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IASB Expert Advisory Panel: Measuring and disclosing the fair value of financial instruments in markets that are no longer active

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Introduction

In response to the recommendations of the Financial Stability Forum in their report *Enhancing Market and Institutional Resilience*, the International Accounting Standards Board (IASB) formed an expert advisory panel. The IASB consulted with members of this panel to identify practices that experts use for measuring and disclosing financial instruments when markets are no longer active. This [draft] document summarises the discussions of the panel. Nothing in this [draft] document constitutes an official position of the panel members or of the organisations they represent.

This [draft] document provides useful information and educational guidance for measuring and disclosing fair values and does not establish new requirements for entities applying International Financial Reporting Standards (IFRSs) or any other Generally Accepted Accounting Principles (GAAP). Entities will find the guidance about the processes used and the judgements made when measuring and disclosing fair value contained in this [draft] document to be useful in meeting the objectives and requirements of IFRSs.

The figures in this [draft] document contain examples that might be considered when measuring and disclosing the fair value of financial instruments. These examples do not present the only approach to measuring and disclosing fair values, nor do they represent mandatory valuation processes or disclosures. They are for illustrative purposes only.

We welcome feedback on this document. Please send any suggestions about this document to Hilary Eastman by email at heastman@iasb.org by **3 October 2008**. Feedback received will not be put on public record.

Part 1: Measurement

Summary

In inactive markets, entities measure the fair value of financial instruments by considering all relevant market information that is available. A thorough understanding of the instrument subject to valuation is necessary in order to identify relevant available information. Information to be considered includes prices from recent transactions in the same or similar instruments, quotes from brokers and pricing services, indices and other inputs to model-based valuation techniques. Entities use this information to measure fair value by assessing the available information and applying it as appropriate.

Some market participants have suggested that, when market prices are stressed, fair values should be determined using a 'fundamental value' approach based primarily on management's estimate of future cash flows. However, such 'fundamental values' are not consistent with the fair value measurement objective because they ignore the spreads that market participants would require for bearing risk and for other factors, such as illiquidity. In other words, they do not represent the price at which a transaction would occur between market participants on the measurement date.

Entities sometimes place undue emphasis on the distinction between active and inactive markets when measuring fair values. Even when markets are inactive, a current transaction price for the same or a similar instrument normally provides the best evidence of fair value (and what constitutes a 'similar instrument' is subject to judgement and requires an understanding of the terms of the instruments). Accordingly, such transaction prices cannot be ignored when measuring fair value. Furthermore, forced transactions, involuntary liquidations and distress sales are rare and evidence is needed before it is determined that a transaction has not taken place at fair value.

If a model is used to measure fair value, it is periodically calibrated to observable market information to ensure that the model reflects current market conditions and to identify any potential deficiencies in the model. As market conditions change, it might be necessary either to change the models used or to make additional adjustments to model valuations. An adjustment to a model valuation is appropriate if it results in a better estimate of the price at which a transaction would have occurred on the measurement date. Adjustments to model valuations are not appropriate if they adjust the measurement away from fair value, for example for conservatism.

An entity might arrive at a range of possible values for an instrument because of the different sources of information available and the different reasonable alternative assumptions that an entity could use. An entity determines its best estimate of fair value within that range by making judgements about the available information. In exercising judgement, different entities might arrive at different estimates of fair value for the same instrument and both entities might still meet the objective of fair value measurement.

Applying the fair value measurement objective

The fair value measurement requirements in IAS 39 are generally clear and well understood. The objective of fair value measurement is to arrive at the price at which a transaction would take place in that instrument at the measurement date.

The recent illiquidity in some financial markets has highlighted the following areas in which views exist that are inconsistent with the objective of fair value measurement:

- differentiating between a 'fundamental value' and fair value.
- using prices in active markets versus inactive markets.
- identifying forced transactions.
- interpreting different estimates of fair value.
- making valuation adjustments.

Fundamental value versus fair value

Some have suggested that, when market prices are depressed or markets are 'in crisis', fair value should be measured using a fundamental value approach based primarily on management's estimate of future cash flows. In such an approach, if cash flow estimates are not expected to decline over the life of the instrument (ie until settlement or maturity), there should be no decline in the fair value of the instrument. The argument put forward is that, in market turmoil, adverse market sentiment creates an illogical view of risk, and this should not be taken into account when measuring fair value.

However, fundamental values are not consistent with the objective of a fair value measurement because they do not take into account factors that market participants would consider when pricing the instrument, such as illiquidity and credit risk. Fair value reflects the amount for which financial instruments can be exchanged in the market for those instruments. Transaction prices continue to reflect fair value and cannot be ignored, even in a market crisis. Accordingly, a value measured using a 'fundamental value' approach might not represent an estimate of a **current** transaction price.

Active versus inactive markets

As a result of the current liquidity crisis, many markets are experiencing lower transaction volumes, reduced transaction sizes or, in some cases, no observable trading activity for short periods. This does not necessarily mean that a market is no longer active. An active market is one in which transactions are taking place regularly on an arm's length basis. What is 'regularly occurring' is a matter of judgement and depends upon the facts and circumstances of each particular market. However, even if a market is judged to be inactive, the fair value measurement process considers those transactions that do take place.

If a market is inactive, an entity measures fair value using a valuation technique. The technique chosen should reflect current market conditions. Therefore, it is not appropriate to ignore transaction prices when measuring fair value and a transaction price in the same or a similar instrument should be considered in the assessment of fair value. What constitutes a 'similar instrument' is subject to judgement and requires an understanding of the terms of the instruments.

There is no bright line between active markets and inactive markets. The distinction between prices observed in active markets and prices observed in inactive markets is typically that, for inactive markets, entities need to put more work into the valuation process to gain assurance that the transaction price represents the best evidence of fair value or to determine the adjustments to transaction prices that are necessary to measure the fair value of the instrument. Hence, the issue to be addressed is not about market activity *per se*, but about whether the transaction price observed

represents fair value. Regardless of the level of market activity, a current transaction price for the same or similar instrument normally provides the best evidence of fair value.

Forced transactions

Fair value is not the amount that an entity would receive or pay in a forced transaction, involuntary liquidation or distress sale (collectively, forced transactions). In practice, forced transactions are rare and to ignore a transaction price on the basis that it was a forced transaction requires evidence that the transaction was forced.

An imbalance between supply and demand (for example, fewer buyers than sellers) is not a determinant of a forced transaction. A seller might be under financial pressure to sell, but it is still able to sell at a market price if there is more than one potential buyer in the market and a reasonable amount of time is available to market the instrument.

Indicators of a forced transaction might include, for example:

- a legal requirement to transact, for example a regulatory mandate.
- a necessity to dispose of an asset immediately and insufficient time to market the asset to be sold.
- the existence of a single potential buyer as a result of the legal or time restrictions imposed.

However, if an entity sells assets to market participants to meet regulatory requirements, the regulator does not establish the transaction price and the entity has a reasonable amount of time to market the assets, the transaction price provides evidence of fair value.

Different estimates of fair value

When valuing instruments for which there is not an active market, an entity uses a valuation technique. Measuring fair value using a valuation technique involves using models and assumptions. A valuation technique might use an observed transaction price of a similar instrument and adjust that price for differences between the instrument that was the subject of the transaction and the instrument being measured at fair value.

When measuring fair value using a valuation technique, entities select the most relevant models to use, make any assumptions necessary and assess the reliance that can be placed on any available pricing information in order to estimate what a transaction price would be on the measurement date. Judgement is exercised when making these decisions. As a result of the application of judgement, two entities might arrive at different estimates of the fair value of the same instrument even though both still meet the objective of fair value measurement. This could be the case when, even if the two entities use the same model, the inputs used in the model are different.

Some have implied that two entities valuing the same instrument should always arrive at the same answer when measuring fair value and, if they arrive at different answers, then one or both entities are wrong. However, it is possible that entities will arrive at different estimates of the fair value of the same instrument at the same measurement date, and the valuation techniques and inputs used by both entities can still meet the objective of fair value measurement and be in compliance with the accounting guidance. The fact that different estimates of fair value exist reflects the judgement and assumptions applied and the inherent uncertainty of estimating the fair value of instruments which do not have prices quoted in an active market. A single entity, however, applies judgement consistently (across time and by type of instrument) when measuring fair value.

Valuation adjustments

A fair value measurement considers the adjustments made to reflect risk premiums or other factors that market participants would consider when pricing the instrument. Valuation adjustments include,

for example, model deficiencies highlighted through calibration of the model, liquidity adjustments and credit adjustments.

Some entities use the term ‘reserves’ to describe those adjustments when measuring fair value. Such adjustments are entirely appropriate if they result in a better estimate of the price at which a transaction would have occurred on the measurement date. However, they are not appropriate if they adjust the measurement away from fair value, for example for conservatism.

Measuring fair values in markets that are no longer active

Understanding the instrument

The first step in measuring the fair value of an instrument that does not have a price quoted in an active market is to understand the terms of the instrument. A thorough understanding of an instrument is necessary even when there are current or recent transactions in an inactive market for the same instrument or observable transactions for similar instruments. Without a thorough understanding, an entity cannot adjust recent transactions in the same instrument for movements in market factors since the transaction date. Likewise, an entity cannot assess the level of similarity between the instrument being measured and the instrument for which observable transaction prices are available.

Furthermore, if there are no observable transactions in an instrument, it is necessary to have a thorough understanding of the instrument before looking for market information to measure the fair value of the instrument (such as transaction prices for similar instruments or observable inputs for the inputs in a valuation model). In order to make valid comparisons and to adjust for any differences, it is necessary to understand the terms of the traded instrument and how those terms differ from those of the instrument the entity is measuring. A thorough understanding of the instrument is also necessary to determine that the inputs to the valuation model are appropriate for valuing the instrument.

Terms of an instrument

The terms of an instrument allow an entity to estimate the undiscounted cash flows of the instrument. The terms governing cash flow characteristics of a financial instrument are essential ingredients for measuring fair value. The basic terms of a financial instrument include, for example:

- the timing of the cash flows: when the entity expects to realise the cash flows related to the instrument
- the calculation of the cash flows: for example, for a debt instrument the interest rate that applies (ie the coupon), or for a derivative instrument how the cash flows are calculated in relation to the underlying instrument or index (or indices)
- the timing and conditions for any options in the contract: for example:
    - prepayment options (one or both parties can demand or make an early payment).
    - extension options (one or both parties can extend the period of the instrument).
    - conversion options (one or both parties can convert the instrument into another instrument).
    - put or call options (one or both parties can exchange the instrument for a defined amount of cash or other assets or liabilities).
- protection of the rights of the parties to the instrument: for example:
    - terms relating to credit risk in debt instruments, such as collateral and events of default triggers.
    - subordination of the instrument, for example the priority of the instruments in the event of a winding up.

In addition, to measure the fair value of an instrument it is necessary to assess the return that market participants would require on the instrument to cover the risk related to:

- the amount and timing of the cash flows for the instrument.
- uncertainty about the ability of the counterparty to make payments when due (credit risk).
- the liquidity of the instrument.

In other words, the risk of the instrument determines the premium that a market participant would require to take on that risk. The market's appetite for different risks changes over time. Therefore, the premium that market participants would require changes. Fair value measurement is based on the premium required by market participants at the measurement date.

The generation and protection of cash flows for a debt instrument

Understanding the credit risk of a debt instrument involves evaluating the credit quality and financial strength of both the issuer and the credit support providers. There are many factors an entity might consider and some of the more common factors are considered below.

The assets to which the holder of an instrument has recourse in the event of non-payment or default could be either all of the assets of the issuing entity or specified assets that are legally separated from the issuer (ring-fenced). The greater the value and quality of the assets to which an entity has recourse in the event of default, the lower the credit risk of the instrument.

Measuring the fair value of a debt instrument therefore involves assessing the quality of the assets that support the instrument (the collateral) and the level of the collateralisation, and evaluating the likelihood that the assigned collateral will generate adequate cash flows to make the contractual payments on the instrument.

The level of subordination of an instrument is critical to assessing the risk of non-payment of an instrument. If other more senior instruments have higher claims over the cash flows and assets that support the instrument, this increases the risk of the instrument. The lower the claim on the cash flows and assets, the more risky an instrument is and the higher the return the market will demand on the instrument.

Many instruments contain some form of protection to reduce the risk of non-payment to the holder. In measuring fair value, both the issuer and the holder of the instrument consider the effect of the protection on the fair value of the instrument, unless they account for this protection separately from the related instrument. Protection might take the form of a guarantee from a third party or a related undertaking (eg when a parent guarantees the debt of a subsidiary), an insurance contract, a credit default swap or simply the fact that more assets support the instrument than are needed to make the payments (this is commonly referred to as over-collateralisation). The risk of non-payment is also reduced by the existence of more subordinated tranches of instruments that take the first losses on the underlying assets and therefore reduce the risk of more senior tranches absorbing losses.

When protection is in the form of a guarantee, an insurance contract or a credit default swap, it is necessary to identify the party providing the protection and assess that party's creditworthiness (to the extent that the protection is not accounted for separately from the debt instrument itself). The protection will be more valuable if the credit risk of the protection provider is low. This analysis involves considering not only the current position of the protection provider but also the effect of other guarantees or insurance contracts that it might have written. For example, if the provider has guaranteed many correlated debt securities, the risk of its non-performance might increase significantly with increases in defaults on those securities. In addition, the credit risk of some protection providers moves as market conditions change. Thus, entities evaluate the credit risk of the protection providers at each measurement date. If the protection is accounted for separately from the debt instrument, this assessment is necessary when measuring the fair value of the protection.

Evaluating available market information

Transaction prices

Same instrument

When measuring the fair value of an instrument for which there is not an active market, the first step is to look for recent transactions in the same instrument. When current transactions can be observed in the same instrument, they provide the best evidence of fair value. That price cannot be ignored unless there is evidence that it does not represent fair value.

When markets are inactive, there might be a timing difference between the most recent transaction in the same instrument and the fair value measurement date. In these circumstances, changes in market factors in the intervening period will need to be considered in measuring fair value. Some changes in market conditions might relate directly to the instrument being valued, such as changes in the credit rating of the issuer of the instrument and changes in the value of any collateral supporting the instrument. Other changes might relate to the market in general, such as a change in market credit spreads relative to risk. All types of changes are considered in measuring fair value.

Similar instruments

When no transactions in the same instrument are observable, recent transactions for similar instruments provide evidence of current market conditions (eg an indication of credit spreads), although an entity might need a model to adjust for any differences between the instruments. An entity could also use the price that is observable for a similar instrument to test the model used to value its own instrument. Models used to value financial instruments are calibrated in this way to any observable and relevant market information available. This is discussed further in the section on models below.

What constitutes a 'similar instrument' is a matter of judgement and requires an understanding of the terms of the instrument. When using transaction prices for similar instruments, an entity first determines the level of similarity between the instruments, for example by comparing the underlying cash flows of the instruments and by making assessments of other characteristics.

Figure 1 contains an example of how an entity might assess the similarity between different financial instruments.

For a particular residential mortgage backed security (RMBS), an entity might look at RMBSs with the same collateral type, same credit rating, same level of subordination and same issue timing. As fewer and fewer transactions take place in the marketplace, it might be necessary to consider instruments with less comparable features to obtain relevant observable pricing information. For example, if an entity purchased an RMBS holding that was issued in June 2005, but no transactions exist for RMBSs issued in the middle of 2005, an entity might look to trades of RMBSs issued in the previous or subsequent quarter to provide evidence of fair value, adjusting the price as necessary (eg for changes in market conditions). An entity might also look to securities of the same issue period if these have similar collateral to the RMBS in question.

Figure 1. Assessing similarity.

It is necessary to be careful when assessing the similarity of instruments and to have a clear understanding of the differences between the instrument with an observable price and the one it is measuring. If observable prices are available for similar instruments, these might provide evidence of the fair value of the instrument. Factors that lead to an adjustment include:

- the timing of the transaction: if time has elapsed since the observed transaction, movements in market factors in the intervening period are considered and adjusted for.

- the terms of the instruments subject to the transaction: as economic and market conditions change, for example, market participants might require covenants for a new instrument that are different from those that were required for a previous instrument. This difference in terms

affects the relative fair value of the two instruments. Furthermore, if a transaction contained complex terms and required extensive documentation to explain the terms, market participants might demand a larger premium to compensate them for the effort required to understand and evaluate the terms, or the potential additional hedging costs that might be incurred.

- any related transactions: for example, if a seller provides the finance for a sale to a buyer, and this finance is not at a market rate (and assuming there is no other transaction occurring), an adjustment is made to the transaction price to reflect the effect of the funding on that price.

- the correlation between the price of the instrument that is the subject of the observed transaction and the price of the instrument being measured: in general, the greater the correlation between the two instruments, the more relevant the observed transaction price is likely to be. When assessing correlations, it is important to remember that observed historical correlations cannot always be expected to continue, particularly if market conditions have changed.

Indices

A common method of pricing instruments is to price against an observable index. Observable prices might be available for indices that share similar risks to those of the instruments being valued and hence demonstrate similar responses to movements in market factors.

However, when using an index to provide input into a valuation model for an instrument or a portfolio of instruments, entities assess to what extent the index reflects the instrument or the portfolio of instruments being valued, and make appropriate adjustments for any differences in their characteristics. For example, it might not be appropriate to use an index that reflects price movements on a portfolio of underlying instruments as a valuation input for a holding in a single instrument.

Entities also assess the extent to which the index reflects actual transactions and therefore provide insight about the quality of the index as an input into a valuation model or as a source of calibration data. For some unobservable inputs, such as some volatility estimates for valuing equity options, few indices are available and the equities underlying the index might be quite different from the equities that underlie the derivative instrument.

Figure 2 contains an example of how an index might be used to measure the fair value of a corporate debt instrument.

Credit default swap (CDS) indices might be used to evaluate movements in corporate credit spreads when measuring the fair value of a corporate debt instrument for which an entity's credit spread information is not available. These indices are based on a large number of underlying corporate CDSs. The underlying corporate CDSs are chosen on the basis of criteria that apply to the index being created, and new indices are created periodically. Such an index might provide a useful indicator of the direction and quantum of movement in credit spreads for corporate debt in general. However, because each index created is based on specific criteria, it provides relevant pricing information only for corporate debt that meets these criteria; that is, debt issues with similar characteristics to those on which the index is based. In addition, such an index does not reflect those credit characteristics of the instrument that are not common to the instruments underlying the index.

Figure 2. Using indices.

Information from brokers and pricing services

When there is an inactive market for an instrument, prices obtained from brokers and/or pricing services can provide useful evidence of fair value. However, before relying on those prices, an entity first understands how the prices were determined to assess whether they are consistent with the fair value measurement objective (ie what a transaction price would have been on the measurement date in an arm's length exchange motivated by normal business conditions). For example, an entity

considers how frequently the prices are estimated to ensure that the prices reflect market conditions at the measurement date.

When an entity is able to obtain prices from several different sources, the entity determines what an acceptable range of prices is before assessing whether pricing differences require further investigation. A comparison of several pricing sources that are independent of each other typically provides stronger evidence than a price from a single source. Consistent pricing within a narrow range from several pricing sources might provide stronger evidence of what a current transaction price would be than when the prices obtained are widely dispersed. In such circumstances, entities consider which price best represents the price that could be obtained in a market transaction on the measurement date. To do this, entities 'look through' the prices to understand how they were determined.

In some cases, differing levels of information might be available to different brokers or pricing services and this could be the cause of the pricing differences. For example, if a broker was involved in the original sale of an instrument, it might have information specific to that instrument that enables it to assess the fair value better than can another broker or pricing service without that information. When more transparency is available on how one price was arrived at compared with another, this allows greater validation of the price and might allow an entity to place more reliance on it.

It is normally not appropriate simply to take the average of quotes obtained from brokers and pricing services if the differences in prices are significant. When significant differences exist, an average does not represent a price at which a transaction would take place, and it is likely that one of the prices obtained better represents the fair value than the other(s). For example, if a particular pricing service has been used to value a particular instrument in the past, the price provided by that pricing service might well be the price the entity uses in future, although an entity should have a clear reason to believe that price best represents fair value. The entity also should have a clear reason for switching pricing services if it does so. If an entity uses broker quotes and pricing services to validate its own pricing model, and the price generated by the model falls within the range of prices obtained from the brokers and pricing services, an entity might use its own model price.

Broker quotes

A quote obtained from a broker is generally an indicative price and not a binding offer (unless the broker is a market maker). In a liquid market, a broker quote is likely to reflect actual transactions in the instrument. However, as the number of transactions decreases, brokers rely more on proprietary models with inputs based on the information available to the broker. For example, they might use information about observable market transactions and assumptions based on their knowledge of the current market for the instrument to arrive at the quoted price.

A broker quote might be in the form of an indicative price or an indicative spread for an instrument. If an entity relies on a broker quote, it first considers whether the broker quote represents what a transaction price would have been on the measurement date in an arm's length exchange motivated by normal business conditions.

Even if entities do not have the expertise to value complex instruments themselves, they can still perform an assessment of whether a broker price is a representationally faithful measure of fair value. When measuring fair values that are material to the financial statements, it is normally not appropriate to rely on a single broker quote. When possible, obtaining a number of broker quotes or other corroborating market information will provide a faithful representation of the fair value. In addition, quotes are more representationally faithful if they come from brokers that have a substantial presence in the market and the experience and expertise to provide a representationally faithful quote for the instrument.

If an entity is looking to rely on a price provided by any third party, whether a broker or a pricing service, it first understands how the valuation has been arrived at and whether it meets the objective of a fair value measurement. With broker quotes it might be more difficult to obtain this understanding as prices are based on proprietary models that brokers might not be willing to share. However, although brokers might not wish to discuss their models, it might still be possible to discuss the

assumptions and the inputs used in the model. Furthermore, an understanding of the process for the calibration of the broker's model will also help to demonstrate whether the model is appropriate.

An important factor to consider is to what extent any quote obtained reflects actual market transactions. A broker quote generally is not a binding offer to buy, but the more it is based on actual market transactions the more likely it is to represent fair value. Entities also look to whether the price obtained is consistent with any market information that is available. As discussed previously, if there are any current market transactions in the same or similar assets, evidence that the current market transactions do not represent fair value would be needed before a broker price that was inconsistent with these could be used. An entity might obtain further evidence of how well a broker quote represents fair value by considering how past prices supplied by that broker for the same or similar instruments have compared with subsequent actual transaction prices. However, if market conditions have changed, this might not provide strong evidence of how well the quote represents fair value.

Some broker quotes might be provided by the broker who originally brokered the instrument. In such circumstances, that broker might have the most detailed information about the instrument and hence might be best placed to arrive at a representationally faithful price. However, when using the broker price to measure fair value, entities consider any commercial factors that could cause the broker to provide a quote that is too high (eg so as not to be seen to have sold a heavily loss-making product) or a quote that is too low (eg this might happen if a broker is worried that it might be asked to act on a quote).

Pricing services

Pricing services differ from brokers in that pricing services do not transact in the instruments for which they provide pricing information. There are two types of pricing service:

- pricing services that use a proprietary model to estimate a price.
- consensus pricing services.

Pricing services using proprietary models

The considerations for using pricing services that are based on a proprietary model are similar to the considerations for prices obtained from brokers, although it might be that a pricing service is prepared to be more willing to share information about its model than a broker normally is. This is partly because pricing services typically provide prices on a wider range of simpler instruments for which widely accepted standard pricing models are used. However, because of this, some pricing services might use general assumptions across a range of assets, potentially resulting in prices that might not accurately reflect the asset being valued.

An entity considers whether valuations provided by pricing services incorporate recent market events or whether the inputs and assumptions used are out of date. This involves understanding their process for updating the valuations to reflect movements in market conditions and how frequently this is performed. The more time that has elapsed between the data used to price the instrument and the measurement date, the less likely the value arrived at is to reflect a price that could be obtained in a current market transaction. This can be a problem for services that update prices only periodically.

As with broker quotes, an entity might obtain further evidence of fair value obtained from a pricing service by considering how past prices for the same or similar instruments have compared with subsequent actual transaction prices. The maturity of the pricing service might also be a consideration in assessing the price, because the longer a pricing service has been in existence, the more time it has had to develop the pricing expertise to measure fair value.

Consensus pricing services

Consensus pricing services obtain pricing information about an instrument from several participating entities (subscribers). Each subscriber submits prices to the pricing service. The pricing service treats this information confidentially. The pricing service returns to each subscriber the consensus

price, which is usually an arithmetical average of the data after a data cleansing routine has been employed, and submission statistics that provide information about the quality of each subscriber's submission compared with the other subscribers. This information might include standard deviations or other data that allows the subscriber to assess whether the prices submitted to the service provider were dispersed or whether they formed a tight cluster. When consensus data are widely dispersed, the consensus price might be more subjective and need further review.

For some markets, such as for exotic derivatives, consensus pricing services might constitute the best available data. However, many factors are considered when assessing the representational faithfulness of the consensus prices, for example, whether the prices submitted by the consensus subscribers reflect actual transactions or just indicative prices based on their own models.

The number of sources from which prices have been obtained and the quality of the sources are key factors in the quality of the consensus data. A consensus price determined from a large number of high quality subscribers will provide a more representationally faithful price than a consensus of only a few subscribers. Having said that, although a consensus price might be derived from a large number of different subscribers, if none is a leading participant in the relevant market then the consensus price might be less meaningful. For example, for some instruments in the commodities markets there are only a limited number of subscribers that are leading market participants. However, consensus pricing services might receive submissions from many other subscribers. In such circumstances, it is possible that many of the submissions received by the pricing service will not reflect actual transactions and an entity places less reliance on these when measuring fair value.

Another consideration is how the subscribers in the consensus use the information. If the subscribers use this to value their own instruments, there might be an element of interrelationship between the submitted prices and the results, which could influence the consensus price.

Consensus pricing service providers might use data cleansing routines (algorithms) to eliminate outlying prices, with the aim of increasing the reliability of the consensus data. Entities assess whether the cleansing routines bias the data in any way and whether the cleansing procedures are meaningful. A cleansing routine that is too strict could remove valid data from the consensus price. Conversely, a cleansing routine that is not rigorous enough might include weak data in arriving at the consensus price.

When assessing consensus data it is important to understand what the prices submitted represent and whether there could be some confusion over the price submitted. For example, submitted prices might represent a mid-level price rather than a bid price or an offer price.

Figure 3 contains an example of using consensus data in a fair value measurement.

On occasion, consensus data might indicate that the distribution of prices might not be normal in the statistical sense. One example of this is when the data indicate that the distribution of prices received from consensus pricing services is bimodal, ie the submitted prices are clustered around two differing price points. If so, the average price is a price at which nobody will trade. In such circumstances, it is possible that participating entities are using two different types of model to arrive at prices.

Consensus pricing distributions might not be normal. As a result, an entity should use its general market knowledge when interpreting consensus prices to ensure that its model arrives at the price that represents what a transaction price would have been on the measurement date in an arm's length exchange motivated by normal business conditions.

Figure 3. Using consensus pricing data.

A problem in using consensus data relates to 'extrapolation'. Consensus services usually exist for only a relatively small subset of products, for example for a limited range of maturities. Entities are therefore sometimes faced with the problem of whether they can use consensus information about one instrument and apply this information to another instrument. When the consensus data have been found to be representationally faithful, the information can be used to calibrate models used to price similar instruments. However, calibrating models to consensus data is not always

straightforward. For simpler products when the industry has converged on a common modelling approach, it is possible to calibrate models with some confidence. But it is harder to do this for more complex products with more complex models, and in such cases calibration might be highly subjective.

Changes in own credit

One component of the fair value of an entity's financial liabilities is the credit spread that market participants would require to take on the credit risk of the instrument. There are various potential sources for reflecting own credit in the valuation of liabilities. These include, for example, the senior debt issue curve of the entity, credit default swap spreads, structured loan note issue curves and asset swap spreads.

Different types of curve might be appropriate for different entities depending on the quality of data available and the instrument being valued. For example, the best data available for entities with liquid CDS markets might be the CDS spreads. For entities with little traded debt, CDS spreads might not be available and a debt issuance curve might be the best source. Whatever the source of data used, entities consider whether the credit spread needs adjustment to reflect the particular instrument being valued. For entities for which limited information is available, it might be necessary to look to information available for entities with similar risk characteristics. If secondary trading in structured debt exists, there might be sufficient market data to use the structured debt market.

Entities take into account the varying sensitivities of different liabilities to own credit risk in evaluating which source of credit data provides the most relevant and representationally faithful information. The credit spread applied is based on the amount a market participant would require for the particular instrument.

Figure 4 contains an example of pricing structured notes using credit spreads.

Credit spreads used in pricing structured notes are generally tighter than the credit spread for an equivalent maturity 'vanilla' debt instrument or a CDS spread. This is due to the increased protection that is generally inherent in structured notes as compared to other debt instruments. Choosing the appropriate credit spread can have a significant effect on the fair value of a liability. A valuation using a CDS spread or an asset swap spread might result in a lower fair value for the liability than using a structured note spread. It is therefore important to evaluate carefully the appropriate credit spread to be used for a particular instrument.

Figure 4. Pricing structured notes.

When adjusting for own credit, it is also important to consider the collateralisation of the liabilities being valued. For example, if the collateral is 'ring fenced' (ie legally separated from the issuer), this might reduce the exposure to credit risk. In addition, if liabilities are subject to a daily collateralisation process, there might not be a material own credit adjustment because the counterparty is protected from loss in the event of default. However, collateral provided to one counterparty is not available to other counterparties. Thus, although some collateralised liabilities might not be subject to significant credit risk, the existence of that collateral might affect the credit risk of other liabilities.

There is some inconsistency in practice about whether entities make own credit adjustments when valuing derivatives. A fair value includes the effect of own credit risk and any entities that do not include own credit in valuing derivatives presumably do so because they have concluded that the effect is not material. In the current environment, it is necessary for entities to reconsider this assumption because the effect of own credit on valuations changes over time as market conditions change.

Using models

Measuring the fair value of a financial instrument requires consideration of current market conditions, including the relative liquidity of the market and current credit spreads. The fair value measurement objective is the same for a model-based valuation as for a valuation using quoted prices in active markets. Hence, a valuation technique reflects what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations. When more than one model exists, using more than one model might allow cross-checking of modelled prices and help to ensure that a particular model does not introduce bias into the measurement.

Figure 5 contains an example of using a valuation technique to measure the fair value of a mortgage loan.

There is generally no observable secondary market price for a mortgage loan. Therefore, a valuation technique is necessary to measure fair value. The valuation model used might need to consider factors such as the underwriting criteria, including credit scores of borrowers and the loan-to-collateral value ratios of the mortgages, the repayment process, the recovery process, house price movements, the geographical location of the collateral, and the general economic outlook. All of these factors affect expectations about the probability of default and loss severity and therefore will affect the fair value of the mortgages. The valuation model should attempt to take into account all factors that market participants would consider when pricing the asset. To the extent that observable inputs are available, they should be incorporated into the model. Related indices might provide information on movements in market factors since the mortgages were originated. However, the assessment of the extent to which the mortgages correlate to any index used requires careful consideration.

Figure 5. Using a valuation technique to measure the fair value of mortgage loans.

Discount rates (including adjustments for liquidity and risk)

A commonly used valuation technique is a discounted cash flow model. When applying a discounted cash flow model, an entity uses one or more discount rates equal to the prevailing rates of return for instruments having substantially the same terms and characteristics to discount the expected cash flows of the instrument. Factors that might affect the discount rate to be used are:

- the timing of cash flows for the instrument.
- any uncertainty about the amount and timing of the cash flows.
- the risk that payments will not be made when due (credit risk).
- the liquidity of the instrument.
- the currency in which payments are to be made.

Estimating the correct discount rate can be difficult. If there are observable prices for similar instruments, these can be used as a source of evidence as to the rate to be used. Alternatively, an entity might perform a discounted cash flow analysis using a risk-free discount rate for an instrument of the same term and adjust the cash flows for the risks of the instrument (eg the probability of default and the spread for bearing the risk that defaults will be higher than expected). Whichever method is used, the effect of expected losses on an instrument, spreads and the time value of money are difficult to deduce separately even if observable prices exist for a similar instrument. This is because the assumptions made by market participants are generally not transparent. As a result, the two adjustments (expected losses and spread) might need to be considered together when measuring fair value.

Figure 6 contains an example of estimating the spread on an asset backed security (ABS).

An entity holds an ABS for which there are no current or recent observable transactions. The entity has identified a similar ABS for which there are current observable transactions and wishes to use this information to estimate the appropriate current spread that would apply to the ABS it holds and the assumptions of market participants about expected losses.

The similar ABS is trading at a discount of 10 to its original issue price and nominal amount of 100. If market participants estimate that expected losses on the similar security are 6, then 6 of the discount relates to expected losses and 4 relates to the increased yield required in the current market. If market participants assume that there are no expected losses, then the entire 10 discount relates to the increased spread market participants currently require. Therefore, without visibility about market participants' assumptions, these two elements that make up the discount (expected losses and spread) cannot be separated. However, when similar instruments are trading at very high discounts to their nominal values, this might be an indication that at least part of the discount arises because market participants assume that losses are inherent in the expected cash flows (ie that some expectation of loss should be included when measuring the fair value of the instrument). In any case, the fair value measurement considers, either together or separately, both the expected losses assumed by market participants and the spread that market participants require for the risk that the actual losses might exceed the expected losses.

Figure 6. Estimating yields on asset backed securities.

Some think that, in periods of market turmoil, adverse market sentiment can create an apparently illogical view of risk and that fair value measurement should not consider the effect of this on model inputs, such as credit and liquidity premiums charged. However, the objective of measuring fair value is to establish what the transaction price would have been on the measurement date in an arm's length exchange and market sentiment is a factor in determining any transaction price.

Calibration

When using a model, either to value an instrument or as part of the evidence to support the valuation of an instrument, in addition to verification of the inputs to the model, entities test whether the model reflects current market conditions. This can be done by applying the model to a similar instrument for which pricing information is available. This is referred to as calibration of the model. If the model appropriately reflects current market conditions, it should produce a price that approximates the market price for the similar instrument.

Figure 7 contains an example of calibrating a model when measuring the fair value of convertible bonds.

An entity has an investment in convertible bonds. There are infrequent transactions in the bonds. As a result, the entity uses a model to measure their fair value at each measurement date. The issuer of the convertible bonds has issued debt securities of similar subordination to the convertible bonds for which prices are more observable, and it is possible to observe prices of the issuing entity's equity options. The model used to measure the fair value of the convertible bonds would therefore be calibrated using any observable prices of the debt and/or equity components to ensure that it meets the objective of a fair value measurement. Even if the model can be calibrated through looking to observable data for the components of the bond, it might still be necessary to calibrate the model by looking to similar convertible bonds to consider whether a market price for the convertible bond might include a premium or a discount over the value of the components.

If there are no traded equity options of the issuer, the entity could use a model based on the equity price. The entity would then estimate the expected volatility of the equity price in order to measure the fair value of the equity component of the convertible bond. The expected volatility might be estimated with reference to the historical volatility of the entity's own equity price and any observable volatility information for similar entities in the same industry.

Figure 7. Calibrating a model for convertible bonds.

Changes in models and assumptions over time

Over time, the models used to measure fair value might evolve and change as modelling techniques are refined to reflect better the price at which a transaction between market participants would take place on the measurement date. This does not mean that the previous models used resulted in values that were not appropriate. However, as models are refined, it is necessary to use these models to measure fair value. Not doing so would be contrary to the objective of fair value measurement.

However, changes to valuation techniques from year to year are appropriate only if the entity can demonstrate that the revised technique provides a more relevant and representationally faithful measure of fair value. For example, a model might have appropriately reflected market conditions when markets were more liquid, but might not be as capable as an alternative model of reflecting market conditions when liquidity decreases. In such circumstances, using an alternative model might provide a better estimate of the fair value of the instrument.

When there has been significant disruption to a market, the historical accuracy of a model might not provide evidence of its accuracy in current conditions even when the inputs used in the model are still available and observable. As discussed previously, using observable information for similar instruments to calibrate models helps to ensure that the models accurately incorporate current market conditions.

The assumptions used in models also might change if market conditions change. However, changes to models and assumptions should be made only when they are necessary to provide a better estimate of the fair value. For example, if a range of reasonable values exists for an assumption and an entity has always chosen the mid-point within that range in measuring fair value, it would be appropriate to move to another point within the range from one measurement date to the next only if there are objective reasons for doing so.

Measuring the underlying components of an instrument

Following a reduction in the liquidity of a particular market, there might be little observable data for some instruments and this might make modelling the instrument as a whole difficult. In such circumstances, there might be observable data for components of the instrument. For example, one approach to measure the fair value of collateralised debt is to measure the fair value of the collateral within the issue vehicle and assume that the value of the collateral would ‘pass through’ to the entities holding the collateralised debt.

In some cases, the collateral within a vehicle includes securities that trade independently from the vehicle and have observable prices. Even when the collateral within the vehicle does not trade outside of the vehicle, it might be possible to consider the prices of similar securities that are observable in the market.

Alternatively, it might be necessary to measure the fair value of the collateral by considering the economic characteristics of the collateral, such as asset type, industry sector, maturity, duration, credit rating and other characteristics. On the basis of the relevant economic characteristics of the instrument, the entity could identify relevant spreads or yields that would correspond to the collateral. These spreads might be available from, for example, market sources, pricing services or brokers.

However, a valuation technique based on collateral values is straightforward only if the value of the collateral is passed through directly to the holders of the instrument being valued. Although it might be possible to measure the fair value of the collateral, if different tranches of notes are issued from a vehicle, the differing levels of subordination of each affect how the value of the underlying assets is passed through to the different note holders.

The allocation of value across the different notes in an issue might be possible by looking at the pricing of notes with similar structures and similar underlying assets and using these prices to calibrate the model used to measure the fair value of the different notes.

Figure 8 contains an example of assessing the collateral in a structured investment vehicle.

A structured investment vehicle has issued four tranches of commercial paper. The collateral assets placed into the vehicle have a nominal value of 100. The top tranche of commercial paper receives the first 50 of cash flows. The second tranche receives the next 25, the third tranche receives the next 10 and the lowest tranche receives the final 15. Holders of the commercial paper have no claims on other assets if the collateral is insufficient to repay their investments in full. An assessment of the underlying collateral assets has been made and it is expected that 75 of cash flows will be received from the assets.

This could be taken to imply that the first tranche has a value of 50, the second 25 and the third and fourth tranches have no value. However, although 75 is the amount expected to be received, the amount actually received might vary from this. Therefore, the third tranche and even the fourth tranche might have value as there is likely to be some probability (even if very small) of receiving some cash flows if the assets perform better than expected. Any value attributed to the third and fourth tranches will reduce the value allocated to the first and second tranches as the overall fair value cannot exceed the fair value of the collateral (ie the present value of 75). This reflects the fact that the holders of the first and second tranches are exposed to the risk that the collateral assets perform less well than expected but do not benefit if the performance of the collateral is better than expected.

Figure 8. Assessing the collateral in a structured investment vehicle.

Valuation adjustments

When using models to measure fair value, the resulting value should be adjusted for any factors that market participants would consider in setting a price but that are not captured by the model used. Depending on the model used, different adjustments might be required to estimate what the current transaction price would be on the measurement date. Valuation adjustments include, for example:

- model adjustments: if there is a known deficiency or if calibration has highlighted a deficiency, the model is adjusted to take it into account.
- liquidity adjustments: if the model calculates a mid-market price, it is adjusted to take into account the relevant bid-offer spread.
- credit risk adjustments: if the model does not take into account counterparty or own credit risk, it is adjusted accordingly.
- other risk adjustments: if the model does not take into account a risk premium that market participants would take into consideration in pricing the transaction (eg a risk premium relating to the complexity of valuation of an instrument), it is adjusted accordingly.

Adjustments are appropriate only to the extent that they are consistent with the objective of a fair value measurement; that is, to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations. However, an adjustment is not appropriate if it moves the resulting measurement away from the objective of fair value measurement. In other words, no adjustment is made for conservatism or prudence.

Part 2: Disclosure

Summary

IFRS 7 *Financial Instruments: Disclosures* improved the disclosures for financial instruments, including those about fair value measurement. IFRS 7 requires the disclosures given to be based on information provided internally to key management personnel, thereby requiring entities to use judgement about what is disclosed and how. IFRS 7 also requires some prescriptive minimum disclosures to the extent that they are not already covered by the disclosures based on internal reporting. Requiring entities to use judgement in deciding how they disclose information about fair value measurement allows them to provide the most relevant information in the most understandable format about how they measure fair value and the assumptions used to do so.

It is important that entities help users of financial statements understand the techniques used and the judgements made in measuring fair value (although it is not the purpose of the disclosure to allow recalculation of fair values). Providing enhanced and detailed disclosures about the fair value of instruments that are of particular interest to users helps entities meet that objective. The instruments of particular interest will change over time as market conditions change and are likely to include those that are the focus of internal management reporting and are receiving external market interest.

In addition, it would be helpful for entities to consider the following when providing disclosures about fair value measurement:

- the aggregation and granularity of disclosure: aggregation of disclosures in a way that reflects how management views fair value measurements, while maintaining sufficient granularity.

- the frequency of disclosure: inclusion of disclosures similar to those in the annual financial statements in any interim financial statements when fair values have moved significantly and any new disclosures necessary to reflect changing market conditions.

- disclosure of the control environment: a description of the entity's governance and controls over the valuation processes.

- disclosure of valuation techniques: an understandable and suitably detailed description of the valuation techniques used in measuring fair values.

- disclosure within a fair value hierarchy: a quantitative (numerical) disclosure about fair value measurements in a tabular, hierarchical format.

- a reconciliation of movements in fair values of instruments measured using unobservable inputs: a reconciliation of the carrying amounts from the start of the period to the fair values at the end of the period showing the increase or decrease in value caused by fair value gains and losses as well as other movements such as sales and purchases.

- disclosure of unobservable inputs: a sufficiently detailed disclosure about the unobservable inputs used and how these have been estimated, as well as disclosure of the sensitivity of valuations to reasonably possible alternative unobservable inputs at an appropriate level of granularity.

- disclosure of changes in own credit risk: an explanation of how movements in the fair value of liabilities caused by changes in the entity's own credit risk are calculated, and of the source of the inputs used in the calculation.

Enhanced disclosures about financial instruments of particular interest to users

Not all classes of financial instruments need the same level of granularity of disclosure. Such an approach might result in either too little disclosure about some instruments (eg those for which detailed disclosure is important for users to understand the fair value measurement) or superfluous disclosure about other instruments (eg those for which detailed disclosure about fair value measurement is not necessary, such as for instruments with prices quoted in an active market).

Furthermore, the internal and external focus on particular financial instruments might change over time. Adjusting the level of detail of disclosure about different financial instruments to reflect this provides users with an appropriate level of information necessary to understand better the fair value measurements that are of most interest. For example, if the market for a particular type of instrument has become extremely volatile and there have been large increases in bid-offer spreads, or if there has been a significant decrease in liquidity, then the level of risk associated with the instrument and the difficulty in valuing the instrument are likely to have increased. Providing more detailed or enhanced disclosures about this type of instrument is likely to help users.

Disclosures about fair value measurement rely on entities using their judgement to reflect the relative significance of different financial instruments. This involves identifying the instrument(s) and classes of instruments for which enhanced and more detailed disclosure about fair value measurement is of particular interest to users at the end of the reporting period. Disclosures about financial instruments are presented from the perspective of management and instruments of particular interest to users are likely to be those instruments on which greater emphasis is placed for the entity's internal management reporting. They are also likely to be the focus of analysts' questions.

The instruments of particular interest to users might differ from period to period. Although the significance of different instruments might change from period to period, it is important that information presented for different periods is comparable.

Market practice has started to provide more detail about instruments currently of particular interest to users as a result of the demands of users for more transparency about fair value measurement. Entities can increase the usefulness of their fair value disclosures by responding quickly to the information demands of users as market conditions change over time.

Fair value measurement disclosures about instruments of particular interest to users can be enhanced by providing:

- a detailed description of the instrument and its fair value.
- information about the valuation techniques used to measure fair values.
- an explanation of the inputs used to measure fair values.

There is a variety of factors to consider in identifying the instruments that could be the focus of enhanced disclosure. For example:

- materiality: the carrying amount of an instrument and the materiality of the related changes in fair value movements are one consideration in determining how much disclosure to give about an instrument.
- uncertainty and subjectivity: the estimation of the fair value of the instrument could fall within a range of values depending on the selection of inputs or the model used, and the choice of inputs and models might involve significant judgement. For example, the valuation could be sensitive to a particular input that might not be observable and users might want a quantification of this sensitivity. Transparent disclosure of the judgements made helps users understand the significance of the judgements.

- observability of inputs: when unobservable inputs are used to measure instruments and the inputs are difficult to estimate or could fall within a large range, users might want transparent disclosure about how the inputs are estimated. If an entity uses unobservable inputs when measuring fair value, an explanation of how they were determined and the effect of movements in those inputs provides transparency about the measurement.

- complexity: the more complex an instrument, the more likely that it is difficult to value. Consequently, more detailed disclosure helps users understand the fair value measurement.

- volatility, increases in bid-offer spreads or reductions in liquidity: instruments with significant volatility have the capability of generating the largest fair value movements and hence are often the focus of both internal and external scrutiny, particularly with regard to understanding the movements in value over the period. Other changes in market conditions, such as increases in bid-offer spreads or reductions in liquidity, might indicate a disturbance in the market and consequently result in more interest in the disclosures about the fair values.

Description of instruments of particular interest to users

When providing more detailed or enhanced fair value disclosures about instruments of particular interest to users, it would be helpful to include an explanation of why the entity considers these instruments to be particular interest to users and the criteria it has applied to identify instruments for which additional disclosure would be useful.

For instruments of particular interest to users, a detailed description of the terms of the instruments gives a better understanding of what the instruments are and facilitates comparability between entities. In addition to numerical disclosure of the carrying amount of the instruments and the changes in their carrying amounts, numerical disclosure of other important terms of an instrument, for example the notional amount of a debt instrument, might give users a better understanding of the fair value measurement.

If the cash flows of an instrument are generated from or secured by specific underlying assets, more detailed information about factors that might affect the value of those underlying assets, such as the maturity, vintage or location of the assets, might help users to assess better the fair value measurement of the asset. For example, an entity might have invested in a structured investment vehicle that issued notes backed by underlying loans originated in 2004. Such a vehicle might be described as a 2004 vintage. However, the vehicle might be a revolving structure with the original loans being replaced by loans originated in 2007. These loans might be significantly more or less risky than loans originated in 2004 (eg because of changes in economic conditions) and hence disclosure of the collateral vintage helps users understand the value drivers and risks of the notes.

Figure 9 contains an example of a disclosure about instruments of particular interest to users: HSBS Holdings plc's exposure to derivative transactions with monoline insurers.

HSBC Holdings plc
Interim Report 2008
Extract from 'Impact of Market Turmoil'

HSBC's exposure to derivative transactions entered into directly with monoline insurers

HSBC's principal exposure to monoline insurers, or monolines, is through a number of over-the-counter ('OTC') derivative transactions, primarily credit default swaps ('CDSs'). HSBC entered into these CDSs primarily to purchase credit protection against securities held within the trading portfolio.

During the second half of 2007, and continuing in 2008, the market value of the securities declined, with offsetting increases in the mark-to-market value of the CDS transactions, thereby increasing OTC counterparty credit risk to the monolines. The table below sets out the fair value of the derivative transactions at 30 June 2008, and hence the amount at risk, based on 30 June 2008 security prices, if the CDS protection purchased were to be wholly ineffective because, for example, the monoline insurer was unable to meet its obligations. In order to assess that risk, protection purchased is shown sub-divided between those monoline insurers that were rated by S&P at 'BBB or above' at 30 June 2008, and those that were 'below BBB'. As certain monolines have been downgraded during the first half of 2008, the exposure to monolines rated 'below BBB' at 30 June 2008 increased from the position as at 31 December 2007. The 'Credit risk adjustment' column indicates the valuation adjustment taken against the mark-to-market exposures, and reflects the assessed loss of value on purchased protection arising from the deterioration in creditworthiness of the monoline insurers evidenced during the first half of 2008. These valuation adjustments, which reflect the possibility of the irrecoverability of the protection purchased, have been charged to the income statement.

HSBC's exposure to derivative transactions entered into directly with monoline insurers

	Notional amount US$m	Net exposure before credit risk adjustment US$m	Credit risk adjustment US$m	Net exposure after credit risk adjustment US$m
At 30 June 2008				
Derivative transactions with monoline counterparties				
Monoline – BBB or above	**12,444**	**1,937**	**(731)**	**1,206**
Monoline – below BBB	**2,123**	**900**	**(822)**	**78**
	14,567	**2,837**	**(1,553)**	**1,284**
At 31 December 2007				
Derivative transactions with monoline counterparties				
Monoline – BBB or above	14,314	1,342	(133)	1,209
Monoline – below BBB	1,120	214	(214)	-
	15,434	1,556	(347)	1,209

Figure 9. HSBC Holdings plc disclosure about derivative transactions with monoline insurers.

Disclosure of valuation techniques

A discussion of the valuation techniques used is critical to meeting the objective of helping users understand the techniques used and the judgements made in measuring fair values, particularly those valuation techniques used to measure the fair value of instruments that are of particular interest to users.

Instruments of particular interest to users are likely to include those instruments that have been most affected by changing market conditions. As a result, the valuation techniques used to measure the fair values of these instruments might have changed. Users are likely to want to know which techniques used to measure the fair values of instruments have changed and why.

Disclosure of inputs used

Selecting the appropriate inputs for a valuation technique requires judgement and can have a material effect on a fair value measurement. An area of focus for users of financial statements is the extent to which entities use unobservable inputs in valuation techniques when measuring fair values and the sources of those inputs. Unobservable inputs are those inputs that are used in a valuation technique that are not supported by a current, observable market transaction.

It is likely that the fair value of many of the instruments of particular interest to users will be measured using one or more unobservable inputs. In addition, instruments of particular interest to users are likely to include those instruments with unobservable inputs that are subjective or difficult to estimate. For those unobservable inputs that are most difficult to estimate and could have a significant effect on the fair values recognised, transparent disclosure about those inputs provides useful information about the risks arising from those instruments and the representational faithfulness of the measurement. Such a disclosure might include, for example, more detail about the source of the inputs used (or the techniques used to estimate the inputs) and the degree of certainty with which the input can be estimated (eg a confidence interval).

An entity is required to disclose whether a change in unobservable inputs to a reasonably possible alternative assumption would change the fair value significantly, and if so, by what amount. General considerations about this sensitivity disclosure are considered below. However, for those instruments that an entity identifies as being of particular interest to users, additional granularity of this disclosure enables users to understand the sensitivity of those instruments to unobservable inputs.

General disclosures about fair value measurement

Aggregation and granularity of disclosure

An entity decides, on the basis of its particular circumstances, how much detail it should disclose, how much emphasis it should place on different aspects of the disclosure requirements and how much aggregation it should undertake to meet the objective of helping users understand the techniques used and the judgements made in measuring fair values.

To do this, an entity determines the most appropriate way to aggregate the information given for each disclosure. For some disclosures, accounting standards require at least a specified minimum level of disaggregation, although entities might consider whether this minimum level provides adequate transparency. For other disclosures, the method of aggregation depends on how the entity is structured, the way it reports internally to management and how it manages its risk and valuation processes. One particular method is not necessarily better than another and the best information often reflects the way that management reports internally. By structuring the disclosures in this way, an entity provides useful information to users of financial statements about how the entity views and manages its valuation processes and risks. Whatever method is used to aggregate information for disclosure purposes, it will be more helpful to users if it is reconciled to the statement of financial position.

Whatever the approach to the aggregation of disclosures, an entity's careful consideration of the presentation and format of the information helps users to understand and locate the information more easily. Presentation of disclosures in a logical and consistent manner, for example through a clear linkage between the qualitative and quantitative disclosures, results in disclosures that are easy for users to follow.

Once an entity has determined how to aggregate the information in the disclosures, it can then determine the level of granularity of the disclosures. Simply providing disclosures at a line item level consistent with the statement of financial position is unlikely to meet the objective of helping users understand the techniques used and the judgements made in measuring fair values. It is likely that within any line item there are instruments with significantly different characteristics or for which the fair value estimation process is quite different. When aggregating information into classes of instruments for disclosure purposes, it is important to consider whether the instruments have similar characteristics, such as the valuation techniques, inputs or other matters, that are the focus of the particular disclosure.

Although a highly summarised disclosure does not provide the most useful information to users of financial statements and might obscure important information, excessive disclosure can also be detrimental. Disclosures that are too detailed can confuse users and might mean that important disclosures are lost or difficult to identify. The level of detail might vary depending upon the nature of the instruments or risks to which the disclosures relate, and the focus on particular instruments might change over time.

Frequency of disclosure

To the extent that the fair value of a financial asset or liability has changed materially since the end of the annual reporting period, some or all of the quantitative and qualitative disclosures provided in the annual financial statements might also be helpful to the users of an entity's interim financial reports. For instruments of particular interest to users, an entity might also consider providing updated fair value disclosures even if the fair values have not changed significantly since the end of the annual reporting period.

Entities are required to provide an explanation of events and transactions that are significant to an understanding of the changes in financial position and performance of the entity since the end of the last annual reporting period. Therefore, when fair values have moved significantly, providing disclosures similar to those in the annual financial statements provides transparency about these movements. Furthermore, changing market conditions might make it helpful to provide additional or more detailed disclosures than those given in the previous annual financial statements.

Disclosure of the control environment

There is an increasing demand from users of financial statements to understand more about the governance and controls over the valuation processes within an entity. An understanding of the governance and controls in place provides useful information about the quality of reported fair values and allows users to ascertain why management is satisfied that the values reported are representationally faithful.

Current market practice in this area is limited and entities could usefully provide information about their overall control environment, particularly as it applies to the identified classes of financial instruments for which enhanced fair value disclosures are provided (ie those instruments that are of particular interest to users). Providing more clarity about controls over the estimation of fair values of instruments that are of particular interest is likely to reflect the increased controls that entities put in place over complex valuations and/or valuations based on unobservable inputs.

The types of controls that entities could consider disclosing, depending on their individual control structure, include, for example:

- a description of the governance group that is responsible for valuation policies and procedures and to whom the group reports.
- the verification of fair value measures by internal or external experts: for example, the extent to which risk management functions challenge or re-perform valuations and whether the functions are independent of the front office.
- the frequency and methods for calibration and back testing of valuation models.
- the process for analysing valuation movements: for example, the analysis performed when significant movement thresholds are reached.
- the extent to which other valuation testing procedures are applied: for example, the percentage coverage achieved through testing procedures.
- the internal reporting procedures in place for fair value measurements: for example, whether pricing, risk management or audit committees discuss valuations containing significant unobservable inputs which might have a significant effect on the financial results of the entity.
- the methods and techniques used to substantiate unobservable inputs: for example, the extent to which unobservable inputs are verified by pricing committees or external bodies and the range of possible values or confidence intervals.

Figure 10 contains an example of a disclosure about an entity's control procedures.

HSBC Holdings plc
Interim Report 2008
Extract from 'Impact of Market Turmoil'

Control framework
Fair values are subject to a control framework designed to ensure that they are either determined, or validated, by a function independent of the risk taker. To this end, ultimate responsibility for the determination of fair values lies with Finance, which reports functionally to the Group Finance Director. Finance establishes the accounting policies and procedures governing valuation, and is responsible for ensuring that these comply with all relevant accounting standards.

For fair values determined by reference to external quotation or evidenced pricing parameters, independent price determination or validation is utilised. In less liquid markets, direct observation of a traded price may not be possible. In these circumstances, HSBC will source alternative market information to validate the financial instrument's fair value. Greater weight will be given to information that is considered to be more relevant and reliable. The factors that are considered in this regard are, inter alia:

- the extent to which prices may be expected to represent genuine traded or tradable prices;
- the degree of similarity between financial instruments;
- the degree of consistency between different sources;
- the process followed by the pricing provider to derive the data;
- the elapsed time between the date to which the market data relates and the balance sheet date; and
- the manner in which the data was sourced.

The results of the independent price validation process is reported to senior management, and adjustments to fair values resulting from considerations of the above information are recorded where appropriate.

For fair values determined using a valuation model, the model being a logical framework for the capture and processing of necessary valuation inputs, the control framework may include, as applicable, independent development or validation of the logic within valuation models, the inputs to those models, any adjustments required outside the valuation models, and, where possible, model outputs.

The results of the independent validation process are reported to, and considered by, Valuation Committees. Valuation Committees are composed of valuation experts from several independent support functions (Product Control, Market Risk Management, Derivative Model Review Group and Finance) in addition to senior trading management. Any adjustments made to the assessed fair values as a result of the validation process are reported to senior management.

Figure 10. Disclosure about control procedures.

Disclosure of valuation techniques

A discussion of the valuation techniques used is important to meet the objective of helping users understand the techniques used and the judgements made in measuring fair values. An entity is required to make this disclosure for each class of financial instrument. For those financial instruments of particular interest to users, more detailed disclosure will be helpful.

Items to consider when disclosing information about valuation techniques include, for example:

- whether there is a choice of valuation techniques and how that choice is made.
- whether and how models are calibrated to market prices.

- a description of the use of broker quotes or pricing services: for example, the number of quotes obtained, how the quotes are verified, what brokers or pricing services are used and why.

- when prices for similar instruments are used to measure fair value, how these prices are adjusted to reflect the characteristics of the instruments subject to measurement.

- when adjustments are made to model values for factors that the model does not incorporate, what these factors are and how the adjustments are made.

Figure 11 contains an example of a disclosure about valuation techniques and inputs.

UBS AG
Q2 2008 Financial Reporting
Extract from note 10b – Valuation Techniques and Inputs

Where possible, financial instruments are marked at prices quoted in active markets. In the current market environment, such price information is typically not available for all instruments linked to the US residential mortgage market, and UBS applies valuation techniques to measure such instruments. Valuation techniques use "market observable inputs", where available, derived from similar assets in similar and active markets, from recent transaction prices for comparable items or from other observable market data. For positions where observable reference data are not available for some or all parameters, UBS estimates the non-market observable inputs used in its valuation models.

For the period ended 30 June 2008, UBS used valuation models primarily for super senior RMBS [residential mortgage backed securities] CDO [collateralised debt obligation] tranches referenced to sub-prime RMBSs. The model used to value some of these positions projects losses on the underlying mortgage pools and applies the implications of these projected lifetime losses through to the RMBS and then to the CDO structure. The primary inputs to the model are monthly statistical data on delinquency rates, foreclosure rates and actual losses that describe the current performance of the underlying mortgage pools. These are received near the end of each month and relate to the preceding month's cash flows on the mortgages underlying each RMBS. The other key factor input to the model is an estimate of loss given default, which is a non-market observable input.

In fourth quarter 2007 and first half 2008, UBS used relevant ABX market indices to calibrate its loss projections to ensure that the super senior RMBS CDO model is consistent with observed levels of the indices in the market. Despite the various limitations in the comparability of these indices to UBS's own positions, it was felt that this was the best approach in view of the further deterioration in liquidity and resultant lack of observed transactions to which the model could be calibrated.

The valuation model also considers the impact of variability in projected lifetime loss levels and applies a discount rate for expected cash flows derived from relevant market index prices to value expected cash flows. The external ratings of the RMBSs underlying the CDO tranches or the CDO tranches themselves are inputs to the valuation model only to the extent that they indicate the likely timing of potential "events of default".

The valuation model incorporates the potential timing and impact of such default events based on an analysis of the contractual rights of various parties to the transaction and the estimated performance of the underlying collateral. There is no single market standard for valuation models in this area, such models have inherent limitations, and different assumptions and inputs would generate different results. The super senior RMBS CDO valuation model is used to value a portion of UBS's net long exposures to super senior RMBS CDOs and in cases where UBS holds a gross long position in a super senior RMBS CDO hedged one-to-one with an offsetting short position (since this valuation is necessary to calculate any related credit valuation adjustments).

In cases where liquidation of the RMBS CDO is deemed imminent, and where it is possible to obtain reliable pricing of the underlying instruments, the super senior RMBS CDO valuation model is superseded. Instead, valuation in these cases is based on the estimated aggregate proceeds of the liquidation (using current fair value estimates of the underlying instruments) less any estimated expenses associated with the liquidation.

Figure 11. Disclosure about valuation techniques and inputs.

As market conditions change, valuation techniques might change and, if so, it is important that users are able to understand how and why the techniques have changed. For example, this might be important when an entity previously relied solely on a quoted price in an active market and now must use a model.

Descriptions of valuation techniques are most helpful to users if they are meaningful and do not become generic. Equally, disclosures should be understandable and the descriptions of valuation techniques might need to be simplified to enable this. For generally accepted and standard valuation techniques, a brief description of the techniques used is likely to be adequate.

Disclosure within a fair value hierarchy

Both IFRSs and US GAAP contain a fair value hierarchy, and the two hierarchies are broadly consistent with each other. US GAAP requires numerical disclosure of fair values recognised in a tabular format organised by the level within the fair value hierarchy. This provides a simple and effective presentation to users.

IFRSs do not require a similar tabular disclosure, although the IASB will consider whether to develop a similar requirement in its fair value measurement project. In the meantime, some entities reporting under IFRSs have provided disclosures similar to those required by US GAAP. Current practice is not consistent in this area and in some cases numerical information of the fair values of financial instruments within each level of the hierarchy can be difficult to derive from the narrative disclosures provided. Such quantitative disclosures would provide insight into the dependence of fair values on unobservable data.

The fair value hierarchies in IFRS 7 (based generally on the hierarchy some entities have used in their interim and annual reports) and FASB Statement of Financial Accounting Standards No. 157 *Fair Value Measurements* (SFAS 157) are summarised in the following table:

IFRS 7	**SFAS 157**
Quoted prices in active markets: prices from observable current market transactions in the same instrument (ie without modification or repackaging)	Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities
Valuation techniques using inputs based on observable market data	Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly
Valuation techniques using inputs that are not based on observable market data	Level 3: significant unobservable inputs for the asset or liability

A valuation technique might incorporate both observable market data and unobservable inputs. When an unobservable input is significant to the fair value measurement, the resulting valuation will fall into the lowest level of the hierarchy. Assessing the significance of inputs requires judgement. Disclosure of the criteria adopted to determine whether any unobservable inputs are significant enough to cause a valuation to fall into the lowest level of the hierarchy aids comparability across entities.

Figure 12 contains an example of a disclosure using the IFRS fair value hierarchy.

The Royal Bank of Scotland Group plc
Interim Results 2008
Extract from note 'Fair Value – Financial Instruments – Statutory'

Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction. Fair values are determined from quoted prices in active markets for identical financial assets or financial liabilities where these are available. Where the market for a financial instrument is not active, fair value is established using a valuation technique. These valuation techniques involve a degree of management estimation, the extent of which depends on the instrument's complexity and the availability of market-based data. Where such data are not observable, they are estimated by management. The table below shows financial instruments carried at fair value at 30 June 2008 in the Group's financial statements, by valuation method.

	30 June 2008		31 December 2007	
	Assets £bn	**Liabilities £bn**	Assets £bn	Liabilities £bn
Quoted prices in active markets	**126.5**	**51.9**	159.4	65.7
Valuation techniques				
- based on observable market data	**741.2**	**642.0**	669.4	510.4
- incorporating information other than observable data	**28.3**	**6.1**	32.7	15.3
	896.0	**700.0**	861.5	591.4

Financial assets and liabilities valued based on information other than observable market data are set out below.

	30 June 2008		31 December 2007	
	Assets £bn	**Liabilities £bn**	Assets £bn	Liabilities £bn
Syndicated loans	**3.8**	**-**	4.6	-
Commercial mortgages	**1.3**	**-**	2.2	-
Super senior tranches of asset-backed CDOs	**2.0**	**-**	3.8	-
Other debt securities	**13.0**	**-**	8.8	-
Exotic derivatives	**4.8**	**2.3**	5.2	4.4
Other portfolios	**3.4**	**3.8**	8.1	10.9
	28.3	**6.1**	32.7	15.3

Figure 12. Disclosure of IFRS fair value hierarchy.

A description of what an entity includes in each level of the hierarchy and the basis for determining which instruments fall into each level allows users to understand the information presented. In particular, disclosure of the criteria adopted to determine whether any unobservable inputs are significant enough to cause an instrument to fall into the lowest level of the hierarchy aids comparability across entities and across individual entities over time.

Reconciliation of movements in the fair values of instruments measured using unobservable inputs

When a fair value measurement uses a valuation technique based significantly on inputs that are unobservable (ie those inputs that are used in a valuation technique and that are not supported by a current, observable market transaction), an entity is required to disclose the movement in fair value recognised in profit or loss during the period. Presenting this information in the form of a reconciliation of movements in fair values enables users to understand those movements during the period. Such a reconciliation might show:

- total gains and losses for the period, separated into:
    - those that have been realised (eg through sale of a financial asset) and those that are unrealised and
    - those included in profit or loss and those included in other comprehensive income.
- movements due to purchases, sales, issuances and settlements.
- transfers into and out of this level of the hierarchy (for example, transfers due to changes in the observability of significant inputs).

Disclosing the movements into and out of the lowest level of the hierarchy highlights when valuations might have become more or less representationally faithful and reflects changes in economic conditions and markets.

Figure 13 shows an example of a disclosure of the reconciliation of movements in fair values measured using a valuation technique based significantly on inputs that are unobservable. *Note: MBS = mortgage backed security.*

HSBC Holdings plc
Interim Report 2008
Extract from 'Impact of Market Turmoil'

HSBC's consolidated holdings of US ABSs, and direct lending held at fair value through profit or loss

	Half-year to 30 June 2008				At 30 June 2008				At 31 December 2007			
	Unrealised gains and (losses) US$m	Realised gains and (losses) US$m	Fair value movements through equity US$m	Impair-ment US$m	Gross principal US$m	CDS gross protection US$m	Net principal exposure US$m	Carrying amount US$m	Gross principal US$m	CDS gross protection US$m	Net principal exposure US$m	Carrying amount US$m
US sub-prime residential mortgage-related assets												
Direct lending	(234)	(8)	-	-	4,199	-	4,199	3,534	6,288	-	6,288	5,825
MBSs	(621)	6	(903)	(29)	8,239	601	7,638	5,283	9,576	657	8,919	7,981
– high grade	(228)	7	(518)	(29)	5,930	571	5,359	4,142	9,079	647	8,432	7,807
– rated C to A	(333)	-	(385)	-	2,292	30	2,262	1,118	462	10	452	153
– not publicly rated	(60)	(1)	-	-	17	-	17	23	35	-	35	21
MBS CDOs	(123)	-	(32)	(21)	1,200	569	631	152	1,157	652	505	440
– high grade	(8)	-	(32)	-	230	50	180	97	923	454	469	411
– rated C to A	(115)	-	-	(21)	970	519	451	55	234	198	36	29
– not publicly rated	-	-	-	-	-	-	-	-	-	-	-	-
	(978)	(2)	(935)	(50)	13,638	1,170	12,468	8,969	17,021	1,309	15,712	14,246
US Alt-A residential mortgage-related assets												
Direct lending	-	-	-	-	329	-	329	325	341	-	341	342
MBSs	(368)	(59)	(3,243)	(5)	17,548	204	17,344	11,349	19,175	205	18,970	17,708
– high grade	(340)	(49)	(3,115)	(5)	16,898	204	16,694	10,969	19,099	205	18,894	17,640
– rated C to A	(29)	(9)	(100)	-	533	-	533	299	64	-	64	56
– not publicly rated	1	(1)	(28)	-	117	-	117	81	12	-	12	12
	(368)	(59)	(3,243)	(5)	17,877	204	17,673	11,674	19,516	205	19,311	18,050
US government agency mortgage-related assets												
MBSs	(2)	-	(54)	-	7,052	-	7,052	7,015	5,996	-	5,996	5,995
– high grade	(2)	-	(54)	-	7,052	-	7,052	7,015	5,996	-	5,996	5,995
– rated C to A	-	-	-	-	-	-	-	-	-	-	-	-
– not publicly rated	-	-	-	-	-	-	-	-	-	-	-	-
US government-sponsored enterprises mortgage-related assets												
MBSs	(50)	40	(91)	-	18,249	-	18,249	17,974	16,125	-	16,125	15,904
– high grade	(50)	40	(91)	-	18,249	-	18,249	17,974	16,125	-	16,125	15,904
– rated C to A	-	-	-	-	-	-	-	-	-	-	-	-
– not publicly rated	-	-	-	-	-	-	-	-	-	-	-	-
Balance carried forward	(1,398)	(21)	(4,323)	(55)	56,816	1,374	55,442	45,632	58,658	1,514	57,144	54,195

Figure 13. Disclosure of the reconciliation of movements in fair values measured using a valuation technique based significantly on inputs that are unobservable.

The reconciliation of the change in the fair values of instruments that contain significant unobservable inputs is a useful disclosure when an entity has ability to provide this information. Such information helps users understand the recognised movements in fair values. However, there are some potential issues with the disclosure of a reconciliation. For example:

- the changes in fair values of instruments might be due to movements in both observable and unobservable inputs. Therefore, disclosing the entire movement does not provide users with the information they might be most interested in; that is, the movement due to changes in unobservable inputs.

- many instruments are hedged by instruments in a higher level of the fair value hierarchy. Disclosing movements in the carrying amount of an item in a lower level of the hierarchy might be misleading if the entity does not show the extent to which those movements correlate with undisclosed movements in the hedging instrument classified in a higher level.

- the reconciliation might be difficult for some entities to compile and report, depending on their organisational structure and internal reporting process.

On balance, however, the usefulness of the information outweighs these potential issues. Entities could make the disclosures more meaningful by providing detail about the actual value changes caused by unobservable inputs. For example, this could be achieved by:

- disclosing those movements that are economically hedged by movements in instruments in other levels of the hierarchy (eg using a valuation technique with inputs based on observable market data).

- separating the movements into those related to observable and unobservable inputs, if this information can be determined.

Entities might not always be able to separate movements into those due to observable inputs and those due to unobservable inputs (eg due to interdependencies between the different inputs). If entities wish to disclose such information, they will typically select whatever method provides the most meaningful information to users about movements in fair values caused by unobservable inputs. If possible, separating this information into individual unobservable inputs might allow entities to provide more information about those inputs that are the most difficult to identify and verify, and which therefore require the highest degree of judgement.

Figure 14 contains an example of a disclosure of a reconciliation of movements in fair values measured using a valuation technique based significantly on inputs that are unobservable. The example provides additional disclosure about observable and hedged movements.

The Goldman Sachs Group, Inc.
FORM 10-Q for the quarterly period ended May 30, 2008
Extract from Note 3 – Financial Instruments

Derivative Contracts
The net unrealized loss on level 3 derivative contracts of $447 million for the three months ended May 2008 and net unrealized gain of $1.90 billion for the six months ended May 2008 was primarily attributable to observable changes in underlying credit spreads (which are level 2 inputs). Level 3 gains and losses on derivative contracts should be considered in the context of the following factors:

- A derivative contract with level 1 and/or level 2 inputs is classified as a level 3 financial instrument in its entirety if it has at least one significant level 3 input.
- If there is one significant level 3 input, the entire gain or loss from adjusting only observable inputs (i.e., level 1 and level 2) is still classified as level 3.
- Gains or losses that have been reported in level 3 resulting from changes in level 1 or level 2 inputs are frequently offset by gains or losses attributable to instruments classified within Level 1 or level 2 or by cash instruments reported in level 3 of the fair value hierarchy.

The tables below set forth a summary of changes in the fair value of the firm's level 3 financial assets and financial liabilities for the three and six months ended May 2008 and May 2007. The tables reflect gains and losses, including gains and losses on financial assets and financial liabilities that were transferred to level 3 during the period, for the three and six month periods for all financial assets and financial liabilities categorized as level 3 as of May 2008 and May 2007, respectively. The tables do not include gains or losses that were reported in level 3 in prior periods for instruments that were sold or transferred out of level 3 prior to the end of the period presented.

Level 3 Financial Assets and Financial Liabilities
Three Months Ended May 2008

	Cash Instruments - Assets	Cash Instruments - Liabilities	Derivative Contracts - Net	Unsecured Short-Term Borrowings	Other Secured Financings	Unsecured Long-Term Borrowings
			(in millions)			
Balance, beginning of period	$71,373	$(977)	$9,394	$(3,839)	$-	$(1,247)
Realized gains/(losses)	624[1]	13[4]	(8)[4]	(134)[4]	(6)[4]	(4)[4]
Unrealized gains/(losses) relating to instruments still held at the reporting date	(944)[1]	-[4]	(447)[4] [5]	(18)[4]	-	(71)[4]
Purchases, issuances and settlements	(2,330)[2]	301	68	357	18	(603)
Transfers in and/or out of level 3	(9,052)[2] [3]	82	(2,499)[6]	(203)	(892)	(77)
Balance, end of period	$59,671	$(581)	$6,508	$(3,837)	$(880)	$(2,002)

Level 3 Financial Assets and Financial Liabilities
Three Months Ended May 2007

	Cash Instruments - Assets	Cash Instruments - Liabilities	Derivative Contracts - Net	Unsecured Short-Term Borrowings	Other Secured Financings	Unsecured Long-Term Borrowings
			(in millions)			
Balance, beginning of period	$37,848	$(224)	341	$(4,836)	$-	$(777)
Realized gains/(losses)	587[1]	9[4]	483[4]	71[4]	-	(4)[4]
Unrealized gains/(losses) relating to instruments still held at the reporting date	98[1]	9[4]	(204)[4] [5]	(189)[4]	-	2[4]
Purchases, issuances and settlements	5,499	(452)	(920)	(946)	-	(123)
Transfers in and/or out of level 3	1,109[7]	(191)	699	393	-	399
Balance, end of period	$45,141	$(849)	$399	$(5,507)	$-	$(503)

(1) The aggregate amounts include approximately $(1.02) billion and $696 million reported in "Trading and principal investments" and "Interest income," respectively, in the condensed consolidated statements of earnings for the three months ended May 2008. The aggregate amounts include approximately $355 million and $330 million reported in "Trading and principal investments" and "Interest income," respectively, in the condensed consolidated statements of earnings for the three months ended May 2007.

(2) The aggregate amount includes a decrease of $8.80 billion due to full and partial dispositions.

(3) Includes transfers of loans and securities backed by commercial real estate, and bank loans and bridge loans to level 2 within the fair value hierarchy, reflecting improved price transparency for these financial instruments, largely as a result of partial dispositions.

(4) Substantially all is reported in "Trading and principal investments" in the condensed consolidated statements of earnings.

(5) Principally resulted from changes in level 2 inputs.

(6) Principally reflects transfers to level 2 within the fair value hierarchy of mortgage-related derivative assets due to improved transparency of the correlation inputs used to value these financial instruments.

(7) Principally reflects transfers from level 2 within the fair value hierarchy of loans and securities backed by commercial and residential real estate and private equity investments, reflecting reduced price transparency for these financial instruments.

Figure 14. A disclosure of the reconciliation of movements in fair values measured using a valuation technique based significantly on inputs that are unobservable. The example provides information about observable and hedged movements.

Disclosure of unobservable inputs

An important part in understanding a fair value measurement is understanding the assumptions made and inputs applied in the valuation technique. A description of the source of the inputs allows users to understand the valuation better. For assumptions and inputs that are unobservable or difficult to estimate, more detailed and transparent disclosure allows users to form educated judgements as to the reasonableness of the valuation methodologies and assumptions applied.

An area of focus for users of financial statements is the extent to which unobservable inputs are used in valuation techniques when measuring fair values, the source of those inputs and the range of different possible values which management could reasonably have chosen. An entity might use many different unobservable inputs in applying its valuation techniques for different instruments and disclosure of all inputs might result in lengthy and superfluous disclosure. However, disclosure of those inputs that are most difficult to estimate, and which could have a significant effect on the fair values recognised, provides information about the risks of the instruments and the representational faithfulness of their fair values. Furthermore, a description of the controls for the entity's verification of the inputs provides users with information to understand better the representational faithfulness of the fair value measures.

Disclosure about unobservable inputs might be provided by class of instrument or by risk type or both, but should meet the objective of helping users understand the techniques used and the judgements made in measuring fair values.

The effect of reasonably possible alternative assumptions

Entities are required to disclose the effect of a reasonably possible alternative assumption, if this would change the fair value significantly. Disclosures about the effect of reasonably possible alternative unobservable inputs is likely to provide useful and transparent information if the analysis is provided at a disaggregated level. For example, the disclosure might be useful if it is presented by class or risk type rather than as a single disclosure that encompasses all financial instruments measured at fair value using unobservable inputs.

The considerations about the level of aggregation and granularity that apply to this disclosure are the same as those for other disclosures about fair value measurement. Furthermore, enhancing the disclosure through reflecting the effect of any offsetting or hedged positions in the disclosure might be helpful to users because this reflects the overall valuation risk of the entity.

Disclosures about the effect of reasonably possible alternative unobservable inputs could be enhanced through disclosure of how the effect has been calculated, allowing users to understand better the disclosure and what it represents. Entities might consider explaining:

- what the entity regards as a reasonably possible alternative assumption.
- how the entity calculated the effect disclosed.
- whether the disclosure takes into account any offsetting or hedged positions.
- whether the effect disclosed represents the movement in a single input or a movement in all unobservable inputs.

Figure 15 contains an example of a disclosure about reasonably possible alternative assumptions.

UBS AG
Q2 2008 Financial Reporting
Extract from Note 10b – Valuation Techniques and Inputs

US super senior RMBS CDO
Write-downs of super senior US RMBS [residential mortgage backed securities] CDO [collateralised debt obligation] positions (subprime, and to a lesser extent Alt-A and prime) during the second quarter of 2008 reflected worsening remittance data as well as declines in the ABX indices to which the valuation model is calibrated. No significant changes to the RMBS CDO valuation model occurred during this period, although approximately two thirds (by market value) of the super senior RMBS CDOs are now valued using the liquidation-based approach described above. The two primary unobservable factors in the valuation model are the loss projections on the underlying mortgage pools and the risk premium component of the discount rate. To assess the sensitivity of the super senior RMBS CDO valuations to the loss projections, a 10% adverse change in all mortgage pool loss projections (that is, from 25% loss to 27.5% loss, where 25% is the average ABX implied loss rate for sub-prime mortgage pools) across all relevant RMBS collateral is considered. Holding all other elements of the model constant, this adverse change in loss projections would result in an additional write-down of approximately USD 436 million (CHF 445 million). The current risk premium assumption in the valuation model is 11.1% (implying a discount rate of Libor plus 11.1%). An increase in the risk premium of 100 basis points, holding other aspects of the model constant, is estimated to result in an additional write-down of approximately USD 92 million (CHF 94 million). These estimates are intended to convey information on the sensitivity of the model-based valuation to unobservable inputs; they are not intended as risk assessments. In the interest of completeness, these sensitivity estimates include both RMBS super senior CDOs valued using the valuation model and those valued on a liquidation basis (corresponding figures for the model-only population are USD 131 million (CHF 134 million) and USD 39 million (CHF 40 million)).

Figure 15. A disclosure about reasonably possible alternative assumptions.

Disclosure of changes in own credit risk

For financial liabilities designated as at fair value through profit or loss, entities are required to disclose the amount of any change in a liability's fair value that is attributable to changes in the entity's own credit risk.

The disclosure of such information helps users understand how any changes in the entity's own credit risk have affected profit or loss. However, this amount alone does not help users understand how the amount was calculated or the uncertainty about that amount.

Given the scrutiny applied to the movements in the fair values of liabilities due to changes in an entity's own credit risk, in addition to the required explanation of how the amount was calculated, disclosing the source of the inputs used to calculate the movement provides transparency about the uncertainty of that amount.

There is no current requirement to disclose the change in the fair value of derivative instruments that is attributable to changes in the entity's own credit risk. Changes in own credit risk can lead to significant gains and losses being recognised in the statement of comprehensive income. As a result, there is a high level of scrutiny of such gains and losses and users might find helpful the disclosure of the effect of a change in the fair value of a derivative instrument that is attributable to changes in the entity's own credit risk.

Figure 16 contains an example of a disclosure about changes in an entity's own credit risk.

JPMorgan Chase
Annual Report 2007
Extract from Note 5 – Fair Value Option

Determination of instrument-specific credit risk for items for which a fair value election was made

The following describes how the gains and losses included in earnings during 2007 that were attributable to changes in instrument-specific credit risk were determined:

- Loans: for floating-rate instruments, changes in value are all attributed to instrument-specific credit risk. For fixed-rate instruments, an allocation of the changes in value for the period is made between those changes in value that are interest rate-related and changes in value that are credit-related. Allocations are generally based upon an analysis of borrower-specific credit spread and recovery information, where available, or benchmarking to similar entities or industries.
- Long term debt: changes in value attributable to instrument-specific credit risk were derived principally from observable changes in the Firm's credit spread. The gain for 2007 was attributable to the widening of the Firm's credit spread.
- Resale and repurchase agreements: generally, with a resale or repurchase agreement, there is a requirement that collateral be maintained with a market value equal to or in excess of the principal amount loaned. As a result, there would be no adjustment or an immaterial adjustment for instrument-specific credit related to these agreements.

Figure 16. A disclosure of changes in an entity's own credit risk.

Appendix 1: Measurement guidance in IAS 39

Fair value measurement considerations

48 In determining the fair value of a financial asset or a financial liability for the purpose of applying this Standard, IAS 32 or IFRS 7, an entity shall apply paragraphs AG69–AG82 of Appendix A.

48A The best evidence of fair value is quoted prices in an active market. If the market for a financial instrument is not active, an entity establishes fair value by using a valuation technique. The objective of using a valuation technique is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models. If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the entity uses that technique. The chosen valuation technique makes maximum use of market inputs and relies as little as possible on entity-specific inputs. It incorporates all factors that market participants would consider in setting a price and is consistent with accepted economic methodologies for pricing financial instruments. Periodically, an entity calibrates the valuation technique and tests it for validity using prices from any observable current market transactions in the same instrument (ie without modification or repackaging) or based on any available observable market data.

…

Fair value measurement considerations (paragraphs 48–49)

AG69 Underlying the definition of fair value is a presumption that an entity is a going concern without any intention or need to liquidate, to curtail materially the scale of its operations or to undertake a transaction on adverse terms. Fair value is not, therefore, the amount that an entity would receive or pay in a forced transaction, involuntary liquidation or distress sale. However, fair value reflects the credit quality of the instrument.

AG70 This Standard uses the terms 'bid price' and 'asking price' (sometimes referred to as 'current offer price') in the context of quoted market prices, and the term 'the bid-ask spread' to include only transaction costs. Other adjustments to arrive at fair value (eg for counterparty credit risk) are not included in the term 'bid-ask spread'.

Active market: quoted price

AG71 A financial instrument is regarded as quoted in an active market if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. Fair value is defined in terms of a price agreed by a willing buyer and a willing seller in an arm's length transaction. The objective of determining fair value for a financial instrument that is traded in an active market is to arrive at the price at which a transaction would occur at the end of the reporting period in that instrument (ie without modifying or repackaging the instrument) in the most advantageous active market to which the entity has immediate access. However, the entity adjusts the price in the more advantageous market to reflect any differences in counterparty credit risk between instruments traded in that market and the one being valued. The existence of published price quotations in an active market is the best evidence of fair value and when they exist they are used to measure the financial asset or financial liability.

AG72 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. 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 (eg 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 (eg 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 is determined on the basis of the relevant market prices for the component parts.

AG73 If a rate (rather than a price) is quoted in an active market, the entity uses that market-quoted rate as an input into a valuation technique to determine fair value. If the market-quoted rate does not include credit risk or other factors that market participants would include in valuing the instrument, the entity adjusts for those factors.

No active market: valuation technique

AG74 If the market for a financial instrument is not active, an entity establishes fair value by using a valuation technique. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models. If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the entity uses that technique.

AG75 The objective of using a valuation technique is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations. Fair value is estimated on the basis of the results of a valuation technique that makes maximum use of market inputs, and relies as little as possible on entity-specific inputs. A valuation technique would be expected to arrive at a realistic estimate of the fair value if (a) it reasonably reflects how the market could be expected to price the instrument and (b) the inputs to the valuation technique reasonably represent market expectations and measures of the risk-return factors inherent in the financial instrument.

AG76 Therefore, a valuation technique (a) incorporates all factors that market participants would consider in setting a price and (b) is consistent with accepted economic methodologies for pricing financial instruments. Periodically, an entity calibrates the valuation technique and tests it for validity using prices from any observable current market transactions in the same instrument (ie 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 (ie 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 (ie without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets.

AG76A The subsequent measurement of the financial asset or financial liability and the subsequent recognition of gains and losses shall be consistent with the requirements of this Standard. The application of paragraph AG76 may result in no gain or loss being recognised on the initial recognition of a financial asset or financial liability. In such a case, IAS 39 requires that a gain or loss shall be recognised after initial recognition only to the extent that it arises from a change in a factor (including time) that market participants would consider in setting a price.

AG77 The initial acquisition or origination of a financial asset or incurrence of a financial liability is a market transaction that provides a foundation for estimating the fair value of the financial instrument. In particular, if the financial instrument is a debt instrument (such as a loan), its fair value can be determined by reference to the market conditions that existed at its

acquisition or origination date and current market conditions or interest rates currently charged by the entity or by others for similar debt instruments (ie similar remaining maturity, cash flow pattern, currency, credit risk, collateral and interest basis). Alternatively, provided there is no change in the credit risk of the debtor and applicable credit spreads after the origination of the debt instrument, an estimate of the current market interest rate may be derived by using a benchmark interest rate reflecting a better credit quality than the underlying debt instrument, holding the credit spread constant, and adjusting for the change in the benchmark interest rate from the origination date. If conditions have changed since the most recent market transaction, the corresponding change in the fair value of the financial instrument being valued is determined by reference to current prices or rates for similar financial instruments, adjusted as appropriate, for any differences from the instrument being valued.

AG78 The same information may not be available at each measurement date. For example, at the date that an entity makes a loan or acquires a debt instrument that is not actively traded, the entity has a transaction price that is also a market price. However, no new transaction information may be available at the next measurement date and, although the entity can determine the general level of market interest rates, it may not know what level of credit or other risk market participants would consider in pricing the instrument on that date. An entity may not have information from recent transactions to determine the appropriate credit spread over the basic interest rate to use in determining a discount rate for a present value computation. It would be reasonable to assume, in the absence of evidence to the contrary, that no changes have taken place in the spread that existed at the date the loan was made. However, the entity would be expected to make reasonable efforts to determine whether there is evidence that there has been a change in such factors. When evidence of a change exists, the entity would consider the effects of the change in determining the fair value of the financial instrument.

AG79 In applying discounted cash flow analysis, an entity uses one or more discount rates equal to the prevailing rates of return for financial instruments having substantially the same terms and characteristics, including the credit quality of the instrument, the remaining term over which the contractual interest rate is fixed, the remaining term to repayment of the principal and the currency in which payments are to be made. Short-term receivables and payables with no stated interest rate may be measured at the original invoice amount if the effect of discounting is immaterial.

No active market: equity instruments

AG80 The fair value of investments in equity instruments that do not have a quoted market price in an active market and derivatives that are linked to and must be settled by delivery of such an unquoted equity instrument (see paragraphs 46(c) and 47) is reliably measurable if (a) the variability in the range of reasonable fair value estimates is not significant for that instrument or (b) the probabilities of the various estimates within the range can be reasonably assessed and used in estimating fair value.

AG81 There are many situations in which the variability in the range of reasonable fair value estimates of investments in equity instruments that do not have a quoted market price and derivatives that are linked to and must be settled by delivery of such an unquoted equity instrument (see paragraphs 46(c) and 47) is likely not to be significant. Normally it is possible to estimate the fair value of a financial asset that an entity has acquired from an outside party. However, if the range of reasonable fair value estimates is significant and the probabilities of the various estimates cannot be reasonably assessed, an entity is precluded from measuring the instrument at fair value.

Inputs to valuation techniques

AG82 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 (and perhaps others).

(a) *The time value of money (ie interest at the basic or risk-free rate).* Basic interest rates can usually be derived from observable government bond prices and are often quoted in financial publications. These rates typically vary with the expected dates of the projected cash flows along a yield curve of interest rates for different time horizons. For practical reasons, an entity may use a well-accepted and readily observable general rate, such as LIBOR or a swap rate, as the benchmark rate. (Because a rate such as LIBOR is not the risk-free interest rate, the credit risk adjustment appropriate to the particular financial instrument is determined on the basis of its credit risk in relation to the credit risk in this benchmark rate.) In some countries, the central government's bonds may carry a significant credit risk and may not provide a stable benchmark basic interest rate for instruments denominated in that currency. Some entities in these countries may have a better credit standing and a lower borrowing rate than the central government. In such a case, basic interest rates may be more appropriately determined by reference to interest rates for the highest rated corporate bonds issued in the currency of that jurisdiction.

(b) *Credit risk.* The effect on fair value of credit risk (ie the premium over the basic interest rate for credit risk) may be derived from observable market prices for traded instruments of different credit quality or from observable interest rates charged by lenders for loans of various credit ratings.

(c) *Foreign currency exchange prices.* Active currency exchange markets exist for most major currencies, and prices are quoted daily in financial publications.

(d) *Commodity prices.* There are observable market prices for many commodities.

(e) *Equity prices.* Prices (and indexes of prices) of traded equity instruments are readily observable in some markets. Present value based techniques may be used to estimate the current market price of equity instruments for which there are no observable prices.

(f) *Volatility (ie magnitude of future changes in price of the financial instrument or other item).* Measures of the volatility of actively traded items can normally be reasonably estimated on the basis of historical market data or by using volatilities implied in current market prices.

(g) *Prepayment risk and surrender risk.* Expected prepayment patterns for financial assets and expected surrender patterns for financial liabilities can be estimated on the basis of historical data. (The fair value of a financial liability that can be surrendered by the counterparty cannot be less than the present value of the surrender amount—see paragraph 49.)

(h) *Servicing costs for a financial asset or a financial liability.* Costs of servicing can be estimated using comparisons with current fees charged by other market participants. If the costs of servicing a financial asset or financial liability are significant and other market participants would face comparable costs, the issuer would consider them in determining the fair value of that financial asset or financial liability. It is likely that the fair value at inception of a contractual right to future fees equals the origination costs paid for them, unless future fees and related costs are out of line with market comparables.

…

Credit risk of liabilities

…

BC88 The Board considered comments on the Exposure Draft that disagreed with the view that, in applying the fair value option to financial liabilities, an entity should recognise income as a result of deteriorating credit quality (and a loan expense as a result of improving credit quality). Commentators noted that it is not useful to report lower liabilities when an entity is in financial difficulty precisely because its debt levels are too high, and that it would be difficult to explain to users of financial statements the reasons why income would be recognised when a liability's creditworthiness deteriorates. These comments suggested that fair value should exclude the effects of changes in the instrument's credit risk.

BC89 However, the Board noted that because financial statements are prepared on a going concern basis, credit risk affects the value at which liabilities could be repurchased or settled. Accordingly, the fair value of a financial liability reflects the credit risk relating to that liability. Therefore, it decided to include credit risk relating to a financial liability in the fair value measurement of that liability for the following reasons:

(a) entities realise changes in fair value, including fair value attributable to the liability's credit risk, for example, by renegotiating or repurchasing liabilities or by using derivatives;

(b) changes in credit risk affect the observed market price of a financial liability and hence its fair value;

(c) it is difficult from a practical standpoint to exclude changes in credit risk from an observed market price; and

(d) the fair value of a financial liability (ie the price of that liability in an exchange between a knowledgeable, willing buyer and a knowledgeable, willing seller) on initial recognition reflects its credit risk. The Board believes that it is inappropriate to include credit risk in the initial fair value measurement of financial liabilities, but not subsequently.

BC90 The Board also considered whether the component of the fair value of a financial liability attributable to changes in credit quality should be specifically disclosed, separately presented in the income statement, or separately presented in equity. The Board decided that whilst separately presenting or disclosing such changes might be difficult in practice, disclosure of such information would be useful to users of financial statements and would help alleviate the concerns expressed. Therefore, it decided to include in IAS 32[6] a disclosure to help identify the changes in the fair value of a financial liability that arise from changes in the liability's credit risk. The Board believes this is a reasonable proxy for the change in fair value that is attributable to changes in the liability's credit risk, in particular when such changes are large, and will provide users with information with which to understand the profit or loss effect of such a change in credit risk.

[6] In August 2005, the IASB relocated all disclosures relating to financial instruments to IFRS 7 *Financial Instruments: Disclosures*.

BC91 The Board decided to clarify that this issue relates to the credit risk of the financial liability, rather than the creditworthiness of the entity. The Board noted that this more appropriately describes the objective of what is included in the fair value measurement of financial liabilities.

BC92 The Board also noted that the fair value of liabilities secured by valuable collateral, guaranteed by third parties or ranking ahead of virtually all other liabilities is generally unaffected by changes in the entity's creditworthiness.

Appendix 2: Disclosure requirements in IFRSs

IFRS 7 *Financial Instruments: Disclosures*

1 The objective of this IFRS is to require entities to provide disclosures in their financial statements that enable users to evaluate:

(a) the significance of financial instruments for the entity's financial position and performance; and

(b) the nature and extent of risks arising from financial instruments to which the entity is exposed during the period and at the reporting date, and how the entity manages those risks.

…

6 When this IFRS requires disclosures by class of financial instrument, an entity shall group financial instruments into classes that are appropriate to the nature of the information disclosed and that take into account the characteristics of those financial instruments. An entity shall provide sufficient information to permit reconciliation to the line items presented in the statement of financial position.

7 An entity shall disclose information that enables users of its financial statements to evaluate the significance of financial instruments for its financial position and performance.

…

9 If the entity has designated a loan or receivable (or group of loans or receivables) as at fair value through profit or loss, it shall disclose:

(a) the maximum exposure to credit risk (see paragraph 36(a)) of the loan or receivable (or group of loans or receivables) at the end of the reporting period.

(b) the amount by which any related credit derivatives or similar instruments mitigate that maximum exposure to credit risk.

(c) the amount of change, during the period and cumulatively, in the fair value of the loan or receivable (or group of loans or receivables) that is attributable to changes in the credit risk of the financial asset determined either:

(i) as the amount of change in its fair value that is not attributable to changes in market conditions that give rise to market risk; or

(ii) using an alternative method the entity believes more faithfully represents the amount of change in its fair value that is attributable to changes in the credit risk of the asset.

Changes in market conditions that give rise to market risk include changes in an observed (benchmark) interest rate, commodity price, foreign exchange rate or index of prices or rates.

(d) the amount of the change in the fair value of any related credit derivatives or similar instruments that has occurred during the period and cumulatively since the loan or receivable was designated.

10 If the entity has designated a financial liability as at fair value through profit or loss in accordance with paragraph 9 of IAS 39, it shall disclose:

(a) the amount of change, during the period and cumulatively, in the fair value of the financial liability that is attributable to changes in the credit risk of that liability determined either:

(i) as the amount of change in its fair value that is not attributable to changes in market conditions that give rise to market risk (see Appendix B, paragraph B4); or

(ii) using an alternative method the entity believes more faithfully represents the amount of change in its fair value that is attributable to changes in the credit risk of the liability.

Changes in market conditions that give rise to market risk include changes in a benchmark interest rate, the price of another entity's financial instrument, a commodity price, a foreign exchange rate or an index of prices or rates. For contracts that include a unit-linking feature, changes in market conditions include changes in the performance of the related internal or external investment fund.

(b) the difference between the financial liability's carrying amount and the amount the entity would be contractually required to pay at maturity to the holder of the obligation.

11 The entity shall disclose:

(a) the methods used to comply with the requirements in paragraphs 9(c) and 10(a).

(b) if the entity believes that the disclosure it has given to comply with the requirements in paragraph 9(c) or 10(a) does not faithfully represent the change in the fair value of the financial asset or financial liability attributable to changes in its credit risk, the reasons for reaching this conclusion and the factors it believes are relevant.

…

25 Except as set out in paragraph 29, for each class of financial assets and financial liabilities (see paragraph 6), an entity shall disclose the fair value of that class of assets and liabilities in a way that permits it to be compared with its carrying amount.

26 In disclosing fair values, an entity shall group financial assets and financial liabilities into classes, but shall offset them only to the extent that their carrying amounts are offset in the statement of financial position.

27 An entity shall disclose:

(a) the methods and, when a valuation technique is used, the assumptions applied in determining fair values of each class of financial assets or financial liabilities. For example, if applicable, an entity discloses information about the assumptions relating to prepayment rates, rates of estimated credit losses, and interest rates or discount rates.

(b) whether fair values are determined, in whole or in part, directly by reference to published price quotations in an active market or are estimated using a valuation technique (see paragraphs AG71–AG79 of IAS 39).

(c) whether the fair values recognised or disclosed in the financial statements are determined in whole or in part using a valuation technique based on assumptions that are not supported by prices from observable current market transactions in the same instrument (ie without modification or repackaging) and not based on available observable market data. For fair values that are recognised in the financial statements, if changing one or more of those assumptions to reasonably possible alternative assumptions would change fair value significantly, the entity shall state this fact and disclose the effect of those changes. For this purpose, significance shall be judged with respect to profit or loss, and total assets or total liabilities, or, when changes in fair value are recognised in equity, total equity.

(d) if (c) applies, the total amount of the change in fair value estimated using such a valuation technique that was recognised in profit or loss during the period.

28 If the market for a financial instrument is not active, an entity establishes its fair value using a valuation technique (see paragraphs AG74–AG79 of IAS 39). Nevertheless, the best evidence of fair value at initial recognition is the transaction price (ie the fair value of the consideration given or received), unless conditions described in paragraph AG76 of IAS 39 are met. It follows that there could be a difference between the fair value at initial recognition and the amount that would be determined at that date using the valuation technique. If such a difference exists, an entity shall disclose, by class of financial instrument:

(a) its accounting policy for recognising that difference in profit or loss to reflect a change in factors (including time) that market participants would consider in setting a price (see paragraph AG76A of IAS 39); and

(b) the aggregate difference yet to be recognised in profit or loss at the beginning and end of the period and a reconciliation of changes in the balance of this difference.

29 Disclosures of fair value are not required:

(a) when the carrying amount is a reasonable approximation of fair value, for example, for financial instruments such as short-term trade receivables and payables;

(b) for an investment in equity instruments that do not have a quoted market price in an active market, or derivatives linked to such equity instruments, that is measured at cost in accordance with IAS 39 because its fair value cannot be measured reliably; or

(c) for a contract containing a discretionary participation feature (as described in IFRS 4) if the fair value of that feature cannot be measured reliably.

30 In the cases described in paragraph 29(b) and (c), an entity shall disclose information to help users of the financial statements make their own judgements about the extent of possible differences between the carrying amount of those financial assets or financial liabilities and their fair value, including:

(a) the fact that fair value information has not been disclosed for these instruments because their fair value cannot be measured reliably;

(b) a description of the financial instruments, their carrying amount, and an explanation of why fair value cannot be measured reliably;

(c) information about the market for the instruments;

(d) information about whether and how the entity intends to dispose of the financial instruments; and

(e) if financial instruments whose fair value previously could not be reliably measured are derecognised, that fact, their carrying amount at the time of derecognition, and the amount of gain or loss recognised.

31 An entity shall disclose information that enables users of its financial statements to evaluate the nature and extent of risks arising from financial instruments to which the entity is exposed at the end of the reporting period.

…

IAS 1 *Presentation of Financial Statements*

…

17 In virtually all circumstances, an entity achieves a fair presentation by compliance with applicable IFRSs. A fair presentation also requires an entity:

…

(c) to provide additional disclosures when compliance with the specific requirements in IFRSs is insufficient to enable users to understand the impact of particular transactions, other events and conditions on the entity's financial position and financial performance.

…

IAS 34 *Interim Disclosures*

…

6 In the interest of timeliness and cost considerations and to avoid repetition of information previously reported, an entity may be required to or may elect to provide less information at interim dates as compared with its annual financial statements. This Standard defines the minimum content of an interim financial report as including condensed financial statements and selected explanatory notes. The interim financial report is intended to provide an update on the latest complete set of annual financial statements. Accordingly, it focuses on new activities, events, and circumstances and does not duplicate information previously reported.

7 Nothing in this Standard is intended to prohibit or discourage an entity from publishing a complete set of financial statements (as described in IAS 1) in its interim financial report, rather than condensed financial statements and selected explanatory notes. Nor does this Standard prohibit or discourage an entity from including in condensed interim financial statements more than the minimum line items or selected explanatory notes as set out in this Standard. The recognition and measurement guidance in this Standard applies also to complete financial statements for an interim period, and such statements would include all of the disclosures required by this Standard (particularly the selected note disclosures in paragraph 16) as well as those required by other Standards.

…

15 A user of an entity's interim financial report will also have access to the most recent annual financial report of that entity. It is unnecessary, therefore, for the notes to an interim financial report to provide relatively insignificant updates to the information that was already reported in the notes in the most recent annual report. At an interim date, an explanation of events and transactions that are significant to an understanding of the changes in financial position and performance of the entity since the end of the last annual reporting period is more useful.

16 An entity shall include the following information, as a minimum, in the notes to its interim financial statements, if material and if not disclosed elsewhere in the interim financial report. The information shall normally be reported on a financial year-to-date basis. However, the entity shall also disclose any events or transactions that are material to an understanding of the current interim period:

(a) a statement that the same accounting policies and methods of computation are followed in the interim financial statements as compared with the most recent annual financial statements or, if those policies or methods have been changed, a description of the nature and effect of the change;

(b) explanatory comments about the seasonality or cyclicality of interim operations;

(c) the nature and amount of items affecting assets, liabilities, equity, net income, or cash flows that are unusual because of their nature, size, or incidence;

(d) the nature and amount of changes in estimates of amounts reported in prior interim periods of the current financial year or changes in estimates of amounts reported in prior financial years, if those changes have a material effect in the current interim period;

(e) issuances, repurchases, and repayments of debt and equity securities;

(f) dividends paid (aggregate or per share) separately for ordinary shares and other shares;

(g) the following segment information (disclosure of segment information is required in an entity's interim financial report only if IFRS 8 *Operating Segments* requires that entity to disclose segment information in its annual financial statements):

(i) revenues from external customers, if included in the measure of segment profit or loss reviewed by the chief operating decision maker or otherwise regularly provided to the chief operating decision maker;

(ii) intersegment revenues, if included in the measure of segment profit or loss reviewed by the chief operating decision maker or otherwise regularly provided to the chief operating decision maker;

(iii) a measure of segment profit or loss;

(iv) total assets for which there has been a material change from the amount disclosed in the last annual financial statements;

(v) a description of differences from the last annual financial statements in the basis of segmentation or in the basis of measurement of segment profit or loss;

(vi) a reconciliation of the total of the reportable segments' measures of profit or loss to the entity's profit or loss before tax expense (tax income) and discontinued operations. However, if an entity allocates to reportable segments items such as tax expense (tax income), the entity may reconcile the total of the segments' measures of profit or loss to profit or loss after those items. Material reconciling items shall be separately identified and described in that reconciliation;

(h) material events subsequent to the end of the interim period that have not been reflected in the financial statements for the interim period;

(i) the effect of changes in the composition of the entity during the interim period, including business combinations, obtaining or losing control of subsidiaries and long-term investments, restructurings, and discontinued operations. In the case of business combinations, the entity shall disclose the information required by IFRS 3 *Business Combinations*; and

(j) changes in contingent liabilities or contingent assets since the end of the last annual reporting period.

17 Examples of the kinds of disclosures that are required by paragraph 16 are set out below. Individual Standards and Interpretations provide guidance regarding disclosures for many of these items:

(a) the write-down of inventories to net realisable value and the reversal of such a write-down;

(b) recognition of a loss from the impairment of property, plant and equipment, intangible assets, or other assets, and the reversal of such an impairment loss;

(c) the reversal of any provisions for the costs of restructuring;

(d) acquisitions and disposals of items of property, plant and equipment;

(e) commitments for the purchase of property, plant and equipment;

(f) litigation settlements;

(g) corrections of prior period errors;

(h) [deleted]

(i) any loan default or breach of a loan agreement that has not been remedied on or before the end of the reporting period; and

(j) related party transactions.

…