

Improving fair value accounting

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The turmoil on international financial markets is proving complex to a degree that few could have anticipated when it initially emerged in the summer of 2007. There is still much uncertainty over the duration and potential impact of this turmoil on the real economy.

This episode has revealed a series of flaws in various areas of the international financial system. One issue on which regulators, supervisors and other interested parties are focusing is the application of fair value. In many cases discussions turn on quantitative and qualitative matters geared to improving valuation methods and their implementation, especially when applied to complex financial instruments. There is also in-depth reflection about what information institutions should provide investors regarding the application of fair value, so that investors may take well-grounded decisions.

Another area of the debate on fair value considers to what extent its application affects management and investment decisions, and particularly how it may exacerbate procyclical behaviour by financial markets.

To examine the relationship between valuation and procyclicality and to identify some solutions to the perverse interaction of the two, the article discusses the advantages of fair value and its limitations, stressing in particular some of the most relevant ones which have emerged during the current financial turmoil. In addition, it puts forward some ideas that might contribute to improving fair value: the use of reserve valuations and of dynamic provisions. It is argued that they can not only improve fair value accounting but also lessen financial procyclicality.

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This episode has revealed a series of flaws in various areas of the international financial system. One topic on which regulators, supervisors and other interested parties are focusing is the application of fair value. In many cases discussions turn on quantitative and qualitative (governance) matters geared to improving valuation methods and their implementation, especially when applied to complex financial instruments. There is also in-depth reflection about what information institutions should provide investors regarding the application of fair value, so that investors may take well-grounded decisions.

Another area of the debate on fair value considers to what extent its application affects management and investment decisions, and particularly how it may exacerbate procyclical behaviour by financial markets. The procyclical behaviour of financial agents means that in good times they tend to increase their risk-taking, and financial vulnerabilities thus build up. These vulnerabilities become manifest when the economic cycle turns adverse, prompting changes in market participants' strategies and amplifying the cycle.

Procyclicality is certainly an intrinsic characteristic of financial markets. But beyond a certain point it arguably generates highly adverse effects on long-term growth prospects ("excessive procyclicality"). This is the case especially when it leads to or exacerbates myopic behaviour and excessive short-termist behaviour on the part of financial institutions. The adverse consequences of procyclicality tend to be more intense at times, as at present, when the interplay between asset valuation and leverage has become more important. If valuation methods tend to introduce incentives to increase leverage and mispricing risks, the adjustment process when economic conditions change will be more pronounced, amplifying its adverse impact on the economy. As it is known, leverage and mismatches tend to grow slowly, but downward adjustments occur rapidly.

It would therefore be desirable to introduce incentives to mitigate this procyclical behaviour, and in any event to avoid regulations that might encourage it. Indeed, during the conception of Basel II, procyclicality was a controversial and widely debated topic, and the Basel Committee itself included various mitigating mechanisms in the Accord. On the contrary, and surprisingly, there has been very little debate until recently concerning the new accounting rules financial institutions have to apply.

The use of fair value to approximate the value of financial instruments is nothing new. Its use has gradually increased over time and has gained in significance as specific products, such as derivatives, have become widespread. For these and other financial instruments, valuation at cost has been inadequate in providing a true and fair view of companies. Historical cost is less informative from a time perspective, and is also insensitive to the signals market prices emit, which hampers agents' decision-making and market discipline.

These limitations of cost-based accounting support the use of fair value as the valuation method on which accounting rules should be based. Fair value offers evident advantages in that it provides for a better approximation to the economic reality prevailing at each point in time.

That said, and as will be argued in this article, fair value would need to be perfected in several areas. In particular, it should allow a better evaluation of risks and profits over the business cycle and it should be compatible with promoting financial stability. The current financial turmoil dating back to the summer of 2007 exemplifies the problems of the present conception of fair value, especially when there are no deep and liquid markets (or these are disappearing), and the products being valued are complex.

When markets disappear, and it is no longer possible to use a market price to value financial instruments, it becomes necessary to resort to internal valuation models based on inputs not directly observable in the market and which, in turn, are subject to high procyclicality. In this way, a negative dynamic arises and intensifies the problems as a result of the reaction of investors and bank managers, who act to limit losses.

To examine the relationship between valuation and procyclicality and to identify some solutions to the perverse interaction of the two, the rest of this article is structured as follows. The first section discusses the advantages of fair value and its limitations, stressing in particular some of the most relevant ones which have emerged during the current financial turmoil. The second section analyses factors that might contribute to improving fair value since, as already mentioned, a return to historical cost seems neither viable, possible nor desirable. The final section draws the main conclusions and policy implications.

1| ADVANTAGES AND LIMITATIONS OF FAIR VALUE

WHAT HAS THE FINANCIAL TURMOIL TAUGHT US?

Like any other valuation method, fair value cannot be considered to be a perfect description of reality. Accordingly, to assess whether fair value is appropriate, there are two pertinent questions. First, does it offer suitable (reliable, comparable and relevant) information enabling economic agents to take well-grounded investment decisions? And second, what weaknesses does it entail?

1|1 The advantages of fair value

Starting with the advantages, it should be noted that financial innovation in recent decades has developed a series of products for which valuation at cost has no use. A clear example of this are financial derivatives, where fair value has proven to be the only method capable of offering a transparent, relevant and reliable valuation. However, the growing complexity of some of these products, and certain limitations in valuation models, have proven problematic recently. I shall return to this point later.

More broadly, fair value provides additional advantages in that it offers a closer view of the actual situation of financial markets. In other words, and unlike cost-based methods, it enables

the information contained in market prices at each point in time to be included, which is useful for those who have to commit funds, or have funds committed, to a financial institution. Likewise, this information is closer to that which institutions themselves use for management purposes, which contributes to introducing appropriate incentives between managers and investors.

Consequently, fair value is associated with greater market discipline, since the action of market players will have a more direct bearing on institutions' decisions. What is more, insofar as investors consider the information in financial statements to be useful and relevant, confidence will be reinforced. Both these matters, greater market discipline and strengthened confidence, entail improvements in terms of efficiency.

Fair value, as indicated, is a market estimation of financial instruments, which is what enables it to include ahead of time all the information available at a given moment. It will thus contribute to detecting potential solvency problems that may be liable to affect institutions, as it will rapidly reflect any deterioration in the quality of their balance sheets.

In sum, the advantages of fair value, and moving beyond the presence of a series of increasingly relevant financial instruments for which valuation at cost is not viable, have to do with improvements in the allocation of resources that internalise the information present in financial markets.

1|2 The disadvantages of fair value

Nonetheless, and as stated, no valuation method is free from limitations, as methods are no more than conventions on how to measure value.

The traditionally disputed limitations of fair value can be grouped around three ideas: the subjectivity of valuation methods; the greater volatility induced; and, in connection with the latter, the excessive emphasis on the short term.

When financial markets are active, the prices traded on them conceivably reflect consensus between buyers and sellers about the future cash flows of financial instruments, and on the degree of uncertainty

surrounding them. Under these circumstances, fair value coincides with market price.

However, there are not always active markets, and prices are therefore not always available for use in applying fair value. In these circumstances, estimating fair value involves the use of valuation methods that allow estimation of what the market price of the financial instrument would be. Irrespective of the model or technique used to develop valuation models, there is some subjectivity in their design. Expressed otherwise, valuation will be affected by the judgement of those who have to develop a model, since they have to take decisions on the theoretical grounds they apply and on the assumptions and simplifications they consider necessary.

Associated with this subjectivity is so-called model risk, *i.e.* the probability that errors will be made in the valuation of a specific instrument owing to the use of inappropriate techniques or to having made assumptions that prove unsatisfactory.

Furthermore, the use of valuation models may give rise to new information asymmetries, creating moral hazard problems. When there are incentives to manipulate the information reported to the markets, the use of valuation models opens up the possibility –which is more evident than when using historical cost– of institutions cherry-picking specific parameters or assumptions, thereby accentuating information asymmetry problems.

Secondly, it has been argued that fair value increases volatility on bank balance sheets, on profit and loss accounts, and consequently on the levels of regulatory capital that banks must hold. As described below, this would intensify the procyclicality of financial markets.

Insofar as fair value takes into consideration market conditions at a specific time, the profit and loss account would be excessively influenced by these potentially very temporary market conditions. This argument would be weightier if the volatility observed on markets were not in response to fundamentals but to spurious reasons. What is more, this volatility might be exacerbated by investors' decisions if they were to act from a

short-term perspective motivated by the changes in accounting value reflected in financial information.

The greater sensitivity of fair value to financial market circumstances may affect the behaviour of bank managers, encouraging undesirable behaviour in terms of appropriate risk management. Thus, for example, if a revaluation of assets was reflected in the institution's profits, that might lead to an increase in the dividend pay-out to shareholders, restricting institutions' capacity to soften intertemporal shocks.

If results were affected by greater volatility, this would be transmitted to regulatory capital, contributing to procyclical behaviour by bank managers. The contractionary phase of the cycle may thus be accompanied by an across-the-board fall in valuations, which would feed through to results and to institutions' capacity to generate reserves. This effect would compound the greater requirements attributable to credit risk that are typical in these contractionary phases, insofar as defaults are negatively correlated to GDP. And this at a time in the cycle when institutions would face greater difficulties increasing their own funds through fresh capital. Accordingly, with a view to meeting minimum regulatory capital requirements, bank managers might react by reducing the credit they grant to the real economy, which would entail a highly adverse impact.

Thirdly, and as a result of the greater volatility induced in banks' profits and loss accounts, the use of fair value might create perverse incentives in banks' management decisions, placing excessive emphasis on the short term. These perverse incentives may be specifically perceived in investment decisions, *e.g.* avoiding those sectors in which the volatility of credit ratings is greater, but they will also affect managers when their compensation is linked to accounting results. Managers might therefore benefit by setting greater store by those decisions that result in profits in the short term, without taking sufficiently into account other long-term strategic questions, including those relating to risks taken. Further, in the case of relatively illiquid instruments, managers' short-termist decisions might ultimately affect (or alter) the prices which fair value is actually intended to approximate.

1|3 The limitations exposed by the financial turmoil

The current turmoil in the international financial system has highlighted some of these limitations of fair value.¹ In fact, this is the first time that many of the products developed recently, in particular the most complex ones, have been tested. This is the case, too, for the models which, under the fair value approach, have been used to value such products. It is therefore worth analysing in some detail the implications that may derive from these circumstances.

Since last summer, liquidity on many markets has dried up considerably. Entities that valued specific products using pre-turmoil market prices have been obliged to resort more to mark-to-model valuations, largely based on inputs not directly observable in the markets (default probabilities, correlations between the defaults of a portfolio, etc.). In this transition process, certain fair value implementation weaknesses have come to light.

For one thing, adaptation difficulties have proven more acute for those institutions which, prior to the emergence of the turmoil, resorted to a limited number of information sources in their valuation process to determine the prices at which to value financial instruments, and in particular the most sophisticated and complex instruments. For example, some entities drew excessively on primary market prices as an approximation to the fair value of the products to be valued. Hence, when these markets virtually disappear for specific business segments, valuation problems emerge with greater intensity.

Moreover, difficulties have been greater for those entities which, before the turmoil, had not developed appropriate contingency plans or which had in fact earmarked insufficient resources to the development of fully fledged valuation models (model development, stress testing, laying of contingency plans, etc.).

The lack of liquidity, along with greater valuation problems, became manifest for a set of complex products that were rapidly developed in recent years under the originate-to-distribute banking model.

In particular, these products combine and repackage, *via* asset securitisation, new financial instruments that are re-sold to investors. The successive combinations of securitisation tranches substantially alter the distribution of losses on these products, so that the level of risk, which increases with each successive securitisation, is much more difficult to calculate. Beyond the complexities inherent in the valuation of this type of highly sophisticated product, the turmoil has highlighted certain shortcomings which should be taken into consideration.

These models were designed under benign economic conditions, and without due consideration being given to how they would operate if conditions turned adverse. In this respect, the valuation models used have not included all the relevant risk factors and, in particular, they have suffered from the absence of three of these risks: model risk, liquidity risk and counterparty risk. For example, many models have not taken sufficiently into account that the underlyings of a lot of these complex products were US subprime mortgage loans, which were therefore sensitive to changes in interest rates, to house prices and to borrowers' incentives. The correlations between defaults in the subprime loan portfolio behind asset-backed bonds were considerably underestimated.

Ultimately, one element that has characterised the current turmoil, in particular at its onset, has been the lack of investor confidence. It was not clear, first, who was bearing the risks nominally considered to have been transferred, and second, what exposures were actually committed. This lack of transparency has also been evident in relation to the information provided to markets about the models applied to estimate the fair value of the different products.

In order to properly understand financial information, investors need to be able to judge how financial instruments have been valued. For this purpose, they need to know, first, the committed exposures, and second, how they are being valued: which techniques are applied, which inputs are used, what assumptions have been made and what is the degree of sensitivity of the valuation to the emergence of different scenarios.

¹ See, for example, CEBS (June 2008), FSF (April 2008), BCBS (June 2008) and the Banco de España FSR (04/2008).

In sum, the financial turmoil has highlighted significant weaknesses regarding the implementation of fair value in at least three areas. First, from a quantitative standpoint, it has exposed shortcomings in the design of valuation models, which have not properly captured the characteristics of the most complex products. Second, from a more qualitative perspective, it has highlighted governance problems, in that systems have not been appropriately designed to verify and test the valuations made. And third, the information reported to the market does not appear to have been sufficient to allow users of such information to understand it.

These implementation-related limitations of fair value have affected agents' behaviour, offering arguments in favour of the general limitations indicated earlier. In particular, fair value has been seen to induce greater procyclicality in certain circumstances.

Indeed, investors in the most senior securitisation tranches were not prepared to manage much higher levels of risk than those initially considered. These types of instruments, generally included in the trading portfolio, rapidly began to lose value, meaning that many investors took the decision to sell once the value fell below specific thresholds in the fair value of the instrument. This process exerted downward pressure on valuations, feeding back into further declines. The final effect has been a very significant impact on the profit and loss accounts of numerous institutions, many of which have had to shore up their capital position under difficult market conditions.

2| IS IT POSSIBLE TO IMPROVE FAIR VALUE?

As argued so far, a return to valuation at cost appears to be neither feasible nor desirable. Yet the application of fair value under very adverse financial market conditions has highlighted significant limitations which bear negatively on financial stability. Improving its functioning would appear to be necessary.

This section is intended to offer some thoughts that may contribute to the debate on how to design an

accounting framework capable of combining two requirements of great importance for the financial system: to offer relevant, reliable and comparable information so that investors may make their investment decisions appropriately; and, at the same time, to contribute to financial stability, or at least to limit the incentives which, from the regulatory angle, may contribute to impairing stability.

In other words, improving fair value will involve seeking valuation mechanisms that give a truer and fairer view of the risks and profits institutions take during the cycle. There are two potentially useful approaches here.

2|1 Valuation reserves

Firstly, institutions could set aside valuation reserves for those more complex structured products that are mark-to-model. These reserves would entail the recognition, in accounting terms, of the uncertainty associated with the calculation of fair value under specific circumstances.

As earlier stated, many of the problems of applying fair value concern the very complexity of the products to be valued, and the speed with which market conditions may deteriorate at a given moment. Consequently, it can be extremely difficult to make estimates of certain inputs that are necessary in the valuation models, and which moreover are not (or may cease to be) observable in the markets.

Faced with these difficulties, it is worth performing different stress tests envisaging different possible scenarios. That provides a measure of the degree of uncertainty surrounding the valuation of a specific instrument at a given time. Ideally, institutions should therefore reflect these measurements of uncertainty in their financial statements: objective and transparent valuation reserves might play a useful role. For example, among other inputs valuation models require estimates of probabilities and of loss given defaults. Estimating these is, especially for the more sophisticated products, complex and may be subject to a high degree of uncertainty. Accordingly, banks should have different estimates of the fair value of the instrument depending on the distinct values these inputs may take given different assumptions and scenarios. Institutions

should reflect in their accounts the estimation of the fair value of the instrument, along with a valuation reserve that reflects the uncertainties surrounding this estimation.

As earlier stated, the valuation reserves should be objective and transparent. And two further qualifying conditions should be added here. First, they should be symmetrical. That is to say, these reserves have to function both in the good times of the cycle and when economic conditions turn adverse. In other words, it is not a question of generating buffers to face difficulties, but of improving the valuation of complex financial instruments by explicitly and transparently incorporating the uncertainty that surrounds the valuation.

Secondly, and running counter to a view widely held at present, fair value implementation problems do not emerge *ex novo* when economic and financial conditions turn adverse; they already exist in good times. It is precisely in these periods when agents act with excessive optimism, valuing risks inappropriately. Can it be disputed at present that the losses being posted do not stem from the excesses committed in the prior years of strong economic growth? This is why the valuation reserves should act at all times so as to offer a more appropriate valuation of the instruments for which valuation models are needed.

All in all, the inclusion of valuation reserves gives a truer measurement of the value of the instrument than that which would be obtained from a direct application of a point estimate of its fair value, since it reflects explicitly in the financial statements a measurement of the degree of uncertainty that institutions manage when they are valuing instruments. Accordingly, investors may take their decisions on a firmer basis.

2|2 Dynamic provisions

The second mechanism that might help improve fair value is dynamic provisions. These are, in fact, a good measurement of the fair value of a loan portfolio.

Conceptually, provisions should be understood as adjustments to the book value of the loans on deposit institutions' balance sheets. These adjustments take into consideration the impact that the credit risk borne by the institutions entails for these loans.

Debate turns on whether this correction in value should envisage exclusively the specific losses that may be identified for specific loans as of the date of the financial statements, or whether consideration should also be given to the losses that the institution, aware that it has incurred them, cannot specifically identify at the level of each individual loan.

In other words, is it reasonable that investors should be surprised in the future by what is already known is going to happen, or is it better that they should have this information when they are about to take their decisions? What better contributes to the true and fair view of banks reporting financial information?

In the field of credit risk, saying that "it is known what is going to happen" is no more than verifying a fact highlighted both by the supervisory experience and by the economic literature. Drawing on supervisory experience, several episodes of financial instability have shown that, following periods of strong credit expansion, the risks that have built up materialise in the form of defaults. It seems difficult to counter the argument that the losses affecting a good number of international banks today respond to the excesses committed by their managers during the long expansionary phase preceding the financial turmoil.

The economic literature, from an empirical viewpoint, has also found firm evidence of a positive relationship between processes of rapid credit growth and losses attributable to credit risk,² which emerge with a certain lag. Theoretically, various arguments have been used relating to information asymmetry and to problems of incentives, which justify this relationship between credit growth and default.³ In other words, at good times in the business cycle risks tend to be underestimated, and build up in bank balance sheets.

Therefore, there are objective, well-founded reasons both in the supervisory experience and in

² See Jiménez and Saurina (2006).

³ During economic booms bank managers tend to underweight the possibility of bad borrowers being financed (the opposite happens during recessions). The literature offers several explanations to rationalise fluctuations in credit policies, such as herd behaviour (See Rajan, 1994), agency problems (See Williamson, 1963) and the so-called institutional memory hypothesis (See Berger and Udell, 2004). Borio (2007) summarises the main factors that explain why during good times it is possible to observe an overextension in risk-taking.

economic theory to justify the fact that a correct valuation of loans in the credit portfolio should also include the factors of risk which, though they have not been specified at the level of individual loans, can in fact be quantified through statistical procedures. The absence of value corrections for these reasons distorts the true and fair view that financial information should provide, hampering decision-making by investors. Dynamic provisions, as an approximation to the fair value of banks' loan portfolios, mitigate the fact that, at favourable times in the cycle, risks are assumed and build up but are only disclosed with a delay in financial institutions' profit and loss accounts.

With regard to improving fair value through the two methods proposed (valuation reserves and dynamic provisions), it should be borne in mind that two instruments are involved that would be totally objective and transparent for investors, so that the latter may have the fullest information possible.

There are two further arguments in favour of valuation reserves and of dynamic provisions. The first takes into account the fact that the information reported in the financial statements should ideally converge with that which institutions use for management decision-making. Conceivably, managers will have to consider what uncertainty surrounds their valuations for the different financial instruments; it may likewise be assumed that when they analyse the credit quality of their balance sheet, they will bear in mind the best estimate available of credit risk losses. If these two assumptions are correct, improving fair value in this direction will contribute to bringing the information analysed by managers and investors into line. Should managers fail to take into account risks and profits over the cycle in their decision-making, the introduction of the proposed changes to fair value will help them do so. And that is good for risk management while, at the same time, investors are offered better information.

The second of these arguments in favour of valuation reserves and of dynamic provisions is that mechanisms are involved that not only offer a truer and fairer view of the bank, but which also contribute to mitigating the current procyclicality of accounting rules, and in general the procyclical

behaviour proper to financial market participants. That is to say, both measures favour a longer-term view, and in particular one "through the cycle", both for managers and for those who need to evaluate the risk profile of banks.

2|3 General principles for the review of fair value

Beyond the specific instruments that may be considered, the significance of which has been outlined, there is a series of general guiding principles that are relevant when reviewing fair value. These are listed below.

SEARCH FOR BETTER VALUATIONS

This principle should be binding both in the more quantitative aspects referring to valuation models (consideration of all the necessary factors of risk; use of tried and tested methodologies, etc.) and as regards providing a more realistic view of the risks and profits associated with business activity throughout the cycle (*e.g.* through dynamic provisions and valuation reserves).

MINIMISE THE PROCYCLICAL IMPACT INDUCED BY FAIR VALUE

It should be acknowledged that, during the favourable phases in the cycle, financial market participants display a natural behaviour that leads them to build up a series of risks which, when the situation turns adverse, tend to materialise. Accounting rules should not encourage this type of behaviour. From the standpoint of the application of fair value, the use of dynamic provisions and of valuation reserves may contribute to mitigating such risks.

GOVERNANCE

Both quantitative and qualitative aspects are relevant in the implementation of valuation models. Sufficient resources should be set aside, and models should be revised and tested by independent units and subjected to different stress tests, among other considerations.

TRANSPARENCY

So that investors may take well-founded investment decisions, they need to be able to receive the necessary information. It will not only be important

to know the volume of exposures valued by means of fair value, but also matters relating to the valuation method and inputs used, to the assumptions made and to those aspects that may contribute to users' better understanding of the financial information.

This article proposes a debate on the suitability of fair value as a valuation method, in the light of the dysfunctions that the current financial turmoil has highlighted.

The main argument holds that accounting rules relating to asset valuation involve the application of fair value as the best standard for providing final users of financial statements with relevant, reliable and comparable information. However, it is proposed that fair value needs to be improved in order to strengthen the relevance, reliability and comparability of information. This can be done through two specific mechanisms (dynamic provisions and valuation reserves) within the framework of some more general guiding principles for this review process.

Regarding the two specific mechanisms discussed, both share important characteristics that are relevant in terms of their effectiveness and usefulness for market participants: objectiveness, transparency and symmetry throughout the business cycle. As to the general principles, these are: the search for better valuations; minimising the procyclical impact induced by fair value; strengthening governance; and promoting transparency.

Importantly, at the level of financial institutions, the proposed change in fair value should enable the quality of the information understood in the aforementioned terms to be compatible with the application of best practices in risk management, in order to restrict the generation of inappropriate incentives that may impair the stability of the financial system. While fair value is a step forward when compared, for instance, with cost valuation, the current turmoil very clearly shows that it is by no means the end of the road. Let us continue along it.

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