

Andrew G Haldane: Fair value in foul weather

Remarks by Mr Andrew G Haldane, Executive Director, Financial Stability, Bank of England, based on a previous speech to the Royal Institution of Chartered Surveyors, London, in November 2009 on 10 March 2010.

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Shakespeare's *Macbeth* opens amid a thunderstorm, with the three witches cackling:

“Fair is foul, and foul is fair
Hover through the fog and filthy air”

Macbeth [Act 1.1.11–12]

Recently, the global financial system has experienced its own dramatic thunderstorm. Financial markets have been thick with fog and filthy air. At times, lightning strikes have threatened seizure in some financial markets and institutions. Two years on, the rumbles of thunder are still discernable.

The debate on the causes and consequences of this perfect storm will swirl around for many years to come. At the centre of this storm is, on the face of it, a rather basic question: how should the instruments that make up the financial system be valued? So basic a question ought not to be a matter of life and death. But for a great many financial institutions during this crisis, it would have been precisely that.

The fundamental concept on which this debate hinges is fair value. Like beauty, its meaning lies in the eyes of the beholder. For some, “fair is foul” – the application of fair value principles risks exposing financial firms to the vagaries of markets, fog, filthy air and all. For others, ignoring the signals from financial market is itself foul and risks creating a financial landscape that is foggy and anything but fair.

The fair value debate is generating electricity in the usually static-free professions of accountancy and regulation. Bankers fulminate at the mere mention. Among Heads of State in some of the biggest countries in the world, accounting standards for derivatives have generated levels of fear and consternation usually reserved for non-financial weapons of mass destruction.

Against that backdrop, this paper attempts to shed a little light on this heated debate.

Three phases of fair value

So what lies at the heart of this debate? It is well-captured by Preston Delano, US Comptroller of the Currency:

“...the soundness of the banking system depends upon the soundness of the country's business and industrial enterprises, and should not be measured by the precarious yardstick of current market quotations which often reflect speculative and not true appraisals of intrinsic worth”.¹

¹ Revision in Bank Examination Procedure and in the Investment Securities Regulation of the Comptroller of the Currency, Federal Reserve Bulletin, July, 1938, pages 563–564.

Delano was US Comptroller of the Currency in 1938. This provides a clue to the fact that the fair value debate is not a new one. To understand this debate, its origins and undulations, it is worth starting at the very beginning.

Although book-keeping has far earlier antecedents, modern accountancy is believed to have begun in the Italian cities of Genoa, Venice and Florence in the 14th century. It is no coincidence that modern banking emerged at precisely the same time in precisely the same cities. Banks emerged to service rapidly expanding commercial companies. And double-entry book-keeping became an essential means of recording and tracking who owed what to whom, oiling the wheels of finance.

It is no coincidence, too, that the first-known description of accountancy was provided by an Italian, Luca Pacioli, in the late 15th century.² Pacioli was not your typical accountant. A wandering Franciscan monk, tutor and mathematician, he was friend and sometime collaborator of Leonardo de Vinci. Although comfortably the less famous of the two, Pacioli is still known today as the father of modern accounting.

From those beginnings, double-entry began to spread north within Europe during the Middle Ages: to Germany in the 15th century, Spain and England in the 16th century and Scotland in the 17th century. By the late 18th century, Goethe had called double-entry “among the finest inventions of the human mind”.³ Some people are easily impressed. Despite that, the progress of double-entry was surprisingly slow. At the start of the 19th century, there were only eleven Londoners who listed their occupation as “accountants”. Imagine.

The 19th century marked a turning point. In the UK, joint stock companies began to spring up. The Bankruptcy Act of 1831 gave accountants a role in winding-up enterprises and the Companies Acts of 1844 and 1862 established a legal requirement for companies to register and file accounts. By the end of the century, audit practices were becoming established. The accountant’s role was to provide a true and fair view of a company’s assets and income, as protection for the state (to whom it paid taxes) and investors (to whom it paid dividends).

It was these concerns that led to the gradual emergence during the second half of the 19th century of fair-value based accounting conventions in the US. From the late 19th century, banks’ securities were carried at market values and their fixed assets at “appraised values”. In other words, by the early 20th century fair value principles were widely applied to companies in general and to banks in particular. In many respects, this period may have been the high-water mark for fair value principles.

In the US, this first wave of the fair value debate ended in 1938.⁴ The backdrop was inauspicious. The first phase of the Great Depression, between 1929 and 1933, saw the failure of a large number of US banks. Between 1933 and 1937, the US economy recovered somewhat. But by 1938 there were fears of a double dip. At the Fed’s prompting, Franklin D Roosevelt called a convention comprising the US Treasury, the Federal Reserve Board, the Comptroller of the Currency and the Federal Deposit Insurance Corporation (FDIC). Its purpose was to determine what should be done with prudential standards to safeguard recovery.

This was no ordinary regulatory convention. Marriner S Eccles, Chairman of the Federal Reserve, called it “guerrilla warfare”. In one corner were the regulators, the Comptroller of the Currency and FDIC. Scarred by their regulatory experience, and fearing further bank failures, the Comptroller and FDIC pushed for high prudential standards, including preservation of fair values for banks’ assets. In the other corner was the Fed. Scarred by their monetary policy

² Pacioli (1494).

³ Goethe (1796).

⁴ Simonsen and Hempel (1993) provide a fascinating account of this episode.

experience, and fearing a further collapse in lending, the Fed argued for laxer prudential standards and the abandonment of fair values. Battle commenced.

The tussle lasted two months, often played out in public through the *New York Times*. In the end, the Fed prevailed. On 26 June 1938, Franklin D Roosevelt announced (without so much as a hint of irony) the Uniform Agreement on Bank Supervisory Procedures. Banks' investment grade assets were to be valued not at market values but at amortised cost. And banks' sub-investment grade assets were to be valued at a long-run average of market prices. In the teeth of crisis, and in the interests of macroeconomic stability, the first phase of fair value had ended.

This pattern was to be repeated half a century later – the second wave of fair value. Historic cost accounting remained in the ascendancy in the US from the 1940s right through to the early 1970s. But from the mid-1970s onwards, accounting standard-setters began to embrace fair value measurement, first in the context of banks' portfolios of equities and other marketable securities.⁵ By the late 1980s, there was widespread recognition that traditional accounting approaches were obscuring the real value of securities and derivatives.

US experience during the Savings and Loan crisis in the mid-1980s provided further impetus. Forbearance, including about the valuation of assets and liabilities, was widely believed to have been a cause of the build-up of problems among the thrifts.⁶ In 1989, Congress passed the Financial Institutions Recovery, Reform and Enforcement Act (FIRREA), tightening valuation standards among banks and bringing them closer to fair values. In the same year, the International Accounting Standards Committee (IASC) commenced a project to assess the measurement and disclosure of financial instruments. These too were to suffer a set-back.

By 1990, recession had taken hold in the US, with lending contracting sharply. As in 1938, the US economy was suffering “financial headwinds”. As in 1938, the Fed were quick to call for a relaxation of prudential and valuation standards to head-off pressures on banks.⁷ And as in 1938, the upshot was a concerted move by the then-President, George Bush, relaxing examination and valuation standards.⁸ For the second time, fair value had been returned to its box.

And so to the present day – the third phase. By 2008, the ranks of “accountants” had swelled, with numbers of recognised accountants in the UK totalling over 275,000. Yet the issues today have loud echoes of 1938. Through the 1990s, the main international accounting standard-setters extended the boundaries of fair value. In the US, this was given impetus by the Federal Deposit Insurance Corporation Improvement Act (FDICIA) in 1991. Widespread use of mark to market was a key ingredient of the prompt corrective action approach embodied in FDICIA.

From 1992, it became a requirement among US companies to disclose the fair value of all financial instruments in the notes to their accounts. Towards the end of the 1990s, this move was formalised with financial instruments (derivatives, equity and debt) being included explicitly in the accounts at fair value. In the US, this followed adoption of Statement of

⁵ United States Securities and Exchange Commission (2008).

⁶ FDIC (1997).

⁷ In a letter to Richard Breeden, Chairman of the Securities and Exchange Commission, which refers back to the 1930s experience, then-Chairman Alan Greenspan notes “that market value accounting raises a substantial number of significant issues that need to be resolved before considering the implementation of such an approach in whole or in part for banking organizations”. Alan Greenspan, “Letter to Hon. Richard C. Breeden,” Federal Reserve, November 1, 1990.

⁸ Simonsen and Hempel (op. cit.).

Financial Accounting Standard 133 (SFAS 133) in June 1998. Elsewhere, it followed adoption of the IASC's International Accounting Standard 39 (IAS 39) in January 2001.

The banking crisis of the past two years has brought that evolution to a halt. As pressures on banks' balance sheets have intensified, subdued lending growth has raised concerns that recovery may be retarded. A debate has begun internationally on rolling back fair value to arrest this downward trajectory. Once again, central bank governors, politicians, regulators and countries have been prominent in their criticism of fair value. Some fear that fair value is poised to enter the third dip on its rollercoaster journey.

Fair values and market prices

What have been the underlying forces leading fair value to be at first lauded, then questioned and periodically abandoned? At the heart of this is the vexed question of whether market prices are a true and fair assessment of value.

In theory, market prices ought to be a full and fair reflection of the present value of future cashflows on an asset. This is the fulcrum of the Efficient Markets Hypothesis (EMH). Market prices, if not perfect, are at least efficient aggregators of information – a one-stop shop for appraising value. This simplicity makes EMH powerful theory. But its real power is its widespread application in practice. EMH has not just monopolised the finance textbooks; it has also dominated the dealing rooms.

If the EMH were to hold strictly, the fair value debate would be uncontentious. Marking of assets to market would be proper recognition of their economic value. In that financial utopia, the interests of accountants, investors and regulators would be perfectly aligned. Accountants would have a verifiable valuation yardstick; investors a true and fair view of their true worth; and regulators an objective means of evaluating solvency. Fair value would serve treble duty.

In practice, the fair value debate is contentious and has been for at least a century. Through history, accountants, investors and regulators have not always sung in tune. Today, accountants are singing opera Pacioli-style, regulators are rapping at 300 words a minute, while investors are left to whistle. In part this discord has been blamed on failures of EMH, "the precarious yardstick of current market quotations".

It should come as no surprise that fair value principles have faced their stiffest tests at times of crisis – the Great Depression during the previous century, the Great Recession during this. For it is at crisis time that EMH itself faces its stiffest test, perhaps none greater than recently. The heterodox British economist George Shackle observed: "Valuation is expectation and expectation is imagination".⁹ Imagination, and thus valuation, is apt to run wild at the peak of the boom and trough of the bust.

These episodes of over-active imagination, or deviations from EMH, can be grouped roughly three ways. Each has an important potential bearing on financial stability and on the fair value debate:

- **"Excess volatility":** Some of the earliest evidence against EMH focussed on the tendency of asset prices to fluctuate more than could be justified by movements in fundamentals – so-called excess volatility. While early evidence focussed on the behaviour of equity prices, the same tests have now been applied to a wide range of asset markets, including corporate bonds, asset-backed securities and exchange

⁹ Shackle (1972) quoted in Bronk (2009).

rates.¹⁰ There is overwhelming empirical evidence of excess volatility in asset prices.

- **“Medium-term misalignment”**: Excess volatility, while inconvenient, need not by itself severely distort the functioning of capital markets. Asset prices’ signals might be noisy, but correct on average. But there is emerging evidence of asset prices becoming persistently misaligned from fundamentals in a variety of markets including equity, residential and commercial property and corporate bonds.¹¹
- **“Apparent arbitrage”**: A third aspect of the failure of EMH is evidence of seemingly pure arbitrage opportunities being sustained by market participants for lengthy periods. Unlike excess volatility and misalignment, these deviations from fundamentals represent riskless opportunities to make profits. They have been evident in past, and in particular in the present, crisis.

Ultimately, the importance of these three features is an empirical question. Charts 1 and 2 plot the long-run behaviour of the equity market, in the UK from the 1920s and in the US from the 1860s. These long sweeps of history are revealing about patterns of misalignment and excess volatility. In each case, some metric of fundamentals is needed. A model-based measure of fundamentals is used, based on long-run average values of dividend growth discounted at a long-run average real interest rate.¹²

For the US and UK, Charts 1 and 2 present persuasive evidence of both excess volatility and misalignment. On average over the sample, equity prices in the UK and US are around twice as volatile as fundamentals. The average absolute deviation of UK and US equity prices from fundamentals has been over 20% and over 30% respectively. If anything, there is evidence of misalignments having increased. Average absolute misalignments have averaged almost 30% and 70% in the UK and US since 1980.

These deviations from EMH are no less striking moving from financial to real assets. Since 1930, real property prices have been more than twice as volatile as typical measures of fundamentals. And real property prices have, in different countries, at times deviated significantly from measures of fundamentals over the same period.¹³

EMH predicts essentially a zero correlation in prices across time, as they follow the random walk of the homeward-bound drunk. This evidence paints a picture of excess volatility (in the short-run) and slow mean-reversion (in the long-run). In other words, there is both positive (at short horizons) and negative (at longer horizons) serial correlation in market prices. This leaves EMH run-over in both directions.

With a steely nerve and deep pockets, investors could make profits from exploiting these trends. But as Keynes remarked, the market can often remain irrational for longer than even a strong-willed investor can remain solvent. In other words, these are risky bets. The crisis has also revealed, however, examples of bets which were, on the face of it, essentially riskless deviations from EMH or “apparent arbitrage”.

Chart 3 considers the price of two on the face of it identical portfolios – an index of CDS contracts and an individually-constructed portfolio of the same CDS contracts. On average, they ought to trade as one and the same. But for around a year from October 2008 onwards, the spreads on these two portfolios differed by as much as 60 basis points. Even once transactions costs are taken into account, there were persistent and significant riskless

¹⁰ Shiller (1981).

¹¹ Shiller (2005), Smithers (2009).

¹² Alternative metrics for fundamentals, such as cyclically adjusted price-earnings ratios or q, yield a broadly similar conclusion (Shiller (2005), Smithers (2009)).

¹³ Shiller (2005).

profits on the table. Chart 4 looks at the difference between two, again on the face of it, identical money market bets – forward rate agreement spreads and forward rates implied by the LIBOR spreads, both of the same maturity. Over the exact same period, these differed by as much as 250 basis points.

So why were the bets not placed and the arbitrage opportunities exploited? First, money is needed to place even a riskless bet. That was the scarcest of commodities after the failure of Lehman Brothers in October 2008. Second, placing a bet also requires a trustworthy bookmaker. They too were thin on the ground in the midst of crisis. In their absence, arbitrage may be more “apparent” than real. Market prices are likely to deviate from fundamentals due to liquidity and counterparty premia.

By way of illustration, Chart 5 provides a decomposition of the yield on sub-investment grade corporate securities in the UK. By mid-2007 at the peak of the boom, the liquidity premium on these assets had pretty much been eliminated. By the end of 2008, this liquidity premium had risen by almost 2500 basis points. As capital markets moved from flood to drought, market prices turned from rich to poor.

Fair value and financial stability

Against this backdrop, what are the potential financial stability implications of using market prices as a valuation yardstick? In roughly chronological order, three main arguments have been used in defence of marking to market. Broadly, these mirror the three historic phases of fair value:

- ***“Protecting shareholders”***

During the 19th and early 20th centuries, as joint stock companies sprang up, the key purpose of company accounts was to protect shareholders’ interests. Like truth in the face of the war, in the face of crisis the financial accounts appear to have been the first casualty. During the 19th century, the published accounts of Spanish banks became less frequent during episodes of crisis. Mussolini’s Italian government of 1931 went one step further, suspending publication of accounts by the banks to forestall panic.¹⁴ It is unlikely Goethe and Mussolini would have agreed on the merits of double-entry.

While less extreme, there is compelling evidence of British banks having massaged balance sheets from the late 19th century right up until the early 1970s, especially during crisis. Typically, this involved the systematic under-valuation of assets to allow hidden reserves to be carried on the balance sheet. The experience of UK banks in 1952 was typical. As the prices of government securities fell sharply, the basis for valuation by banks was shifted from “at or below market value” to “at or under cost”. This mirrored the Roosevelt and Bush forbearance announcements of 1938 and 1990.

The motives for hidden reserves among UK banks were purportedly prudential, as protection against the “excessive dividend expectations” of shareholders and as a cushion against losses in crisis.¹⁵ Although the Companies Act of 1947 prohibited the use of hidden reserves, the banks were exempt from its provisions. But the writing was on the wall. Non-disclosure by banks came under repeated fire during the 1960s. Sensing the inevitable, British banks “voluntarily” decided to pursue full disclosure in 1969, in the interests of shareholder transparency and protection, though there is evidence of hidden reserves persisting right up to the 1980s.

¹⁴ James (1992).

¹⁵ Billings and Capie (2009).

Those considerations remain relevant today. Shareholders in global banks have lost 40% of their net worth since the start of the crisis. The implied volatility of global banks' equities is around 50% higher than at the start of the crisis. At its peak, it was seven times higher. Confidence in banks' balance sheets has been shaken to the core. It is unlikely to be restored by a return to murky valuation and hidden reserves.

- ***“Gambling for resurrection”***

One special case of shareholder protection arises when management increase their risk-taking incentives as the probability of failure rises. Such incentives are in-built in a world of limited liability. But the ability to engage in such gambling for redemption depends importantly on the degree of information asymmetry between the shareholders and the manager. The lower the transparency of the accounts, the greater the incentives and ability of management to bet the ranch.

This type of behaviour is if anything more likely among banks, given the intrinsically greater opacity of their assets. And examples are legion. For example, in the run-up to the Savings and Loan crisis in the US, many thrifts financed long-term fixed rate assets with variable rate deposits, thereby running significant interest rate risk. This was a big gamble. But because it was disguised in the accounts, neither regulators nor the thrifts themselves felt obliged to manage this risk. As interest rates rose, the gamble failed causing many thrifts to collapse. In response, the Office of Thrift Supervision required fair values to be reported from the early 1990s.

- ***“Timely risk management”***

Perhaps the most recent of the arguments used to support fair values arises from its role as a risk management device. Market prices, while noisy, offer timely signals. They are likely to prompt early recognition and management of emerging risks and mistakes, by both regulators and the regulated. Sunlight is an effective disinfectant.

In this regard, it is telling that more widespread marking to market accompanied regulatory efforts to improve prompt corrective action measures – for example, in the US through FDICIA. Among market participants, the use of fair values and fleet-of-foot risk management techniques is widely felt to have contributed to the relative success of some firms during the course of the crisis. Lloyd Blankfein, CEO of Goldman Sachs, certainly appears to think so.¹⁶

For the prosecution, the main arguments also appear to be threefold. Essentially, these follow from the three commonly attributed failures of the EMH.

- ***“Excess volatility”***

If market prices exhibit greater volatility than warranted by fundamentals, this will be mirrored in the balance sheet footings and profits of entities marking their positions to market. This is far from a new phenomenon. Robert E Healy, the SEC's first Chief Accountant back in the early 1930s, lamented that firms “can capitalise practically everything except the furnace ashes in the basement”.¹⁷

The impact of fair values on profits may have been even greater over recent decades. Banks' profits have become significantly more volatile over the past few decades, with the standard deviation of banks' return on equity trebling comparing the forty-year periods either side of

¹⁶ “At Goldman Sachs, we calculate the fair value of our positions every day, because we would not know how to assess or manage risk if market prices were not reflected on our books. This approach provides an essential early warning system that is critical for risk managers and regulators”, Lloyd Blankfein, *Financial Times*, October 13 2009.

¹⁷ Quoted in Seligman (2003).

1970. There is also evidence of banks' equity prices having exhibited higher correlation as fair value principles have been extended.¹⁸

Consider a hypothetical experiment. Imagine banks in the UK had been required to mark their banking books to market over the period 1999 to 2008, in addition to their trading book. Market prices are used to proxy different categories of loan. For example, Residential Mortgage Backed Securities (RMBS) and covered bond prices are used to proxy mortgage loans. As with banks' trading books, all gains and losses arising on the banking book are assumed to flow directly to profits.

Chart 6 plots the path of UK banks' profits, both actual and simulated under the mark to market assumption. Simulated profits are around eight times more volatile. Between 2001 and 2006, UK banks' cumulative profits would have been around £100 billion higher than recorded profits, as the expected future returns to risky projects were brought forward. This would have been the 21st century equivalent of capitalising the ashes in the blast furnace.

For what goes around comes around. Hypothetical losses during 2008 would then have totalled in excess of £300 billion, as the risk from these projects was realised. The ashes in the furnace truly turned to dust. Had shareholders not already torn it out, this rollercoaster ride in profits would have been hair-raising. In this admittedly extreme case, it is questionable how much shareholder protection fair values would have delivered in practice.

- ***“Fundamental misalignment”***

A related but distinct issue arises when market prices deviate from their true values for a protracted period. Marking to market then runs the risk not just of unwarranted volatility but unjustifiable bankruptcy. Take a bank whose liabilities are perfectly maturity matched with its 10-year assets. So there is no necessity for the bank to liquidate its assets to make good its liabilities as they fall due.

But the market price of the banks' assets might well embody a premium for instant liquidity – a liquidity premium. As Chart 5, at times of stress, these premia are large and overshoot, lowering asset prices below economic value. In this situation, a marked to market balance sheet may give a misleading impression of banks' worth. And if these distortions are large enough, fair values could even generate insolvency.

During this crisis, the precipitate rise in liquidity premia and fall in asset prices may have called into question the viability of many banks had their assets been fair-valued. Consider again the banking book of UK banks on a mark to market basis. Chart 7 shows the loss of value on this book, which would have peaked at over £400 billion during the early months of 2009. The total capital resources of UK banks at that time were around £280 billion. In other words, the UK banking system in aggregate would have been technically insolvent on a mark to market basis. The recent recovery in asset prices has been almost as remarkable as the preceding fall. It has meant UK banks were back in the black within a matter of months.

- ***“Liquidity and fire-sales”***

The act of marking to market may itself have a bearing on asset price dynamics. This arises because of its potential effects on banks' behaviour. If swings in perceived solvency cause banks to sell assets, these fire-sales may themselves add to downward pressures on asset prices. Under mark to market, these pressures are felt by all institutions, not just the seller. In effect, fire-sales by one firm have negative externalities for all others. And as other banks adjust their own balance sheets in response, there is a risk the downward dynamic is perpetuated.

¹⁸ Khan (2009).

By acting in this way, marking to market has the potential to serve as an amplifier of stress in the financial system.¹⁹ Other things equal, it could result in sharper and more severe asset price falls than in the past, accompanied by greater institutional stress. It could exaggerate excess volatility and misalignment. Marking to market may not just be a casualty of the failure of EMH; it may also be a cause.

Hyun Shin has likened the destabilising dynamics of mark to market to the unstable oscillations of London's Millennium Bridge at the time it opened. In finance, these adverse dynamics have a much longer historical pedigree. In their classic monetary history of the United States, Friedman and Schwartz assigned mark to market a key role in propagating banking failure during the Great Depression.²⁰ The evidence of such dynamics during this crisis is more mixed. Some studies have claimed this effect was limited to banks with large trading portfolios;²¹ others that it has been significant and wide-ranging across the financial sector.²²

Perhaps the truth lies somewhere in between, with some market and institutions affected and others immune. Chart 8 plots commercial property values in the UK since 1920. There are five discernible boom and bust cycles in commercial property, signified by the dotted lines. Chart 9 looks at the cumulative falls in value during the bust. In four of the cases, the bust was similarly timed and sized. The exception is the bust of 2007–08, where the fall in value has been both greater and faster. It is plausible that fire-sales, aggravated in part by marking to market, may have contributed to this dynamic.

The fair value agenda

So how do these considerations relate to the debate on international accounting standards? At present, these stand at a crossroads. In the US (through the Financial Accounting Standards Board (FASB)) and internationally (through the International Accounting Standards Board (IASB)), standard-setters are reviewing their treatment of financial instruments. Substantive decisions are planned during 2010.

Within the IASB, a review of IAS39 is underway, with consultation on a new standard, IFRS9. The fair value debate is at the heart of the new proposals. One key dimension is valuation, where IFRS9 proposes a combination of amortised cost and fair values, with clear criteria to determine the suitability of assets for each category. In the US, FASB is expected to issue consultation proposals that would tend to reinforce the use of fair value among US banks.

A second dimension is provisioning. The concern here is that the use of provisions based on incurred losses means that impairments are recognised too late, thereby contributing to pro-cyclicality of loan supply.²³ In response, the IASB has issued a consultation paper proposing that provisions be set on an expected loss basis. These proposals are currently being explored by regulators internationally.

¹⁹ For example, see Plantin, Sapra and Shin (2008) and Allen and Carletti (2007) for a theoretical exposition of these dynamics.

²⁰ "Under such circumstances, any runs on banks for whatever reason became to some extent self-justifying, whatever the quality of assets held by banks. Banks had to dump their assets on the market, which inevitably caused a decline in the market value of those assets and hence of the remaining assets they held. The impairment in the market value of assets held by banks, specifically their bond portfolios, was the most important source of impairment of capital leading to bank suspensions, rather than the default of specific loans or specific bond issues." (Friedman and Schwartz (1963)).

²¹ For example, Laux and Leuz (2009).

²² For example, Wallison (2008).

²³ For example, Turner (2010).

Underlying both of these debates is a perceived tension between the needs of different stakeholders, in particular investors and regulators. So what broad principles might frame accounting standards if the demands of these stakeholders are to be met? Using the framework outlined earlier, these principles might include:

- *The importance of a common measuring rod*

The G20 have committed FASB and the IASB to convergence of international accounting standards by June 2011. This is an ambitious timetable, for it is not just a meeting of two minds. There are perhaps more than 30 different accounting standards operating worldwide. Many minds need to meet if a truly international standard is to emerge.

It could be argued that differences in accounting standards do little harm. Like foreign languages, we may learn to live, perhaps even love, them. Attempts to compel a common language might risk creating the accountancy equivalent of Esperanto. Unfortunately, the analogy is inexact. Banks are, by their nature, international. So too are investors in, and regulators of, banks. If all parties speak different languages at the same time, the result is likely to be noise rather than signal.

For banks, the noise to signal ratio has been particularly high during this crisis. Differences in accounting standards have contributed to this noise. In 2008, UK banks' assets would have been £2 trillion, or around 30%, larger under European IFRS than under US GAAP standards. These differences make problematic international comparisons of such rudimentary concepts as bank leverage. This in turn hinders investors' risk assessments and regulators' supervisory assessments.

- *A failure of efficient markets is not of itself a failure of fair value*

It is commonly heard that the failure of EMH argues against fair value in favour of some alternative, such as amortised cost. The truth is more subtle than that. Deviation from EMH will cause both accounting measures to deliver distorted signals of value. Depending on the precise circumstances, either measure might deliver a more accurate measure of true economic value.

To see this, consider four scenarios. Consider first a bank making a single loan. In the first period, amortised cost and fair valuations of this loan will be equal. Expected cashflows will in both cases be discounted at the prevailing market discount rate. To the extent EMH is violated – for example, because the market discount rate is too low – both accounting concepts will result in asset over-valuation. Both concepts will be equally imprudent. In other words, credit cycles that cause failures of EMH contaminate bank asset valuations irrespective of the accounting convention.

Consider next a bank with a portfolio of two loans, one initiated when assets prices were priced correctly, the other when they were over-valued. In this situation, amortised cost and fair values will value the asset portfolio differently. Because market prices are applied to the whole asset stock, fair value will tend to result in greater recorded overvaluation. In other words, marking to market is more susceptible to valuation cycles than amortised cost.

Third, consider a situation where, having been over-valued, the market price of the second loan corrects back to equilibrium. Fair values now deliver the correct valuation of the entire asset portfolio. Amortised cost measures, meanwhile, will continue to give a misleadingly bullish account of the second loan's valuation, since this will be discounted at the artificially-low discount rate used at initiation. In other words, in this set of circumstances the tables are turned, with fair values giving a more accurate and prudent measure of valuation.

Finally, if instead of correcting to equilibrium, assume market prices over-correct – say, because of an overshoot in illiquidity premia of the type witnessed during crisis. It is then no longer clear which valuation metric is preferable. Both will be inaccurate to some degree but in opposite directions – the amortised cost measure suggesting valuations which are “too high”, while fair value will suggest valuations which are “too low”. The greater the initial

misalignment in asset prices, and the smaller their subsequent overshoot, the greater the likelihood of fair values being preferred over amortised cost and vice-versa. Ultimately, however, this is an empirical question.

In general terms, however, the point is clear: efficient markets are not necessary but may be sufficient to justify the use of fair value principles.

- *Better accounting for expected losses*

What is clear from these examples is that there is a potential trade-off in the use of amortised cost versus fair value measures when market prices deviate from EMH. Both might give misleading signals, but in opposite directions. Recognising the problems with either, is there a way of doing better than both?

Perhaps the simplest way of doing so would be to use both valuation metrics. There have already been suggestions that “dual” accounts could be drawn up.²⁴ The upside of this approach is that it would give regulators and investors more information on which to base assessments. It releases stakeholders from the need to pick a winner. The downside is that both valuations may be inaccurate, with a lack of clarity about which ought to be used, for example, to judge bank solvency. Or in the words of Macbeth’s three witches, “double, double, toil and trouble”.

A more ambitious alternative would be to seek a more systemic and standardised valuation methodology in the first place, against which different approaches can be cross-checked. The key here would be to establish an objective measure of expected loss, less susceptible to the excess volatility of market prices but adept at picking up its timely signals. In the language of George Shackle, stricter valuation standards would help place some bounds on the expectations and imaginations of bankers.

This is a role which neither accountants nor regulators are best placed to carry out. It would require a body with both expertise in valuation and objectivity. It would seek consistency and, as far as possible, accuracy in valuations across asset classes, institutions and countries. An International Valuation Standards Board already exists. But its standards have only been adopted in around half a dozen countries. Accounting and regulation already have fora to support consistency of standards. During this crisis, valuation practices have been every bit as important. Perhaps they too need international recognition.

- *Business models matter, especially for banks*

Accounting standards already reflect characteristics on the assets side of banks’ balance sheet. For example, IASB standards require consideration of the cashflow characteristics of assets (for example, specified cashflows of interest and principal) and the intentions of the holder (for example, to collect the contractual cashflows). But for banks the characteristics of their *liabilities* may be every bit as important as their assets. Indeed, at times of stress in funding markets, liability characteristics may be more important.

Consider, for example, a 10-year loan with regular interest payments which is intended to be held to maturity by a bank. These characteristics would justify the bank carrying the asset at amortised cost. But imagine this loan is funded with overnight loans. Whatever the intention, this liability structure would require early liquidation of the asset if funding were to dry up. In other words, the *ability* of a bank to hold assets to maturity may be as important as the *intention*.

The greater the maturity mismatch, the greater the likelihood of liability characteristics dominating asset intentions. In other words, the case for using fair values is greater when balance sheets are maturity mismatched. Or, put differently, precisely because market prices

²⁴ For example, FASB (2009).

embody a liquidity premium, they could give a better view of the true asset position of a firm facing liquidity constraints. For institutions facing funding pressure, liquidity premia may be a legitimate measure of fundamentals.

And which companies' balance sheets are most subject to such maturity mismatch? Banks. It has been argued that banks ought to be protected from the vicissitudes of market prices. But, given their maturity transformation role, the case may actually be stronger for banks than for other types of both financial (such as insurance companies and pension funds) and non-financial firms. For some banks, this may be the accounting convention that best aligns the economic characteristics of both assets and liabilities.

It is interesting that there was evidence of financial markets making their own switch in valuation convention during the course of the crisis. As funding maturities shortened, the probability of asset liquidation rose. It became rational, then, for investors to begin valuing even banking book assets at market prices, as in Chart 7. For a time, this process appeared to generate its own downward dynamic, with shortening maturities and falling asset prices eroding the impliedly mark-to-market solvency position of banks in a liquidity/solvency loop.

Some have argued this downward dynamic itself justifies switching-off fair values. But the perils of doing so are clear. Persisting with an inappropriate valuation metric may give an inaccurate picture of banks' true solvency position. It will also reduce banks' incentives to adjust funding structures to guard against such a dynamic. It is precisely such risk management incentives that appear to explain the relative success of some firms, including Goldman Sachs, during this crisis. Therein may lie a lesson.

Conclusion

The fortunes of fair value have waxed and waned historically, particularly at crisis time. So it is no surprise that fair value is under attack today. We may be at yet another pivot point.

With financial markets still thick with fog and filthy air, now would be an unfortunate time to starve balance sheets of the sunlight provided by fair values. Blocking out the sun or, worse still, claiming it revolves around the earth will not serve banks or regulators well in the longer run. Restoring traditional accounting principles sounds desirable, provided the (Italian) values we import are Pacioli rather than Mussolini.

At the same time, it needs to be recognised that too much sunlight can scorch. That means applying appropriate filters to fair values, screening out their harmful rays. Rethinking valuation practices across firms, asset classes and countries, better to capture expected losses, is one important such filter. Recognising the liability as well as asset characteristics of institutions may be another.

We need to ensure these changes do not erode fair value principles, as that would result in the baby being thrown out with the bathwater. Making fair values less foul ought to advantage both investors and regulators. It would protect fair value from lightning strikes when the next financial thunderstorm breaks.

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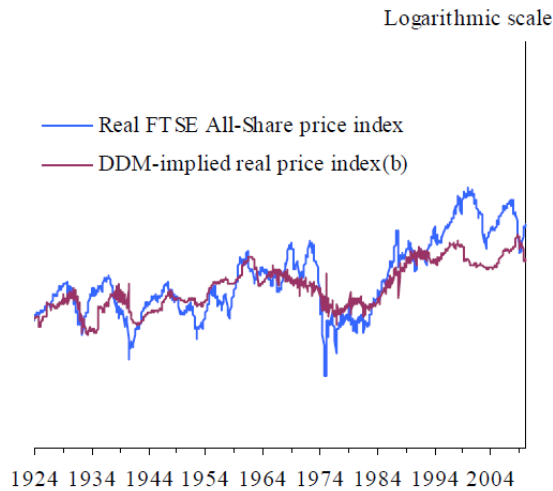
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Annex

Chart 1: Real FTSE All-Share price index and its fundamental-implied value^{(a)(b)}

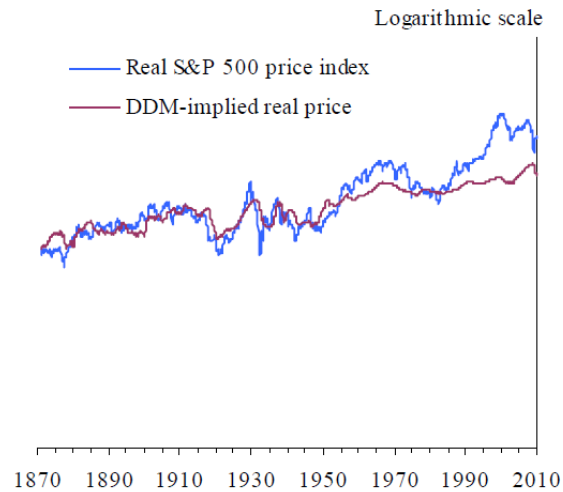


Source: Global Financial Data and Bank calculations.

(a) For further details see Shiller, R., 'From Efficient Markets Theory to Behavioral Finance', *Journal of Economic Perspectives* (2003).

(b) Assuming future real dividend growth rates and real discount rates equal to average values since 1923.

Chart 2: Real S&P 500 price index and its fundamental-implied value^{(a)(b)}

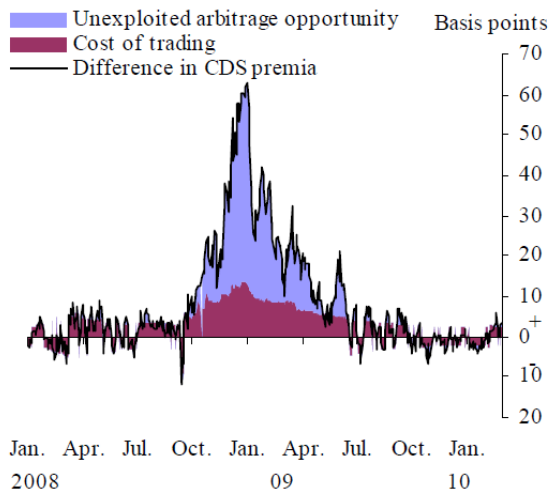


Source: www.irrationalexuberance.com.

(a) For further details see Shiller, R., 'From Efficient Markets Theory to Behavioral Finance', *Journal of Economic Perspectives* (2003).

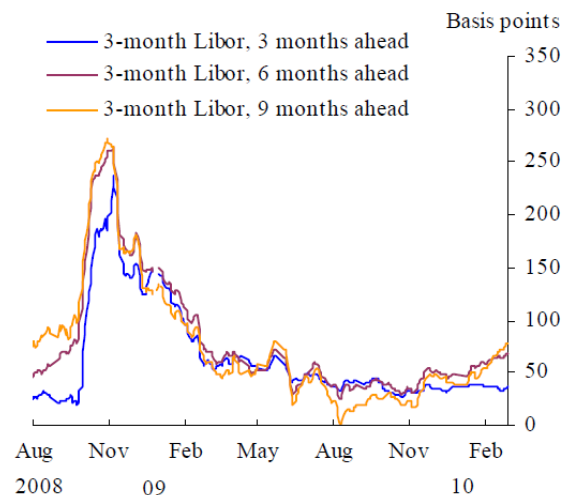
(b) Assuming real dividend growth rates and real discount rates equal to average values since 1923.

Chart 3: Price of CDS index versus basket of constituents



Sources: JPMorgan Chase & Co., Thomson Datastream and Bank calculations.

Chart 4: Forward sterling Libor spreads^(a)



Sources: Bloomberg, British Bankers' Association and Bank calculations.

(a) Difference between forward sterling Libor rates calculated using the Libor curve and those implied by forward rate agreements.

Chart 5: Decomposition of sterling-denominated high-yield corporate bond spreads

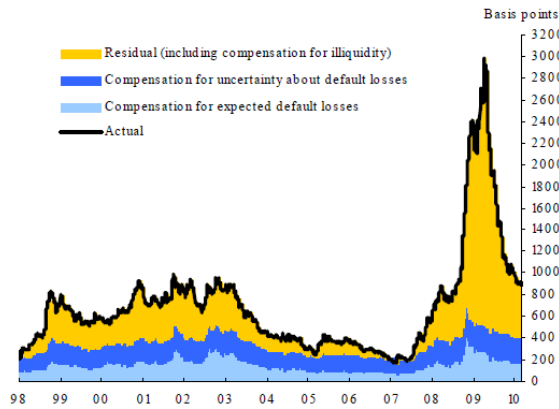
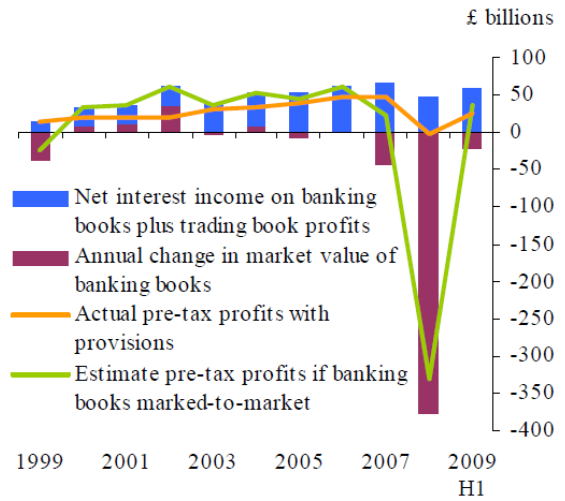


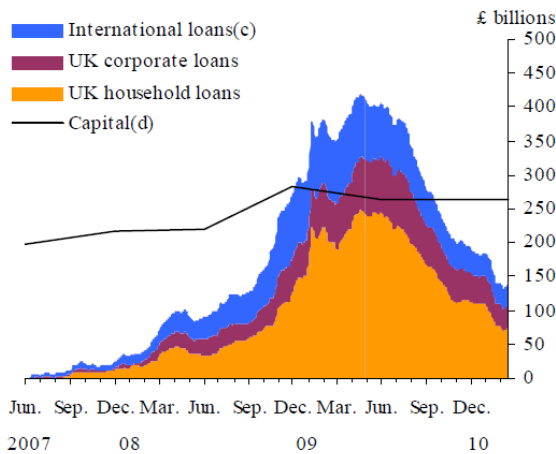
Chart 6: Major UK banks' profits with banking books marked-to-market^(a)



Sources: Bank of England, published accounts, UBS Delta, Merrill Lynch, JP Morgan and Bank calculations.

(a) The chart shows what major UK banks' profitability would have been if assets contained in the banking books were carried on a mark-to-market basis, using sensible proxies for the various exposures. For example, US RMBS are used to proxy the market value of US mortgage exposures. International exposures include US and Europe only. Peer group includes: Barclays, RBS, Lloyds Group, HSBC, Santander Group and Northern Rock.

Chart 7: Market value discount to face value of major UK banks' loan books^{(a)(b)}



Sources: Bank of England, Bloomberg, published accounts, UBS Delta, Merrill Lynch, JP Morgan Chase & Co and Bank calculations.

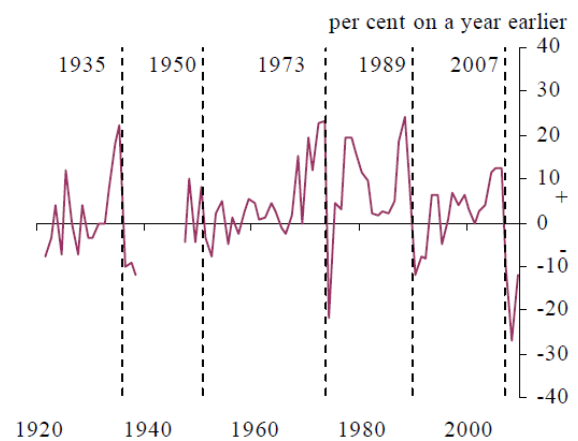
(a) Based on weekly moving average prices of traded instruments as proxies for market value of similar banking book exposures.

(b) Group comprises of Barclays, HSBC, Lloyds Banking Group, Nationwide, Northern Rock, Royal Bank of Scotland and Banco Santander, with aggregate banking book exposures of £2.2 trillion.

(c) International exposures include United States and Europe only.

(d) Held fixed from last reported data at end-2009 H1.

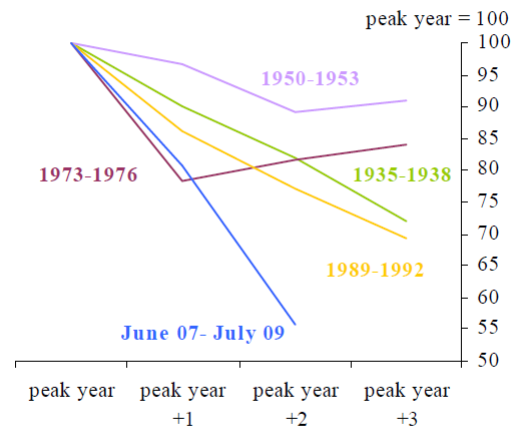
Chart 8: Long-run UK commercial property capital values^(a)



Sources: Scott (1996), Investment Property Database and Bank calculations.

(a) The vertical dotted lines indicate the discernible booms and busts. The attached labels indicate peak years.

Chart 9: UK commercial property value declines from cyclical peaks



Sources: Scott (1996), Investment Property Database and Bank calculations.