
- FVA hasn't created the financial crisis, and its rejection doesn't resolve the problems originated by the crisis.
- The absence of active markets doesn't justify the abandonment of FVA but the improvement of valuation methodologies (Brinza, 2011).
- Renunciation of FVA during a market's financial distress would affect the neutrality of accountancy and would divest investors of beneficial information.

3.3.1 Relevance versus reliability

Much of the debate regarding FVA outcomes from mistake about what is diverse and what is new about FVA, as well as dissimilar points of view about the purpose of it. In our opinion, the controversy about FVA takes us back to a number of previous accounting topics, like the trade-off between relevance and reliability, which have been discussed for years.[5]

Relevance and reliability are the two primary qualities that make accounting information useful for decision-making. Subject to constraints imposed by cost and materiality, increased relevance and increased reliability are the characteristics that make information a more desirable tool, and at the same time, if either of those qualities is completely missing, the information will not be useful.

To the extent the goals of reliability and relevance are realized, the economy should advantage in numerous ways. Higher transparency will lessen concerns about asymmetric information and should reduce the uncertainty premium required by investors. A reduction in information asymmetries should alleviate concerns about adverse selection that stands up when less-informed investors transact with better-informed ones. This should improve their willingness to trade and increase the allocation of resources. Moreover, enhanced disclosure can lower the risk of assessing future cash flows and consequently can directly decrease the required rate of return on an individual security.

The analysis of prior and current accounting literature shows that the debate about FVA principally regards the divergence between relevance (i.e., the usefulness of accounting information for stakeholders) and reliability (i.e., the accuracy of information) (Barth, 1991). Indeed, all the literature indicates that fair value provides more relevant information to

DOI: 10.1057/9781137448262.0005

investors and creditors than historical cost even if the latter is considered more objective and reliable that fair value in some circumstances. The debate of FVA essentially turned around the issues of relevance and reliability, and it represents now another and new example of the relevance versus reliability matter.

Empirical studies that have investigated these arguments in the banking and finance industry have focused on the value-relevance and reliability of FVA relative to HCA. For example, Barth (1994) compared relevance and reliability of these different regimes, and especially examined the value-relevance and reliability of the fair value of US banks' investment securities, showing that it is relevant and reliable to investors. Apart from occasional positions, standard setters always deal with this trade-off and connected arguments. For instance, IAS/IFRSs entail fair value measurements with the purpose of enhancing the relevance of reported values. From this perspective, fair values incorporate more information than historical costs in financial statements and, other things being equal, make them more useful and informative with potential advantages to investors, managers and other parties.

Therefore, the general assumption in normal times, as soon as markets are liquid and efficient, is that FVA is adequately reliable and relevant to be used in corporate valuations, and that it is favourable to efficiently operating security markets. Due to the fact that the theme of evaluation is a very composite one, fair value has been the subject of a varied collection of studies dedicated on the relevance of values recorded in financial reports. The views described in the previous paragraph show that there are a number of proponents of fair value who strongly support it and its endorsement by the IASB in IAS/IFRS. Supporters of the use of FVA believe that information about fair value of financial assets and liabilities is more relevant than historical cost. In this perspective FVA has gained credibility because investors identify fair value estimates as more value relevant than historical cost amounts.

Relevance is defined in the glossary of the FASB Statement of Financial Accounting Concepts No. 2 – Qualitative Characteristics of Accounting Information as the capacity of information to differentiate a decision by supporting users to make predictions about the results of past, present and future events or to confirm or correct prior expectation. To be relevant, information must be timely, and it must have predictive value or feedback value or both. In other words, relevant accounting information is capable of confirming decisions that stakeholders have previously made and/or of

DOI: 10.1057/9781137448262.0005

making a difference in stakeholders' future decisions. Fair value reflects daily quoted market prices, and certainly these values appear to be timely, affirmative and prognostic information about a firm's activities.

As a result, under FVA, investors and other decision makers can exercise better market discipline and corrective actions on company's decisions because fair value provides a better indication of current risk. If fair value is not relevant, then it is not meaningful, and then it would provide no information that is beneficial to investors regarding the underlying economic value of the securities that are reported at fair value.

In effect, a measurement system that reflects the market values of assets and liabilities would therefore lead to better insights into the risk profile of companies, and towards this aim, one of the most important qualities of it is that its information is significant to its users.[6]

In this perspective, the framework IASB already recommends that firms' reports be fashioned to enable users to make economic decisions concerning an assessment of the company's future cash flows. If investors are provided with information about future cash flows to select their investments, the records will also mirror the economic reality.

Proponents of mark to market accounting contend that the market value of an asset is more relevant than historical cost because it reflects the amount at which an asset could be bought or sold in a current transaction between willing parties. Likewise, the market value of a liability is more relevant than historical cost because it reflects the amount at which the liability could be incurred or settled in a current transaction between willing parties.

In light of such considerations, it seems that accounting regulators have been progressively replacing HCA with fair values estimated both from liquid market prices and from model-based valuations.[7] Nevertheless, for assets, liabilities or equity instruments that are not traded in active markets and for which market information is not available, the estimation of fair value is possible to be difficult. Subsequently, a key issue is whether a fair value measurement can be assumed as having adequate reliability.

Reliability is defined in the glossary of the FASB Statement of Financial Accounting Concepts No. 2 as the quality of information that guarantees its reasonable freedom from error and bias and that assurances faithfully represent what it purports to signify. Additionally, reliability assumes accounting information to be unbiased, verifiable, neutral, and a truly portray of the underlying reality of the business. In this respect, according to the fair value supporters' conclusion, reliability will encourage

DOI: 10.1057/9781137448262.0005

greater market discipline and will allow users of financial statements to make better capital allocations. Fair value as an estimation of exit value under normal market conditions is clear and not debatable within a well-ordered liquid market. If markets were liquid and transparent for all assets and liabilities, FVA evidently would deliver consistent and desirable information for the decision-making process.

FVA can provide transparent information for the users of accounting information since it can reflect what is happening in the market. In this situation, FVA improves the transparency of the information on the financial statements, and the investors can get easy access to transparent market information and benefit from it. There is no denying that transparency is important, but the debate lies in whether FVA can guarantee enough transparency. Even though FVA delivers transparent information based on market prices, inefficient markets could distort prices and have a negative effect on the basis of FVA.

Moreover, because many assets and liabilities do not be traded in an active market, the inputs and the methods for estimating their fair value could be more subjective and, thus, the valuations less reliable. The unreliability of the evaluation model for some financial instruments with illiquid markets reduces the effectiveness and the reliability of the information provided by FVA, making transparent information useless. Thus, FVA could not be helpful in offering transparent information in illiquid markets.

What if there are no liquid markets? These are the circumstances in which an estimate of fair value will certainly encompass the forecast of future cash flows and the choice of proper discount rates. These valuations rely on management's expectations and measurement error. When fair values are founded upon unbiased market practice, market prices would attend to provide stakeholders with accounting information that is both relevant and reliable. Conversely, when fair values are based upon elements other than unbiased market prices, or when the market prices themselves become other than unbiased, there is concern that the information offered may be less relevant or reliable and might even be distorted.

3.4 Fair value in financial crisis conditions

FVA has drawn much attention and has been seriously criticized for its role in the GFC. Specifically, the financial crisis has exploded severe

DOI: 10.1057/9781137448262.0005

debate about the consequences of fair value measurement in distressed and illiquid markets. Many researchers suggest that the application of FVA in the financial reporting may have rather played a role in aggravating the effects of the financial crisis.

Anyhow, regarding FVA and accuracy of related information for investors, there are real fair value's information benefits. The situation converses in distressed markets because the absence of organized and liquid exchanges for many assets and liabilities stances difficulties in making reliable fair value measurements.[8] In these conditions, FVA communicates less relevant and reliable financial information because of the volatility of market pricing used measurements. During the financial crisis, the events have proved that, for the time, markets are illiquid, or when a momentary decline in risk tolerance directs investors to evade risky assets – in spite of the underlying quality – FVA can cause financial statements to portray a state that does not reflect the intrinsic economic and financial fundamentals of a company.

As the financial crisis shows, there is a necessity to enhance transparency and to promote clarity, consistency and robustness of disclosures as the valuation approaches come to be critical in preserving the accuracy of information provided to stakeholders.

But does FVA really encourage transparency by providing relevant information to stakeholders? Critics (Krumwiede, 2008) of FVA claim that FVA has not led to improved transparency in financial reporting as the users of it had anticipated. For example, in the banking sector, many have argued that although fair value seems to give relevant liquidation value every time, it confuses the value creation process by combining present profit with unrealized capital gains and losses.

FVA was originally accepted because assets and liabilities measured at fair value are more relevant for decision-making while financial reports based on historical costs are considered inappropriate when fair value exceeds the historical cost of the items (Foster and Shastri, 2010). Nevertheless, during the financial crisis, FVA hasn't achieved its prospects to grow transparency in financial reporting in spite of its stately aim (Krumwiede, 2008; Laux and Leuz, 2009). Fair value is believed to enhance relevance, but it reduces reliability, altering investors' view of financial performance and stability (Dietrich et al., 2001; Magnan, 2009). Economic research has shown for years that markets are frequently defective, even in normal times, but particularly in periods of speculative bubbles because of information asymmetries and different beliefs and

DOI: 10.1057/9781137448262.0005

behaviours of market participants. Fair value allows for certain assets to be valued at the amount for which they could be exchanged in an open market transaction. Therefore, the difficult with this stands up when the market for an asset that a firm values at fair value becomes illiquid. FVA is potentially unreliable in the absence of quoted market prices, resulting in a reduction of comparability and reliability of financial statements (Chea, 2011). As a result of the credit and liquidity crisis, many markets experienced reduced transaction volumes, lower transaction dimensions and, sometimes, no real market activity for some periods of time. In inactive and illiquid markets,[9] fair value measurements became more difficult because of the absence of observable market prices and trading activity for complex financial products.

Assets and liabilities for which markets become illiquid and market prices are not available, could be valued at fair value using supposed market values and valuation models that the company must come up with (Bout et al., 2010). So fair value can be estimated when a market does not exist because fair value valuation models contain the expected risk-discounted cash flows that market participants could obtain from a financial instrument at a certain date. Regarding the valuation models used, an entity must consider current market conditions and comprise appropriate credit and liquidity risk corrections. The technique should be periodically adjusted to observable market data to ensure that the model reflects current market conditions.

An entity should raise the application of observable market data and reduce the use of unobservable market inputs in order to measure the price at which an orderly transaction would occur between market participants on the measurement date. Nevertheless, under stressed liquidity conditions, financial institutions made wider use of unobservable inputs in their model-based valuations, increasing uncertainty and opacity among financial institutions, supervisors, and investors regarding the valuation of financial products under such conditions.

Thus, the determination of fair value in turbulent markets may require a significant grade of judgment. Because a number of assets and liabilities do not be traded in active markets, the inputs and methods for measuring their fair value are more subjective, and thus the valuations are less consistent (Bies, 2005). In this regard, another consequence of the information provided by fair value measurement is the discretionary judgment that inevitably emerges within the value determination of assets or liabilities for which inputs are unobservable (i.e., Level 3 inputs). This

DOI: 10.1057/9781137448262.0005

subjectivity reveals itself through managerial judgment, use of reserved information, and the intrinsic uncertainty concerning the validity of the assumptions used in the valuation.

Evidently, there are risks in using a valuation technique for instruments for which there is no liquid market in which prices can be observed. These fair value models include many assumptions, and their even small changes can conduct to significant modifications of income.[10] For instance, estimations of future cash flows provide occasions for subjective judgments or alteration of the values. Therefore, fair values can be unreliable owing to the inherent error in either the measurement technique or the inputs of it.

In other words, fair value measurements may be resulting from models that include basic assumptions that insert measurement error and required inputs (i.e., cash flow or income forecasts) that are themselves subjected to estimation error. In short, discretionary in estimations of fair value introduces possible alterations of the earnings. In effect, critics state that sometimes fair value measurements are not related with 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 during a liquidity crisis prices do not reflect the properly discounted value of future expected cash flows, but they are measured by the cash obtainable in the market at that moment. These market circumstances affect bank asset values through FVA, as well as portfolio and contract selections, and encourage default contagion across financial institutions, especially for those with long-term assets. Hence, according to some authors (Allen and Carletti, 2008) market prices under situations of market illiquidity should be overlooked because they understate intrinsic values and alter portfolio and contract choosing.

3.4.1 Criticisms of fair value

Some critics argued that FVA exacerbated the severity of the 2008 financial crisis (*The Economist*, 2008), undermining stakeholders' confidence and affecting economic stability unfavourably. Over this, we advocate two different viewpoints. On one side, FVA delivers the relevant and true underlying value of assets and liabilities. On the other side, FVA induces

DOI: 10.1057/9781137448262.0005

too much and artificial volatility that does not reflect underlying value (Plantin, 2008a; ECB, 2004; Menicucci, 2010). The second view is also the main critique related to the use of FVA: that is, it introduces higher volatility in the financial statement, and so it improves both volatility and contagion in the market. The qualities credited to fair value are not excused from criticism that FVA increases pro-cyclicality by intensifying the effects of the business cycle. Above all, FVA implies a short-term approach that can significantly upsurge the volatility of balance sheet values. Besides, fair value does not need a transaction to have happened to recognize the change in value, so it permits to recognize profits and losses previously than under the HCA.

On this matter, some prominent researchers have argued that FVA exaggerates the intrinsic pro-cyclicality of the financial system, leading to larger booms and more negative busts (Allen and Carletti, 2011; Brunnermeirer et al., 2009). On the basis of other empirical findings, the model proposed by De Jager (2014), for example, shows that in the banking sector, FVA is an accelerator that amplifies the financial cycle upswing and causes changes in the demand for financial instruments in the real economy.

These contributions highlight that when markets are illiquid, FVA may cause excessive bank insolvencies and contagion through distorted market prices. These conditions amplify leveraging and deleveraging cycles through their impact on haircuts and interactions with capital requirements, leading to descending liquidity spirals in asset prices. The major assertions are that FVA adds to excessive leverage in boom periods and contributes to excessive write-downs in busts, which in turn makes the financial system more vulnerable and financial crises more severe. The write-downs due to falling market prices reduce bank capital and direct to a downward spiral. Banks are enforced to sell assets at fire sale prices, which in turn can set off contagion as prices from asset fire sales of one financial institution become significant for other financial institutions.

The pro-cyclical nature of FVA is more an effect of how accounting data impact on economic decisions than of how financial statements are prepared. Fair values reported in financial statements are evaluations of market conditions at any time, so that knowing this, users of financial reporting can interpret fair values (and associated disclosures) to assess the uncertainty surrounding these estimates and to correct their decision-making process in a transparent manner.

DOI: 10.1057/9781137448262.0005

Mostly critics argue that the financial crisis demonstrates that measuring financial instruments using fair value may have unintentional consequences such as the pro-cyclicality of fair values when accounting is closely combined to prudential regulatory systems and the unreliability of mark to model (particularly for assets – except for those traded in liquid markets – which are being held for the long term).[11]

In response to the credit crunch, some parties have criticized FVA, especially financial institutions. Those criticisms can be sum up as follows:

- The measure of fair value is subjective, whereas the markets are inactive and illiquid;
- FVA implies to report losses that are misleading because they are provisional, and they will upturn when markets return to normal;
- Under FVA, reported losses unfavourably affect market prices generating further losses and growing the whole risk of the financial system;
- FVA is pro-cyclical because it accelerates the market drop by encouraging sales in order to accomplish the capital requirements;
- FVA forces financial institutions to report losses driven by the short-term uncertainty and lack of liquidity in the market.

Moreover, there are of course other limitations of FVA usage, which calls for a better explanation. As a final point for our assessments, two key concerns about FVA can be summarized briefly:

Unrealized gains – Revaluation of assets and liabilities to their up to date fair value at the balance date can lead to recognition of unrealized profits. Changes in fair values are only expectations, and their realization is conditioned by a number of factors, such as the decision, usually made by management, to liquidate the position and market stability or volatility. Then, if the unrealized profits are distributed, the possibility of distribution of unrealized profits to the owners and consequently the risk of the erosion of entity's capital can stand out, especially during a financial bubble.

Reliability of measurement – Fair value is a hypothetical value reflecting fair conditions and positions of market participants but in many cases (i.e., in inactive and illiquid markets), an estimate of such conditions is necessary in order to derive to fair value. Though fair value is not directly the origin of the financial crisis, many measurement issues need to be analyzed. At the time, markets of certain financial instruments became illiquid, and as a result fair values held less reliability than usual.

DOI: 10.1057/9781137448262.0005

Especially when market prices are rapidly falling and/or when markets suffer from lack of liquidity, the reliability of fair value measurement is impeded or limited because the estimates of fair value may become distorted by forced sales or fire sales (Hellwing, 2009; Bignon et al., 2009).

The most challenging is the measurement of financial instruments that are attributed no better than to the Level 3 of the fair value hierarchy. The valuation of Level 3 positions is based on models with unobservable market inputs because much of the relevant information possessed by companies is never priced in a market. The resulting fair value is subjective and difficult to prove by the users outside the entity.

For instance, mark to market accounting does not properly reveal the way in which banks and insurance companies manage their core businesses of yielding long term loans and underwriting insurance policies. Mark to market accounting could therefore produce negative real effects on banks and insurance companies' core businesses by shortening their planning prospects. As is known, the essence of banking consists of making long-term decisions about credit quality and concentration and in tending customer relationships over the life of the contracts.

3.5 Key observations on fair value arising from the financial crisis: volatility and pro-cyclicality

The quite long history of using FVA has carried with it a wave of critics. Although the criticism has strengthened considerably during the current financial meltdown, FVA's remarks can be ascribed to two main arguments against its use: its tendency to intensify pro-cyclicality and its contribution to the increased volatility of information reported in financial statements. In this respect, the financial crisis has made light on two key aspects of the concept of fair value: volatility and pro-cyclicality. These arguments against FVA are very important and need further examination. Appreciating the nature and the measure of such effects is a key subject to understand the causes of the controversy surrounding the fair value reporting standards.

3.5.1 Fair value and volatility

The first strong opposition to fair value is that confidence on market values for assets and liabilities under FVA risks induces too much

DOI: 10.1057/9781137448262.0005

volatility in the markets. At this point, it is important to make a distinction between volatility of prices, which just mirrors the volatility of the underlying fundamentals, from volatility that cannot be legitimated by these fundamentals (i.e., 'artificial' volatility).

The volatility is even excess because 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. Obviously, if the fundamentals themselves are volatile, then market prices merely reflect the underlying reality. However, the nature of the volatility is artificial in the sense that it refers to somewhat more harmful. For instance, marking to market outcomes artificial volatility in income because any variance of the current value of a loan held to maturity from its cost will be gradually compensated during the life of the loan (i.e., 'pulling the value to par' at maturity).

Market prices have a two-edged effect: they reflect the volatility of the underlying fundamentals as well as affecting the market outcome influencing market participants' actions. 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 dealings of these market participants, and thus will have an impact on their actions. Market price fluctuations can arise due to the effect of great number of factors. If the changes of market prices are connected with assets to which FVA is applied, banks are forced to write-down and to reduce the book value of those assets. That reduction leads to capital draining, and it imposes on financial institutions the need 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 became relevant for other banks, too, as well as difficulties with maintaining obligatory capital reserves and liquidity problems. Downward liquidity spirals occur, financial markets freeze up, and crisis spreads, finally resulting in banks' bankruptcies. The expectation of short-term price fluctuations likely induces market participants to react in such a way as to magnify these price oscillations.

When such reaction consequences are sizable, then companies' decisions are based on the deductions of others' decisions rather than on the basis of supposed fundamentals. According to this logic, there is the danger of an extra endogenous cause of volatility that is merely a

DOI: 10.1057/9781137448262.0005

result of the accounting regime rather than something that reflects the underlying fundamentals.

The beginnings of downward cycles and the spreading of crisis can occur when banks' management is focused on short–term objectives (i.e., short–term profits).[12] For instance, short sales aimed to speculate on more future fall-downs in market prices can be a motivation that converts into an unusual surplus of supply over demand on the market of financial instruments during the crisis. Market speculation on the upcoming trends of prices is an intrinsic characteristic of market economy, together with the first signals of market turmoil and drops in asset prices. This situation further leads to spread panic in financial sector in order to avoid higher losses and to sell assets at even lower prices. As a result, inevitable crises spread out into real economy flows later.

Financial reporting does not own any device for impeding market participants' behaviour (Beatty, 2007), and in this background, FVA plays no role in the financial crisis. In this respect, no accounting measurement model is protected from market prices' declines, regardless of whether the sales of assets were forced or not. In the event of a potential abandon of fair value measurement and the return back to historical cost, in any case, the entity has to recognize impairment losses if carrying amounts of assets surpass their recoverable amounts. Consequently, banks and other financial institutions may be forced to sell the assets to respect capital requirements also under HCA.

3.5.2 Fair value and pro-cyclicality

The second reason for severe opposition to FVA, based on macroeconomic grounds, is that it is pro-cyclical (IMF, 2008; Matherat, 2008; Carosio, 2008; Banca d'Italia, 2009). Financial brokers obviously are inclined to act cyclically – taking more risks when economic market is trending upwards and choosing for security in an economic downturn. Then, a process is assumed to be pro-cyclical when it strengthens markets and economy in this direction. Pro-cyclicality is generally defined as the amplification of normal fluctuations of economic cycles – both in booms and in busts – generating conditions for increasing uncertainty and instability of the financial system. Specifically, the pro-cyclical effect is a reaction effect mechanism amplifying the volatility of the financial system, and it could activate or aggravate the instability of financial markets.[13] A situation can be categorized as pro-cyclical when an explicit regulation intensifies the natural trend of the market. In other words, pro-cyclicality

DOI: 10.1057/9781137448262.0005

is a kind of exacerbation of natural financial oscillations of the market, and it seems to be the situation that we can be experienced, whereas the loss of liquidity of some markets guides to huge write-downs.

It is important to acknowledge that pro-cyclicality of FVA is more than only reporting cyclical trends of market in asset prices; rather, the expression 'pro-cyclicality' makes only sense if we accept the idea that the accounting system aggravated the cycles in the financial system or in the real economy. For this reason, it is necessary to differentiate between natural (i.e., real) and artificial (i.e., amplified) pro-cyclicality. The credit crunch and the difficulty of increasing new loans because of saturated demand is certainly a natural cause or a consequence of economic downward spiral and cannot be ascribed to an accounting regime. The single cause of potential artificial pro-cyclicality rests the impairment charges of assets and liabilities preserved under FVA and combined with forced assets sales.

In this respect, significant concerns come forward with the pro-cyclical effects FVA could have on companies' balance sheets and on the financial system at large (SEC, 2008). Moreover, another important issue is that FVA can inspire a pro-cyclical stress in asset prices. In particular, asset prices valued according to the fair value are likely to be biased because their estimates within a financial bubble are higher than the intrinsic values, even inducing too much credit growth. When the bubble bursts, valuations may be lower than the underlying values of the assets in the market, then speeding up the liquidity crunch. In both cases, during a financial crisis – which generally implies abnormal market conditions – the fair value of financial assets and liabilities are not always fair to a large extent.

Hence, FVA can be considered pro-cyclical, i.e., it worsens prices' fluctuations, and it may also cause a downward spiral in the financial system. There are principally two arguments about why FVA can contribute to pro-cyclicality.

The first is that FVA and asset write-ups let banks grow their leverage in booms (Adrian and Shin, 2008a), which in turn makes the financial crisis sounder and the financial system more instable. The second argument is that FVA can cause contagion in financial markets. The basic notion is that financial institutions have to 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) and that the prices from these forced sales become significant to other institutions that are prescribed by FVA to mark to market their assets.

DOI: 10.1057/9781137448262.0005

How does FVA evidence pro-cyclical effects both in booms and in busts in practice? In booms, overstatement of profits and write-ups in assets recognized at fair value permit financial institutions to raise their leverage and to restrict their motivations to form reserves that may be pulled in times of crisis. In busts, FVA sets a downward pricing in previously weak markets which outcomes in further declines in market prices. In order to neutralize the write-down elicited by the application of FVA, financial institutions have been compelled to sell securities in illiquid markets even though the earlier purposes have been to hold those investments to maturity. Such forced or interested sales converted in observable inputs for other institutions that are required to use FVA to mark to market their assets. All at once, the little interest of other healthy sellers to come in such markets does not offer consent for the prices to go back to, or above, the fundamental value.

These enforced sales have made the market still more illiquid and volatile, resulting in additional price falls, which led also to more indecision for investors and to the reduction of their confidence in the market. Furthermore, sharpened volatility and unrealized losses, which due to FVA where recognized in the financial statements, reduced even more investors' confidence in the market prices, causing additional market illiquidity, much more financial instability, price drops and reduced value of firm's assets.

3.6 Concluding remarks

The financial crisis has highlighted the effects of FVA in troubled markets and especially on two main aspects concerning the fair value model, i.e., volatility and pro-cyclicality. The first severe criticism against the application of fair value is that market values for assets and liabilities could introduce volatility in large amounts in the markets under FVA. The second strong opposition to fair value is that it can persuade a pro-cyclical pressure in asset prices. However, the criticism on pro-cyclical effects of FVA is of a wider magnitude.

By compromising too much relevance to markets, accounting standards would thus be guilty of emphasizing both booms and busts. This criticism inquiries FVA not only when it is applied to illiquid securities, but at large as the guiding principle for accounting recognition of a broad variety of financial instruments.

DOI: 10.1057/9781137448262.0005

Regarding to it, the basic awareness that observable market prices give the best possible indication of value is faulty[14] because the application of FVA magnifies the seeming healthiness of banks' balance sheets at the top of the cycle and lessens it by an equal extent at the bottom.

By definition, reducing the impact of changes in fair value on the balance sheet will result in reduced pro-cyclicality of capital. As well, potential measures to moderate pro-cyclicality consist of limiting the impact of changes in fair value on the balance sheet through, for instance, a smoothing mechanism or a circuit breaker. However, if fair value estimates are reliable and relevant for investors, any smoothing technique could obscure valuable information. Since the unintentional consequences of FVA described above are strengthened by certain practices and policies that connect economic decisions to accounting data, they could be mitigated by not using fair value evaluations in an automatic manner. Anyway, further reinforcement of accounting standards to guarantee that fair value estimates are as reliable and relevant as possible could be very appropriate.

Notes

1 The rapidity of the activities to modify or to increase financial reporting standards provides insights into the urgency of the situation and reveals how the boards operate in crises.
2 IASB Expert Advisory Panel comprises a group of experts from preparers and users of financial statements, as well as regulators and auditors. Experts are selected on the basis of their practical experience with the valuation of financial instruments.
3 IASB Exposure Draft on Fair Value Measurement, May 2009
4 Rankin (2009, p. 10) claims that the function of fair value financial reporting is like that of the thermometer: it mirrors the reality but it does not create it.
5 The quality of an accounting system is evaluated on its capacity to ease the decisions of users, the relevance and reliability of the information, and the system's ability to allow comparison over time and between companies.
6 Such an argument would be overwhelming within wholly frictionless markets where market prices completely represent the fundamental values of all assets and liabilities.
7 The market-oriented models applied internally by firms are expected to describe the firm's reality to outsiders better than the previous book value system.

DOI: 10.1057/9781137448262.0005

8 For example, many assets of financial institutions (i.e., loans) are illiquid, not standardized and not traded in sound markets.

9 The major difference between prices observed in active and inactive markets is that the valuation process is much more challenging in inactive markets. Even when a market is considered to be inactive, a current transaction price for the same or a similar instrument normally provides the best indication of fair value.

10 This introduces 'model noise', as a result of imperfect pricing models and imperfect estimations of model parameters.

11 Opponents of FVA argue that fair value is not appropriate and potentially misleading for assets that are held for a long period (i.e., assets held to maturity).

12 Particularly, a great number of authors and analysts underlined this problem, because bonuses in banking sector are generally based on realized annual profits.

13 The Financial Stability Forum (at present: Financial Stability Board) describes pro-cyclicality as 'the dynamic interactions (positive feedback mechanisms) between financial and the real sectors of the economy'. Interactions between financial and real sectors tend to magnify economic business cycle peaks and troughs and to reduce financial stability. The SEC describes pro-cyclicality as 'the amplification of otherwise normal cyclical business fluctuations' (SEC 2008).

14 Markets are frequently imperfect, even in normal times, and all the more so in times of speculative bubbles or of collective panic, principally because of information asymmetries and differences among market participants in terms of beliefs and behaviour.

DOI: 10.1057/9781137448262.0005

4

Fair Value Accounting (FVA) in the Banking Sector

Abstract: *This chapter analyses the implications of FVA in the banking sector and in particular their impact on banks' balance sheets and financial stability. A topic of debate, concerning the impact of fair value on financial institutions, is the potential effect of fair value on the volatility of reported earnings and the relationship between pro-cyclicality and FVA. The evidence is that an extensive application of fair values could excessively increase the volatility of banks' balance sheets and might reduce banks' 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 financial distress at large directly impacts on the level of prudential requirements for equity capital in the banking sector.*

Menicucci, Elisa. *Fair Value Accounting: Key Issues Arising from the Financial Crisis.* Basingstoke: Palgrave Macmillan, 2015. DOI: 10.1057/9781137448262.0006.

DOI: 10.1057/9781137448262.0006

4.1 Introduction

In the second half of 2008, when the GFC deepened, financial institutions increased significant concerns about FVA, especially for the most liquid assets. Banks contended that market prices were considerably below the assets' fundamental values and that FVA exacerbated the crisis by generating a downward spiral. In this regard, fair value and its application have been a theme of significant debate, and they have come under scrutiny because some market participants blamed the entire crisis mostly on FVA. The object of our discussion concerning FVA within the context of the financial crisis involves the assumed pro-cyclicality effects FVA could place in financial statements.

FVA is recognized as having exacerbated these effects (Stevenson, 2012) and being the major contributing factor to the credit crunch.[1] Many banks assumed that FVA played a prominent role within the financial crisis and they alleged that the existing complications in today's financial markets could be traced to fair value. It is also interesting to outline that European banks seem more opposed to FVA than US banks are, regarding significant implementation problems for FVA due to litigation and enforcement risks.

Nevertheless, there were exemptions, such as Credit Suisse and JP Morgan, which contended against a suspension of FVA and defended it during the crisis, too. A number of big banks in the United States and Europe instead questioned much more flexibility in moving to models to determine fair value on the basis of the underlying fundamentals or expected future cash flows. Moreover, especially European banks asked for the option to reclassify financial instruments from the trading category to the held to maturity one.

Doing so reveals that banks have consistently conveyed concerns about FVA. Banks' viewpoints have been reasonably consistent over time and their criticism on FVA during the crisis is truthful since they have elevated worries even in times when FVA may have permitted them to report higher estimates than HCA. On the contrary, other market participants (e.g., investor and accountants) are substantially less concerned about FVA, even during the financial crisis. For example, some stated the necessity of having an accounting standard that recognizes relevant and useful values of financial instruments. Moreover, FVA with satisfactory disclosures is considered more reliable, timely, and comparable than values that would be reported under other alternative accounting approaches.[2]

DOI: 10.1057/9781137448262.0006

With this background, it comes to be clear why and how FVA has introduced such deep effects on the financial reports of banks and securities firms.

This chapter analyses the implications of FVA's features in the banking sector and how these impact banks' balance sheets. The chapter addresses especially some viewpoints of the relationship between pro-cyclicality and FVA, focusing on the effects on banks' balance sheets and providing support for the public discussions too. We do not intend to offer a definitive assessment of FVA because we acknowledge that its cyclical aspects may cover up additional elements (e.g., regulatory and risk management considerations) that merit further inspection.

4.2 The impact of FVA on banks' financial statements

Measurement of accounting items is one of the critical issues in the procedure of preparing a financial statement which may properly present economic activities of a company. Accounting items of financial statements can be measured by several aspects, conforming to the nature of the item and the purpose for which the item has been acquired by entity. The relevance and reliability of the measures are the crucial points of evaluating assets, liabilities, equity and other elements (Petroni et al., 1995). In fact, the aim of financial reporting – and more specifically of accounting – is to be a basis of independent and relevant information to valuations made by market participants.

In the context of financial crisis, FVA stances difficulties in asset valuation because sometimes the specificity of assets required accountants to use valuation models in order to determine asset values.[3] However, the use of these models for accounting purposes does not guarantee the reliability of accounts because small changes in the assumptions can lead to large variations in the valuations' results.

Fair value started to be accused when the market began to deteriorate, because neither financial institutions nor regulators greeted the reporting of the market downturn in the banks' balance sheets. In the financial crisis that began in the summer of 2007, the effects of fair value measurement model have been often described as a vicious cycle mechanism. Financial asset rising prices are comprised in the income when the market is growing, and they further stimulate the growth in asset prices, resulting in asset value overestimated. This is what happens especially

DOI: 10.1057/9781137448262.0006

during the economic booms, whereas asset prices continues to grow, the banks' assets and income valued at market price also rise, and the self-strengthening of the financial market cycle produces effects differing from the real economy. FVA can lead companies or financial institutions to appear healthier than they are, and it can thus enable further asset extension financed by debt.

At the same time, financial assets' falling prices are included in the loss when the market is downturn, and they further decrease asset prices, then resulting in asset value underestimated. The use of mark to market accounting in a time of crisis may indeed cause financial institutions to sell their assets unnecessarily so that asset prices become reliant on market liquidity rather than on future earning potential of the assets. This is what happens especially during economic distress, whereas market values decline and assets directly have impairment, forming excessive losses and thereby affecting the credit expansion.

As described, these arguments – truly regarding pro-cyclicality – tend to ignore that recognizing assets and liabilities at fair value may reveal early warning signs contributing to a more timely recognition of problems and thus to mitigate the severity of a crisis and the strength of price drop (FCAG, 2009). Just based on what happened during the financial crisis, it could be expected that FVA exposes problems in financial reporting faster than HCA. But this exposure by FVA during the downturn can lead to a downward spiral, with forced sales of assets and lessened values in balance sheets.

We can now appreciate how the mark to market effect of FVA triggers a decline in asset values and how this descending trend develops into a risky downward spiral. Anyway, it is important to underline that increasing asset prices ensure an equivalent but opposite pro-cyclical effects. When market values increase for any item that has a willingly available price, ever more credit becomes obtainable to transfer these assets. As more credit is accessible, more cash is offered for too few assets and prices grow. From the perspective of financial institutions, under FVA a rise in the value of assets can be recognized in earnings or in equity. In both cases, the rising earnings and the strengthening capital encourage more borrowing and the acquisition of more assets, so the upward spiral (i.e., bubble) carries on.

Fair value measurement of certain assets compels banks to report losses which are accompanied by a lessening of their equity. Subsequently, in order to preserve their solvency ratio, banks have to

DOI: 10.1057/9781137448262.0006

increase supplementary capital and they are forced to lessen their lending in conditions of depressed market going down.

Anyway, financial institutions accept that mark to market accounting is beneficial for some items on the balance sheet and in particular for operations characterized by the objective of obtaining a profit from short term price variations. Their opposition is instead to a full fair value reporting regime in which mark to market accounting should be applied consistently to all assets and liabilities. Especially, banks conflict with marking to market certain items such as long-term loans that represent the major percentage of the assets in their balance sheets. In this respect, the banks are in contrast with the valuation of all assets and liabilities at fair value if this circumstance will originate periodically large fluctuations as a reflection of short-term movements of prices in the financial market.

Do market values of financial instruments still reflect their underlying cash flows or the price at which financial instruments could be sold (i.e., theoretical or fundamental value) in due course (IMF, 2008)? With continually falling market prices, financial instruments are traded under their theoretical value in order to conform to regulatory capital requirements. In this way, the market process drops even more, and further falling of market prices causes more reductions of financial instruments' values, contributing to the downward spiral.

4.2.1 FVA and increased volatility of information in financial statement

Through markets becoming increasingly more volatile and illiquid, even the valuations of financial instruments come to be more volatile and mistaken. As a result, since most assets and liabilities are estimated at fair value, also some values reported on the balance sheet and recognized earnings are subjected to increasing volatility, then deforming stakeholders' outlook on financial performance and stability (Magnan, 2009).

We identify three possible sources through which FVA may introduce volatility into banks' financial statements. The first is the intrinsic volatility, which reflects the changes in the value itself, and it is determined by the variation in underlying economic conditions. When financial instruments are measured and recorded at their fair value, gains and losses stand up from changes in fair values – as a result of changes in the underlying economic environment – and are directly recognized in the

DOI: 10.1057/9781137448262.0006

bank's income statement. The second is the volatility caused by valuation error, wherein the value is not observed but estimated, so that model assumptions and specifications may inaccurately mirror reality. The third type of volatility is the mixed-model volatility, which reveals because some assets and liabilities are measured at fair value whereas others may be at historical cost. As a result, the effects of economic circumstances are not consistently recognized in the financial statements.

The amplified volatility of information reported in financial statements may affect relevance and reliability of disclosure for market participants, especially for investors. In detail, the volatility may adversely impact investors' capacity to make or to revise expectations on the basis of past and present events. As such, the application of FVA may reduce the stakeholders' ability to assess financial risk of banks' operations at large. In particular, amplified volatility is evident in situations characterized by fast varying economic conditions, as was the situation of 2008 financial crisis when many earlier liquid financial markets transformed into inactive ones.

The increased volatility of the financial statements is principally associated with fair value measurements at Level 1 and Level 2 as they reflect the uncertainty of active markets. Fair value valuations are more strongly related with share prices in active markets than in inactive and illiquid ones. In this respect, an empirical study showed that Level 1 and Level 2 valuations (designed for active markets) provide greater value relevance to financial statements' users than the Level 3 valuations (designed for products without an active market) (Song et al., 2010).

Anyhow, the general agreement is that fair value valuations deliver helpful information, but further disclosures are needed, especially regarding Level 3 measurements, whereas subjective inputs used within the model of FVA may increase uncertainty around valuations. Fair value valuations based on Level 3 can challenge financial reporting in terms of accuracy and objectivity because the use of unobservable and estimated inputs for fair value measurement may affect reliability and verifiability of information. Therefore, transparent quantitative and qualitative disclosure regarding the nature of valuation methodologies within financial reporting could sharpen reliability of mark to model valuations.

Since the illiquidity of certain financial instruments intensifies, financial institutions have turned increasingly to model-based valuations, and once valuation moves from market prices to mark to model valuation,

DOI: 10.1057/9781137448262.0006

FVA stances reliability challenges for which some markets – mostly those distressed – will be characterized. Under stressed liquidity conditions, the valuation of financial products is based on a wider use of unobservable inputs, which increase uncertainty among financial institutions, supervisors and investors regarding valuation issues.

The evidence that FVA would introduce higher volatility in banks' balance sheets is not, itself, a sufficient motivation for declining the validity of the accounting regime. As discussed in the previous chapter, various empirical evidence subsists about the growth in value relevance that FVA delivers for users of financial statements, in comparison with HCA (Barth et al., 2001; Barth, 2004; SEC, 2008). Furthermore, even if the application of FVA induces increased volatility in share prices, investors may be better able to understand the significant changes in economic conditions, also separating the different causes of volatility.

It should also be noted that HCA, which effectively can be considered the main option to FVA, may be connected with volatility in financial statements, too.[4] This volatility is often denoted as deferred recognition of economic circumstances, and this one occurs when gains and losses that are originated by unrecognized increases in assets' value over several years are recorded in financial statements in a single period.

By recognizing unrealized gains and losses, FVA transfers the recognition of the economic results advancing in time compared to HCA. If companies make economic decisions, or investors react excessively because of reported unrealized gains and losses, then FVA may give adverse feedback effects that would not happen under HCA. For example, financial institutions' write-downs of financial assets cause further reductions of the market values of these assets and maybe even the growth of the systemic risk. Moreover, reporting unrealized losses can instigate banks to eliminate the defected values from their balance sheets by selling the affected assets to increase capital or to comply with internal or regulatory investment policies. Decreasing valuations can trigger some management decision rules that cause the liquidation of certain assets or portfolios, adding further stress.

The above examination settles some concerns that an extensive application of fair values could overly upsurge the volatility of banks' balance sheets and maybe reduce their capability to respond to distressed economic conditions. Indeed, for assets and liabilities held to maturity, the resulting volatility from the recognition of overestimated fair values is only artificial and finally distorted because the values – except of the

DOI: 10.1057/9781137448262.0006

short-term variations – will converge to the identical result as under the HCA.

The key assets that could be affected by the major variations in the credit quality are the loan portfolio and the debt securities detained both in the trading and the banking book of a financial institution. Regarding these financial instruments, it's important to focus attention on the different timing through which the growth of credit risk is reflected in the financial statement both under FVA and HCA because the timing of this adjustment could differ substantially within both ones.

In order to assess the impact of a decrease in asset quality in financial statement, it is useful to analyse a possible scenario in which credit risk gradually amplifies in a period. While the whole impact of credit losses on capital would be the same under both, the time frame of the recognition of those variations in the accounts is different, and this may bring positive or negative effects. In the final period, FVA and HCA deliver precisely the same result, supposing that the deterioration in risk quality would completely emerge. Thus, the most remarkable aspect is the different time for the recording of the change in the bank's balance sheet. In order to consider the different impact of FVA and HCA on bank accounts, it is critical to turn the consideration on the timing for balance sheet adjustments under both accounting models.

Under FVA, the value of the assets would be reviewed downwards in order to mirror the reduction in estimated future cash flows, while under the HCA, a provision for the same extent would be fashioned when the asset is recognized as impaired, which is just the same result on the profit and loss.

FVA recognizes the decline in asset quality once the probability of default is adjudged upwards, even if impairment or default has not yet materialized. As the amount of the expected future cash flows declines, the value of the loans is immediately reported downwards, and the decrease is directly translated in the profit and loss accounts. Under the HCA, instead, the deterioration materializes only when the loans are impaired and specific provisions are formed.

In other words, under FVA, the sudden downward revision in credit quality would be instantly turned into the profit and loss over the entire period. Hence, FVA allows an earlier recognition of any worsening in asset quality, which might encourage the management to take corrective actions. The positive consequence is that corrective actions could be taken earlier, thus preventing management from assuming a passive

DOI: 10.1057/9781137448262.0006

approach of waiting until the distress period ended. From a financial stability perspective, the timelier recognition under FVA is welcome by institutions, investors, regulators and stakeholders because it allows them to quickly detect financial risks and to become well aware of them.

On the other side, if the rise in credit risk is subsequently reversed before the impairment and defaults occur, then no or partial effect would be manifest under the HCA, while the full downward and upward adjustments would be recorded under FVA. The effect on volatility may also be lower under FVA than under the HCA, if the assumption is that provisioning only takes place ex-post when the losses have previously become visible.

All things considered, it can be concluded that during financial distress characterized by a shock to credit quality, FVA permits a timelier reporting of the alterations in the risk setting. In this sense, FVA is more forward-looking than the HCA combined with retrograde provisioning. Though if the risk quality is estimated at a short-term perspective, FVA could also originate an artificial volatility and pro-cyclical adjustments in bank capital (Van Schijndel, 2010). On the contrary, the HCA coupled with dynamic provisioning would support a levelling of such shocks using the buffers collected in normal times.[5]

4.3 FVA and volatility in earnings and regulatory capital

Another topic of debate concerning the impact of fair value on financial institutions – and in general on the financial system – is the potential effect of FVA on the volatility of reported earnings. Besides the challenging of valuation, FVA may introduce the problem of financial volatility into accounting (Barth, 1994).[6] Precisely the volatility of a bank's income could significantly increase as a result of the adoption of FVA.

Under FVA, any changes (gains/losses) rising from fluctuations in fair values as a result of changes in the underlying market's situation will go directly to a bank's income statement. In this way, losses and/or gains are fully recognized in the accounts.

FVA undertakes that the market prices are the top basis for measuring the value of an asset or a liability, but during a market crisis, as prices reflect the state of the market, fair values inevitably fall. In the case of Level 3 values of assets and liabilities that aren't traded normally or

DOI: 10.1057/9781137448262.0006

may not have a market, fair values fall even if the asset or the liability hasn't lost intrinsic value. Whether the loss is real or artificial, financial institutions need to recognize the value decrease (so-called loss) on their income statements, as subsequent of a cash flow reduction. Put into practice the definition of what fair value is, the use of FVA forces banks and other financial institutions to write off losses that may or may not have occurred. This cycle inverts when asset prices rise and amplify booms in credit and asset values (Adrian and Shin, 2008b).

In other words, fair value can generate an increase in the pro-cyclicality of bank lending as more accentuated decrease in bank profits and capital during downturns would support the over-reduction of credit, which would then create the conditions for a deeper and more long permanent downward (see Figure 4.1).

If we assume that greater supply of the asset tends to put downward pressure on its price, then there is the potential for a feedback effect in which weaker balance sheets lead to greater sales of the asset, which depresses the asset's price and leads to even weaker balance sheets.

Within this crisis, the situation and the macroeconomic effects has been even worse since the major impact was a compulsory re-intermediation of loans onto banks' balance sheets, affecting capital ratios in addition to fair value losses. Financial intermediaries adjust values in their balance sheets accordingly to asset price movements, and in doing so, they contribute to increasing leverage during booms and reducing it during bursts (Adrian and Shin, 2008b) (see Figure 4.2 and Figure 4.3).

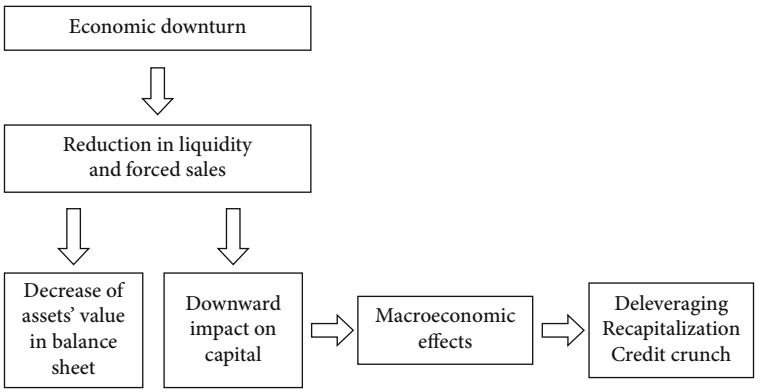

FIGURE 4.1 *The effects of fair value during an economic downturn*

DOI: 10.1057/9781137448262.0006

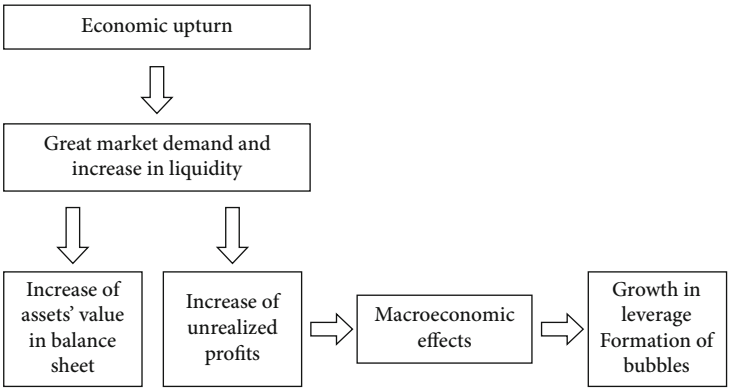

FIGURE 4.2 *The effects of fair value during an economic upturn*

As shown in Figure 4.2, the mechanism works just in reverse in upturns. An opposing spiral would also be exacerbated by the effect that upward adjustments in asset valuations would have on bank profits and capital, which would further contain their lending.[7] If we assume that high demand for the assets tends to put upward force on their price, then there is the possibility for a feedback effect with a greater demand for the asset, which in turn increases the asset's price and leads to stronger balance sheets.

The early effect of the crisis is a forced growth in leverage followed by a deleveraging phase. The deleveraging effect can be considered as 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 deleverage, especially whereas FVA is extensively applied. However, the consequences for the financial system may be unsettling because of the pro-cyclical nature of leverage.

According to this logic, market participants, regulators, and central banks refer to the pro-cyclicality of FVA. Their chief concern is that 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. In fact, the most commonly 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) as shown in the following Table (Table 4.1).

DOI: 10.1057/9781137448262.0006

TABLE 4.1 *The effects of fair value on bank regulatory capital*

Classification of financial assets	Effects on balance sheet	Effects on income statement	Effects on bank regulatory capital
Assets measured at fair value through profit or loss (FVTPL)	The asset is reported at fair value. Realized and unrealized changes in fair value affect the value of equity.	Realized and unrealized changes in fair value are recognized in income statement.	Unrealized profits and losses affect regulatory capital.
Assets measured at fair value through Other Comprehensive Income (FVTOCI)	The asset is reported at fair value. Changes in fair value are reported as Accumulated Other Comprehensive Income.	Unrealized changes in fair value are excluded from the income statement and are recorded as Other Comprehensive Income.	Unrealized losses affect regulatory capital if the asset is considered permanently impaired.
Assets measured at Amortized Cost	The asset is reported at Amortized Cost.	Changes in fair value are recognized in income statement only if the asset is considered permanently impaired.	Unrealized losses affect regulatory capital if the asset is considered permanently impaired.

So, it's crucial to investigate largely how FVA affects bank regulatory capital and how the use of FVA implies that any liquidity or financial distress at large directly impacts on the level of capital. For example, a study investigated the interaction of accounting rules with regulatory capital requirements and revealed that the interaction of FVA and capital requirements can produce inefficiencies (even when market prices mirror fundamental values) that are vacant if the capital is assessed by adjusted book value. The redefinition of capital requirements within a pro-cyclical approach (rather than abandoning FVA) could be a good way to avoid these implications (Heaton et al., 2010). In this respect, the case of the 2008 financial crisis is remarkable as well, as it showed that a liquidity crisis might very quickly affect capital levels through the vicious loop of liquidity and its influence on capital requirements.

In particular, the huge increase of recapitalizations is related to the use of FVA, since the link between liquidity and valuation has a direct impact on profit and loss accounting and then on capital, as displayed in the following diagram (Figure 4.3).

DOI: 10.1057/9781137448262.0006

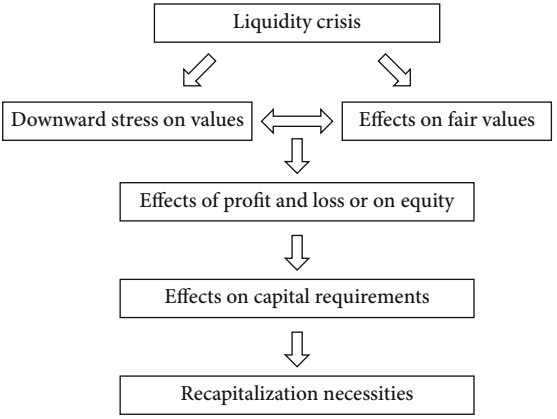

FIGURE 4.3 *The effects of fair value on capital during a liquidity crisis*

The link between the prudential requirements for equity capital and the FVA, as shown above, can be defined as pro-cyclical. The financial institutions have to sell assets to maintain their regulatory capital, but doing so, they thereby power the downward trend of the markets, causing a more need to sell assets, and so on. If a bank writes down its assets to reduced prices and, consequently, the bank's regulatory capital is depleted, the write-downs can required the bank to trade assets at fire sale prices and get a downward spiral going. In this sense, if fire sale prices from a distressed financial institution come to be significant results for other banks, mark to market accounting can cause write-downs and regulatory capital problems for otherwise healthy banks.

It should be noted that this trend could simply be kept back when a number of investors start to respond to the market buying financial instruments. At that point, the rising pressure on liquidity and valuation have a direct effect on profit and loss accounting through unrealized gains generating additional capital.

Some studies differ from the overall opinions, showing that the link between impairment based on fair value's application and required sales, which originates one more fall-down of prices (with the necessity to experience additional impairment losses), is very feeble in the banking sector. In particular, the pro-cyclical feature of FVA can be refuse at least for commercial banks, which improbably are wedged in the crisis cycle (i.e., fall in market prices, impairment losses, forced sales of affected

DOI: 10.1057/9781137448262.0006

assets, additional drop in market prices, further impairment losses). The critical conditions of commercial banks, which caused the 2008 economic downward, have real economic origins (e.g., mortgages to clients with little credit standing and no capacity to refund the loan), and they are not only a consequence of the pro-cyclical nature of FVA.

Anyhow, the pro-cyclicality should arise in two ways. Firstly, banks are not able to find clients disposed to finance new credit within a market practically static in term of new loans. Due to private consumption drooping and to economic contraction, the market prices of financial instruments began to decrease and, as a consequence, banks need to impair their assets. Secondly, the banks are forced to sell their assets in order to preserve minimum capital requirements, which leads to additional impairments down to prices considered unfaithfully low. Fair value based on mark to market accounting implies enforced sales, thus deepening the existent economic crisis.

Banks are forced to trade their assets in order to generate cash, to rearrange their assets and to meet the minimum capital requirements. However, this sequence is not the obvious one. The sale of assets is not the unique approach to withstand Basel Convention requirements, because otherwise, it is possible to increase new share capital without the need to sell assets below their fundamental value. Furthermore, it is arguable whether the sales of assets are really obligatory to satisfy capital requirements, or whether banks and other financial institutions complete the sales voluntarily without any relationship to recognized impairment losses.

Anyway, the income figures recorded by credit institutions are certainly more volatile under FVA than under HCA at large, and regulatory capital requirements are more often exceed when assets and liabilities are measured at fair value rather than at historical cost.

Moreover, it's important to take into account the time dimension of a financial shock on the banks' profit and loss. Supposing that assets and liabilities impacted by the financial distress are neither sold before maturity nor renewed after maturity, FVA and the HCA will have to provide just the same collective effect on the profit and loss. The cause is that bonds and loans reveal changes that occur in the current stated value ('pull to par' movements), as the financial instrument moves closer to maturity, regardless any value variations that may have been recognized over their lifetime. Obviously, such a convergence effect does not show for shares held by the bank as they do not have maturity, and there is no obligation for the issuers to repay a nominal amount.

DOI: 10.1057/9781137448262.0006

The convergence effect suggests that any direct change in the fair value of such bonds and loans – as a result of an interest rate shock – will be progressively recuperated through offsetting value adjustments over the residual life of the instruments. The application of a measurement method that displays each time the net asset value of the portfolio considerably rises the volatility of income for instruments that are held to maturity, especially in the period nearly after the interest rate shock. It should also be underlined that the growth in the financial instrument's value – as a result of the interest rate drop – would directly highlight under FVA (but not under the HCA), therefore leading to the reporting of unrealized gains.

An alike analysis can be made for a situation of interest rate increases. This basically leads to a negative difference between fair value and historical cost immediately after the interest rate growth, even if the difference between FVA and HCA should be minor for an interest rate increase (because the value of the securities in the banking book are revised downturn in both FVA and HCA).

As well, some disadvantages concerning a more extensive application of fair value surface from the pro-cyclical feature of FVA. The first regards the expected intensification in the volatility of income. It can be contended that volatility delivers relevant information and should be accordingly reported in the financial statements. However, an undue confidence on fair values – comprising for assets that are not actively traded in liquid markets – improves the risk that the information disclosed would be artificial. Namely, the accounting values are determined by short-term oscillations in financial market valuations and are triggered by market deficiencies or by inadequate valuation methods.

The second drawback concerns the banks' smoothing role of intertemporal financial shocks. FVA involves more positive results during good times, when asset prices are increasing. This especially happens when market participants have an excessively optimistic valuation of risks during upwards, which is mirrored in a short-term influence in the quantification of expected cash flows. The upturn estimation of assets would be reflected in bank profits, and bank management could challenge pressure from investors to dispense dividends, including unrealized gains on assets of the bank portfolio.

On the contrary, the HCA does not recognize unrealized gains that may not occurred, and it makes possible to piled up reserves during good times, which can then be depleted during bad times. This would

DOI: 10.1057/9781137448262.0006

translate into lower variability in bank income and would allow banks to assure themselves against unexpected circumstances. This intertemporal smoothing feature of the financial system would consequently be better realized under the HCA.

However, in some cases, the symmetrical treatment within FVA generates apparently deceptive effects. For instance, the application of FVA on a bank's particular debt – where the price of the bank's bonds drops due to a deterioration in its own solvency – will result in a gain that must be reported in the bank's financial statements, like the difference between the original value of the debt and its market price.

Certainly, the problems to which financial institutions oppose during a credit crunch are the real economic problems related to too much monetary extension of central banks and to the abnormal conduct of financial institution in times of monetary expansion. Hence, the following question can be posed: should be reformed the accounting model or should be changed the setting level of regulatory capital requirements? The pro-cyclical feature of FVA cannot be a motivation for dismissing fair value as a measurement regime. The necessity to raise capital in order to meet minimal capital requirements shall not be resolved by the denial of fair value measurement but on the regulatory capital level setting the basic conditions for doing the business.

In the prudential point of view, the negative impact of hugely lower valuations stemming from market conditions advances questions as to whether increases in regulatory capital may be necessary for the valuation of complex structured products. The major consequence of accounting rules is that capital comes under concrete stress, as its amount may be expose to a great level of volatility. By making the link between solvency risk and other risks directly, financial institution needs a strong capital base even more than before. All at once, the mentioned volatility may lead banks to have some flexible regulatory capital requirements that can be changed according to accounting requirements. However, FVA can attend as a primary cautioning system for supervisors to do earlier inspection of a bank's risk profile, risk attitude and risk management practices.

It is still a correct sign to users of financial statements to ensure proper tools for comprehending the implications of FVA and the effects on regulatory capital.

The aim is not to affect the current definition of regulatory capital for accounting reasons only and to preserve the stability of prudential capital

DOI: 10.1057/9781137448262.0006

from pro-cyclical effects of FVA through prudential filters applicable to assets (i.e., recognition in Tier 1 of unrealized losses; partial recognition of unrealized gains in Tier 2; no recognition of any unrealized loss/unrealized gain). The objective is to except unrealized losses and gains from the calculation of solvency ratios. Nevertheless, these filters are simply a limited solution to the pro-cyclical effects of FVA, as they merely apply to financial instruments evaluated at fair value through equity, whereas it is too difficult to implement filters on financial instruments measured at fair value through profit or loss. On the liability side, accounting profits created from a bank's own debt when its financial situation deteriorates can be excluded from the calculation of solvency ratios through filters applicable to the fair valuation of own credit risk (Matherat, 2008).

4.4 FVA and financial stability

Over the past years, accounting standards for the valuation of financial instruments have evolved to better reflect the economic reality of the companies. As is well known, the most important accounting amendment is the measurement of an increasing selection of financial assets and liabilities at fair value, i.e., at the price that knowledgeable and willing parties would pay in an arm's length transaction at the date of the financial statement.

Initially, this change lets to more relevant and more certainly comparable financial statements across entities. Though since markets are excessive optimism or/and pessimism, the application of FVA affects the economy and the financial system, for instance by strengthening the jumps of the economic cycle. In this regard, since autumn 2007, a negative liquidity-valuation spiral that greatly impacted confidence in the market began, making a global liquidity restriction in the interbank market and increasing downgrades and write-downs. Since then, the academic literature (Freixas and Tsomocos, 2004; Plantin et al., 2008a) warned about the possible negative outcomes of using FVA for banks in the event of a decline in financial assets values.

Notably, the link between liquidity and valuation was a specific feature of the crisis, which highlighted challenges related to the impact of FVA on financial stability. The pro-cyclical nature of FVA is not a challenge in normal financial conditions when variations in accounting figures simply mirror underlying economic volatility. Conversely, FVA can be

DOI: 10.1057/9781137448262.0006

a concern for financial stability when accounting measurements do not reflect underlying fundamentals. Insofar as asset values reveal overly optimistic or pessimistic estimations of discounted future cash flows at different time in the economic cycle, there is the potential for these prices to fluctuate excessively to reflect oscillations in the financial system and in the real economy. In fact, during financial shocks comprehending a significant price source (e.g., an interest rate shock, a real estate crisis or a shock market crash), the instant recognition of unrealized profit or loss under FVA exacerbates the effects of the shock, thereby contributing to further aggravation of the crisis.

Moreover, improved use of fair values may also encourage banks to modify their portfolio mix far away from their traditional liquidity transformation role and may support recourse to risk-transfer instruments (e.g., securitization), hence allocating risks more uniformly throughout the economy. Really, once a systemic disruption develops, its macroeconomic consequences are expected to be more severe, and the shock-absorbing features of the financial system might be missing.

So much so, it has been assumed that mark to market valuation in illiquid markets or stressed conditions exacerbated the impact of the financial crisis on financial institutions. In particular, during the mentioned crisis, the depressed market conditions led to substantial write-downs in the financial statements of financial firms, which reacted by contraction of credit and liquidation of assets, then reinforcing the market downturn and, in turn, implying further write-downs (IIF, 2008).

Marking to market forces banks to drop assets at fire-sale prices, which then cause values to fall even further piloting many banks towards insolvency. Mortgages, corporate bonds and structured debts could be performing, but because of the market is frozen, the prices of these assets fall below their true value. Under such circumstances, market prices may not accurately reflect risks and can result in overstated profits that amplify the cyclical upturn. Moreover, worries about the valuation of complex and structured products brought markets to a major financial distress, with transactions taking place at an additional discount.

In rapidly evolving financial markets, inaccurate valuations may quickly alter the implications for solvency and more broadly financial stability. Authors who criticize FVA argue that the use of fair value as a measurement attribute has essential impact on the origin, diffusion and reinforcement of a financial crisis. The European Central Bank expressed a similar outlook about the possible impact of FVA on the stability of

DOI: 10.1057/9781137448262.0006

financial system and real economy (ECB, 2004).[8] Within different market conditions, the ECB analyses the approach through which FVA can contribute to the spreading of financial crisis and identifies it in the link between accounting and mechanisms of control of banks' obligatory regulatory capital levels.

Besides, the analysis of the studies on accounting for financial distress shows the existence of critical literature that inspects the helpfulness of the fair value measurement in time of crisis, and the relationship between this accounting model and the stability of the economic system.

In this respect, FVA may really lessen the severity of a crisis, thus providing prompt warning signs for a coming crisis, and thereby may guide banks to take proper actions previously. Even if it were more volatile, FVA could play a role by partly moderating the crisis if warning signals are taken into account earlier thanks to it, and in this manner, FVA could help markets to get better before negative downturns worsen. An FVA that is able to perceive and to reflect current market conditions in a timely fashion could lead to a well recognition of a bank's risk profile. Earlier advice that can stimulate corrective actions by management, supervisors and shareholders enables them to make an appropriate assessment of the effects of banks' risky actions on regulatory capital and financial stability. It is ever more agreed in both the academic literature and the regulatory discussion that the correction implemented by knowledgeable investors is a crucial supplement of supervisory control. Furthermore, since FVA should carry out earlier identification of bank losses, it could have a less extended effect on the economy than the case of provisions for losses usually made when the economy is already feeble (e.g., provisions for losses of loan portfolios (Liao et al., 2010)). Increasing new reserve of capital at a previous time allows banks to maintain written-down assets – and those originally not for trading – on their balance sheets and, therefore, to elude asset price spirals.

About the advantages of FVA, greater opportunity for market discipline and the corrective action are the main beneficial issues. FVA would lead to an improved insight into the risk profile of the banks, also requiring the transfer of many relevant off-balance-sheet items onto the balance sheet. Financial stability benefits if shareholders are able to willingly detect deterioration in the security and reliability of a financial institution. In effect, market participants' feedback could pressure bank's management to take corrective actions at a timely period, either by directly affecting managers' decision-making or by leaving from the investment.

DOI: 10.1057/9781137448262.0006

Market prices give timely signals that can support decision-making. Nevertheless, within distorted and illiquid markets, there are other less beneficial properties that introduce artificial volatility to prices, misleading real decisions. Under the use of mark to market, price changes reveal immediately on the balance sheets of financial intermediaries and stimulate reactions from them. In doing so, the mark to market model improves the responses of banks and other financial institutions, adding impulse to the feedback effects in financial markets.

One more advantage concerns the potential of FVA to bound the possibility for pro-cyclicality. Fair value reflects the market awareness of credit quality, at least for large debtors, and as a result, adjustments in valuations would be well unstated by financial statement users. Additionally, as fair value is measured on the basis of expected cash flows, its notion is forward-looking in nature and should embody all the future information obtainable. For this reason, FVA allows for the prior recognition of asset deterioration.

If, conversely, losses are incurred and measured on the basis of private information and discretionary decisions of the management, measurements are inclined to be also more backward-looking and pro-cyclical. The amounts of provisioning may also increase, and consequently, investors may have to largely correct their assessment on the quality of bank assets. The seeming opacity of bank's conduct may also lead investors to overreact to such circumstances.

As all this is likely to happen during downturns, delayed adjustments in valuations may possibly be reversed into a sharp credit congestion that would contribute to an extra slowdown of financial market. Likewise, the potential of amplified volatility would perhaps increase the risk of certain compulsory financial ratios being surpassed (e.g., regulatory capital requirements or ratios used in loan agreements). Financial institutions may face an incentive to take proactive measures in order to prevent this from occurring, for instance by building up additional reserves and thereby increasing their resilience.

Lastly, it may be claimed that augmented volatility in accounting values would have no impact on investors' perceptions if they correctly interpret the information disclosed. As well as under the HCA, if market participants – in particular analysts and institutional investors – are completely successful in extrapolating fair valuations from a variety of sources, the improved volatility in balance-sheet items is certainly not problematic for them.

DOI: 10.1057/9781137448262.0006

In addition, for banks, investors would be concerned about exposures to subprime mortgages and make their own judgments, even in the absence of fair value disclosures. These considerations assume the existence of markets that are reasonably efficient, whereas all obtainable public information is properly reflected in the market valuations by investors. To provide investors with the possibility of reporting the real values of assets and liabilities, FVA undertakes that markets always deliver the price of items efficiently, and investors make their decisions on the basis of all available information.

If this doesn't happen, fair value does not avoid the advance of asset bubbles and may also contribute to aggravate a tendency that is different from fundamental price movements. On the contrary, FVA offers useful information during stable market conditions, but its helpfulness may become uncertain during disturbed and volatile financial markets.

Anyway, financial markets would be able to correctly deduce this increased volatility if relevant information is conveyed by the disclosure of financial instruments under FVA. Users of financial reporting require to take into account the uncertainty concerning valuation estimates disclosed in the financial statements, and in this respect, good disclosure practices can provide users of financial statements with an understanding of the assumptions underlying these estimations, as well as the uncertainty surrounding them.

4.5 Practical implications and perspectives for FVA

There is a general confidence that the convergence of FVA and bank capital rules contributes to trigger a financial crisis. In this regard, many bankers branded FVA when the unexpected seize-up of credit markets in the drop of 2008 drove the prices of assets detained by financial institutions to unprecedented slumps. The main assertion is that valuations of long term investments – based on values achieved from illiquid markets – generate a dejected pro-cyclical process whereby mark to market measurements lessen regulatory capital compelling financial institutions to sell off products. This situation finally leads to financial instability and to a peak of negative credit effects as well as that reached during the 2008 financial crisis.

Anyhow, even if the application of FVA introduces undesirable volatility and pro-cyclicality, it can be considered a faithful measurement as

DOI: 10.1057/9781137448262.0006

it provides a portrait as correct as possible of a bank's current financial situation. An alternative approach to avoid the pro-cyclical implications for the accounting system is to diverge from market prices when financial distress is probable.

Both FASB and IASB tolerate such deviances in specific circumstances. Firstly, the accounting standard setters clearly specify that market prices resulting from forced sales should not be applied in order to safeguard against negative feedback from upset banks. Second, FASB and IASB permit the application of valuation models to measure fair values when markets become inactive, also mitigating contagion consequences in a financial crisis. Moreover, US GAAP and IFRS standards admit a reclassification of fair value assets into a category to which HCA and less strict impairment tests are applied. Thus, FASB and IASB allow mechanisms to mitigate negative downward spirals in distressed markets.

Just based on their assessment of the 2008 market turmoil, policymakers and market participants agreed on the need to review the adoption of FVA in times of crisis. Instead, the Financial Stability Forum (FSF) and other policymakers (FSF, 2008; IIF, 2008) suggested that accounting standard setters reinforce guidance for applying FVA, especially when measurement is challenging in markets that are no longer active. In reply to the FSF, the IASB (as well as the FASB and the Securities and Exchange Commission) formed an advisory panel made up of securities markets regulators, accounting standard setters and accounting experts to improve its guidance on measurement and disclosure issues concerning financial instruments (IASB, 2008).[9]

Furthermore, there have been many political pressures for suspension or considerable reform of FVA, due to the general remark that the application of fair value contributed to the severity of the 2008 financial crisis. Persuaded by such arguments, the European Commission and the US Congress have promoted for the reassessment of fair value, and they have called upon the accounting standard setters to relax their accounting rules.[10]

A limitation of the use of fair value would certainty treat the wounds of the financial crisis, but it would also make them worse, lessening the level of confidence that stakeholders have in the financial and economic conditions of financial institutions.

Moreover, relaxing the rules or providing more accounting flexibility to limit potential complications of FVA in times of crisis allows for manipulation and can reduce the reliability of the accounting

DOI: 10.1057/9781137448262.0006

information. Investors believe that banks exercise accounting discretion to overstate assets' values considerably and to write down their mortgage-related assets excessively (Huizinga and Laeven, 2009). Consequently, the resulting reduction of transparency about banks' solvency could be a real, critical problem during a crisis than potential contagion effects from a severer application of FVA.

In this respect, the key question is not essentially 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 assessment of financial position and performance because it refers to current market situation. In this sense, FVA records in balance sheets also market prices suffering from economic downturn since it just depicts the reality. It means that fair value is a measurement model that produces negative effects only for those entities that suffer from real economic troubles. In other words, FVA only displays real economic conditions, and in doing so, it shows even worse only those entities that do not have a healthy financial situation (Khan, 2010). The amounts reported in financial statements are basically influenced by the real well-being of an entity and the nature of transactions; consequently, only those financial institutions that are widely involved in speculative and other risky trades suffer the effects of the financial crisis.

In this regard, FVA could improve accounting information in several ways. First, fair value would provide users of financial statements with a more true assessment of the firm. Second, under FVA, financial statements would deliver a more detailed portrait of the risk that the entity is bearing because valuation at fair value would represent the faithful value of assets and liabilities. Assets and liabilities would be recorded on the balance sheet at values held to reflect the complete information available at the time of recognition of the accounting values: that is to say, at the current market prices or at a model-based estimation of those values.

Third, 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 that came up during the debate was how FVA prevents the dubious practices of managers hiding the consequences of their actions from the sight of investors. FVA is considered an opportunity to do away with the

DOI: 10.1057/9781137448262.0006

profit-smoothing manipulation which was possible with the use of HCA (Plantin et al., 2008b; Brinza, 2011; Véron, 2008).

While both FVA and its main alternative (i.e., historical cost) reveal deficiencies, the arguments discussed above aim to present FVA positively, underlining the distinct advantage of being able to best mirror the reality of current financial and economic conditions. Although the application of FVA requests to be explained for situations where it is difficult to attain reliable estimations of market values, it remains a greater accounting model than any other alternatives.

4.6 Lessons from the financial crisis

What are the key lessons of the financial crisis? Events during distressed financial markets revealed some weaknesses in the application of FVA in financial statements of financial institutions. One topic is that FVA misses many of its beneficial properties when prices from active markets are no longer obtainable, and thus valuation models (mark to model) have to be applied. This circumstance in turn makes the measurement of fair value very challenging. Most prior research shows that the use of FVA turns into more volatile financial results, and the volatility induced by FVA suggests that the reported values of financial institutions' assets and liabilities can modify more than business fundamentals would submit.

Moreover, FVA induces pro-cyclicality in reported incomes because it adds unrealized gains to earnings during an upward period, hence creating a subsequent fall in reported earnings during a downward period (Barth et al., 1995; Laux and Leuz, 2009). If there is a downturn in market developments, which transforms into a severe lessening of their capital ratios, financial institutions may be forced to deleverage and to sell further financial instruments at distressed prices, thus providing for a downward spiral.

Despite the drawbacks stated above, fair value remains the best existing accounting model for measuring certain items in financial statements. The criticism of FVA, which arose as reaction to financial crunch, is to some extent appropriate, but actually, there is no convincing empirical evidence that FVA added to the severity of the GFC (Prochazka, 2011; Bonaci et al., 2010).[11] About the valuation objective, further research is required to conclude whether FVA exacerbated the GFC. It is improbable

DOI: 10.1057/9781137448262.0006

that FVA contributed to aggravate the severity of the financial crisis further, either by growing banks' leverage in the boom or by intensifying banks' deleverage in the slump. Anyhow, there is little evidence that downward spirals and asset fire sales occur as a direct consequence of FVA, or that the effects would have been fewer under HCA.

Based on our analysis and on the empirical evidence in the literature, there are few arguments to believe that FVA contributed to banks' distresses in a major way during a crisis. Presently, there are also few suggestions that prices are strictly biased due to fire sales of assets, or that banks are forced to make too many write-downs during a financial crisis (Shaffer, 2010).

For instance, for US bank holding companies, the impact of fair value variations on bank income and regulatory capital during an upturn or a downturn is much more restricted than frequently contended. Moreover, during a financial crisis, banks turn to the safeguards and substantial discretion in the application of fair value largely, which allow them to avoid marking to misleading market prices. Therefore, FVA plays only a restricted role for banks' income statements and regulatory capital ratios except for the few banks that are characterized by large trading activity.

To conclude, we believe that it is basically unproven that FVA worsened the financial crisis, but it is certainly true and possible that fair value rules and their implementation could be further enhanced. However, our conclusions have to be construed cautiously and should not be interpreted as supporting an extension of FVA but as guiding efforts to reform some of its rules.

Concerning the relevance of FVA and its application effects for banks' balance sheets and capital requirements, it is possible to find a significant trade-off when banks are forced to write down the value of assets as losses occur. On 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 arranges for incentives to take prompt corrective actions by financial institutions and regulators and likely confines unwise lending, which finally diminishes the strictness of a financial crisis (Barth et al., 2001). Additionally, though severer FVA contributes adversely to downward spirals and contagion, these undesirable effects in times of financial turmoil have to be balanced against the positive effects of earlier loss recognition.

DOI: 10.1057/9781137448262.0006

In respect of these arguments, it is just the case to enhance awareness in relation to fair value rules and to elucidate the opposing issues in favour of and against the application of FVA. It can be reasonably argued, as the following considerations disclose:

- The universal financial system is not branded by a common set of accounting standards regulating fair value measurement of assets and liabilities. In this matter, the two most important sets of accounting standards – US GAAP and IAS/IFRS – are joined but not completely.
- Only certain categories of assets and liabilities have to be recognized at fair value. The inclusion in each category depends on intended use of assets and liabilities and the level to which unrealized gains and losses related to fair value measurement are reflected in the financial statements ... the level ... changes on the basis of this categorization.
- Fair value measurement is characterized by subjectivity and bias (in particular Level 3 inputs), but Level 3 instruments embody only a small amount of financial instruments in the balance sheets of financial institutions in the United States and Europe.
- There are two main concerns against FVA that are offset by arguments supporting it: improved pro-cyclicality and increased volatility of values in the financial statements. The arguments in favour of fair value are the amplified relevance of information offered to investors, the small estimated possibility of earnings management, and the implications of limits related to HCA.
- Traditional accounting valuation techniques measuring financial instruments at historical cost mask changes in the fundamental economic value of these instruments.

These latter allegations allow us to sustain that FVA imparts an appropriate degree of information, taking into account the globalization of capital markets and the growing complexity of existing financial instruments. As defective as FVA may be believed to be, additional fine-tuning of regulations and accounting standards may well mitigate its weaknesses. Moreover, we can admit that HCA is defective, too, and that its imperfection has become gradually clearer as the financial market develops. However, we would highlight that a return to HCA is an improbable remedy to the challenges associated with FVA, mainly because HCA provides incentives involved in so-called 'gains trading', and it implies a lack of transparency during crises.

DOI: 10.1057/9781137448262.0006

4.7 Concluding remarks

We conclude our book with some proposals for future research. Based on existing empirical evidence, it is difficult to assess the role of FVA in the financial crisis. We especially require more work on the question of whether market prices significantly diverged from fundamental values during this crisis and more evidence that FVA did have an impact above and beyond the pro-cyclicality of asset values and bank lending.

It is likely that FVA feedback effects have contributed considerably to market illiquidity. However, there is no doubt that the credit crunch – which gave rise to financial crisis – wasn't triggered by accounting but was caused above all by firms, investors, poor management risks, and households making bad operating, investing, and financial decisions, and in some cases, committing fraud. The strictness of market illiquidity during the credit crunch and any perceived negative feedback effects are much more reasonably explained by financial institutions' considerable risk extension of subprime and other positions and their need to increase regulatory capital, as well as by the ongoing high ambiguity and information asymmetry concerning those situations.

Overall, fair value measurement should not be accused of the 2008 economic downturn and credit crunch. On the contrary, this financial crisis showed that fair value could be a significant device to differentiate well-being firms from unhealthy ones. The objective of financial reporting and especially of accounting should always be to provide needed information to users (i.e., stakeholders). Financial reporting has to bear messages that have to present the financial situation at balance sheet date as well as the economic performance and any change in the financial situation during the reporting period. FVA makes just that, and in doing so, it increases a company's transparency.

Although fair value is blamed, the key challenge of financial reporting does not lie in accounting standards, but rather in the fact that companies do not fully deliver information useful for investors. Financial reporting aids in the decision-making of numerous users, but mainly of investors. Moreover, it serves as a basis for measuring future profitability of a company and for establishing the level of regulatory capital (such as Basel ratios), after special analysis and adjustments intended to achieve these objectives. That is not done; blames that fair value has caused the problematic of undercapitalization of financial institutions emerge.

DOI: 10.1057/9781137448262.0006

In this regard, stakeholders such as analysts, investors, standard setters and especially auditors may be responsible for encouraging and allowing such behaviour to occur by managers. The absence of full disclosure by management in their financial reporting is more to blame for the crisis than FVA is.

Accounting information plays a fundamental role in the efficient functioning of a market economy, and in this respect, financial statements enable the allocation of capital throughout the economy by conveying information that helps users (especially creditors and investors) to assess a company's future profitability. A constant flow of timely and relevant information reinforces the stability of markets by increasing transparency about an entity's activities, thereby stimulating market discipline. Therefore, it is imperative that financial statements ensure a proper guide for decision-making, and this is possible if accounting information portrays the economic reality of a company's financial position and performance as truthfully as possible (Chouinard and Youngman, 2008).

Notes

1 As noted by the American Bankers Association in its letter to the SEC in September 2008 and by the International Monetary Fund (IMF) in the Report on Global Financial Stability (IMF, 2008).
2 See the joint letter written by the Consumer Federation of America, Center for Audit Quality, Council of Institutional Investors, Investment Management Association and CFA Institute to the SEC in November 2008
3 Nevertheless, difficulties exist in determining fair value prices in downturns and illiquid markets, as well during boom times in active markets when prices can exceed and include risk premium that inflates revenues.
4 The alternative application of historical cost accounting can be accompanied by a lack of comparability, since similar assets measured upon different purchase prices derive in identical assets recognized with different values (SEC, 2008).
5 Recent work by the IMF (2008) points out the pro-cyclical effects of FVA on the capital ratios of banks and finds measures that could mitigate them. The authors prove pro-cyclicality by simulating the impact of different accounting regimes on bank balance sheets over the business cycle. When they consider a liquidity deficiency to the model, the pro-cyclicality is improved if financial instruments are evaluated at fair value.
6 The existence of too much financial market volatility generates excessive risk and tends to decrease the investment capacity of firms. Barth (1994)

DOI: 10.1057/9781137448262.0006

inspected the effect of FVA on banks' financial statements and found a growth in volatility in earnings and regulatory capital.

7 For example, a potential consequence would be the limitation of credit availability to counterparties whose credit rank is more volatile, e.g. small and medium-sized enterprises (SME).

8 In its monthly bulletin, back in April 2004, the Central European Bank (EBC) detailed four possible scenarios (i.e., a significant deterioration in asset quality, an unexpected change in interest rates, the deflating of a real estate bubble and significant upward and downward adjustments in stock prices) to delineate how application of FVA can cause difficulties to banking and financial system at large (EBC, 2004).

9 The IASB Expert Advisory Panel issued a report in October 2008.

10 See in particular the Banking Subcommittee on Securities, Insurance, and Investments of the United States Senate, 'International accounting standards: opportunities, challenges, and global convergence issues', 24 October 2007; Committee on Oversight and Government Reform of the US House of Representatives, 'The financial crisis and the role of federal regulators', 23 October 2008.

11 Prochazka (2011) and Bonaci et al. (2010) examined the actual debate about whether FVA played the role of a messenger or a mover in the financial crunch, and they concluded that there are some limitations to FVA, but its utilization should not be blamed for the economic and financial downturn because there aren't any solid arguments sustaining the opinions that fair value is the cause of the financial crisis.

DOI: 10.1057/9781137448262.0006

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DOI: 10.1057/9781137448262.0008

DOI: 10.1057/9781137448262.0008

DOI: 10.1057/9781137448262.0008

DOI: 10.1057/9781137448262.0008