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Fair Value Accounting

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Partenaire financier

Fair Value Accounting^{*}

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Résumé

Le document présente une genèse de la comptabilisation à la juste valeur et revoit certains travaux de recherche et certaines preuves empiriques qui sont pertinents dans le cadre du débat entourant le recours à cette méthode. Nous commentons aussi le rôle de la comptabilisation à la juste valeur dans le contexte de la crise financière : a-t-elle simplement été un indicateur de mauvaises nouvelles ou a-t-elle été « procyclique », c'est-à-dire a-t-elle contribué à la triste situation économique en plus d'informer sur celle-ci ? Nous décrivons brièvement la comptabilisation à la juste valeur comme étant constituée de trois niveaux d'évaluation : le niveau 1 pour les actifs/passifs dont la valeur de marché est directement observable ; le niveau 2 pour les actifs/passifs dont les données issues du marché, mais non les prix, sont observables ; et le niveau 3 pour les actifs/passifs dont la valeur est obtenue à partir de modèles. Nous concluons que le recours à la méthode de comptabilisation à la juste valeur par les organismes de réglementation a probablement été procyclique dans le cas des éléments d'actif du niveau 1 évalués selon cette méthode, c'est-à-dire les actifs dont les valeurs comptables étaient fondées sur les prix du marché directement observables. En comparaison, les valeurs comptables établies selon la comptabilisation à la juste valeur dans le cas des éléments d'actif qui n'étaient pas fortement négociés (niveaux 2 et 3) ont probablement pris du recul par rapport à l'évolution du marché et ont vraisemblablement fait l'objet d'opinions biaisées quant à leur estimation. Notre analyse permet aussi de penser que la pertinence de l'évaluation selon la comptabilisation à la juste valeur est tributaire des conditions du marché (efficacité et fluidité) et que les facteurs d'évaluation fondamentaux, dont les flux de trésorerie sous-jacents aux actifs/passifs, sont toujours pertinents malgré l'existence de prix du marché parallèles. En terminant, le document offre des observations au sujet du rôle des vérificateurs, des organismes de réglementation et de normalisation, ainsi que des investisseurs en ce qui a trait à l'information qui se dégage de la comptabilisation à la juste valeur.

Mots clés : comptabilisation à la juste valeur, procyclicalité, crise de liquidité, juste valeur marchande, efficacité du marché, bulle

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Abstract

The paper provides a genesis of fair value accounting (FVA) and reviews some research and empirical evidence that are relevant to the debate surrounding its use. We also comment on FVA's role in the financial crisis: was it just the messenger of bad news or was it "procyclical," contributing to the sad state of the economy in addition to reporting on it? We briefly characterize FVA as comprising three levels of valuation: level 1 for assets/liabilities for which market values are directly observable, level 2 for assets/liabilities for which market-derived inputs, but not prices, are observable and level 3 for assets/liabilities which value is derived from models. We conclude that the use of FVA by regulators was probably procyclical for level 1 FVA assets, i.e., those assets which accounting values were based upon directly observable market prices. In contrast, accounting values for FVA assets that were not actively traded (levels 2 and 3) probably lagged market developments and were likely biased in their valuation. Our analysis also suggests that the appropriateness of FVA-derived valuation is conditional upon market conditions (efficiency and liquidity), and that fundamental valuation drivers such as an asset/ liability underlying cash flows are still relevant valuation inputs despite the existence of concurrent market prices. The paper concludes with some observations regarding the role of auditors, regulators, standard-setters and investors regarding FVA-derived information.

Keywords: *Fair value accounting, procyclicality, liquidity crisis, fair market value, market efficiency, bubble.*

Introduction

When we started writing this article, the InTrade.com web site was offering to the public a security paying a hundred dollars if a North American city were later chosen to host the 2016 Summer Olympics, and zero dollars if it weren't. The bid and ask prices of this security were \$50.10 and \$54.30, suggesting a probability range for the Olympics taking place in North America of between 50% and 54%. The prices rose a week later when President Obama visited Scandinavia to promote Chicago as the venue, then crashed to zero when Rio de Janeiro was awarded the games.

On any given day, up to 100,000 InTrade clients trade securities promising to pay \$100.00 if similar political, economic, and social events transpire. The website says its security prices provide unbiased estimates of the probabilities the events will happen. If the probability of Chicago getting the Olympics had been higher than 54%, there would have been excess demand for the Olympics security by the cognoscenti. They would have bid up the price and pushed the market toward equilibrium, where the marginal informed trader would have been indifferent between buying and shorting the security.

Economists have long agreed that prices in perfect markets transmit less biased estimates of the values of commodities and securities than any single expert trader could provide. In the past decade or so, accounting standards acceded to this efficient-markets view at an increasing rate, under the rubric of Fair Value Accounting ("FVA"). At first, the shift from Historical Cost Accounting (HCA) toward FVA spawned orderly debates among accountants, businesspeople, regulators and investors about the definition of fair value and when its use was appropriate. But during the 2008-2009 financial crisis, when even economic theorists doubted that financial

markets were working anywhere close to perfection, the debates intensified, shining a harsh light on FVA and the accounting profession in general.

We review some research and empirical evidence that are relevant to the FVA debate. We also comment on FVA's role in the financial crisis: was it just the messenger of bad news or was it "procyclical," contributing to the sad state of the economy in addition to reporting on it?

Time to Take Stock

FVA has had its ups and downs. In the late 19th and early 20th centuries, firms often valued their capital assets using appraised, net realizable values. By the 1930s, moral hazard—manifest in abusive and self-serving over-valuation practices by some managers—led to the dominance of HCA as an antidote. However, accounting theorists continued to tout FVA and a one-sided version of FVA ("lower-of-cost-or-market") continued to be applied to inventories.

FVA did not emerge in full bloom again until 1993, in SFAS 115 *Accounting for Certain Investments in Debt and Equity Securities*. Ironically, SFAS 115 was predicated on the assumption that HCA allows managers to smooth companies' earnings by timing the recognition of unrealized portfolio gains and losses; and FVA is the antidote for this "earnings management" hanky panky. Another, implicit assumption was that quoted market prices for securities possess at least some of the magical properties alluded to in the introduction to this article, conveying less biased information than would be provided by any single market participant, including the management of the reporting company. But what if quoted market prices are unavailable?

FVA Hierarchy

US standard setters took a step toward answering that question in 2006 when they issued SFAS 157 *Fair Value Measurements*, defining fair value as "...the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at

the measurement date...” So, whenever FVA is called for, one uses quoted prices of assets, if they are available, in actual, well-functioning markets. If they aren’t available, one must simulate what those prices would be, if such markets existed.

This requirement raised two additional questions that inflamed FVA debates during the financial crisis: How do we know if markets are working “well enough” to use quoted market prices without further investigation? And if quoted market prices are unavailable or if markets are not working well enough to rely on those prices, how can we ensure that the simulated prices faithfully simulate the hypothetical prices that would eventuate in a “real” market? After all, managers propounding the prices are subject to moral hazard. At least some of them would be expected to exaggerate fair values and to “self-select” whether to use quoted or simulated prices.

SFAS 157 identifies three categories of fair values depending on the level of judgment or subjectivity associated with their measurement. At level 1, financial instruments are measured at quoted prices for identical instruments in active markets. If an asset does not trade in an active market but valuation inputs are observable, level 2 fair values reflect a) quoted prices for similar financial instruments in active markets, b) quoted prices for identical or similar financial instruments in markets that are not active, c) inputs other than quoted prices but which are observable (e.g., rates on a yield curve in-between quoted rates) or d) correlated prices. Finally, at level 3, one finds assets that have no market or are so unique as to have no comparable assets whose prices could be used as bench marks. They would be “marked-to-model” using discounted cash flow models or hypothetical hedge portfolios, based on knowledgeable market participants’ views and assessments.

In a recent article, Alex Milburn observed that active, well-regulated capital markets exhibit reasonable efficiency. However, it is easy to see that the potential for moral hazard and

adverse selection escalates as we move down the valuation hierarchy, especially in going from level 2 to level 3. For example, the *New York Times* recently reported that Wall Street was flirting with a new financial instrument called securitized insurance. The idea would be to approach individuals with \$1 million life insurance policies and offer them, say, \$400 thousand to assign the \$1 million payoff to the buyer. Tranches of these assigned policies would then be bundled and sold to investors. The investors would profit if policy holders died shortly after assigning the payoffs. A securitized insurance specialist said that the chief risk was that drug companies would discover a cure for cancer, prolonging the time before the payoff and reducing its present value. On reflection, one can see the potential for moral hazard (sellers understating their health) and adverse selection (healthy people accepting the payouts). We doubt that any analyst could provide reliable level 3 simulated prices for these derivatives.

Distressed Markets

A related issue is what to do when markets would normally provide reliable, level 1 quotes but are temporarily “distressed.” Economists Franklin Allen and Elena Carletti recently provided very substantial insights on this issue. They argue that markets work properly only if market prices reflect the present value of future cash flows. However, in times of financial crisis, such as the Russian crisis of 1998 that led to the demise of Long Term Capital Management and the credit crisis of 2008, prices diverge from the asset’s underlying value and instead reflect the amount of “cash-in-the-market,” the liquidity that is available to buyers who are currently active. In such times, money becomes a valuable good in itself rather than being a mere numeraire that we use to keep track of the prices of other goods. If money is in short supply, the only sustainable equilibrium entails all security prices falling. Liquidity injected by governments is then a tide that lifts all boats.

An example of liquidity pricing relates to the 2008 price collapse of AAA-rated tranches of mortgage backed securities. Some banks had to write down AAA-rated super senior tranches of mortgage-linked collateralized debt obligations by as much as 30% because of a drop in market prices. If this price drop had stemmed from deterioration in the fundamental value of the mortgages, it would have implied a loss rate of 38%, consistent with 76% of the households defaulting and only repaying 50% of the face value of the mortgages. The Bank of England noted that this was not realistic because none of the AAA-rated tranches had yet defaulted and the Bank estimated that there should not be any future defaults at all, even with a continued decline in US house prices. Another indication of liquidity pricing is the unusually high co-movement among different types of securities with different fundamentals. This can only be explained by their joint dependence on a third variable, the amount of cash in the market.

In such situations, slavishly marking down asset values to quoted prices on banks' balance sheets can exacerbate a liquidity crunch by forcing banks to sell good assets at depressed prices to obtain enough liquidity to maintain regulatory solvency or capital ratios. Unfortunately, this means there will be more good assets chasing the same amount (or less) of cash-in-the-market. This can drive down asset prices even farther in a vicious circle and even lead to contagion in the market where all banks suffer and liquidity is unavailable to finance business activities in the real economy.

At the time of writing, the IASB's solution is to account for "banking books"—groups of assets managed on the basis of income and expenses incurred to maturity of the instruments—at amortized historic cost, reflecting only expected credit losses in earnings. Expected credit losses would be estimated using management's estimates of expected cash flows, irrespective of the quoted fair values of similar assets in distressed markets. The FASB, in contrast, seems to be

moving toward always marking banks' financial instruments to market but sending non-credit loss markdowns, during times of market distress, to Other Comprehensive Income ("OCI"). Financial statement readers would then decide how much weight to put on the OCI amounts.

In our view, the key issue to resolve is whether distressed asset prices reflect what would be obtained from the distressed sale of "good" assets that banks might be forced to sell to satisfy liquidity needs or the desire to offload "lemons" whose expected cash inflows are lower than they were when the assets were purchased. Consumers of used cars can appreciate the distinction. When a seller advertises a car as "must sell," presumably the seller is trying to convince readers that he or she doesn't really want to sell the car but needs to sell it to obtain liquidity. Is this a credible claim or is it a ruse to sell a lemon to a sucker? If the claim is true, the seller has every incentive to convince us it is true, by disclosing the car's service records.

Financial statement users have information needs that are similar to the readers of used car ads and banks have incentives that are very similar to those of used car sellers. Accounting can supply valuable information to users, including bank regulators and policy makers, by distinguishing good assets from lemons. The good assets do not deserve to be marked down to quoted prices provided banks have the ability and intention to hold them long enough to recover their investments. The lemons, however, do deserve to be marked down as they are not going to pay off no matter how long a bank holds them. This has nothing to do with how long the market for financial assets might be depressed because of liquidity pricing. It also has nothing to do with whether the market is "efficient" or not. It has to do with the fundamental valuation of the asset. Like used car sellers, bankers have every incentive to convince auditors that their assets are not lemons by presenting detailed data relating to borrowers' financial strength and plausible assumptions about the amount and timing of future collections, co-movements of asset prices

with similar assets in the market, and so on. In our view, the real issue is not whether we footnote non-credit losses or relegate them to OCI, it is whether the numbers are backed up by rigorous auditing to ensure the plausibility of expected cash flows. Early empirical evidence is consistent with this preference.

Procyclicality – Early Empirical Evidence

Three recent empirical studies shed some early light on investors' assessments of the carrying values of US banks' assets and liabilities during the financial crisis. The studies used cross-sectional regressions to estimate the multiples that shareholders assigned to level 1, 2, and 3 carrying values in pricing bank shares during 2008. Results are summarized in the table below.

	Two Studies of Quarterly Ranges of Valuation Multiples during 2008			One Study Combining all Quarters
	<i>(Dollars of Share Price per Dollar of Assets at Three Levels of the Valuation Hierarchy)</i>			
Hierarchy Levels	Q1	Q2	Q3	Combined Quarters
Level 1	\$0.81–\$0.84	\$0.64–\$1.03	\$1.01	\$1.00 for both assets and liabilities
Level 2	\$0.77	\$0.58–\$0.63	\$0.50	\$1.00 for both assets and liabilities
Level 3	\$0.65–\$0.71	\$0.37–\$0.42	\$0.28	+\$0.68 for assets; –\$2.19 for liabilities

One study looked at all four quarters of 2008, combined. It reported that level 1 and 2 assets and liabilities were valued by investors at close to their reported book on average. Level 3 assets, however, were heavily discounted: share prices reflected only \$0.68 per dollar of carrying value on the balance sheet. Moreover, level 3 liabilities were priced at more than double their carrying values, so that share prices were \$2.19 lower for every extra dollar of level 3 liabilities. This implies that investors took level 3 carrying values with a strong grain of salt. Importantly,

however, the study reported that stronger governance was associated with higher asset multiples and lower liability multiples, especially at levels 2 and 3. Governance measures included board independence, audit committee activity, ownership structure, internal controls, and auditor size.

Two other studies estimated similar valuation multiples quarterly for 2008. At the end of Q1 2008, a one dollar cross-sectional increase in level 1 net assets was valued at \$0.81–\$0.84, while similar increases in the carrying values of level 2 and 3 assets were valued at \$0.65 to \$0.77. As the crisis intensified, however, the table above shows that some of the multiples declined dramatically, especially for level 3 assets—most spectacularly in Q3 when the level 3 multiple declined to \$0.28. Indeed, in Q3 the level 3 multiple was not significantly greater than zero except for banks with high capital adequacy ratios and Big-Four auditors. One of the studies, which focused on smaller banks listed on the NASDAQ, showed that the level 1 multiple actually increased in Q2 and Q3, consistent with the suggestion that investors thought that the assets had been written down too much: i.e., the accounting was mildly procyclical, leading rather than lagging the deterioration in the economy.

We draw three tentative conclusions from these early studies. First, if FVA is procyclical, the procyclical impact of the accounting was evident only in level 1 assets, which were marked down as much as, or even a bit more than, investors' valuation of the assets—especially on the balance sheets of smaller, NASDAQ-listed banks. These are precisely the assets that banks would have been likely to sell if they needed liquidity. Level 3 asset values, in contrast, were resistant to mark-downs: the accounting for these assets lagged, rather than leading, the economic down-cycle. It is unlikely that the banks would have sold them during the crisis.

Second, investors generally perceived that level 3 asset carrying values were biased upward, especially as the crisis intensified. This probably reflected time lags in marking the

instruments to model, the uncertainty about their actual fair values, and, perhaps, the discretion available to management in biasing the carrying values upward to suit their own purposes.

Third, more favorable capital ratios, higher quality auditors, and stronger governance translate into higher valuation coefficients for level 2 and 3 assets. Hence, marking to model—including the IASB’s incurred credit loss model—is a defensible accounting method provided auditors can attest to the credibility of management’s estimates.

The case of Lehman Brothers is consistent with the empirical findings and our tentative conclusions. On November 30, 2007, three-quarters of Lehman’s fair-valued assets were valued using level 2 or 3 inputs, not on the basis of quoted prices. By May 31, 2008, that proportion had increased to nearly 82%. Further empirical work as well as the liquidation of Lehman Brothers will eventually provide evidence regarding the extent to which its assets had been overstated or purposely shifted into levels 2 or 3, to hide developing losses and give management more breathing room before marking down the assets. This unflattering interpretation is consistent with Lehman Brothers being an early-adopter of both SFAS 157 (*Fair Value Measurements*) and SFAS 159 (*Option for Fair Value Measurement*) and implementing the provisions of the new FVA standards in Q1 2007 without having auditors attest specifically to the credibility of the estimates.

Accounting and the Market: Mirrors Facing Each Other?

Reporting market prices on corporate balance sheets is inconsistent with using financial statement data to see if a firm’s stock price reflects its fundamental or intrinsic value. Finance studies in the late 1990s show that value and price are statistically co-integrated; however, they can diverge from each other for considerable periods of time when information acquisition is costly or markets are distressed. The studies also suggest that value relevance has two

dimensions. When price is a noisy measure of value, value-relevance may be assessed according to the ability of an information signal to contribute to future returns rather than current values.

Other studies conducted during the late 1990s and early 2000s raise a fundamental question, at the macro-economic level, as to the grounding of financial statements in real economic phenomena. A study by Norman Macintosh and his colleagues at Queen's University in 2000 argues "companies' earnings determine security prices, which determine derivative prices, which determine companies' earnings. In short, neither the accounting sign nor the financial market sign appear to be grounded in any external reality. Instead, each model appeals to the other model for the only "reality check" available." In other words, at the macro-economic level, accounting and the market are like two mirrors reflecting each other, each depending on the other for its information, in an endless endogeneity-loop where it is not clear what determines what. This has the potential to create market bubbles, where asset prices are decoupled from underlying cash flows; and to create systemic risk, where companies (especially financial institutions) mutually depend on each others' assessment of fair values of derivatives without reference to underlying property values.

The Lehman case illustrates that possibility. During the last complete fiscal year before its bankruptcy (2007), Lehman reported earnings of \$4.3 billion. Investors presumably relied on Lehman's reported earnings to assess its prospects and determine share price. A significant proportion of Lehman's assets and expenses were shares and share-based derivatives. Close to 50% of its assets were measured according to FVA. Arguably, then, Lehman's earnings and stock price were mutual reflections of each other. Similar arguments may apply to many financial institutions deeply involved in the current crisis or engulfed by it.

Implications for Standard-Setters and the Profession

The use of FVA is spreading beyond financial instruments and banks. It is manifest in such areas as the measurement of minority interests, capital asset revaluations under IFRS, and goodwill impairments. This emphasis on FVA evinces a focus by standard-setters on the information needs of investors, especially shareholders, to the potential detriment of other financial statement users.

Support for FVA in the academic literature comes largely from empirical findings that FVA-based numbers are associated with companies' share prices—they are value-relevant. However, mere associations between accounting numbers and stock market prices do not justify adopting FVA *holus bolus*, because accounting serves many constituents besides shareholders, often serving as a basis for contracts relating to compensation, debt covenants, and partnership interests.

Lenders, for example, would be loath to endorse a firm's policy of paying dividends based on unrealized, expected cash flows. We think that the excessive bonuses paid by many financial firms in the years leading to the crisis, often based partly on FVA-derived earnings, suggest that enthusiasm for FVA should be tempered with caution in compensation contracts as well. In short, FVA pulls accounting away from its traditional stewardship role, for which verifiability and conservatism ensure that payouts are based on delivered, not expected, performance. The emergence of FVA also poses challenges for auditors. The market crisis has made clear that auditors cannot blindly rely on quoted prices. We think that the evidence strongly suggests that auditors' need to go beyond reported prices to gain a comprehensive understanding of underlying market conditions in the context of companies' business models: banking books would generally not be affected by quoted values, provided audits add credibility to level 2 and 3 carrying values.

Conclusion

There can be little doubt that regulators' use of FVA, as it is currently practiced, can result in FVA being more than just a messenger delivering bad news. Perhaps paradoxically, however, we view this and other criticisms of FVA during the financial crisis as being "good" for the accounting profession, in the sense that they have caused standard setters to ponder when FVA is appropriate and when quoted market prices can be relied on as reliable indicators of fair values. Without the crisis, accountants would have merely speculated how FVA should be modified in distressed markets; during the crisis, they had to confront the issue head-on.

The FVA debate goes beyond accounting and financial reporting. It strikes at the essence of what accountants are expected to contribute to society and what competencies and skills they must possess in order to deliver useful information to financial statement readers. We believe that accounting standards overstretch accountants' current capabilities and prior learning, and they tend to ignore the informational needs of stakeholders other than investors.

In our view, standard setters and auditors need to start with a clean sheet of paper in determining how FVA is implemented. When level 1 inputs are unavailable or unreliable due to market distress, manifest in such phenomena as liquidity pricing or cash-in-the-market pricing, management must drill down into the opaque assets on banks' balance sheets to assess their underlying value, and auditors must opine on the plausibility of managers' expected cash flow projections. If management claims that quoted prices diverge from intrinsic values due to a lack of liquidity, then a rigorous audit could validate management's claim. Otherwise, the securities are probably "lemons" and should be summarily marked to market.

We call on accountants to exercise leadership over the financial reporting process instead of passively relaying market-induced values. The evidence shows that investors' valuation of fair-

valued assets is enhanced by higher quality auditing and stronger governance, suggesting that accountants can add credibility to fair values by taking an active role in auditing level 2 and 3 inputs and expressing opinions about the plausibility of level 2 and 3 fair values. To the extent that they are reluctant to do this because of legal liability concerns, it would be appropriate to consider safe-harbor reforms of the legal liability regime for auditors.

The intervention of external parties, such as auditors, also has the potential to break the facing-mirrors endogeneity-loop by focusing on the fundamental cash flows underlying asset values. Thus, the market crisis has provided the accounting and auditing profession with a rare opportunity to actively manage the transition of financial statements toward a more thoughtful, better grounded way of implementing FVA. The future of the profession rests on its success in managing this transition.