

Fair Value Issues and the Sub Prime Crisis

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Abstract

A debate has developed about an old chestnut of accounting - fair value determination. The purpose of this paper is to detail recent observations from the sub prime and subsequent liquidity crisis and discuss the application of both Australian and US accountings standards to the issue of fair value. In recent times, there has been considerable commentary regarding the use of fair value accounting and its impacts during the crisis. In particular questions have arisen about whether current market prices are consistent with the definition of fair value in AASB 139 and FAS 157, or whether current market prices are more indicative of distressed sales.

Prepared for the 13th Melbourne Money and Finance Conference

Melbourne June 2008

¹ The views expressed in this paper are those of the author and do not necessarily represent those of Ernst & Young.

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Introduction

The unfolding financial turmoil in world economies brought about by the sub prime crisis has prompted the government and private sectors to reconsider policies, business models and risk management practices. It has also caused some commentators to raise questions about the accounting, disclosure and risk management practices of banking and industrial corporates. In recent times, there has been considerable commentary regarding the use of fair value accounting and its impacts during the crisis.

A short synopsis of the sub prime crisis

Since 2001, against the backdrop of low interest rates and booming asset prices, credit aggregates, alongside monetary aggregates, had been expanding rapidly in most economies. Simultaneously, expansion in the global real economy in particular in China and India further fuelled the growth in business activity and expansion of credit. Despite the rapid increase in credit, however, the balance sheets and repayment capacity of corporations and households did not appear to be under any strain. The high level of asset prices kept leverage ratios in check while the combination of strong income flows and low interest rates did the same with debt service ratios. Across a wide spectrum of asset classes, volatilities and risk premia looked exceptionally low, including to varying degrees in fixed income, credit, equity and foreign exchange markets. This was also a period where excess liquidity in the world caused investors to chase higher yields and saw a loosening of credit standards.

The main manifestation had been 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, in particular, structured credit products, through which portfolios of credit exposures could be sliced and diced and repackaged to better suit the needs of individual investors. This category included, in particular, collateralised debt obligations (CDOs), backed both by cash instruments, such as primitive securities, loans or asset-backed securities, and by derivative claims, such as CDSs and CDOs themselves.

The nature of many of the credit linked instruments is such that the securitiser – who could be either the mortgage originator or another firm that purchased the mortgages from the

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originator—places mortgages in a bankruptcy-remote entity that issues various tranches of mortgage backed securities. These tranches are sequenced from most senior to most junior. The most senior tranche is sized as large as possible while still obtaining a AAA rating for that tranche from credit rating agencies. The most junior (“equity”) tranche is unrated and sized as small as possible while still obtaining the lowest investment grade rating for the second most junior tranche. Typically the securitiser retains the equity tranche in order to credit enhance (i.e., reduce the credit risk of) the other tranches, which usually are purchased by third parties. Ignoring any other forms of credit enhancement (e.g., third-party guarantees), the equity tranche bears credit losses on the securitized mortgages first. If that tranche is lost due to credit losses, then the second most junior tranche bears the incremental credit losses on the securitized mortgages until it is wiped out. And so on until all credit losses are absorbed.

As noted by Ryan (2008)², reflecting the binary quality described above, all of the 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 will be wiped out. Moreover, if asset price depreciation is sufficiently large, even the most senior tranche will experience poor investment performance.

Sub Prime MBS rated AA or lower often are rescrutinised in CDO securitisations, which create sequenced senior to junior tranches of CDOs. As in the original MBS securitisations, the most senior CDO tranche typically is sized to yield a 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 diversify considerably in most circumstances. However, subprime mortgages’ binary quality discussed above implies that both of these reasons can fail when house prices depreciate, because losses on the underlying junior MBS will be both individually large and highly correlated. In periods of substantial house price depreciation, it is entirely possible that all of the MBS in a CDO resecuritisation pool suffer near complete losses, so that even the most

² Ryan, S.G., (2008) “Accounting for and in the Sub Prime Crisis”, Stern School of Business Working Papers series.

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senior CDO issued based on those MBS loses much of its value. This in fact occurred during the third wave of the subprime crisis.

As an example of financial engineering, CDOs may themselves be resecured one or more times in so-called CDO2, CDO3, etc., resecutisations. The issues just discussed are accentuated for these further resecutisations. In addition, other forms of securitisation have become common - commercial paper and structured investment vehicle (SIV) securitisations otherwise known as "conduit" securitisations in which the issued asset-backed securities have a shorter life than the underlying assets, and so the securities have to be rolled over at the end of their life to maintain the financing for the securitized assets. In these securitisations, either the securitiser or a bank usually provides liquidity support, that is, agrees to provide financing to the securitisation conduit in the case the securities cannot be rolled over.

The expansion of these products had both contributed to, and been supported by, a strengthening of the originate-and-distribute (O&D) business model of financial intermediation. Increasingly, rather than holding the credits they originated, credit institutions would sell them off, possibly after having repackaged them, into the capital markets.

By mid 2007 it was recognised that significant asset and loan serviceability deterioration had occurred in the US housing market. This uncertainty spread to the secondary market for Collateralised Debt Obligations (CDO) where the demand for credit linked products declined significantly. This resulted in significant uncertainty regarding the pricing of these instruments. The lack of demand led to a number of roll overs of asset backed paper being unable to be serviced by financial markets resulting in liquidity constraints. News of large-scale exceptional injections of liquidity and public statements aimed at calming disorderly markets were the strongest signal that the turmoil had become a significant problem. Central banks in a number of industrialised economies, including the United States, the Euro area, Japan, the United Kingdom, Canada, Switzerland and Australia, adjusted their operations to ensure that they continued to implement their monetary policy effectively, retaining control over the relevant short-term rates, and to promote orderly conditions in the term market segment.

As noted by the Bank of international Settlements (2008)³, the dynamics of the financial turmoil are rather straight forward and follow a common pattern known to those who . The

³ Bono, C (2008) "The financial turmoil of 2007-?: a preliminary assessment and some policy considerations", BIS Working Papers 251

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turmoil represented a sharp repricing of credit risk that, given the leverage built up in the system, led to, and was exacerbated by, an evaporation of liquidity in many markets, including in the interbank market. The repricing, which happened to have the US subprime mortgage market at its initial epicentre, followed a prolonged phase of broad-based and aggressive risk-taking. It was amplified by the great opacity of new instruments, such as structured credits, and of 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 of those of others. The crisis of confidence in turn triggered an evaporation of market liquidity for the instruments concerned and of funding liquidity for those institutions suspected of being vulnerable to the market disruption.

The impacts of liquidity tightness spread to other corners of the credit markets. Investors have not only pulled back from investments in collateralized debt obligations, but also in high-yield “junk” bonds, debt issued in leveraged buyout transactions, and even short-term asset-backed commercial paper. The tightening of credit availability has led to a substantial expansion in the credit spread on all debt in financial markets and can be seen in the expansion of credit spreads of all debt across all maturities. For example in Australia, as shown in the figures below the credit spread on Australian investment grade debt has increased significantly over the past 12 months (Refer to Appendix A).

Fair Value Issues

Accounting (or 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 are the basis for exercising market discipline.

Revisions in international financial reporting standards in recent years have been increasing the fair value accounting (FVA) elements in the arrangements. This has also generated a heated debate concerning the merits of the trend. The debate has had a number of aspects. Some, as noted further below, concern the system-wide properties of this measurement system (macro level), including its potential procyclicality properties; others concern its firm- or instrument-specific properties (micro level).

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As noted by Young (2008)⁴ the determination of fair value is one of the oldest debates in accounting - historical cost vs. market value. The supporters of the historical cost school would have us believe that the best representation of an asset or liabilities fair value is the value at which it was purchased, created or sold. This is due to the price being observed at the time of purchase, creation or sale and therefore not being subject to financial market trading activity or manipulation. In contrast supporters of the market value approach believe that the fair value is best represented by the current market price for the asset or liability as this represents the current value of the asset or liability at the time of recording the financial accounts. For the fence sitters an alternative exists whereby some assets or liabilities are better suited than others to market valuation - especially financial instruments where an observable market price is available from a liquid market.

It is noted that those parties affected by the market turmoil are likely to encounter significant accounting complexities as well as areas involving significant judgments or estimates. Among others, such areas 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. I will focus on issues related to the fair value of financial instruments.

Australian corporates are required to adhere to AASB 139 Financial Instruments: Recognition and Measurement, the Australian Accounting standard for the reporting of financial instruments. This standard is very similar to the International Accounting Standard 39 which is currently being debated for introduction to the United States of America. However, the US currently has an Accounting Standard similar to AASB 139 being the US Accounting standard FAS 1576.

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. It is not the amount that an entity would receive or pay in a forced transaction or distressed sale. FAS 157

⁴ Young, M.R., (2008) "Fair Value Accounting and Subprime"

⁵ IAS 39 Financial Instruments: Recognition and Measurement

⁶ Statement of Financial Accounting Standards No. 157, Fair Value Measurements

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defines 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.”

Both definitions reflects an optimal “exit or replacement value” notion of fair value, that is, the highest values of assets and the lowest values of liabilities currently held by the firm. This notion corresponds to firms’ solvency more than do 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 fire sales. Given the paramount importance of maintaining solvency during the subprime crisis, this element of the definition of fair value is well suited to users of financial reports’ current informational needs.

If markets are illiquid and credit spreads are at historically high levels, as is now the case, then the fair values of should reflect those conditions. In particular, firms should not incorporate their expectations of market liquidity and credit spreads returning to normal over some horizon, regardless of what historical experience, statistical models, or expert opinion indicates.

Fair value measurement of a financial instrument is generally the ‘mark-to-market’ value. AASB 39 states that at initial recognition the best evidence of fair value is the transaction price. An alternative valuation is only permitted (and hence a “day one” profit recognised) if it is based on the prices of other observable market transactions or from a valuation technique where all model inputs are verifiable to market quotations. This means that a profit or loss on initial recognition can only be recognised if the value can be determined based entirely on observable data.

AASB 139 AG.72 states that the appropriate quoted market price for an asset held or liability to be issued is usually the current bid price and, for an asset to be acquired or liability held, the asking price. 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.

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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 conditions have changed since the time of the transaction (e.g. a change in the risk-free interest rate following the most recent price quote for a corporate bond), the fair value reflects the change in conditions 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. The fair value of a portfolio of financial instruments is the product of the number of units of the instrument and its quoted market price. If a published price quotation in an active market does not exist for a financial instrument in its entirety, but active markets exist for its component parts, fair value can be determined on the basis of the relevant market prices for the component parts.

Active and non- active markets

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 to establish what the transaction price would have been on the measurement date (AASB 139.AG75). Hedged items that are unrecognised (in the financial statements) and designated as cash flow hedges are not required to be recognised at fair value, however a method of calculating the change in fair value (present value) of the expected future cash flows of the hedged item may be required to assess hedge effectiveness (if a quantitative methodology is used) and will be required to measure hedge ineffectiveness.

Where there is an active markets (AASB 139.AG.71 to AG.73)

These are defined as markets where quoted prices are readily available and representative of the prices of actual and regularly occurring transactions. In an active market AASB 139 states

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that the best evidence of fair value is the published price quotation. There may be more than one quoted market price for an instrument, e.g. in the wholesale and the retail markets. The valid 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 portions and offer prices for short portions. 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, for example if market conditions have changed or the price represented a forced sale transaction. In such circumstances the price should be adjusted. However, it is important to note that 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. Where prices are not available for an instrument in its entirety but only for its component parts, the fair value should be determined based on these components. This is consistent with market practice and increases the range of instruments that will fall into the active market category.

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 OTC derivatives markets, such as the interest rate swaps market, probably need to be considered as active markets, even though valuation models need to be used and adjustments will need to be made for credit or other costs to determine fair value.

Where there is no active market (AASB 139 AG.74 to AG.82)

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For instruments which fall into this category, 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. Wherever there is a technique commonly used in the market, which has been demonstrated to provide reliable price estimates, that approach 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.

Therefore, a valuation technique is required to incorporate all factors that market participants would consider in setting a price and is consistent with accepted economic methodologies for pricing financial instruments. AASB 139 AG.76 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 whose variables include only data from observable markets.

AASB 139. AG.82 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. The fair value of a financial instrument will be based on one or more of the following factors:

- Time value of money
- Credit risk
- Volatility reflecting the magnitude of future price changes
- Foreign exchange, interest rate, equity or commodity prices
- Prepayment costs

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- Servicing costs.

For example, when using a valuation model to measure the fair value of securities backed by Subprime mortgages (when quoted prices are not available), assumption such as prepayment speeds, default rates and discount rates often are 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, the model can be applied to similar securities for which price information is available. 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.

Valuation models that utilize historical default data, or an entity's own default assumptions, rather than assumptions that marketplace participants would use, are not appropriately utilizing market participant assumptions, even if the default assumptions are "stressed."

In addition, to further enhance disclosure IFRS 7 which is now applicable for Australian corporates, requires entities to disclose the methods and, when a valuation technique is used, the assumptions applied, to determine the fair values of financial instruments. In addition, entities are required to disclose whether fair values recognized or disclosed in the 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.

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Conclusions

Questions have arisen about whether current market prices are consistent with the definition of fair value in AASB 139 and FAS 157, or whether current market prices are more indicative of distressed sales.

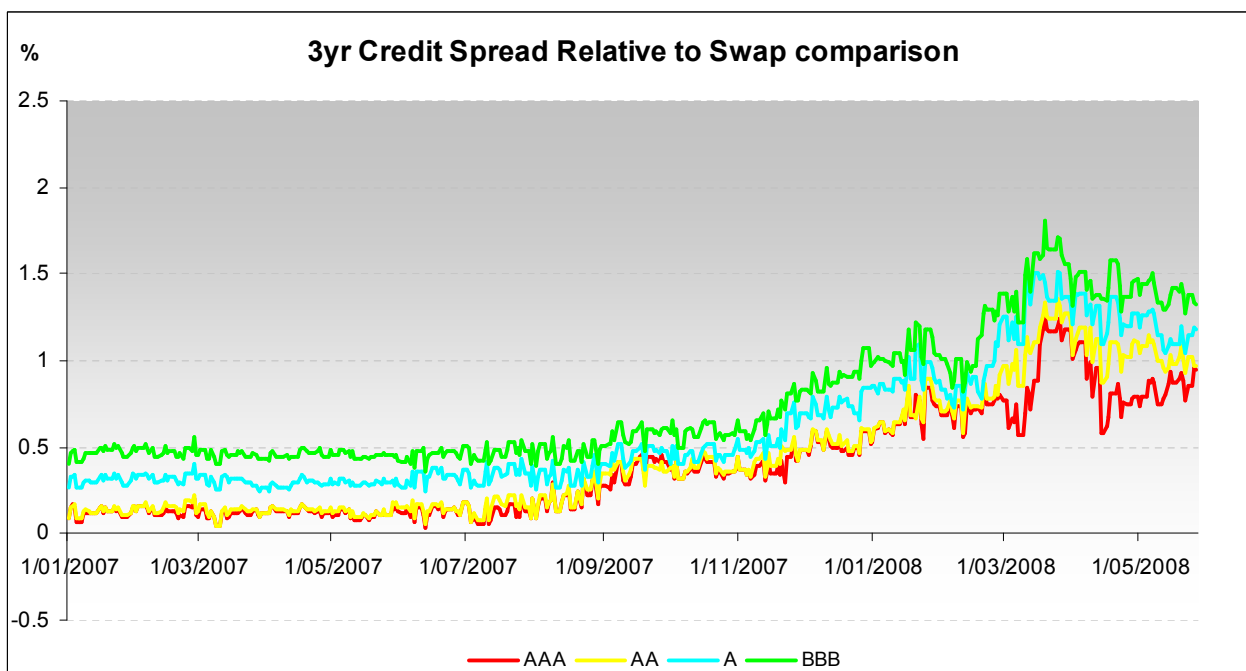
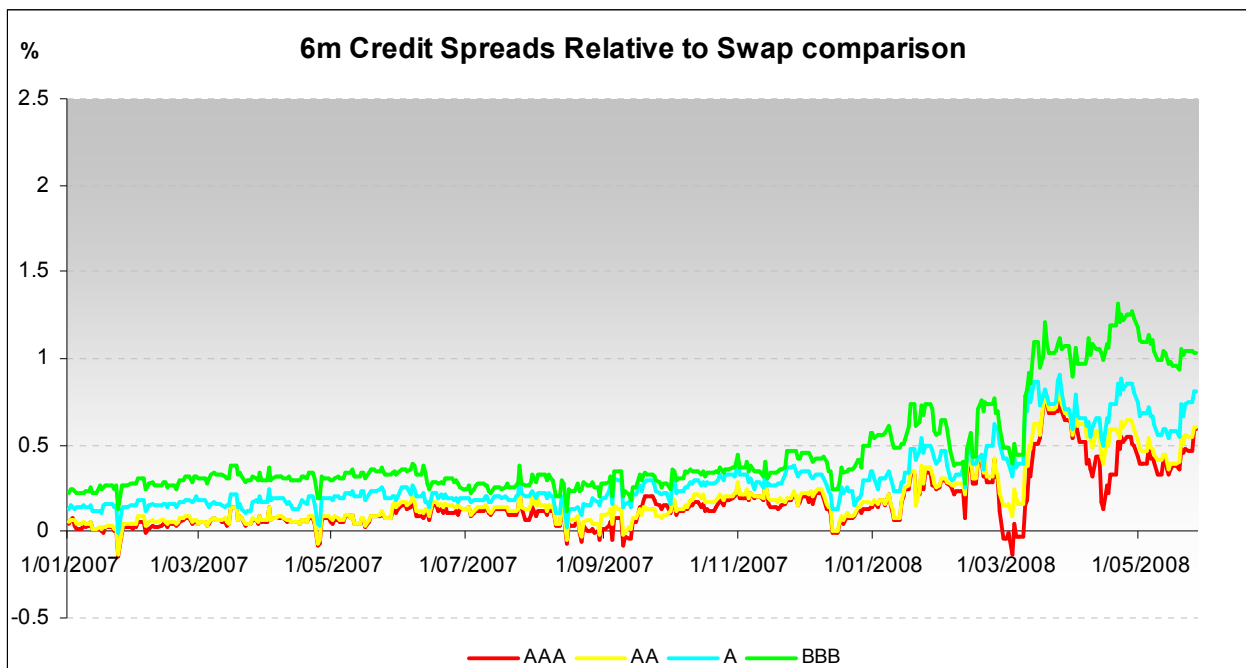
It is important to distinguish between an imbalance between supply and demand (e.g., fewer buyers than sellers, thereby forcing prices down) and a “forced” or “distressed” transaction. The U.S. Securities and Exchange Commission addressed illiquid market conditions in a 2004 accounting and auditing enforcement release. In that release, the Commission concluded that the registrant had violated generally accepted accounting principles 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 Commission 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 (i.e., a view that assumes equilibrium will occur and facilitate transacting at more “rational” prices). As discussed if orderly transactions are occurring between market participants in a manner that are 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 these are forced or distressed sales.

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. It is not appropriate to assume that all transactions in a relatively illiquid market are forced or distressed transactions. Because the objective of a fair value measurement is to determine the price that would be received to sell 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 would not be appropriate to disregard observable prices, even if that market is relatively thinner as compared to previous market volume.

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Appendix A



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