Institution-specific Value

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Workshop on Accounting Risk Management and Prudential Regulation, Bank of International Settlement, Basel, Switzerland, November 11-12, 2005

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Introduction

- My brief is to discuss "institution-specific value" – a term that will mean different things to different people. I focus on selected aspects:
  - How "current value" has been used elsewhere by standard setters
  - The special issues posed when valuing liabilities
  - The similarities between different concepts of current value for assets
  - Measurement issues

- To minimize duplication with the other presenters:
  - Focus on IAS 39 and ignore the comparable US standards
  - Concentrate on selected theoretical issues, without reviewing the empirical research literature.

Background

- IAS 39 "Financial Instruments: Recognition and Measurement" has had a stormy passage, and the journey might not yet be over:
  - European banks do not want to show their financial instruments at fair value and worry that their hedging arrangements might be misleadingly represented in a "mixed model"
  - But the case for fair valuing financial instruments is that historical cost conceals gains and losses associated with incomplete hedging
  - There is a widespread concern that fair value measures may be "soft" and open to manipulation
  - Regulators worry that valuing liabilities at fair value might result in "disappearing liabilities" at credit-impaired institutions.

- Fair Value is defined in IAS 39 as
  - "…the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction"
    - The FASB's SFAS 133 definition is almost identical
  - The objective is to arrive at a value that is independent of the entity
    - To the extent that this objective is achieved, I have nothing to talk about!
    - But it is important to note the definition makes clear that it might not be possible to take a real, observable, transaction price – in the real world, sometimes prices are either not actually observable, or are set by parties that are not equally informed.

- The IASB has had to revise IAS 39 several times:

  – The original 1998 version set out a "mixed model"
    - Derivatives @ FV with FV gains/losses taken to income
    - Available-for-sale financial assets @ FV with FV gains/losses only included in income on realization
    - Other financial instruments @ HC.

  – Standard revised to allow FV hedge accounting option and cash flow hedge accounting option, to allow entities to align gains and losses from hedging transactions.
    - But companies found it difficult and costly to meet requirements set out for the options – particularly when hedging net positions of large portfolios of numerous and changing financial instruments.

- IASB responded by amending IAS 39 in 2003 to include an additional option:

  – An entity could designate any financial asset or liability as being "at fair value through profit or loss"
    - An advantage of the amendment was it presented companies with a means of avoiding mismatching problems that otherwise arise from the mixed model
    - The amendment was heavily opposed in the EU, in particular, because it extended the use of FV
      – Fair valuing liabilities raised spectre of entities reporting gains as their credit worthiness declined.

  –

- EU Commission responded, after heavy lobbying, that it would ban FV option outright if IAS 39 was not further amended.

Background

- IASB responded by issued a further revised version of IAS 39 in June 2005 that would restrict FV option to 3 situations:

  1. When it eliminates or significantly reduces an accounting mismatch that would otherwise arise
  2. For a group of financial instruments which it can be shown are managed and evaluated internally on a FV basis in accordance with a documented risk management or investment strategy
  3. Certain financial instruments that contain embedded derivatives

Background

- This extremely brief overview of a complex process of development of IAS 39 (it may not be over yet) suggests several tentative conclusions:
  1. FV is a conceptually appealing concept, at least when applied to the assets side of the balance sheet, because the definition of FV corresponds closely to what a financial statement user needs to know to assess the credit worthiness of a financial institution
  2. To handle real-world hedging complexities has meant it is necessary to extend the FV concept to include liabilities
  3. The compromises that have had to be made means that the measures are highly dependent on managerial actions and intentions.

Fair Valuing Liabilities

The ideal case

- Let us first consider a setting where credit risk is not an issue – entity's notes and bonds are essentially riskless. Let's also set aside measurement problems by assuming all its financial assets are traded in an active market. (Hardly realistic, but it helps us locate where problems lay.)

    - A central characteristic of financial instruments – one that distinguishes them from other kinds of resources – is that there are two parties.

    - FV has the property that the amount shown for an asset on the creditor's books is the same amount as is shown for the liability on the debtor's books – not something likely (other than at time of issue) with HC.

    - If the issuer creates a perfect hedge of the interest rate exposure on its financial liabilities, this will only be properly reported if both sides of the hedge are marked to market

Fair Valuing Liabilities

The ideal case

- Even in this ideal setting for FV, a prudential regulator might be unhappy that a rise in interest rates might create the appearance of declining liabilities, even though the amounts owed have remained constant.

- However, the same will happen to the financial assets side of the balance sheet. Symmetry is preserved, and realistic insights provided.

- Now let's relax the assumption of zero risk.

Credit risk

- The dual nature of financial assets and liabilities remains unchanged.

- The logic of writing down asset values because of increased credit risk remains clear.

- But isn't the monitoring task of the bank regulator made more difficult if financial liabilities are written down as default risk increases?

Fair Valuing Liabilities

Credit risk

- Monitoring would clearly be more difficult if financial assets were carried at HC and financial liabilities at FV
- However, if both assets and liabilities are shown at FV, the apparently-vanishing liabilities of a credit-impaired entity would also be accompanied by vanishing assets –
  - Otherwise it is difficult to see how credit impairment can have taken place
  - An alternative would be to separate out credit risk from interest rate risk and show default risk separately as a put option
  - The measurement difficulties look formidable, the benefits questionable
  - And which entity is going to be happy publishing monetary estimates of its impending doom!

Credit risk

- The fair value of financial liabilities will always be be institution-specific to some degree, as long as there is any likelihood of the entity not being able to meet its contractual promises to borrowers in full. This applies both at time of initial recognition under historical cost and thereafter if fair valued.

- The main obstacle is the practical measurement difficulties. This aspect is common to both financial assets and financial liabilities.

Fair Valuing Assets

- IAS 39 stipulates that when an active market exists, the appropriate measure of the FV of a financial asset is its current ask price (exit value).

- There are other settings where assets are (or have been) shown at current value.
    - Perhaps the most systematic international effort were the attempts to account for inflation in the wake of the 1973 oil crisis, that resulted in the issuance of SFAS 33 in the US and SSAP 16 in the UK.
    - Both accounting standards required non-monetary assets to be valued on a "current cost" basis, defined as
        - Current cost = min (replacement cost, recoverable amount)
        - Replacement cost = entry value
        - Recoverable amount = max (present value, exit value)

Fair Valuing Assets

Valuation aspects of inflation accounting

- The relative merits of current cost and exit value were extensively debated at that time, and it is interesting to review some of the arguments that led to current cost being preferred.
- Primarily concerned with how best to measure the non-financial operating assets of industrial and commercial companies
- Operating assets such as work in progress and specialized plant and equipment have negligible exit value and their benefits can only be realized through the production process.
- As a result, an entity-specific approach was preferred over exit value.

Fair Valuing Assets

Current cost (or some related entity-specific value) appears in other contemporary IASB standards:

- Current cost in IAS 29, "Financial Reporting in Hyperinflationary Economies"
- Fair value or if highly specialized and rarely sold, "income or a depreciated replacement cost approach", in IAS 16, "Property, Plant and Equipment"
- Recoverable amount to estimate "impairment loss" in IAS 36, "Impairment of Assets".

Logic of recoverable amount as a measure of current value is clear enough, that of current value less so.

The logic of current cost

- ## The basis of current cost is "deprival value"
  - The amount by which the firm would be worse off without the asset
  - The deprival value concept has a long history in economics and figures (in various guises) in rate regulation and insurance cases
  - Deprival value depends on what the entity would do if deprived of it: replace v. do nothing. If it did nothing, the loss would be equal to recoverable amount. It would only replace if

    Entry value < recoverable amount
  - So it follows that

    Deprival value = min (entry value, recoverable amount)

Fair Valuing Assets

Current cost and exit value compared

- Financial assets do not have alternative-use value and we can therefore safely assume

$$Entry\ value > exit\ value$$

- In which case, deprival value is bounded by the two market values:

$$Exit\ value \leq deprival\ value \leq entry\ value$$

$$Exit\ value = asking\ price - brokerage\ fees$$

$$Entry\ value = bid\ price + brokerage\ fees$$

Fair Valuing Assets

Current cost and exit value compared

- In many financial markets, bid-ask spread is narrow and brokerage fees small (at least for financial institutions)

- In such approximations of perfect markets,

$$\text{Deprival value} \cong \text{fair value}$$

- The case for deprival value is strongest when the market is imperfect and exit value is low.
  - The approximations for fair value set out in IAS 39 look more like approximations of deprival value.
  - But it is in those situations that measurement errors will be greatest.

Measurement Accuracy

- A criticism that has always been advanced against the use of current value methods in accounting is that doing so will reduce the reliability of financial statements.

- This has not stopped the IASB mandating the use of fair values in IFRS 3, *Business Combinations*, in IFRS 5, *Non-current Assets Held for Sale and Discontinued Operations*, in IFRS 5, *Non-current Assets Held for Sale and Discontinued Operations*, and permitting its use in other areas.

- It is not obvious that the problems of arriving at reliable estimates of value in these other areas are inherently easier than with financial instruments.

Measurement Accuracy

- A critical issue is whether revaluation gains and losses are to be included in reported income
  - Gains and losses on non-financial assets are usually excluded from income
  - The treatment is more complicated with financial instruments because of the need to balance hedging gains and losses

- It is easy to demonstrate that errors in re-measurement of balance sheet amounts can be magnified in profit or loss. This may seem self-evident, but the magnification can be even larger than intuition might suggest.

Measurement Accuracy

- Let us denote BV_0 and BV_1 as the beginning-of-period and end-of-period book value of the asset, respectively, with the difference, $Y_1 = BV_1 - BV_0$ being the gain or loss on revaluation.

- Measurement error can be defined as the variance of the estimate of value around its true (but unobservable) true value.

- Suppose we assume that management does not bias its estimates. Let us characterize the resultant measurement errors of opening and closing assets and the gain or loss in terms of their mathematical variances, denoted as $var(BV_0)$, $var(BV_1)$, and $var(Y_1)$, respectively.

Measurement Accuracy

- The variance of the revaluation gain or loss can be expressed in terms of the following mathematical formula:

$$\text{var}(Y_1) = \text{var}(BV_0) + \text{var}(BV_1) - 2\text{cov}(BV_0, BV_1)$$

- $\text{Cov}(BV_0, BV_1)$ is the covariation between the opening and closing book value estimates. If our measurement errors are random, we can assume that the valuation error at one date does not affect the error at the next, and so $\text{cov}(BV_0, BV_1) = 0$. This implies that

$$\text{var}(Y_1) = \text{var}(BV_0) + \text{var}(BV_1)$$

The P&L variance will be roughly twice the B/S variance!

Measurement Accuracy

- The intuition behind this result can perhaps best be conveyed in the phrase, "income is the difference between two large numbers". The following simple numerical example illustrates the logic involved.

- Consider an asset with a true fair value of €100 at the beginning of the year and a true value at the end of the year of €120. Further suppose that the estimates of fair value fall into one of three equally likely states: equal to true value; true value plus 10% error; and true value minus 10% error.

- Table 1 summarizes the outcomes.

Measurement Accuracy

Gains and losses arising from different beginning and ending FV estimates

Nine possible profit or loss outcomes are possible; all are equally likely. The expected (true) gain is €20. The variances of the opening and closing estimates of true value are €66⅔ and €96, respectively. The BV variances are €66⅔ and €96. The P&L variance is €262⅔.

Table 1

FV @end of year

		108	120	132
FV	110	-2	10	22
@				
start	100	8	20	32
of				
year	90	18	30	42

Measurement Accuracy

- The income effect is equal to €20 plus or minus a standard deviation of €16.2. In other words, a balance sheet error of plus or minus 10% has magnified into a profit or loss error of 81%.

- We should be wary of assuming that valuation at historical cost is necessarily error free. There is no measurement error, but bias is introduced.

- Suppose the asset is shown at HC = €90 throughout. The BV is 10% less than its true value at the beginning. None of the true gain has been recognized; the bias is therefore 100%. Derivatives are a prime example of such HC bias.

Measurement Accuracy

- The other approach to dealing with balance sheet estimation errors is to break the link between the balance sheet and the income statement. Gains and losses arising from the revaluation of assets are transferred directly to an "asset revaluation reserve" or "other comprehensive income" section of equity.

- The accumulated gains and losses are later transferred to profit or loss when the asset is finally sold or otherwise derecognized. This is the treatment required in IAS 39 for gains and losses on available-for-sale financial assets.

Measurement Accuracy

- The rationale for deferring the recognition of revaluation gains and losses is therefore primarily one of "waiting until one knows for sure the gain or loss":
  - Understandable with assets where the markets are incomplete and transaction costs loom large
  - But many financial instruments are traded in highly liquid secondary markets where market values can be unambiguously determined. Little or no improvement in income measurement accuracy would seem to be gained by deferring profit recognition until time of sale.
  - An unsatisfactory aspect of IAS 39 is that the treatment of fair value gains and losses is determined by the class of financial instrument rather than whether the gains and losses (e.g. on available-for-sale financial assets) can be reliably determined.

Measurement Accuracy

- The picture is different when market prices are not available and fair values have to be determined by recourse to present value estimates or option pricing models. In such circumstances, fair value estimates must depend heavily on the entity's judgments and knowledge about how the instrument will be used.

- A similar situation can arise even when market prices are available, but the enterprise has greater knowledge about the true worth of the assets than do other market participants. In this situation, market price will not generally approximate the fair value ideal of the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

Measurement Accuracy

- Sight should not be lost of the key attraction of the "fair value through profit or loss" option. The option enables companies to avoid the accounting mismatch problems that otherwise arise from the mixed model when using derivative to macro hedge a portfolio of assets not accounted for on a fair value basis.

- What we now need are studies of the likely magnitudes of fair value measurement errors, so that we can compare them to the biases that would likely result from not using fair values. The difficulties the researcher faces in getting access to the necessary data are formidable.

Concluding Remarks

- I have addressed a number of issues that lay at the heart of the problems the IASB has had in developing an acceptable accounting standard for financial instruments.

- A unifying theme to these concerns has been that fair values are not just "out there" waiting to be picked up and used but entail consideration of complex institution-specific issues. I have offered some views on these issues, which I will attempt to summarize here as follows:

- The application of fair value principles to financial liabilities is perhaps the most revolutionary aspect of IAS 39, but the concerns that have been raised should not be realized as long as financial assets are also shown at fair value.

Concluding Remarks

- I contrast the exit value perspective of the fair value of financial assets postulated in IAS 39 with the deprival value model of firm-specific value that figured in inflation accounting models and appears in some other IASB standards. I argue that the circumstances when recourse has to be made to option pricing models and discounted present value analysis are when fair value will look more like deprival value than exit value.

- I show how errors in the valuation of assets can be magnified in the income statements. But this applies whatever way the accounting is done. I conjecture that whereas historical cost will likely have lower measurement error, it will introduce biases that can be just as large.

Concluding Remarks

- The opposition to fair value accounting is understandable. Historical cost accounting has several virtues:
  - It is cheap and relatively quick and easy to do and the difference between what was spent and what was received will always be the most readily understood definition of gain or loss.
- However, if there is an area of accounting where current value is likely to be more informative than historical cost then it must be financial instruments.
- IAS 39 doubtless came as a shock to the banking community in many countries. The measurement problems are formidable. However, the problem of institution-specific dimensions of value would seem to be much more manageable for financial institutions than for many other business enterprises, and the prevalence of derivative instruments makes it imperative.