
EXPOSURE DRAFT

Application of the Disclosure Framework for the Valuation of
Financial Instruments and the Certified in Valuation of Financial
Instruments (“CVFI”) Credential

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Prepared by the AICPA for comment from those whose duties involve the valuation of
financial instruments, securities, and investments for regulatory reporting purposes.

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A1. APPLICATION OF THE DISCLOSURE FRAMEWORK FOR FINANCIAL INSTRUMENTS

This application guidance will continue to evolve and expand; this first edition addresses only select topics within the following areas: general valuation guidance and financial instruments valuation guidance.

This guidance is not designed to show valuation professionals how to perform a valuation; instead its purpose is to provide valuation professionals with guidance on how much work, what level of rigor, and what extent of documentation are required when performing valuation assignments for financial reporting purposes. In certain circumstances, however, sections of the Application of the DF-FI may provide some how-to discussion in order to complement the usability and application of the framework. Such discussion is not intended to supersede existing or evolving technical guidance; however, in the event of conflicts between content in the framework and such technical guidance, the latter shall take precedence.

This guidance is intended to establish minimum scope of work and documentation thresholds and should not be interpreted as a limitation or restriction that precludes a valuation professional from providing more comprehensive scope of work and documentation where deemed appropriate.

As discussed in the DF-FI, this guidance is intended to address the valuation of financial instruments in compliance with one or more defined measurement objectives. One example of such a measurement objective is the U.S. GAAP standard of “fair value” for financial reporting purposes. Due to its prominence, the operative definition of a financial instrument as utilized in this guidance is from U.S. GAAP:

Cash, evidence of an ownership interest in a company or other entity, or a contract that does both of the following:

1. Imposes on one entity a contractual obligation either:
 - a. To deliver cash or another financial instrument to a second entity
 - b. To exchange other financial instruments on potentially unfavorable terms with the second entity.
2. Conveys to that second entity a contractual right either:
 - a. To receive cash or another financial instrument from the first entity
 - b. To exchange other financial instruments on potentially favorable terms with the first entity.

Consistent with this definition, the DF-FI and related A-DF is intended to cover the following broad categories of instruments:

- Equity Securities
- Debt Securities
- Derivatives
- Hybrid Securities
- Structured Products
- All other assets and liabilities that meet the definition of financial instruments

A2. GENERAL VALUATION GUIDANCE

Fair value concepts are the foundation for estimating the value of a wide spectrum of assets and liabilities. Fair value is the measurement attribute of many such assets and liabilities included in an entity's financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP), and International Financial Reporting Standards (IFRS). This section sets forth the most common concepts the valuation professional should understand in order to estimate the fair value of financial instruments. This section also addresses the scope of work and extent of documentation. It is not intended to address valuation theory or to be a how-to guide regarding valuation procedures.

This application section covers three significant topics related to the fundamentals of fair value and may be applicable to many different subject interests. As a result, these general concepts are presented together in this introductory section. They are as follows:

- Fair value measurement
- Selection of valuation methods and models
- Hierarchy of assumptions and Inputs
- Evaluation of management estimates

A2.1 Fair Value Measurement Initial Recognition and Calibration

Topic Overview

The valuation professional must evaluate and document his or her assessment of fair value at the initial transaction (if applicable) and subsequent measurement dates, as well as management's selection of calibrated inputs used to value the subject interest on subsequent measurement dates.

Initial Recognition

As indicated in FASB ASC 820-10-30-3, in many situations, the transaction price appears equal to the fair value based on the perspective of market participants and as a result equals fair value at initial recognition. FASB ASC 820 does not, however, make this presumption. Rather, FASB ASC 820-10-30-3A requires that several factors be considered when determining whether the transaction price reflects fair value of the subject interest on the transaction date or on subsequent measurement dates.

Valuation professionals should not assume that transaction price equates to fair value at or near the transaction date.

Subsequent Measurement Dates

Calibration is used with various valuation techniques; however, regardless of which valuation technique is used by the valuation professional, IFRS 13 – 23 states:

In addition, the fair value measurement of those equity instruments must reflect current market conditions (see paragraphs 15 and 24 of IFRS 13). An investor might ensure that the valuation techniques reflect current market conditions by calibrating them at the measurement date. At initial recognition, if the transaction price represented fair value and an investor will use a valuation technique to measure fair value in subsequent periods that uses unobservable inputs, the investor must calibrate the valuation technique so that it equals the transaction price (see paragraph 64 of IFRS 13). The use of calibration when measuring the fair value of the unquoted equity instruments at the measurement date is a good exercise for an investor to ensure that the valuation technique reflects current market conditions and to determine whether an adjustment to the valuation technique is necessary (for example, there might be a characteristic of the instrument that is not captured by the valuation technique or a new fact that has arisen at the measurement date that was not present at initial recognition).

Following, FASB ASC 820-10-35-24C requires that

[i]f the transaction price is fair value at initial recognition and a valuation technique that uses unobservable inputs will be used to measure fair value in subsequent periods, the valuation technique shall be calibrated so that at initial recognition the result of the valuation technique equals the transaction price. Calibration ensures that the valuation technique reflects current market conditions, and it helps a reporting entity to determine whether an adjustment to the valuation technique is necessary (for example, there might be a characteristic of the asset or liability that is not captured by the valuation technique). After initial recognition, when measuring fair value using a valuation technique or techniques that use unobservable inputs, a reporting entity shall ensure that those valuation techniques reflect observable market data (for example, the price for a similar asset or liability) at the measurement date.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- a. Assessment of fair value of the subject interest at the initial transaction (for example, consideration of unit of account, principal market, market participants, and methods and inputs used to determine fair value)
- b. The relevance of all calibrated inputs used to estimate fair value on subsequent measurement dates
- c. The evaluation of all inputs used to estimate fair value on subsequent measurement dates

- d. The evaluation of management’s rationale and support for the inputs used to estimate initial fair value of the subject interest and its classification in the fair value hierarchy
- e. The rationale for any changes in valuation approaches or methods used for subsequent measurement dates as compared to the initial transaction

A2.2 Other Fair Value Requirements

Topic Overview

ASC 820 and IFRS 13 contain many requirements regarding the measurement of fair value. Some are not particularly relevant to financial instruments. For example, ASC 820 discusses the concept of “highest-and-best-use” – this can be a critical assumption for the valuation of non-financial assets, but is not typically relevant when valuing financial instruments. A summary of selected requirements (from ASC 820) follows:

Unit of Account

A fair value measurement is for a particular asset or liability. Therefore, the measurement should consider attributes specific to the asset or liability, for example, restrictions, if any, on the sale of the asset at the measurement date. The asset or liability might be a standalone asset or liability or a group of assets and/or liabilities. Whether the asset or liability is a standalone asset or liability or a group of assets and/or liabilities depends on its unit of account. The unit of account determines what is being measured by reference to the level at which the asset or liability is aggregated (or disaggregated) for purposes of applying other accounting pronouncements. The unit of account for the asset or liability should be determined in accordance with the provisions of other accounting pronouncements, except as provided below.

If the reporting entity holds a position in a single financial instrument (including a block) and the instrument is traded in an active market, the fair value of the position shall be measured within Level 1 as the product of the quoted price for the individual instrument times the quantity held. The quoted price shall not be adjusted because of the size of the position relative to trading volume (blockage factor). The use of a blockage factor is prohibited, even if a market’s normal daily trading volume is not sufficient to absorb the quantity held and placing orders to sell the position in a single transaction might affect the quoted price.

The Principal (or Most Advantageous) Market

A fair value measurement assumes that the transaction to sell the asset or transfer the liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. The principal market is the market in which the reporting entity would sell the asset or transfer the liability with the greatest volume and level of activity for the asset or liability. The most advantageous market is the market in which the reporting entity would sell the asset

or transfer the liability with the price that maximizes the amount that would be received for the asset or minimizes the amount that would be paid to transfer the liability, considering transaction costs in the respective market(s). In either case, the principal (or most advantageous) market (and thus, market participants) should be considered from the perspective of the reporting entity, thereby allowing for differences between and among entities with different activities. If there is a principal market for the asset or liability, the fair value measurement shall represent the price in that market (whether that price is directly observable or otherwise determined using a valuation technique), even if the price in a different market is potentially more advantageous at the measurement date.

Market Participants

Market participants are buyers and sellers in the principal (or most advantageous) market for the asset or liability that are:

- a. Independent of the reporting entity; that is, they are not related parties
- b. Knowledgeable, having a reasonable understanding about the asset or liability and the transaction based on all available information, including information that might be obtained through due diligence efforts that are usual and customary
- c. Able to transact for the asset or liability
- d. Willing to transact for the asset or liability; that is, they are motivated but not forced or otherwise compelled to do so.

Application to Liabilities

A fair value measurement assumes that the liability is transferred to a market participant at the measurement date (the liability to the counterparty continues; it is not settled) and that the nonperformance risk relating to that liability is the same before and after its transfer. Nonperformance risk refers to the risk that the obligation will not be fulfilled and affects the value at which the liability is transferred. Therefore, the fair value of the liability shall reflect the nonperformance risk relating to that liability. Nonperformance risk includes but may not be limited to the reporting entity's own credit risk. The reporting entity shall consider the effect of its credit risk (credit standing) on the fair value of the liability in all periods in which the liability is measured at fair value. That effect may differ depending on the liability, for example, whether the liability is an obligation to deliver cash (a financial liability) or an obligation to deliver goods or services (a nonfinancial liability), and the terms of credit enhancements related to the liability, if any.

Documentation of Other Fair Value Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- Identification of the applicable unit(s) of account for each FI measurement
- Description of the principal or most advantageous market
- Identification of any significant market participant assumption utilized
- For any liabilities, a description of the adjustments for nonperformance risk

A2.3 Selection of Valuation Methods and Models

Topic Overview

Consistent with accounting and valuation guidance, the three valuation approaches to estimate the fair value of a subject interest are the income, market, and cost (or asset-based) approaches. In addition, there are various valuation methods available for use within each of these three approaches, and a wide variety of specific models available within certain methods. The following sections present examples of methods and associated models – the list is illustrative and does not include all available and accepted methods and models.

Valuation Methods

In determining the appropriate valuation method(s), the valuation professional should consider, among other things, valuation guidance, the history and nature of the subject interest, academic research, peer group company disclosures, and approaches used for similar assets or liabilities. The following are examples of methods commonly used to estimate fair value of subject interests:

- a. Methods under the income approach
 - a. Cash-Flow Replicating Portfolio
 - b. Discounted cash flows
 - i. Conditional (e.g., most likely, contractual, etc.) scenarios
 - ii. Expected present value (multiple, weighted single) scenarios
 - iii. Certainty equivalent scenarios
 - iv. Swaps and hedges
 - v. Decision tree techniques
 - c. Numerical methods
 - i. Binomial and other lattice models
 - 1. Equity models
 - 2. Commodity models
 - 3. Debt models
 - 4. Hybrid models
 - ii. Monte Carlo techniques
 - d. Closed form models
 - i. Black-Scholes
 - ii. Black-76

- e. Tailored valuation models
 - f. Other income approach methods as applicable
- b. Methods under the market approach
- a. Market-Value Replicating Portfolio
 - b. Direct observation
 - i. Level 1 prices
 - ii. Level 2 prices
 - 1. Unadjusted
 - 2. Adjusted
 - c. Matrix pricing techniques
 - d. Other market approach methods as applicable
- c. Methods under the cost approach
- a. Cost-based techniques are context-specific. Even when the cost of a financial instrument is considered to be representative of fair value, such as at an initial transaction date, GAAP and IFRS guidance require the application of calibration techniques that are typically either income- or market-based. Further enumeration of cost-based methods and models is beyond the scope of this framework.

Considerations for Selection and Reconciliation of Methods and Models

Many financial instruments have unique terms and conditions, such as path-dependencies or price reset features that limit the applicability of certain valuation methods and models. In these circumstances, the valuation professional will often rely on a single, tailored valuation technique. For other financial instrument valuation engagements, valuation professionals will rely on multiple valuation methods to estimate a fair value. If developed correctly and with good information, the results from each method should provide indications of fair value that are reasonably consistent with each other. If the results are not reasonably consistent, further analysis is generally required to evaluate the factor or factors causing the inconsistencies (for example, one method may be more appropriate than another method based on the facts and circumstances). When the valuation professional uses multiple approaches as part of the analysis, the valuation professional must reconcile the various approaches into a supportable and reasonable conclusion of value.

The nature of the financial instrument, as well as the fair value hierarchy itself, will often impact the selection of valuation method and model. For example:

- i. Level 1 financial instruments – market approach
- ii. Most Level 2 financial instruments – market approach
- iii. Level 3 financial instruments –
 - 1. Less complex: generic income-based models
 - 2. More complex: tailored models

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- a. The process and rationale for selecting the valuation method(s) or excluding potentially relevant valuation methods to estimate the fair value of the subject interest.
- b. The process and rationale for selected weighting (or emphasis on) each approach and the method in reconciling various indications of value to reach the final conclusion of value (if more than one approach or method is used)
- c. A reconciliation of the results should include these, among other things:
 - i. A supporting narrative about the applied methods and their applicability and usefulness to the valuation assignment, the reliability of the underlying data used in their preparation, and an explanation of inputs and assumptions
 - ii. An assessment of the reliability of the results obtained and whether any of the results used to reach a conclusion of value are deemed more or less probative of fair value based on information gathered throughout the engagement (Note: The extent of documentation should be commensurate with the level of judgment and qualitative analysis involved in supporting the positive assertion.)
 - iii. A clear explanation discussing any apparent inconsistencies in the analysis relative to external or internal documentation or data (for example, contrary evidence), which may then take the form of mathematical calculations when using quantitative weighting
- d. An explanation, based on the results of items a–c, that identifies whether the conclusion of value is based on the results of one valuation approach and method or based on the results of multiple approaches and methods.

A2.4 Hierarchy of Assumptions and Inputs

Topic Overview

Once the valuation method(s) and related model(s) have been selected, the valuation professional must develop assumptions and populate the model(s) with appropriate inputs. Management-based assumptions

are often critical to the valuation process, and are addressed in a separate section. The framework for selecting, supporting and documenting other key assumptions and inputs follows.

Both GAAP (ASC 820) and IFRS (IFRS 13) require valuation professionals to use valuation techniques that maximize the use of relevant “observable” inputs and minimize the use of “unobservable” inputs. These pronouncements also establish a three-level hierarchy of inputs:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs for the asset or liability. Unobservable inputs shall be used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date.
- If an input used to measure fair value is based on bid and ask prices (for example, in a dealer market), the price within the bid-ask spread that is most representative of fair value in the circumstances shall be used to measure fair value, regardless of where in the fair value hierarchy the input falls (Level 1, 2, or 3). This Statement does not preclude the use of midmarket pricing or other pricing conventions as a practical expedient for fair value measurements within a bid-ask spread.

In addition, both GAAP and IFRS distinguish observable from unobservable inputs:

- Observable inputs are inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity.
- Unobservable inputs are inputs that reflect the reporting entity’s own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances.

The hierarchy described above, as mentioned, is a hierarchy of inputs. ASC 820 goes on to define the linkage between the level of inputs, the selection of valuation techniques, and the resulting level of the concluded measurement:

- The availability of inputs relevant to the asset or liability and the relative reliability of the inputs might affect the selection of appropriate valuation techniques. However, the fair value hierarchy prioritizes the

inputs to valuation techniques, not the valuation techniques. For example, a fair value measurement using a present value technique might fall within Level 2 or Level 3, depending on the inputs that are significant to the measurement in its entirety and the level in the fair value hierarchy within which those inputs fall.

- Observation: management estimates, by their nature, are generally unobservable, Level 3 inputs, and therefore, whenever such inputs are significant to the measurement of the subject interest, the resulting value would fall within Level 3.

For measurements under the standard of fair value, valuation professionals must follow the above-described hierarchy.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, for each method and model:

- a. The significant assumptions and inputs utilized
- b. Other model assumptions and inputs
- c. Sufficient information regarding each input and its source to permit identified users to determine the level in the hierarchy, as well as the level of the resulting measurement

A2.5 Evaluation of Management Estimates

Topic Overview

The valuation professional is responsible for evaluating whether management-provided estimates are consistent with the objective of fair value and properly supported. Key estimates for the measurement of financial instruments include:

- a. Prospective financial information (PFI)
- b. Internal milestones (key hires, establishing technical feasibility, raising capital)
- c. External milestones (IPO, merger, obtaining regulatory approval)
- d. Other key management assumptions

Prospective financial information is a broad term that encapsulates several types of forward-looking financial information. PFI is any financial information about the future. The information may be presented as complete financial statements or limited to one or more elements, items, or accounts. Common categories include, but are not limited to, break-even analyses, feasibility studies, forecasts, or projections. This type of information is

commonly prepared for external financing, budgetary purposes, or calculating the expected return on investments. Furthermore, the manner in which the PFI is expected to be used will usually dictate the type of PFI prepared.

Important: Valuation professionals who obtain management’s PFI for use in their valuation procedures must review the PFI with the appropriate level of professional skepticism (see DF-FI sections 2.16–2.18).

Reasonably Objective Basis

Since management estimates (e.g., PFI) represent future expectations, they are, by their very nature, imprecise. Therefore, the assumptions used must be reasonable and supportable. In order for the valuation professional to determine whether a management estimate is reasonable, the valuation professional must use professional judgment to identify the most reliable objective information available.

Understanding Management’s Approach to Developing Estimates

Estimates might be routinely prepared by one or more members of management or, in larger companies, an internal functional group often called financial planning and analysis (subsequently referenced as ‘management’). Valuation professionals should understand and document how each estimate was developed by management.

Valuation professionals should be aware of the purpose for which the estimate was prepared. In addition, valuation professionals should understand whether the estimate was prepared using market participant assumptions. Valuation professionals should strive for objective, reasonable, and supportable estimates relevant for use in the valuation process with the understanding that management bias may exist and, if present, should be properly adjusted (reflecting market participants’ assumptions) in the analysis.

The Valuation Professional’s Assessment of Management Estimates

Part of the valuation professional’s responsibility is to evaluate the estimates provided by management for reasonableness in general, as well as in specific areas. Factors and common procedures to consider when performing this assessment may include, but are not limited to, these:

- Frequency of preparation. If a designated group of management regularly prepares estimates, those are likely to be more consistent and meaningful compared to circumstances when management does not regularly prepare such estimates.
- Comparison of prior estimates with actual results. The valuation professional should complete a comparison of prior estimates (if they exist) against actual results. This type of analysis will help assess whether management’s estimates tend to be optimistic, conservative, or just generally

inaccurate. Many external influences might make the estimation process difficult and an inaccurate estimate does not necessarily indicate that management's process is deficient.

- There are cases in which the outlook for a company differs significantly from its historical performance and other industry information that is available. The former should be infrequent but may occur if the company is significantly changing its business focus, geographical location, or other factors. The latter could occur if a company is in a niche industry with relatively sparse industry information available, or the expectations of the company differ from that of its industry. The primary goal is to have a well-supported and clear explanation as to why the differences exist.
- Comparison to industry expectations. The valuation professional should complete an analysis of management estimates relative to the economy, industry, and other external data.
- Check for internal consistency. The review of metrics should consist of review of each estimate individually as well as a concurrent review to evaluate whether all of the estimates used in the analysis are collectively consistent with each other.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- a.* The identification of the party or parties responsible for preparation of estimates
- b.* The process used to develop the estimates from the perspective of market participants
- c.* The explanation of key underlying assumptions used in each estimate
- d.* The steps used in, and results of, testing each estimate for reasonableness
- e.* An analysis of any evidence that contradicts management's assumptions or conclusions used in their estimates
- f.* The rationale for any adjustments made to management's estimates

A3. FINANCIAL INSTRUMENTS VALUATION GUIDANCE

Each valuation engagement is unique due to the myriad of facts and circumstances involved in each assignment. However, there are core considerations that a valuation professional must consider and document when performing this type of engagement. This section identifies the most common components of an assignment for which the valuation professional is retained to provide a conclusion of value of a financial instrument. It delineates requirements that govern the scope of work and extent of documentation. It is not intended to address valuation theory or to be a how-to guide regarding valuation steps.

A3.1 Cash Flows (and Other Benefit Streams)

Topic Overview

Estimates of future cash flows (numerators) are inextricably linked with the development of appropriate discount rates (denominators). The process of estimating cash flows, as evidenced in management-provided PFI, has been discussed in a separate section herein. This section addresses the identification and documentation of the risks embedded in the PFI so that a proper discount rate can then be applied.

Consistent with the guidance in ASC 820, estimates of future cash flows will have one of two fundamental risk profiles:

- **Conditional:** The estimate will usually, but not always, be based on a single scenario that includes a favorable bias, such as a “best case” scenario that assumes the successful resolution of some technical, regulatory, or market risk, or a “most likely case” scenario that may not properly reflect unfavorable events. The appropriate discount rate for such conditional estimates will likely include credit, market, size, and other risk premiums, as appropriate, plus an additional risk premium to account for the absence of less favorable scenarios and assumptions, and the uncertainty of successful risk resolution.
- **Expected:** The estimate will be based on a sufficient number success and failure scenarios, weighted by the expected probability of each. There are two types of expected cases:
 - The cash flow estimates contain systematic (market) risk, and should be discounted a “risky” discount rate that includes credit, market, size, and other risk premiums, as appropriate.
 - The cash flow estimates have been adjusted for systematic risk, to certainty-equivalents,

and should be discounted at or near risk-free rates.

Option-pricing models, both closed-form and numerical, employ risk-neutral assumptions and are thus conceptually similar to certainty-equivalent cash flow models.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- d. Nature of estimated cash flows (or other benefit stream); for example:
 - i. Enterprise level
 - ii. Debt
 - (1) Contractual
 - (2) Adjusted
 - iii. Equity
 - (1) Preferred
 - (2) Common
 - iv. Other
 - (1) Revenue (e.g., for earnout)
 - (2) EBITDA
- e. Description of risk profile of estimated cash flows (or other benefit stream)
 - i. Conditional: include a description of the significant conditional factors
 - ii. Expected: include a description of the scenarios and the weights assigned to each
 - iii. Certainty-equivalent/risk neutral: include a description of the adjustments employed to adjust to certainty-equivalents

A3.2 Discount Rate Derivation

Topic Overview

Given the spectrum of discount rate models that exist, the valuation professional must carefully assess which model is most appropriate for a particular task and ensure that rationale is well documented in the engagement work file.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- a. Cost of equity
 - i. The rationale for the selection of a discount rate model or models.
 - ii. The source of the risk free rate used in the calculation and explain the rationale for its selection.
 - iii. The source or calculation of the equity risk premium and rationale for its use.
 - iv. An explanation of the calculation of beta of the guideline public companies (or other industry risk adjustments) and the rationale for the method used (or rationale for the use of another source of beta) when using CAPM.
 - v. The rationale for selecting the specific beta when using CAPM, including “adjusted betas.”
 - vi. The amount of size premium, the source of the premium data and the rationale for selecting the concluded premium (even if that premium is zero) when applicable.
 - vii. The amount of company-specific risk adjustment, if any, the rationale for application of the adjustment, and the objective and quantitative data sets used to develop the specific concluded adjustment. Qualitative factors may be considered in determining whether a company-specific risk adjustment should be applied; however, quantitative support must also be provided to support the amount of the adjustment (note: this quantitative support does not include the valuation professional’s judgment or the level of company-specific risk premiums observed in other valuations). This is typically the most subjective part of the derivation of the cost of equity capital and, therefore, documentation related to this feature should be the most extensive.
 - (1) Comparisons to internal rate of return (IRR) calculations or to the results of other discount rate models may aid in supporting a company-specific risk adjustment. In instances when a company-specific risk premium has been used in prior valuations it is appropriate for the valuation professional to explain why no company-specific risk premium was used in subsequent valuations.
 - viii. The amount of country-specific risk adjustment the source of the adjustment data (if applicable), and the rationale for selecting the concluded adjustment (even if that adjustment is zero).
 - ix. Other significant assumptions should be clearly explained and documented as well as other inputs that may apply depending on the models chosen by the valuation professional.

- b. Cost of debt
 - i. The source(s) of data used and the rationale for use of the source(s) (for example, spot market YTM on bonds with a debt rating commensurate with the credit-worthiness of the subject entity).
 - ii. The rationale to support the selection of the pretax cost of debt and any additional source documents
 - iii. The rationale for the statutory tax rate used to adjust the pretax rate to an after tax rate.
- c. Capital Structure
 - i. The capital structures of the guideline public companies, industry sector, or subject company and rationale for selection of the time frame over which they are measured, as applicable.
 - ii. The market participant capital structure (when appropriate) selected in the calculation of the WACC and rationale for its selection.
- d. Other
 - i. When other discount rate models are used instead of CAPM or WACC, the valuation professional must provide within the work file details on
 - (1) the model specification,
 - (2) inputs chosen and the sources of those inputs,
 - (3) sub-methodological selections made, and
 - (4) why, if applicable, any adjustments were made to the model results.

A3.3 Risk-neutral Models

Topic Overview

Although there are many different methods and models that are appropriate for valuing financial instruments, there are three general categories that tend to be frequently encountered:

- Direct observation (Level 1, Level 2 prices)
- Discounted cash flow models using risk-adjusted discount rates
- Risk-neutral models using risk-free discount rates

Risk-neutral models, in turn, come in a variety of forms, including:

- Closed-form: Black-Scholes, Black-76
- Numerical:

- Binomial equity, debt and hybrid models
- Monte Carlo techniques

Risk-neutral models are widely considered to be the most appropriate measurement tool for instruments that have non-linear payoffs, such as:

- Stock options
- Debt options
- Convertibles
- Earnouts

Substantially all risk-neutral models rest on the same foundations:

- An underlying asset (or metric such as EBITDA) which determines the payoff
- An exercise price (cash or other asset) which must be given in exchange for the payoff
- A contractual maturity date

Depending on the facts and circumstances, the alternative models listed above may or may not be used interchangeably. Some warrants, for example, can be properly valued using a normal Black-Scholes model; other warrants will require a dilution-adjusted Black-Scholes model; still others (e.g., those with path-dependent features) will likely require a binomial model or, more likely, a Monte Carlo technique to properly measure the value. Thus, the nature of the subject interest and its specific terms and conditions will influence the selection of the valuation model and the nature of the assumptions and inputs required.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- Description of all significant terms and conditions of the subject instrument
- Rationale for the selection of a risk-neutral framework
- Rationale for selection of the specific risk-neutral model
- Discussion of models considered but rejected
- Discussion of key terms explicitly modeled
- Support for all key model inputs, including management estimates and assumptions
- Rationale for any contractual terms that were not modeled

A3.4 Valuation of Equity Securities

Topic Overview

The valuation of non-traded equity securities is a complex topic, due to the wide variation in their structures and risk profiles. For example:

- Along one dimension, equities can be segregated into preferred securities and residual (common) securities.
- In theory equities have an infinite life, although in practice there may be redemption features, or the nature of the underlying business itself, that limit their lives either contractually or economically.
- They may be found in companies with simple or complex capital structures.
- The risk profile of relatively stable or mature companies may suggest that expected future returns may be normally distributed.
- The risk profile for earlier stage or underperforming companies is often non-normal, due to the presence of one or more significant contingencies outside the control of management.

The issues listed above, as well as many other factors, result in significant variation in appropriate valuation methods and models. For example, the common stock of a mature company with a simple capital structure is often valued using straightforward methods such as discounted cash flows and market multiples. In contrast, valuation of the common stock of an early stage technology company may need to employ multiple scenarios, option-based models, decision tree analysis, complex allocation methods, or other suitably sophisticated techniques. The selection of method(s) and model(s) must appropriately balance these issues with the requirement for the valuation professional to maximize the use of observable inputs.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- The capital structure of the business entity, including significant terms and conditions of each class of debt and equity
- The risk profile of the business, e.g., expectations of normally distributed returns v. contingent outcomes
- The rationale for the valuation methods and models selected
 - Consistency with capital structure and risk profile

- Availability of supportable inputs
- The rationale for methods and models considered and rejected

A3.5 Valuation of Debt Securities

Topic Overview

The valuation of non-traded debt securities is complicated by a number of issues.

- Contingent features. All debt securities have contractual payment terms with respect to interest and return of principal. If these terms are relatively simple, e.g., a fixed interest rate payable at fixed time intervals, and a fixed schedule for principal repayment, such debt can typically be valued in a discounted cash flow model. However, if the debt securities also contain contingent provisions such as optional early redemption, investor puts, or make-whole features, proper valuation of the security may require a numerical model such as a binomial lattice.
- Payment terms. Debt securities may have interest payments that are partially or wholly paid in-kind. Amortization of principal may be linked with some exogenous variable, such as reduction of collateral, achievement of EBITDA targets, etc. These terms impact the modeling of cash flows and effective maturity.
- Seniority/security/covenants/other credit enhancements. These features can affect the probability of default and repayment, and may be present in the subject security, or may be absent from the subject security and present in other debt securities issued by the company. Either way, they complicate the discount rate development process.
- Appropriate discount rate. Establishing an appropriate risky discount rate at inception is typically part of the calibration process discussed herein. However, at subsequent measurement dates, or in situations in which the debt terms were not the result of an arms-length negotiation, development of an appropriate rate may require a synthetic credit rating analysis, comparable debt analysis, or other techniques.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- Description of the debt structure of the issuer, including significant terms and conditions of each class of debt
- Identification of all key features of the subject interest
- Rationale for selection of debt model

- Discussion of models considered but rejected
- Discussion of key debt terms explicitly modeled
- Rationale for any terms that were not modeled
- Description of discount rate development process

A3.6 Valuation of (Standalone) Derivatives

Topic Overview

U.S. GAAP (ASC 815-10-15-83) defines a derivative instrument as a financial instrument or other contract with all of the following characteristics:

a. Underlying, notional amount, payment provision. The contract has both of the following terms, which determine the amount of the settlement or settlements, and, in some cases, whether or not a settlement is required:

1. One or more underlyings
2. One or more notional amounts or payment provisions or both.

b. Initial net investment. The contract requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.

c. Net settlement. The contract can be settled net by any of the following means:

1. Its terms implicitly or explicitly require or permit net settlement.
2. It can readily be settled net by a means outside the contract.
3. It provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

No other area of fair value measurement has more variety or complexity than the accounting for and valuation of derivatives. A partial list of standalone derivatives, and some commonly used valuation models associated with each, appears below:

- Stock options: Black-Scholes, binomial, Monte Carlo
- Warrants: Black-Scholes, binomial, Monte Carlo
- Futures: discounted cash flow, risk-neutral methods
- Interest rate swaps: discounted cash flow, risk-neutral methods
- Currency swaps: discounted cash flow, risk-neutral methods
- Commodity swaps: discounted cash flow, risk-neutral methods
- Credit default swaps: probability weighted cash flows, risk-neutral methods

- Debt-related options: binomial

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- Description of all significant terms and conditions of the subject derivative instrument
- Rationale for selection of the valuation model
- Discussion of models considered but rejected
- Discussion of key derivative terms explicitly modeled
- Rationale for any terms that were not modeled

A3.7 Valuation of Hybrid Securities

Topic Overview

Hybrid securities are among the most difficult of all financial instruments to value properly. The following is a brief list of frequently encountered hybrid instruments, along with potential valuation models:

- Convertible preferred: scenario methods; option-pricing models; binomial lattices
- Convertible debt: binomial lattices; Monte Carlo
- Redeemable preferred stock: binomial lattices; option-pricing models

Implicit in their definition, hybrids contain multiple elements, or components, that vary with respect to expected payoffs and risks. In even their simplest form they comprise:

- A host instrument (e.g., a debt security)
- An embedded derivative (e.g., the option to convert debt principal into equity securities at maturity)

Therefore, the valuation process includes many, if not all, of the complexities of valuing debt (or other host instruments), with many of the complexities of valuing equity (or other) derivatives. This produces some difficulties during the initial calibration process:

- Debt instruments are generally calibrated to the transaction price by solving for the implicit discount rate
- Equity options are generally calibrated to the transaction price by solving for the implicit volatility
- Hybrids often contain both debt and option components

As a consequence, calibration of hybrid instruments requires the valuation professional to simultaneously solve for both the implicit risky debt rate and the implicit volatility, which may be expected to produce a matrix of potential solutions versus a unique solution. It is frequently the task of the valuation professional to select the combination that best reflects the views of likely market participants.

- Description of all significant terms and conditions of the subject hybrid instrument
- Rationale for selection of the valuation model
- Discussion of models considered but rejected
- Discussion of key host and derivative terms explicitly modeled
- Rationale for any terms that were not modeled
- Description of the calibration process as of the transaction date

A3.8 Valuation of Structured Products/Asset-Backed Securities

Topic Overview

There are a variety of structured products available in the market, such as collateralized debt obligations (CDO), collateralized mortgage obligations (CMO), and collateralized loan obligations (CLO). They are structurally complex, but conceptually simple. A legal entity (such as a trust) is set up. Large numbers of similar types of assets – e.g., mortgages, auto loans, or credit card debt – are purchased and placed in various pools inside the trust. The trust then sells tranches of trust indebtedness of varying credit quality to investors. The safest tranches have priority positions in the distribution (waterfall) of scheduled cash inflows from the underlying assets (lowest risk) and thus have the lowest expected yield. Lower quality tranches have subordinated rights with respect to cash inflows, and thus have higher target yields. Investments in these securities are subject to various risk factors and uncertainties (which vary depending on the seniority) that affect the amount and timing of expected cash flows:

- Interest rates (if pools contain floating rate assets)
- Default rates
- Recovery rates
- Prepayment rates
- Other factors

These debt securities are typically valued using discounted cash flow models.

Documentation Requirements

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- Description of asset composition held by the legal entity
 - Nature of assets
 - Terms and conditions:
 - First lien v. unsecured
 - Fixed v. floating interest
 - Fixed v. variable repayment of principal
 - Other
- Historical credit quality and related cash flow information
 - Historical default rates
 - Historical recovery rates
 - Historical prepayment rates
- Assumptions regarding future cash flows
- Nature and number of scenarios
- Discount rate development process
- Sensitivity analyses performed

A3.9 Broker Quotes and Pricing Services

Topic Overview

Many reporting entities, and particularly banks and other financial institutions, hold portfolios that include thinly-traded securities. To comply with the applicable measurement objective (e.g., fair value under ASC 820, or a value under a regulatory standard), these entities must often value large numbers of individual securities in relatively short time frames to meet filing deadlines. For many entities, therefore, the most efficient way to comply is to utilize information from brokers and/or pricing services. Valuation professionals must therefore first address the reliability of the source (broker, service, other). If the source is considered sufficiently reliable, then the valuation professional must then consider factors specific to each individual security.

Documentation Requirements

The valuation professional should document the following qualitative factors that support the degree of reliance to be placed upon each external source (broker, service, other):

- Independence
- Objectivity
- Consistency
- Competence
- Other reputational factors as appropriate

For each security, the following factors should be documented:

- Does the pricing information come from actual transactions, or just indicative offers to buy or sell?
- Is the information for identical securities?
- What is the periodic transaction volume, in both number of shares and dollar value?
- What is the bid-ask spread, and where does the price fall within this range?
- Which market(s) is the source of the pricing information?
 - Is it the principal market?
 - The most advantageous market?
- Are the observed transactions arms-length, or among related parties?
- Are transaction costs excluded?
- Did the broker/service make any adjustments to observed prices or quotes?
 - If so, what is the nature of and basis for these adjustments?
- Can the price be corroborated from a second source of information?
- Other factors as appropriate

If the above questions (in their totality) cannot be answered satisfactorily, such that the pricing information is not sufficiently supported with respect to the relevant measurement objective, then the valuation professional should consider either a) making an adjustment to the price, or b) using an alternative technique, such as an income-based model, to arrive at a supportable value.