Fair or not?
Fair value measurement in the sub-prime crisis

Fair value accounting has come under significant scrutiny in the wake of the sub-prime mortgage market crisis and subsequent global liquidity crisis. Commentators have questioned whether current market prices are consistent with the definition of fair value in Australian accounting standards, or whether current market prices are more indicative of distressed sales. We argue that these prices do indeed represent fair values and convey useful information for market participants.

AS THE FINANCIAL TURMOIL has unfolded in world economies, commentators have questioned the accounting, disclosure and risk management practices of banking and industrial corporations. The extreme view is that fair value accounting is exaggerating or even causing financial market volatility by requiring write-downs, and it goes as far as proposing its suspension. We examine whether current market prices for affected financial instruments are fair values as defined by accounting standards, or are indicative of distressed sales and therefore by definition are not ‘fair values’. Sub-prime mortgage crisis

A major feature of the global credit boom between 2001 and 2007 was the extraordinary expansion of credit risk transfer instruments, which permitted the transfer, hedging and active trading of credit risk as a separate asset class. Examples included credit default swaps (CDSs) and structured credit products such as collateralised debt obligations (CDOs). These products were further resecuritised into secondary markets.

For many credit-linked instruments, the securitiser places mortgages in a bankruptcy-remote entity that issues various tranches of mortgage-backed securities (MBS).
The most senior tranche is sized as large as possible for it to obtain an AAA rating. The most junior (‘equity’) tranche is unrated and sized as small as possible such that the second most junior tranche obtains the lowest investment grade rating. Typically, the securitiser retains the equity tranche. Ignoring any other forms of credit enhancement (e.g. third-party guarantees), the equity tranche bears credit losses on the securitised mortgages first. If that tranche is lost due to credit losses, then the second most junior tranche bears the incremental credit losses on the securitised mortgages until it is wiped out, and so on until all credit losses are absorbed.

Sub-prime MBS rated AA or lower were often resecuritised in CDO securitisations, which created sequenced senior to junior tranches of CDOs, with the most senior tranche typically sized to yield an AAA rating. While it may seem odd that higher-rated CDOs can be created out of lower-rated MBS, this is possible for two reasons. First, individual MBS experiencing losses in a CDO resecuritisation pool need not experience complete losses, and so the portion that is not lost is effectively allocated to the most senior CDO tranche. Second, and more importantly, these pools are constructed to include diverse sets of MBS from many different prior securitisations, and the losses on the individual MBS in the pool are expected to have low correlation.

As noted by Ryan (2008),

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all MBS tranches are likely to experience good investment performance if asset prices appreciate and debt markets remain liquid. In contrast, if house prices depreciate or debt markets become illiquid, most or all of the junior MBS tranches are wiped out. Moreover, if asset price depreciation is sufficiently large, even the most senior tranche will experience poor investment performance.

By mid-2007 it had become clear that asset and loan serviceability had significantly deteriorated in the US housing market. This uncertainty spread to the secondary market for CDOs, where the demand for credit-linked products declined significantly. This resulted in significant uncertainty regarding the pricing of these instruments, and contributed to the development of illiquid markets in which required rollovers of asset-backed paper could not be achieved at realistic prices (if at all). In such an environment, the accounting standards for valuing and reporting asset values become particularly significant. As noted by the Bank of International Settlements (2008),\[2\] the sharp repricing of credit risk was amplified by the great opacity of new instruments, such as structured credits, and the distribution of exposures across the system. This led to a crisis of confidence in valuations, triggered by unexpected rating agency downgrades, and to a generalised distrust of counterparties, as market participants wondered about the size and character of their own exposures and those of others. The crisis of confidence triggered an evaporation of market liquidity for those new instruments as well as a loss of funding liquidity for institutions considered vulnerable to the market disruption.

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**Fair value**

Financial reporting standards are a crucial element of the financial infrastructure: they are a key measuring rod for valuations, incomes and cash flows and the main vehicle through which this information is conveyed to the public. As a result, they provide the basis for exercising market discipline.

Revisions in international financial reporting standards in recent years have increased the emphasis on fair value accounting (FVA). They have generated a heated debate about the system-wide properties of this measurement system (including its potential pro-cyclicality properties) and its firm or instrument-specific properties.

As noted by Young (2008),\[3\] the determination of fair value raises one of the oldest debates in accounting: historical cost versus market value. The supporters of historical cost argue that the price observed at the time of purchase or creation is an objective, verifiable measurement not subject to financial market trading activity or manipulation. Of course, at the time of purchase the historical cost is the market value; the two values diverge over time. In contrast, supporters of the market value approach believe that fair value is best represented by the current market price for the asset or liability as this represents the value of the asset or liability at the time of recording the financial accounts. In practice, the financial reporting framework is a mixed measurement system, with some assets or liabilities better suited to market valuation than others. Financial instruments are particularly suited to market valuation, as an observable market price is available from a liquid market.

Those parties affected by the market turmoil are likely to encounter major complexities in accounting and finance issues, requiring significant judgments or estimates. Such issues may include loan loss reserves, consideration of other-than-temporary impairment, complex or judgmental determination of fair value, off-balance sheet structuring involving special purpose entities, loan and investment portfolio modifications, and short-term liquidity conduit and trust arrangements. We focus on issues related to the fair value of financial instruments.\[4\]

Australian corporations are required to adhere to the Australian Accounting Standard for the reporting of financial instruments, AASB 139 Financial Instruments: Recognition and Measurement, which is very similar to the International Accounting Standard 39.\[5\] AASB 139
defines fair value as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm’s length transaction. Importantly, it is not the amount that an entity would receive or pay in a forced transaction or distressed sale price offered by a seller in financial or operational difficulty. To claim a distressed sale valuation therefore removes the necessity of compliance with the standard, and hence the necessity of a write-down to market value in a market downturn.

The definition reflects an optimal ‘exit’ or ‘value-in-exchange’ notion of fair value: the highest values of assets and the lowest values of liabilities currently held by the firm. This notion corresponds to firms’ solvency more than the possible alternative fair value notions of ‘entry value’ (the price that would be paid to buy an asset or received from issuing a liability) or ‘value-in-use’ (the entity-specific value to the current holder of an item). In particular, if all assets and liabilities on a firm’s balance sheet were perfectly measured at exit value, then owners’ equity would equal the cash expected to remain if the firm liquidated all of those items in orderly transactions between market participants at the measurement date, that is, not in distressed sales.

Given the paramount importance of maintaining solvency during the sub-prime crisis, this element of the definition of fair value is well suited to the current informational needs of users of financial reports.

When markets are illiquid and credit spreads are at historically high levels, as is now the case, then the fair values of financial instruments should reflect those conditions at reporting date. In particular, firms should not incorporate their expectations of market liquidity and credit spreads returning to normal over some horizon, regardless of indications from historical experience, statistical models, or expert opinion. Fair values can be subject to volatility, but reflect a real economic phenomenon, and are certainly more relevant than any historical cost.

Fair value measurement of a financial instrument is generally the ‘mark-to-market’ value. AASB 139 states that at initial recognition, the best evidence of fair value is the transaction price. A profit or loss on initial recognition can only be recognised if an alternative value, based entirely on observable data, can be determined.

AASB 139.AG72 states that the appropriate quoted market price is usually the current bid price for an asset held or liability to be issued and the asking price for an asset to be acquired or liability held. When an entity has assets and liabilities with offsetting market risks, it may use mid-market prices as a basis for establishing fair values for the offsetting risk positions and apply the bid or asking price to the net open position, as appropriate.

When current bid and asking prices are unavailable, the price of the most recent transaction provides evidence of the current fair value as long as there has not been a significant change in economic circumstances since the time of the transaction. If there has been a significant change, valuation should be made by reference to current prices or rates for similar financial instruments, as appropriate.

Similarly, if the entity can demonstrate that the last transaction price is not fair value (e.g. because it reflected the amount that an entity would receive or pay in a forced transaction, involuntary liquidation or distress sale), that price is adjusted.

AASB 139 distinguishes between instruments quoted on active markets and those where there is no active market. Measurement can be undertaken with reference to quoted prices in active markets or, if no active market exists, a valuation technique can establish what the transaction price would have been on the measurement date (AASB 139.AG75).

Active market

In active markets, where quoted prices are readily available and represent prices of actual and regularly occurring transactions, AASB 139 states that the best evidence of fair value is the published price quotation. If there is more than one quoted market price for an instrument, the price to use is the one quoted in the most advantageous market to which the entity has immediate access. Consequently not all entities will use the same price as the fair value.

AASB 139 requires the use of bid prices for long positions and offer prices for short positions. Where an entity has a portfolio of offsetting transactions, the bid or offer price may be applied to the net open position rather than transaction-by-transaction. This is important for dealers who run portfolios of transactions and manage their exposure on a net basis, and is consistent with generally accepted market practice.

AASB 139 acknowledges that there may be circumstances when current prices are unavailable and the most recent traded price may be stale. In such circumstances the price should be adjusted, but no adjustment is allowed simply because an entity has such a large holding of a particular instrument that the market price would almost certainly change if the position was sold. Some liquidity adjustments currently applied in practice may no longer be permitted.

If the convention in the market for a particular instrument is to quote rates that are model inputs rather than prices, this is the approach that should be followed to determine fair value. This means that many of the more liquid over-the-counter (OTC) derivatives markets, such as the interest rate swaps market, probably need to be considered active markets, even though valuation models need to be used and adjustments for credit or other costs will be needed to determine fair value.

No active market

For instruments with no active market, fair value has to be established using a valuation technique such as recent transactions in similar instruments, discounted cash flow analysis and option pricing models. Any technique that is commonly used in the market and has been demonstrated to provide reliable price estimates should be followed.

The approach to be used in the absence of an active market is similar to a mark-to-model rather than mark-to-
market approach. A valuation technique would be expected to arrive at a realistic estimate of the fair value if:

- it reasonably reflects how the market could be expected to price the instrument; and
- the inputs to the valuation technique reasonably represent market expectations and measures of the risk-return factors inherent in the financial instrument.

AASB 139.AG76 requires that an entity calibrates the valuation technique and tests it for validity using prices from any observable current market transactions in the same instrument (i.e. without modification or repackaging) or based on any available observable market data. An entity obtains market data consistently in the same market where the instrument was originated or purchased. The best evidence of the fair value of a financial instrument at initial recognition is the transaction price (i.e. the fair value of the consideration given or received) unless the fair value of that instrument is evidenced by comparison with other observable current market transactions in the same instrument (i.e. without modification or repackaging) or based on a valuation technique with variables that only include data from observable markets.

AASB 139.AG82 provides that an appropriate technique for estimating the fair value of a particular financial instrument would incorporate observable market data about the market conditions and other factors that are likely to affect the instrument’s fair value. For example, when using a valuation model to measure the fair value of securities backed by sub-prime mortgages (when quoted prices are not available), assumptions such as prepayment speeds, default rates and discount rates are often key inputs. To the extent that default rate assumptions can be derived from transaction prices observable for similar securities and/or credit default swaps, such data should be used. An additional adjustment, such as a liquidity adjustment, or higher discount rate, might be necessary to ensure the model reflects current market conditions.

To test whether the model reflects current market conditions, it can be applied to similar securities with available price information. If the model appropriately reflects current market conditions, it should produce approximately the market price. The parameters and assumptions used in those valuations should also be used, with adjustments where appropriate, to value similar securities where a market price is not currently available.

Importantly, valuation models that rely on historical default data, or an entity’s own default assumptions, are not appropriately utilising market participant assumptions, even if the default assumptions are ‘stressed’.

It is important to distinguish between an imbalance between supply and demand (e.g. fewer buyers than sellers), which forces prices down and a ‘forced’ or ‘distressed’ transaction. The U.S. Securities and Exchange Commission (SEC) addressed illiquid market conditions in a 2004 Accounting and Auditing Enforcement Release. In that release, the SEC concluded that the registrant had violated generally accepted accounting principles (GAAP) by using a definition of fair value that assumed that supply and demand were in reasonable balance when, in fact, GAAP defines fair value as the amount at which an asset could be bought or sold in a current transaction. The SEC concluded that the registrant should have considered current market conditions, such as imbalances in supply and demand, when determining the (then) current market value. Specifically, the commission objected to the practice of ignoring prices quoted by external pricing sources and taking a longer view of the market (a view that assumes equilibrium will occur and facilitate transacting at more rational prices).

To further enhance disclosure, AASB 7, which now applies to Australian corporations, requires entities to disclose the methods used and assumptions applied (when a valuation technique is used) to determine the fair values of financial instruments. In addition, entities are required to disclose whether fair values recognised or disclosed in financial statements are determined, in whole or in part, by reference to published price quotations in an active market, or are estimated using a valuation technique. They are also required to disclose whether fair values are determined, in whole or in part, on a valuation based on assumptions that are not supported by prices from observable current market transactions in the same instrument (i.e. without modification or repackaging) and not based on available observable market data.

Conclusion

Commentators have questioned whether current market prices are consistent with the definition of fair value in AASB 139 or are more indicative of distressed sales.

As discussed, if orderly transactions occur between market participants in a manner that is usual and customary for transactions involving such assets, then those transactions are not forced sales. The fact that transaction volume in a market is significantly lower than in previous periods does not necessarily mean that sales are forced or distressed. Moreover, decreased volumes in a market do not necessarily mean the market has become inactive. Persuasive evidence is required to establish that an observable transaction is a forced or distressed transaction. Because the objective of a fair value measurement is to determine the price that would be received for the sale of

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the asset at the measurement date (an exit price), such a measurement, by definition, requires consideration of current market conditions including the relative liquidity of the market. It is not appropriate to disregard observable prices, even if that market is relatively thin compared to previous market volume.

We conclude, therefore, that current market values for financial instruments affected by the sub-prime mortgage crisis do indeed represent fair values as defined and required by financial accounting standards. They do not represent distressed sale values. Rather than contributing to financial volatility, fair values are highly relevant to the information needs of participants in current markets.

Notes
1 The views expressed in this paper are those of the author and not of Ernst & Young. The authors wish to thank Kevin Davis and Iain MacLachlan and conference participants at the 13th Melbourne Money and Finance Conference held in June 2008.
3 Remolona and Shim 2008, ‘Credit derivatives and structured credit: the nascent markets of Asia and the Pacific’, BIS Quarterly Bulletin noted that a single-name CDS contract is an over-the-counter derivative in which the buyer pays a fixed premium in return for protection against losses in the event of default by a specified borrower. CDS contracts are most actively traded in the form of CDS indices, which consist of standardised portfolios of single-name CDS contracts.
4 As noted by Remolana and Shim 2008, a CDO is a securitisation where the risk of a credit portfolio is transformed into tranches of varying risks by means of a subordination structure. CDOs can be further classified into cash and synthetic CDOs. In a cash CDO, the manager assembles a collateral pool of debt, transfers it to a special purpose vehicle (SPV) and uses the cash flow from the collateral to pay principal and interest to investors in the CDO. In a synthetic CDO, the manager assembles CDS contracts rather than actual debt. Compared to a cash CDO, a synthetic CDO has the advantage that the manager can quickly assemble a sufficient number of names by going to one or two CDS dealers.
8 AASB 139 recognises that all financial assets and liabilities, including derivatives and embedded derivatives, are to be recognised on balance sheet, either at fair value or at amortised cost depending on the specific rules. Movements in fair value are recognised through profit and loss for trading items, or equity for available for sale items. All derivatives and embedded derivatives are deemed held for trading and therefore at fair value through profit and loss, subject to detailed hedge accounting rules.
9 IAS 39 Financial instruments: recognition and measurement.
11 Ernst & Young 2008, ‘Reducing complexity in reporting financial instruments’.