

5^{èmes}
États
Généraux
DE LA RECHERCHE
COMPTABLE

11 décembre 2015

www.anc.gouv.fr



AVEC LE SOUTIEN DE :



POLICY PAPER

Is fair value a reliable and relevant
measurement basis?

Didier MARTEAU, professor of Economics at ESCP Europe

*Is fair value a reliable and relevant measurement basis ?
Didier Marteau, professor of Economics at ESCP Europe*

The most important recommendations of the G20 on financial regulation held in Pittsburgh in September 2009 include both a reduction of the moral hazard associated with systemically important financial institutions and the improvement of the accounting standard-setting process to make it more transparent, coherent and independent. The two subjects are related because too high a proportion of fair value in determining income may plead in favour of "regulating" estimates. The causes are well known and the American investment banks have often been condemned for accounting arbitrage in respect of securitized receivables prior to the outbreak of the sub-prime crisis in the spring of 2007: sub-prime loans granted were initially measured at face value, then transferred to SPVs funded by the issue of securities which were purchased and classified as trading assets measured at fair value. Any gain arising from the difference between the fair value of the portfolio and the face value of the asset backed securities was then recognised in income and included in the basis for the bonus calculation. It is however scientifically impossible to determine a single price for a loan portfolio, the value of which depends on the likelihood of individual issuers defaulting, the default correlation, and on the effective rate of recovery in case of default. The price distribution may be determined but not a single price.

Six years after Pittsburgh, have the G20's recommendations been implemented? The publication of IFRS 13 in May 2011, exactly on the subject of fair value measurement seems a clear indication of convergence between the IASB and the FASB, whose new standard (replacing FAS 157) is very similar to IFRS 13. Convergence can be observed on this particular point although the general convergence project is no longer on the agenda. But is this common route the right one? Whilst IFRS 13 provides a definition of fair value, requires further disclosures about valuation techniques, particularly with respect to the use of mark to model, whilst it improves consequently the comparability and the interpretation of income and facilitates the work of the auditors, it does however endorse the choice of fair value as a relevant and reliable measurement basis, which is a highly debatable choice. How can we seriously consider mark to model level 3 valuations to be reliable, when they are based on unobservable inputs? When confronted with unobservable inputs, the scientific community makes an estimation expressed as a probability distribution. I often refer to the example of climate derivatives the valuation of which is generally classified as level 3. What is the value of a 5 year climate swap of the average August temperature in Madrid, in which the bank pays, for example, a fixed temperature of 22° Centigrade each year, and receives the variable temperature? As the futures contracts quoted on the CME (Chicago Mercantile Exchange) have maturities of less than 5 years, it is not possible to duplicate the swap by a group of futures contracts. It is therefore necessary to use a mark to model valuation based on the expected August temperature in Madrid for the next five years. These inputs are unobservable even for the most eminent climate specialists and give rise to a totally unrobust swap valuation with unrealised changes in value that directly affect income as required by IFRS 13. Most securitized loan products are in this category and classified as mark to model level 2 or 3.

This is not a secondary issue. If we examine the balance sheet of the investment bank Goldman Sachs published in June 2014, we note that out of a total of 800 billion dollars of assets measured at fair value, less than 1% is mark to market, and is therefore effectively verifiable, as against 99% at mark to model, including 10 billion classified in level 3. Of course further interpretation is required: as the liabilities are also measured at fair value, the changes in the fair value of the liabilities and the assets are supposed to offset one another, thereby reducing the level of uncertainty of reported income. Nevertheless, the recognition in income of changes in fair value is still an issue and it takes on a political dimension when this accounting technique contributes to the volatility of the reported income of financial institutions and may

generate non-internalised collective costs. For example, the prudential regulation Basel III bases the amount of capital required to cover market risk on the calculation of Value at Risk, the maximum loss that would be incurred by a bank on its trading portfolio under the assumption of an unfavourable market scenario over a period of ten working days. How meaningful would the VaR be if the portfolio is made up of assets and liabilities priced according to a model, based on unobservable inputs? How robust would the calculation of capital requirements be and what protection would it provide? Fundamentally, the issue raised here in an indirect way is that of the conceptual framework. Is public interest sufficiently protected when the regulated capital requirement calculation is based on a valuation using largely unverifiable internal inputs and techniques?

I. The diagnosis

I.1 The assimilation of fair value to market price is based on the assumption of the informational efficiency of capital markets, but neglects the business model

Fair value supporters shield themselves behind the theory of the informational efficiency of capital markets, developed in the early Seventies 70 by Eugene Fama, Professor at Chicago University and Nobel prize winner in 2013. According to this theory, the current price of an asset reflects all relevant information available and the best estimate of the value of an asset at a given point in time is its market price. Indeed, if we thought that the value of an asset was higher than its market price, then market operators would purchase the asset in the hope of selling at a higher price, thus increasing its price to the estimated value. This is rather a quick shortcut: because the market price is the best estimate of an asset's value at a given point in time, the fair value of an asset is its market price. This shortcut is in fact a sophism, an argument giving the illusion of coherence which leads to a false conclusion. The conclusion is false for three reasons.

Firstly, Eugene Fama's reasoning relates to a pure exchange economy, in which assets are held exclusively for exchange. The price of an asset in this case is its exchange value, and not its value in use, to quote the distinction made by Aristotle:

"Any type of property has two uses, both of which are essential to it but not in the same way: one is proper to the object, the other not. A shoe may either be worn or exchanged. It may at least be used for both purposes. He, who exchanges the shoe for money or food to satisfy another's needs, uses it as a shoe but not according to its proper use; because the shoe was not made to be exchanged. I can say the same about all other types of property; they may indeed all be exchanged, because exchange between men arose initially from the abundance or the scarcity of goods necessary for life."

Obviously it makes no sense for a flour manufacturer to measure wheat purchased for consumption and destruction in the production process at market price. The chairman of the IASB acknowledged as much in a speech he made at the IFRS conference in Paris in June 2015: "For many economic activities, we are not convinced that using fair value for measurement would lead to relevant information. The main reason is that the current market price of many assets is not of primary importance if such assets are being used in combination with other assets to produce goods or services. For example, it may not be extremely relevant to know the

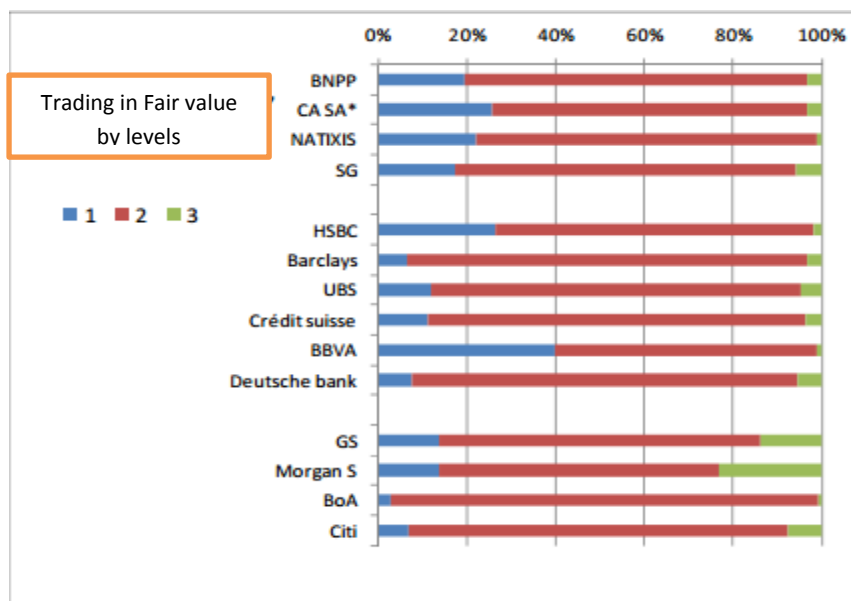
present market value of the robots of a car manufacturer if the company intends to keep them to produce cars.”

In addition, a market price is associated with a transaction volume rather than with inventory. It is a theoretical error to measure inventory, such as a portfolio of trading assets, using a price associated with a transaction volume representing only a small fraction of the inventory. Although this happens in the well-known case of distressed market prices in a liquidity crisis, the issue is of a more general nature. If we consider the example of private sector bonds, the actuarial interest rate may be broken down into three components: the risk-free rate (assume the government rate !), the credit spread and the liquidity spread, which is compensation for the risk of selling the asset in unfavourable market conditions assuming a liquidity crisis. It is precisely in a liquidity crisis that it would be reasonable to value the private sector bond assets which are not held for immediate sale, after deducting the liquidity spread included in the price. It would then be possible to reconstitute a price – mark to model – by estimating just the credit spread using existing models or market instruments (CDS, rating...), and adding to this spread the rate applicable to government bonds of the same maturity.

Lastly, the fundamental hidden issue behind fair value measurement is not so much that of mark to market as the proportion of mark to model in the valuation of portfolios. This is not a new issue as former ANC Chairman Jean-François Lepetit, already condemned the preponderance of mark to model in the valuation of portfolios at fair value in his report to Christine Lagarde on systemic risk in April 2010. He even suggested “taxing the potentially illiquid market instruments which generate the most systemic risks. The tax would be based on assets and certain liabilities recognised in categories 2 and 3 of the trading portfolio” (Report on Systemic Risk, page 78, “Documentation française”, April 2010). The former regulator’s idea was basically to apply financial transactions tax to the trading portfolio measured at mark to model, as this valuation lacks robustness and takes on a systemic dimension.

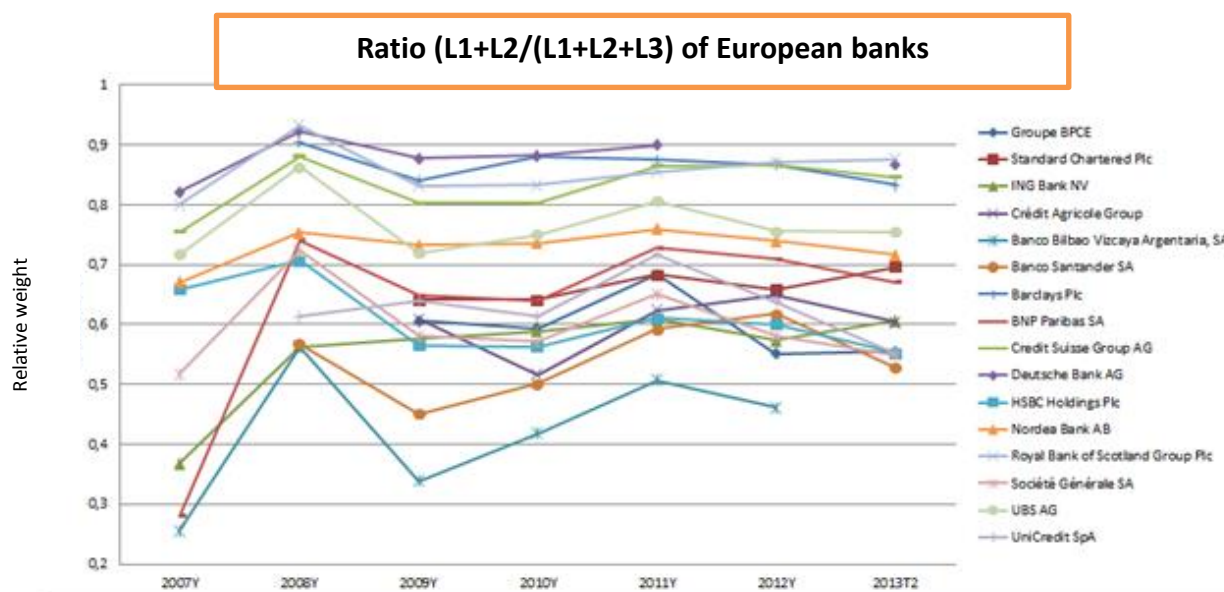
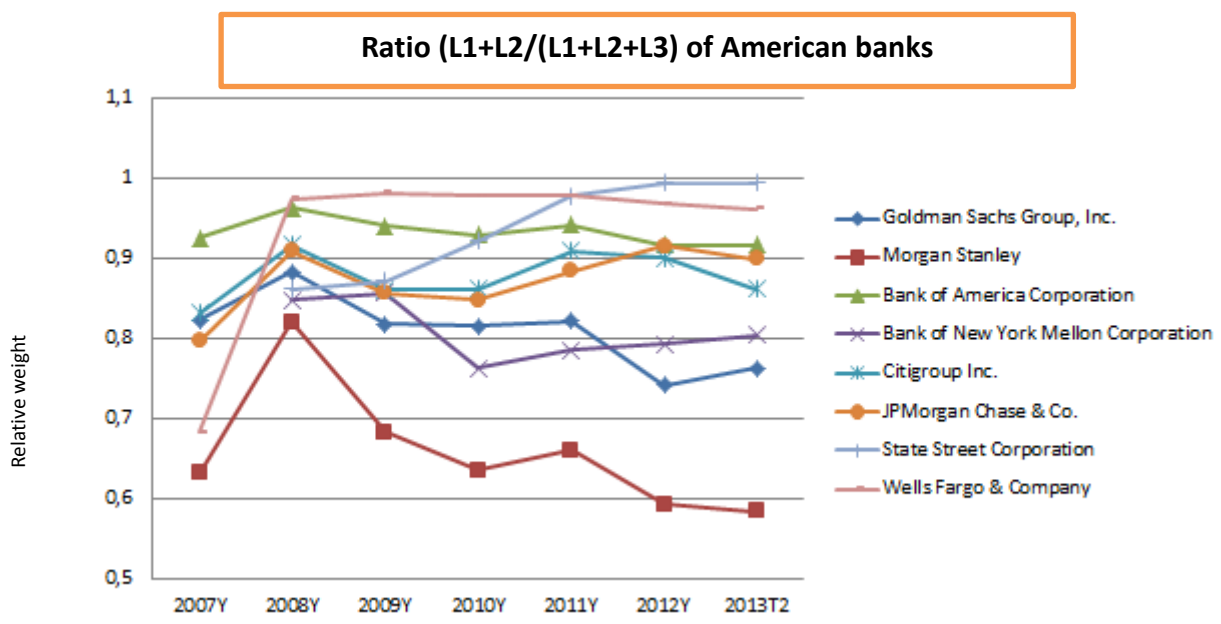
I.2 The examination of portfolios measured at fair value shows the predominance of mark to model

The following table, taken from the report, illustrates the composition of assets measured at fair value by valuation level:



Without getting into the often heated debate about the responsibility of accounting standards for accelerating, but certainly not for causing, the financial crisis of 2007-2008, we cannot help noticing that standard setters have remained silent on the issue of mark to model, the requirements of IFRS 13 at no time question the recognition of unrealized value changes in income. There are, at the best, just a few recommendations about providing further information about calculation methodology and the sources of data, and even some encouragement where applicable to carry out stress tests to validate the assumptions used. The consequence of maintaining the accounting status quo is an increasing proportion of price model valuations since 2008, as Laurent Clerc, Financial Stability Manager at the Bank of France and Didier Marteau have shown, in an article published in the review "Revue d'Economie Financière" in March 2014 ("Fair value and model price: an international comparison of the structure of trading portfolios and the risk/return ratio"). The following tables illustrate the change in the relative weight of mark to model as a proportion of the total portfolio valuation both in American and European banks. They demonstrate clearly that there has not been a change in investment banks' behaviour since the crisis, and that the ratio for European banks is similar to that of American banks:

Source: "Report on Systemic Risk", J.F Lepetit, April 2010



The above figures relate to the total trading portfolio measured at fair value, including “cash” assets (shares, bonds, currency...), derivatives (futures, options, swaps...) and structured products (securitized loan products, such as CDOs, for example, or structured interest rate products). As cash products are generally quoted on liquid markets, and are therefore valued in L1 (mark to market) the relative weight of L2 and L3 in the derivative and structured product portfolio is even more significant. The composition of Goldman Sachs bank’s portfolio of derivative assets measured at fair value taken from the annual report for 2014 is set out below as an illustration:

Derivative Assets at Fair Value as of December 2014

\$ in millions	Level 1	Level 2	Level 3	Cross-Level Netting	Cash Collateral Netting	Total
Interest rates	\$123	\$ 800,028	\$ 483	\$ —	\$ —	\$ 800,634
Credit	—	47,190	7,658	—	—	54,848
Currencies	—	109,891	150	—	—	110,041
Commodities	—	28,124	866	—	—	28,990
Equities	175	58,122	634	—	—	58,931
Gross fair value of derivative assets	298	1,043,355	9,791	—	—	1,053,444

We note that mark to market, incorrectly assimilated to fair value, only represents...0.03% (!) of the total value of derivative assets, whilst the proportion of level 3 assets is around 1%. These figures cannot leave the banking regulator indifferent, even if a correction is required to take account of the value of derivative liabilities.

There is not a watertight borderline between L2 and L3

We note the following definition of the different valuation levels provided by the IASB:

Level 1: Financial assets and liabilities whose values are based on unadjusted, quoted prices for identical assets or liabilities in an active market.

Level 2: Financial assets and liabilities whose values are based on their quoted prices in inactive markets, or whose values are based on models - but the inputs to those models are observable either directly or indirectly for substantially the full term of the asset or liability.

Level 3: Financial assets and liabilities whose values are based on prices or valuation techniques that require inputs that are both unobservable and significant to the overall fair value measurement. These inputs reflect management's own assumptions about the assumptions a market participant would use in pricing the asset or liability.

Whilst level 1 is clearly defined, the distinction between levels 2 and 3 is unclear. What is the difference between an unobservable input (level 3) an indirectly observable input (level 2)? The valuation of structured credit products illustrates the fragility of the borderline: although the valuation inputs are not objectively observable (likelihood of default of issuers, default correlation...), credit products, including CDS and CDO, are mainly classified in level 2. Default probability may indeed be derived from quoted financial instruments, such as bonds (conversion of the credit spread into default probability) or shares. In the case of the latter, it is possible for example to use Merton's model, which assimilates a share to a call option on the entity's assets, with an exercise price equal to the face value of debt. Consequently, it is possible to use the share price to determine the volatility of the value of the assets and the probability over a given period that they will fall below the redemption value of debt, which is a default signal. This default probability, derived from a model, may then be used as an input for valuing credit products and justify in the majority of cases their inclusion in level 2. But it is in fact an unobservable input, and its reliability is at the least debatable because of the assumptions used to make the estimation.

Critical analysis of IFRS 13 and the standard-setter's responses

In a presentation of IFRS 13 ("IFRS 13, Fair value measurement, June 2013") Steve Cooper, IASB Board Member examines the most frequent criticisms of fair value and responds to each of them. I propose a summary of these responses based on the three main categories of criticism.

II.1 Unrobust measurement techniques using data from illiquid markets or unobservable inputs provide misleading information about income to investors

There are basically three approaches to determining the price of an asset/liability measured at fair value. If it is an open position held for trading, market price may be the reference under the assumption the market is sufficiently liquid. This choice assumes the informational efficiency of markets according to which the best estimate of the exchange value of an asset is its market price. The underlying assumption is that all information whether past, present, public or private is included in the current price. According to Fama, depending on the level of

integration of the information in the market price, the latter may be efficient in a weak form (past information), semi-strong (public information) or strong form (private or inside information). If the market provides strong form informational efficiency, no information could lead an operator to consider that the market price is under or over-valued. If any such information existed it would already be included in the price. According to Fama, there is therefore no expectation that the price will change, confirming the idea that market price is the best estimate of the exchange value of an asset. This is moreover the assumption underlying option valuation, in which the return on the underlying asset is supposed to follow a Gaussian process and its evolution over time represented by a series of drawings in a normal distribution. In this respect, IASB supporters have a rigorous and unquestionable theoretical framework, provided the assumptions used are verified and the asset or liability is held for exchange rather than use. This leaves the case of illiquid markets for which the proposal to deduct the liquidity spread from the asset price appears appropriate.

The IFRS defines the market price to be used to value a position. No one can dispute the new proposal to select an exit price, a bid price for an asset and an offer price for a liability.

The second approach for estimating the value of a position, if the latter is not traded on a market, is duplication. It is effectively possible to duplicate certain financial instruments by combining several others, which by arbitrage have the same value as the duplicated instrument. Let us illustrate this approach by a very simple example. Let us suppose that in a bank's derivative portfolio there is a swap for 10 000 metric tons of wheat with a 9 month maturity, paying a fixed price of 200 euros/ton each quarter and receiving a variable price. The swap itself is not very liquid, but may be duplicated by the purchase of three quarterly futures contracts on a futures market which is more liquid. If the futures contracts are quoted respectively at 210, 220 and 230 euros, the value of the swap may be simply determined as the present value of 10, 20 and 30 euros per metric ton, i.e. 100 000, 200 000 and 300 000 euros. A raw material swap is the equivalent of a series of future contracts and may therefore be duplicated if no market price is available. The same applies to an option on an illiquid market, which may be replicated by a portfolio composed of a loan and the purchase of a certain quantity of underlying assets called delta. The price of the option is then the price of the replicated portfolio. In the case of an option it is possible (simpler!) to use a dominant model (Black-Scholes for example) and use the inputs applicable (mainly volatility) to an asset similar to the underlying of this option. Valuation by duplication is generally classified in level 2.

The last approach applies when it is not possible to value the position using the first two approaches. This applies to structured credit products, such as CDOs, which are non-replicable credit portfolios. In this case, a probabilistic model with unobservable inputs (default probabilities, default correlation, recovery rate in case of default...) is generally used. The resulting valuation is surrounded by uncertainty which may be very great and there is no scientific justification for expressing it as a single price. Consequently, an accounting standard that requires unrealized changes arising from price valuation models to be recognised in income not seem to be in the public interest and refers back to the purpose of the conceptual framework and the related issue of the identity of the end-users of reported earnings.

The IASB's response on the issue of model prices for assets and liabilities denotes a certain lack of concern. It is true that the supporters of the IASB state that the recognition of mark to model variations in income and income-related compensation are separate issues. The latter is the responsibility of management and a matter of ethics. This point of view is acceptable, but it implicitly acknowledges that reported income is misleading and does not contribute to an optimal allocation of capital, which is nevertheless the proclaimed objective of standard setters who never stop saying that investors are their priority. A rather strange paradox ...

Criticisms	Our response
Information constraints (for example, few deep and liquid markets)	<ul style="list-style-type: none">• The lack of market data or other key information is a global constraint, rather than a regional one.• Even when limited information is available, fair value measurements can still be performed.

II.2 Fair value leads to accounting and behavioural volatility

The micro-economic analysis of the behaviour of market operators leads to the assertion that, on an empirical basis, fair value increases the volatility of income. This assertion is based on two arguments:

- On one hand, market operators with positions marked to market tend to accelerate asset sales as soon as the market goes down, to avoid incurring unrealised losses that affect income. These sales, called “fire sales”, have the effect of amplifying the fall in the market, of creating a possible liquidity crisis and contribute to the creation of a gap between market price and the fundamental value of the asset. The gap between the fundamental price and the market price is the liquidity spread which may reach significant levels in certain circumstances. These “fire sales” have two effects similar to negative externalities. On one hand, they distort the signal given by market prices and prevent investors from allocating their capital in an optimal manner. On the other hand, they increase the volatility of income, have a negative effect on equity, and ultimately increase the uncertainty of investors, as well as all of the bank’s counterparties that are obliged to revise upwards their counterparty risk on derivative and cash commitments (interbank loans for example), and even on depositors. An increase in risk without an adjustment of return may be assimilated to a collective cost. In a recent article, “Marking to market versus taking to market” (June 2015), Guillaume Plantin and Jean Tirole place the assumption of asymmetrical behaviour of market operators at the heart of their model. This behaviour rapidly sparks off sales when the market goes down and the underlying positions are marked to market, whilst on the contrary in the same market scenario positions valued at historical cost are retained. The accounting debate coincides here with the moral hazard issue, as operators that are not exposed to market risk (assumption of historical cost on downturn of market) adopt more risky behaviour than exposed operators (recognition of unrealized losses in earnings). In an older article (Fair value accounting and financial stability ,G. Plantin, H. Sapra, H.Chin, Revue de la Stabilité Financière, October 2008), the authors show that panic sales associated with fair value relate principally to underlyings of long bonds, senior securities and those in illiquid markets. This outcome is to be expected, market risk increases with the life of the bond (the duration of long-lived securities is greater than that of short-lived securities), the credit risk is significant (we quickly get rid of securities with a low rating that may go below investment grade) and the market illiquid. This volatility does not so much reflect a distortion of real economic conditions as a form of mimetic behaviour induced by the fear of unrealised losses. We might add the unfavourable consequences of procyclicality induced by prudential regulation to the effects of panic sales. A fall in income causes a reduction in regulated capital, which in turn forces the sale of risky assets, which is quicker than raising capital, bringing about a fall in market prices, then of unrealised income, of capital....Of course this risk

is well known since the subprime crisis, and prudential regulations have changed completely with the introduction of capital buffers to eliminate the procyclicality mechanism.

- on the other hand, operators with positions valued at historical cost, would have an interest in cashing in on any unrealised gains, by selling assets if the prices go up. Therefore, their behaviour is contra cyclical, in the sense that they sell when the market goes up. To the extent that historical cost measurement encourages operators to sell when the market goes up and not to sell when the market goes down, the effect of this measurement basis, all things being equal, is to contribute to financial stability rather than market volatility. That is not, however, the end of the discussion, to the extent that any provisions for the impairment of assets may be assimilated to unrealised losses and contribute to the volatility of income. But apart from the reversal of provisions that may introduce an element of volatility, the impossibility– today – of recognising unrealised gains on credit products to match the provisions, limits the effects of historical cost valuation on the volatility of income. For how long?

The standard setters' position on the effects of the accounting measurement system on income volatility is as expected: income volatility reflects the volatility of the value of the assets and liabilities themselves:

Volatility introduced in reported income	<ul style="list-style-type: none"> • Fair value reflects the underlying economic volatility of the assets and liabilities themselves. • For earnings to be informative to investors, they need to reflect this volatility.
Procyclicality	<ul style="list-style-type: none"> • Procyclicality is a natural consequence of an economic downturn. Amplified by fair value? From 2004–2006 banks held c. 50% assets not subject to fair value and prudential filters neutralised the effect to Tier 1 capital of some fair value gains and losses.

This response may be examined from three perspectives:

- if we accept that banks' income is in part determined by changes in the accounting valuation of assets and liabilities, is the income volatility caused by economic factors underlying the valuation or by the behaviour of market participants, in a hurry to sell, for example, when their positions are measured at fair value? In the first case, the standard setters' response is legitimate but not in the second.
- Is the volatility of income associated with a change in the credit spread on an entity's own debt the direct reflection of the volatility of economic factors underlying the entity's performance? The answer is clearly negative, all the more so because, by a known mechanical effect, an own credit spread deterioration leads to a reduction in the value of the entity's debt and gives rise to a gain. It is true that unrealised gains are now recognised in Other Comprehensive Income, but this cosmetic device does not dispel our concern with respect to a standard that leads to the recognition in income of gains that increase progressively as an entity draws closer to default. The standard allowing the recognition of gains associated with deterioration in the value of the entity's own debt is based on an economic error. If the entity's credit spread

deteriorates, it will be able to redeem its debt below par and recognise a book gain. But the entity will need to replace its debt by a new issue at the new downgraded market conditions. The issuer's interest rate has increased, so the entity has incurred an economic loss equal to the present value over the term of the debt of the difference in interest rates on the new and the old loan. This is exactly the amount of the gain recorded on the redemption of its debt. In other words, the debt redemption transaction is the equivalent of exchanging an immediate gain for an identical loss, spread over time. In economic terms there is no gain, just an artificial income fluctuation.

We all remember the gains recorded by certain investment banks in the third quarter of 2011 due to deterioration in their credit quality. Five American investment banks, Citigroup, Bank of America, JP Morgan, Morgan Stanley and Goldman Sachs reported gains due to deterioration in their credit quality equivalent to 4/5 of the profit for the period, estimated at 16 billion dollars. For the same period, Barclays, HSBC and Royal Bank of Scotland reported credit gains on their debt of 10 billion pounds as against a loss of 2.7 billion a year earlier. Is it really possible to affirm that this volatility in reported income is a reflection of the volatility of economic factors underlying these institutions' performance?

- The increase in the volatility of income, explained by a combination of accounting and behavioural parameters increases the default frequency for banks and the likelihood of systemic crisis. It must therefore be considered as a negative externality.

II.3 The additional requirements to provide more transparent information on valuation do not validate mark to model as a measurement principle

IFRS 13 reinforces the requirements for transparent disclosure of valuations using a price valuation model. It requires on the one hand the disclosure in the notes of observable and unobservable inputs to price valuation models, and on the other hand, a description of the architecture of models developed or used. It also requires the publication in the notes of an analysis of the sensitivity to inputs, in order to measure the range of estimation of valuations recognized in income. These are improvements, but does the measurement of positions in level 3, or even 2, by a single price have any scientific justification? Let us examine the valuation sensitivity report in the notes to the annual report of the RBS for 2014:

30 June 2014	Level 1 £bn	Level 2 £bn	Level 3 £bn	Total £bn	Level 3 sensitivity	
					Favourable £m	Unfavourable £m
Assets						
Loans and advances to banks	-	37.1	0.3	37.4	20	(10)
Loans and advances to customers	-	71.0	0.2	71.2	20	(30)
Debt securities	55.5	36.6	1.8	93.9	130	(60)
Equity shares	6.1	0.9	0.4	7.4	60	(60)
Derivatives	0.1	273.2	3.1	276.4	340	(180)
	61.7	418.8	5.8	486.3	570	(340)
Proportion	12.7%	86.1%	1.2%	100%		
Liabilities						
Deposits by banks and customers	-	111.9	0.2	112.1	-	(10)
Debt securities in issue	-	18.4	1.2	19.6	30	(40)
Short positions	34.3	4.7	-	39.0	-	-
Derivatives	0.1	268.2	2.5	270.8	120	(120)
Subordinated liabilities	-	0.4	-	0.4	-	-
	34.4	403.5	4.0	441.9	150	(170)
Proportion	7.8%	91.3%	0.9%	100%		

The portfolio measured at fair value L3 is 5.8 billion sterling, with a favourable adjustment of 570 million, or around 10%, and an unfavourable adjustment of 340 million, or around 6%. These figures should be compared to the net income of RBS, of 1.4 billion in the first half of 2014 and 600 million in the first half of 2013, the unfavourable adjustment representing respectively 24% and 57% of the net income, the favourable adjustments 41% and...95%. From a theoretical point of view it is an error to measure an uncertain position at expected value without integrating the risks. We shall illustrate the idea by a trivial example. You are offered a gamble on the toss of a coin which gives you either a 50% chance to win 1 million euros or a 50% chance to lose only 999 999. What is the price of the gamble? If it is measured at expected value, the cost of playing is 0.5 euro. But who would agree to pay this amount to take part? A participant unconcerned by the risk, described as "risk-neutral" in economic theory, but not a participant conscious of the risk or "risk averse". You would have to pay the latter a large sum of money to persuade him to play. The same applies to price valuation models: the proposed valuation is an expectation and does not therefore reflect the value of the asset which must be reduced by a risk premium.

II. Discussion of adjustments to IFRS 9 and IFRS 13

The fair value debate covers two related but very different issues. The first, on which standard setters voluntarily place emphasis, is the optimal combination of historical cost and fair value. Although this is important, it actually conceals the more fundamental issue, of the techniques for estimating fair value, incorrectly assimilated to market price. These two issues may be dealt with by adjusting existing accounting standards. However the potentially systemic consequences of price model valuation may possibly lead to additional proposals relating to the internalisation of negative externalities.

III.1 Base the accounting valuation of transactions and positions on the business model

"Value added model" and "trading model"

The choice between historical cost and fair value accounting is determined by the definition of performance. Based on the terminology of Roger Marshall and Andrew Lennard¹, the value added model, under which the fundamental purpose of a business is to transform inputs into finished products, implies historical cost accounting after adjustment for any provisions. On the other hand, the price change (trading) model, which refers mainly to the activity of trading entities, investment funds and banks' trading desks, naturally implies fair value accounting, even if we must avoid falling into the trap of assimilating fair value to market price. A bank's lending activity falls within the scope of the value added model.

This common sense distinction is not adopted by the IASB, and whilst IFRS 9 makes an explicit reference to the business model, it requires fair value measurement as a matter of principle. Fair value applies automatically henceforth to derivatives and shares, and only debts held as an asset or recognised as a liability are measured at amortised cost. Measurement of liabilities at amortised cost is available subject to meeting two conditions, firstly the instrument must pass the contractual cash flow test (as in the case of fixed and variable rate bonds, but not

(1) ¹ "The reporting of income and expense and the choice of measurement bases", contribution to the Accounting Forum of June 2014

convertible bonds with an option component), and secondly that the entity has not chosen the fair value through OCI option. Own debt may therefore still be measured at fair value, with the gain arising from a deterioration in credit spread recognised in OCI and not as previously in profit or loss (paragraph 5.7.7. of IFRS9).

In a paper published in July 2015², the EFRAG seems to accredit the business model segmentation proposed by Marshall and Lennard, even if the implicit assimilation of fair value to current price is regrettable:

THE REPORTING OF INCOME AND EXPENSE AND THE CHOICE OF MEASUREMENT BASES

The paper by Marshall and Lennard also considers that the business model should have an impact on measurement. The paper suggests that, for the purpose of the Conceptual Framework, business models should be classified into two categories:

- a) 'Value-added' businesses, in which an entity obtains inputs from suppliers and employees and, usually after some kind of process, uses those inputs to provide goods and services to customers from which revenue is obtained (for example, those used by retailers, manufacturers, service providers and commercial banks).
- b) 'Price change' businesses, in which an entity acquires assets (and sometimes liabilities) in order to benefit from gains resulting from changing their value (for example, those used by commodity dealers, investment funds and some other financial activities).

The paper explains that a cost-based measurement basis generally² should be applied to assets and liabilities within value-added businesses, whereas current market prices should generally be used for entities in price change businesses so as to assess their financial performance.

However, the analysis of investment banks' balance sheets shows that more than 90% of their derivative portfolio is valued using a price model, in some case the proportion is 99%, with a fraction valued using unobservable inputs (L3). Valuation at market price is marginal in investment banks' portfolios, thus rebutting the assumption that fair value is equivalent to market price.

In the trading model, fair value is not really market price

Level 2 valuation is applicable when the asset (liability) is not quoted on a liquid market. The model used in this case has market inputs and the resulting estimation looks reliable. Take the example of a share option with a three year maturity, sold by a trading desk and not quoted on a standardized market. It is well known that the price of an option using the Black-Scholes model relies on only one unobservable input, volatility. Suppose the share option is quoted on a market but with a maturity of 1 year and a volatility level of 20%. These are exactly the characteristics of a level 2 valuation. But can we use the volatility of a 1 year option as an input for a three year option? Of course not, for two main reasons. On one hand, it is true that 3 year

(2) ²"Getting a better framework: profit or loss versus OCI", EFRAG Bulletin July 2015

volatility depends on 1 year volatility, but also on the forward 2 year volatility in one year's time, about which the valuer has no information. On the other hand, the volatility depends, admittedly in an apparently paradoxical way, on the exercise price of the option. However the quoted market price of the option may be very different to the price of the option to be valued. These two remarks lead to the affirmation that, in the case in point, the level 2 valuation is subject to a double uncertainty and insufficiently robust to be expressed as a single price and recognised in income.

The fragility of estimations in levels 2 and 3, at a time when the prudence principle is being reaffirmed, must plead in favour of proposing the disclosure of changes in fair value in the notes or their recognition in OCI rather than through profit or loss. This would provide investors with the information enabling them to adjust income themselves.

III.2 Recognise unrealised changes in fair value in OCI, and no longer in profit or loss, including those arising from the trading portfolio: do not aggregate unrealized and realized gains or losses

The main disadvantage of disclosing level 2 and level 3 changes in fair value in the notes or recognising them in OCI is that it causes a mismatch between the accounting effects of hedged items and those of the related hedge. Banking practice consists of applying a delta-neutral strategy to hedge their option portfolios. Suppose, in the case included in the previous paragraph, that the bank hedges the sold call (purchase option) by the purchase of shares (level 1, i.e. market price). Is it conceivable to present the changes in valuation of the option in the notes or in OCI and those of the hedge in profit or loss? This treatment would make profit or loss meaningless. It is therefore necessary to recognise the changes of value of assets/liabilities and their hedge in the same account, and the OCI account would seem appropriate. The implementation of this proposal implies recognizing unrealized gains or losses on all positions in OCI in order to avoid mismatches. This includes L1, L2 or L3 valuations, not just positions valued using a price model.

An additional advantage of this proposal is that it would improve the transparency of performance measurement by separating all unrealised gains and losses whether they arise from model or market prices from realised profit or loss. It would be the analyst's job to add together realised and unrealised items of profit or loss in order to provide an overall view of income. It would be the responsibility of the banks' management to determine whether variable compensation is based on profit and loss or OCI, but their decision would no longer be based on the publication of profit or loss which is the confusing sum of certain and uncertain items. Should interim compensation be paid to a poker player because he has made a profit after a few hands? The issue here is the time horizon for measuring performance, and as a result of the recommendations of the G20 in Pittsburgh, banking institutions have started changing their bonus calculation by basing it on the average income over several years instead of the income for the year. Admittedly, under current accounting standards the average income still contains unrealized items, but the risk of moral hazard is reduced.

As a reminder, an extract from the G20 in Pittsburgh relating to market operators' compensation:

"Reforming compensation practices to support financial stability: excessive compensation in the financial sector has both reflected and encouraged excessive risk taking. Reforming compensation policies and practices is an essential part of our effort to increase financial stability"

No longer recognising unrealised changes in fair value through profit and loss does not mean a return to amortised cost

The recognition of unrealised positions in OCI, irrespective of their level, L1, L2 or L3, would provide a solution to satisfy the supporters of fair value that rightly draw attention to the limits of amortised cost. It is not because we consider that the value of a complex financial instrument measured at model price is better represented by its entry value than its fair value, but because we want to separate out unrealised valuation changes in a specific account in the income statement.

Our proposal reconciles the views of fair value supporters, as fair value would remain the measurement basis for open positions arising from a trading activity, and those of amortised cost supporters, as unrealised valuations would no longer form part of profit or loss.

III.3 Include financial stability in the conceptual framework

The consequences of mark to model on financial stability are an issue over and above the inevitable subject of moral hazard. Prudential regulation requires banks to maintain a level of capital to cover market risk, the amount of which was for a long time based on a Value at Risk calculation, the maximum loss in a given confidence interval (99%) that would be incurred by a bank on its trading portfolio under the assumption of an unfavourable market scenario over a given period (ten working days). Whilst the calculation of the VaR of a portfolio of positions that can be reversed on a liquid market is straightforward and verifiable from a methodological point of view, how meaningful is the VaR if the portfolio is priced according to a model? How can you measure the volatility of an unobservable input? How can you measure the correlation of two unobservable inputs? The fair value system encourages the development of complex structured products, sometimes using internal data and models, and leads to major uncertainties in determining the amount of capital cover required. In his report to Christine Lagarde, in 2010, Jean-François Lepetit compared the capital allocated to covering market risk to trading results. The ratios, expressed as a return on equity, reached levels well above 100%, which lead the author to recommend using these micro-economic indicators as early warning for systemic risk.

For example, the trading result to regulated equity ratio for certain Anglo-Saxon banks was close to 1000%... How can we find the right balance between an accounting system that encourages the issue of complex products that are difficult to value and the unrealised changes in value of which are nevertheless recognised in profit or loss, and a system that only takes account of the changes in value of assets and liabilities on an occasional basis, and then only by the recognition of provisions, providing a distorted view of performance?

We have to acknowledge that no system provides or will provide a satisfactory solution. Abandoning fair value would probably hinder financial innovation and consequently equate to a collective cost. Continuing with fair value brings with it the risk of uncertain valuations and exposes the economy to systemic risk. Two solutions may then be put forward.

The first, inspired by Pigou consists of allowing banks to value most of their portfolio using a price model, and recognise unrealised changes in value in profit or loss, whilst taxing the underlying portfolios on the assumption they increase systemic risk and consequently negative externalities. At a time when Europe is discussing the introduction of a financial transactions

tax, the idea of a Pigou tax, instead of a Tobin tax, on the portfolio L3 or (L2+L3) is a proposal with a theoretical basis.

The second solution would be a combination of the two approaches, consisting of recognition of unrealised changes in the fair value of the portfolio (L2+L3) in OCI, and not in profit or loss. Analysts and investors would have the information needed to estimate what they consider to be the profit or loss themselves, and the incentive to fabricate complex products would better obey the logic of public interest rather than maximizing personal interest. It would then be management's responsibility to choose unrealized and unrecognized profits as a basis for variable compensation ...