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Typeset by Page Bros, Norwich
INTERNATIONAL VALUATION STANDARDS

Exposure Draft for Consultation

Consultation period 28 April 2023 to 28 July 2023
International Valuation Standards (IVS) are developed in an open and transparent way through public consultation. The consultation period on the proposed changes opens on 28 April 2023 for 3 months until 28 July 2023.

Comments can be submitted in the following ways:

- By personal letter or email to: aaronsohn@ivsc.org
- Online via the IVSC website
- Consultation and Summary Questions

The link takes you through to the relevant page on the website and the respondent can scroll down to find whichever method they prefer to use to respond.

The IVSC will also be providing a series of webinars in May 2023 on the proposed changes to IVS, which will be available via the IVSC website and publicised via eNews.

Subject to consultation responses received, the next edition of IVS will be published in January 2024 with an effective date of July 2024.
Summary Consultation Questions

In order to answer the consultation questions below it is necessary to read the General Standards first followed by any applicable Asset Standards.

**Respondent details (compulsory)**

1. What is your name?
2. What is your job title?
3. Which firm/organisation do you work for?
4. What is your primary location? *(country or world region)*
   - Africa
   - Americas (Canada and USA)
   - Asia
   - Europe
   - Latin America
   - Middle East
   - Global
5. What is your role in respect of valuations? *(if other, please specify)*
   - Academic
   - Advisor
   - Analyst *(please specify, eg, data analyst)*
   - Asset Manager
   - Banker
   - Consultant
   - Data Provider
   - Fund Manager
   - Government Employee
   - Investor
   - Rating Agency
   - Regulator
   - Researcher
   - Service Provider
6. What is your main area of interest? *(tick as many boxes as appropriate)*
   - Business Valuation
   - Financial Assets Valuation
   - Tangible Assets Valuation
   - Other *(please describe)*

7. Are you responding to these questions as an individual or on behalf of a firm or organisation?
   - Individual
   - Firm/Organisation

8. Have you responded to previous IVS consultations?
   - Yes
   - No
Exposure Draft
Consultation Questions

General Standards

1. The IVSC Technical Standards Boards (the Boards) have enhanced the structure of the General Standards to mirror the valuation process to improve users’ ability to understand and apply International Valuation Standards (IVS). Do you believe that this has been accomplished? If not, why not, and what specific changes would you make?

2. In the edition of IVS (effective 31 January 2022), the IVS Framework was included as a preamble and there was a lack of clarity as to whether it was mandatory or not. In the General Standards as proposed in the Exposure Draft, the IVS Framework, now chapter IVS 100 Framework, forms a mandatory part of IVS. Do you agree that this should be mandatory? If not, why not, and what specific changes would you make?

3. IVS 100 Framework now includes section 30 Quality Control. Do you agree that the new requirements for quality control are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

4. IVS 104 Data and Inputs has been added to the General Standards. Do you agree that the requirements for data and inputs are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

5. The General Standards now include specific requirements for consideration of ESG factors within IVS 101 Scope of Work, IVS 103 Valuation Approaches and IVS 106 Documentation and Reporting. In addition, an ESG Appendix has been included in IVS 104 Data and Inputs. Do you agree that the requirements and framework for ESG considerations are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

6. IVS 105 Valuation Models has been added to the IVS General Standards. Do you agree that the requirements for valuation models are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

7. IVS 106 Documentation and Reporting now includes section 20 Documentation. Do you agree that the requirements for documentation and reporting are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?
8. The IVS Glossary is intended to include only defined terms used within IVS. The Glossary now includes additional definitions and others have been revised or deleted. Do you think these changes are appropriate? If not, why not, and what specific changes would you make?

9. Stakeholders requested that the Board provide additional standards regarding valuation reviews. The Board has developed standards related to two types of valuation review (Valuation Process Review and Value Conclusion Review). Do you think these additions are appropriate? If not, why not, and what specific changes would you make?

10. Do you have any other comments or observations?

**Asset Standards**

**Business Valuation**

11. The current Exposure Draft includes only minimal changes to IVS 200 Businesses and Business Interests through to IVS 230 Inventory. Most changes pertain to cross-referencing.

The Boards found that IVS 200 to IVS 230 inclusive:

- effectively represent current international best practice; and
- are congruent with the proposed changes in other sections of IVS.

Furthermore, since the adoption and implementation of these standards are at critical junctures in several key jurisdictions, the Boards have chosen to not make any substantial changes to these chapters.

Do you agree that IVS 200 to IVS 230 should remain substantially unchanged to maintain consistency with IVS General Standards as outlined in the Exposure Draft? If you disagree, please explain your reasoning and provide specific suggestions for changes that you believe would enhance these standards?

**Financial Instruments**

12. IVS 500 Financial Instruments has been restructured to follow the enhanced structure of the General Standards which are now mandatory. The restructured IVS 500 mirrors the valuation process in order to not only improve users’ ability to understand and apply IVS but also to ensure that users’ can apply IVS 500 in conjunction with IVS General Standards. Do you believe that this has been accomplished? If not, why not, and what specific changes would you make?

13. The revised proposals on IVS 500 Financial Instruments include requirements on governance of the valuation process which need to be applied in conjunction with the requirements in IVS General Standards. Do you agree that the requirements for governance are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

14. The revised proposals on IVS 500 Financial Instruments include requirements on data and inputs which need to be applied in conjunction with the requirements in the General Standards. Do you agree that the requirements
for data and inputs are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

15. In line with the Boards’ publication plan the revised proposals to IVS 500 now include requirements on methods and models which must be applied in conjunction with the General Standards. Do you agree that the requirements for methods and models are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

16. In line with the Boards’ publication plan the revised proposals to IVS 500 now include requirements on quality control which must be applied in conjunction with the General Standards. Do you agree that the requirements for quality control are clear, complete and provide adequate clarity to ensure compliance with IVS? If not, why not, and what specific changes would you make?

17. Do you have any other comments or observations in relation to IVS 500 Financial Instruments? Is IVS 500 sufficiently detailed and if not, why not and what specific changes would you make?

18. Are there any elements within IVS 500 that should be included within IVS General Standards? If so, please advise which elements?

Tangible Assets

IVS 300 Plant, Equipment and Infrastructure

19. IVS 300 Plant, Equipment and Infrastructure now includes infrastructure. Is this sufficiently covered and if not, why not and what specific changes would you make?

20. Additional content has been added to IVS 300 in relation to the income approach. Is this sufficiently covered and if not why not and what specific changes would you make?

21. Additional content has been added to IVS 300 in relation to the market approach. Is this sufficiently covered? If not why not and what specific changes would you make?

22. Do you have any other comments or observations in relation to IVS 300? Is IVS 300 sufficiently detailed? If not, why not and what specific changes would you make?

23. Are there any elements within IVS 300 that should be contained within IVS General Standards? If so, please advise which elements?

IVS 400 Real Property Interests

24. IVS 400 Real Property Interests has been restructured to align with IVS General Standards and as part of this process additional sections have been added to provide additional context on data and inputs and valuation models. Does IVS 400 provide sufficient content and clarity on these topics relative to the content added in the General Standards? If not, why not, and what specific changes would you make?
25. Do the General Standards provide sufficient additional content in relation to the consideration of ESG or should IVS 400 \textit{Real Property Interests} provide additional content? If so, what additional changes would you make?

26. Do you have any other comments or observations in relation to IVS 400? Is IVS 400 sufficiently detailed and if not, why not and what specific changes would you make?

27. Are there any elements within IVS 400 that should be included within IVS General Standards? If so, please advise which elements.

\textbf{IVS 410 \textit{Development Property}}

28. IVS 410 \textit{Development Property} has been restructured to align with IVS General Standards and as part of this process additional sections have been added to provide additional context on data and inputs and valuation models. Does IVS 410 provide sufficient content and clarity on these topics relative to the content added in the General Standards? If not, why not, and what specific changes would you make?

29. Do the General Standards provide sufficient additional content in relation to the consideration of ESG or should IVS 410 provide additional content? If so, what additional changes would you make?

30. Do you have any other comments or observations in relation to IVS 410? Is IVS 410 sufficiently detailed and if not, why not and what specific changes would you make?

31. Are there any elements of IVS 410 which should be included within IVS General Standards? If so, please advise which elements?
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Foreword

The International Valuation Standards Council (IVSC) is an independent, not-for-profit organisation committed to advancing quality in valuations. Our primary objective is to build confidence and public trust in valuation by producing transparent and consistent standards and securing their universal adoption and implementation for the valuation of assets across the world. International Valuation Standards (IVS) are a fundamental part of the financial system.

Valuations are widely used and relied upon in financial and other markets, including for inclusion in financial statements, for regulatory compliance or to support lending and transactional activity.

The purpose of IVS is to promote and maintain a high level of public trust in valuation practice by establishing appropriate global requirements for valuations that equally apply to all parties involved in the process and those who oversee this process.

IVS are principle-based and apply to everyone in the valuation process for all assets and liabilities no matter where they exist around the globe.

IVS apply to a range of valuations, including:

(a) valuations performed by valuers for their own employers (employed);
(b) valuations performed by valuers for clients other than their employers (engaged).

IVS can also apply to all valuations which assert compliance.
Structure of the International Valuation Standards (IVS)

The International Valuation Standards comprise General Standards that are applicable across all valuations, and Asset Standards that relate to specific valuation disciplines. Appendices, which are part of the International Valuation Standards, provide additional information for certain concepts articulated in the International Valuation Standards.

General Standards

General Standards apply to all valuations. The General Standards are as follows.

- IVS 100 Valuation Framework
- IVS 101 Scope of Work
- IVS 102 Bases of Value
  - Appendix: Bases of Value
  - Appendix: Premise of Value
- IVS 103 Valuation Approaches
  - Appendix: Valuation Method
- IVS 104 Data and Inputs
  - Appendix: ESG
- IVS 105 Valuation Models
- IVS 106 Documentation and Reporting

Asset Standards

Asset Standards provide requirements in addition to the General Standards for specific types of assets and liabilities as follows:

- IVS 200 Businesses and Business Interests
- IVS 210 Intangible Assets
- IVS 220 Non-Financial Liabilities
- IVS 230 Inventory
- IVS 300 Plant, Equipment and Infrastructure
- IVS 400 Real Property Interests
- IVS 410 Development Property
- IVS 500 Financial Instruments
Glossary

This glossary defines certain terms used in IVS (all glossary definitions are italicised within IVS chapters).

10. Defined Terms

10.1. Asset or Assets
The right to an economic benefit.

10.2. Basis (bases) of Value
The fundamental premises on which the reported values are or will be based (examples are included in IVS 102 Bases of Value, section 10) (in some jurisdictions also known as standard of value).

10.3. Client
The person, persons, or entity who appoints the valuer for a given valuation. “Clients” may be internal (ie, valuations performed for an employer) or external (ie, when a valuer is engaged by a third-party client).

10.4. Cost(s) (noun)
The consideration or expenditure required to acquire or create an asset.

10.5. Discount Rate(s)
A rate of return used to convert a monetary sum, payable or receivable in the future, into a present value.

10.6. Equitable Value
This is the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties.

10.7. Equity instrument
The residual interest in the assets of the entity after deducting all its liabilities.
10.8. **Financial Asset or Assets**

Any asset that is:

(a) cash;
(b) an equity instrument of another entity; or
(c) a contractual right:

• to receive cash or other asset from another entity; or
• to exchange assets or liabilities with a third party under conditions that are potentially favourable to the entity; or

(d) a contract that will or may be settled in the entity’s own equity instruments.

10.9. **Financial Instrument**

A contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

10.10. **Financial Liability or Liabilities**

Any liability that is:

(a) a contractual obligation:

• to deliver cash or other asset to another entity; or
• to exchange assets or liabilities with another entity under conditions that are potentially unfavourable to the entity; or

(b) a contract that will or may be settled in the entity’s own equity instruments.

10.11. **Intangible Asset**

An identifiable non-monetary asset with no physical substance.

10.12. **Intended Use**

The reason(s) for which a value is developed as described in the scope of work. This is also known as intended purpose.

10.13. **Intended User**

Any party identified, by the client and valuer in the scope of work as a user of the valuation.

10.14. **Investment Value**

The value of an asset to the owner or a prospective owner given individual investment or operational objectives (may also be known as “worth”).

10.15. **Jurisdiction**

The legal and regulatory environment in which a valuation is performed.
10.16. Liabilities

The present obligation to transfer an economic benefit. A liability has the following two essential characteristics:

(a) It is a present obligation;
(b) The obligation requires an entity to transfer or otherwise provide economic benefits to others.

10.17. Liquidation Value

The gross amount that would be realised when an asset or group of assets are sold from a liquidation sale, with the seller being compelled to sell as of a specific date. Liquidation value can be determined under two different premises of value (see IVS 102 Bases of Value, Appendix A60):

(a) an orderly transaction with a typical marketing period; or
(b) a forced transaction with a shortened marketing period.

10.18. Market Value

The estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

10.19. Must

An action or procedure that valuers have unconditional responsibility to perform should the requirement apply.

10.20. Price (noun)

The monetary or other consideration asked, offered, or paid for an asset, which may be different from the value.

10.21. Professional Judgement

The use of knowledge and experience to select and apply valuation processes, valuation models, and inputs and to interpret the results to provide a value.

10.22. Service Organisation

An entity (or segment of an entity) that provides information, reports or opinions including but not limited to providing market data, credit ratings or other services to support the valuation.

10.23. Should

Actions or procedures that are presumptively mandatory. The valuer must comply with requirements of this type unless the valuer demonstrates that alternative actions which were followed under the circumstances were sufficient to achieve the objectives of the standards.

10.24. Significant

Any aspect of a valuation which in the professional judgement of the valuer greatly impacts the resultant value.
10.25. Specialist
An individual or group of individuals possessing special skill or knowledge required to perform or assist in the valuation or the review and challenge process. A specialist can be internally employed or externally engaged.

10.26. Synergistic Value
The result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values. If the synergies are only available to one specific buyer, then synergistic value will differ from market value, as the synergistic value will reflect particular attributes of an asset that are only of value to a specific purchaser. The added value above the aggregate of the respective interests is often referred to as marriage value.

10.27. Tangible Asset
A physical measurable asset such as property, plant, and equipment.

10.28. Valuation
The act or process to determine a value as of a valuation date that is prepared in full compliance with IVS.

10.29. Valuation Approach
A way of estimating value that employs one or more specific valuation methods (see IVS 103 Valuation Approaches).

10.30. Value Conclusion Review
An analysis by a peer applying IVS to assess the reasonableness of a value conclusion.

10.31. Valuation Date
The point in time to which the valuation applies.

10.32. Valuation Method
Within valuation approaches, a specific technique to develop a value (see IVS 103 Valuation Approaches Appendix).

10.33. Valuation Model
A quantitative implementation of a method in whole or in part that converts input data into outputs used in the development of a value (see IVS 105 Valuation Models).

10.33. Valuation Process Review
An analysis by a peer applying professional judgement to assess the compliance of a valuation with IVS.

10.34. Valuation Review
A valuation review is either a valuation process review or a value conclusion review.
10.35. Valuation Risk
The risk that the resultant value is not appropriate for its intended use.

10.36. Value (noun)
The valuer’s conclusion as the result of a valuation process as of a valuation date that is fully compliant with the requirements of the IVS.

10.37. Valuer
An individual, group of individuals or individual within an entity, regardless of whether employed (internal) or engaged (contracted/external), possessing the necessary qualifications, ability and experience to execute a valuation in an objective, unbiased, ethical and competent manner. In some jurisdictions, licensing is required before one can act as a valuer.

10.38. Weight
The amount of reliance placed on a particular indication of value in reaching a conclusion of value.

10.39. Worth
The value of an asset to the owner or a prospective owner given individual investment or operational objectives (may also be known as “investment value”).
General Standards
General Standards apply to all assets and liabilities and are the starting point for any valuation. Asset Standards provide requirements and guidance in addition to the General Standards for specific types of assets and liabilities.

Compliance with IVS includes adherence to the IVS General Standards and any applicable Asset Standards.

In performing their valuations, the valuer must comply with the Valuer Principles and the Valuation Principles.¹

10. Valuer Principles

10.1. Ethics

Valuers must follow the ethical principles of integrity, objectivity, impartiality, confidentiality, competence, and professionalism to provide a non-biased valuation and to promote and preserve the public trust.

10.2. Competency

At the time the valuation is submitted, valuers must have the technical skills and knowledge required to appropriately complete a valuation.

10.3. Compliance

Valuers must disclose or report that IVS were used for the valuation and that they complied with those standards in performing the valuation.

¹ IVSC Code of Ethical Principles for Professional Valuers provides an example of an appropriate framework for due care.
10.4. Scepticism

*Valuers must* apply an appropriate level of scepticism at every stage of the *valuation*. The level of scepticism should be based on the potential for bias within the information and data.

10.5. Documentation

*Valuers must* keep a copy any report issued of the *value* and a record of the valuation work performed *must* be kept for an appropriate period after completion of the *valuation*.

20. Valuation Principles

20.1. Scope of Work

*Valuations must* be performed on a basis consistent with the scope of work.

20.2. Intended User(s)

*Valuations must* disclose or report a clear and accurate description of the *intended user(s)* of the *valuation*.

20.3. Identification of Subject of Valuation

*Valuations must* clearly identify what *asset(s)* and *liability(ies)* are being valued.

20.4. Intended Use

*Valuations must* disclose or report a clear and accurate description of the *intended use* of the *valuation*.

20.5. Basis of Value

*Valuations must* follow the *basis (or bases) of value* (see IVS 102 *Bases of Value*, para 10.1) appropriate for the *valuation* and all applicable requirements.

20.6. Valuation Date

*Valuations must* disclose or report the *valuation date* that is the basis of their analyses, opinions, or conclusions. *Valuers must* also state the date they disclose or report their *value*.

20.7. Assumptions and Conditions

*Valuations must* disclose *significant* assumptions and conditions specific to the *valuation* that may affect the resulting *value*.

20.8. Valuation Approach and Method

*Valuations must* use the *valuation approach* and *valuation method* consistent with the *intended use* to develop a *value*.

20.9. Data and Inputs

*Valuations must* use appropriate data and inputs to develop a *value*. 
20.10. Valuation Models

Valuations must use appropriate models to develop a value.

20.11. Communication of Valuation

Valuations must report the analyses, opinions, and conclusions of the valuation to the client and intended user(s).

30. Quality Control

30.1. Quality controls check that valuation processes are performed consistently, objectively, transparently and in compliance with IVS and allow for the assessment of the valuation and the resultant value.

30.2. Quality controls around the valuation process must be in place.

30.3. Quality controls apply throughout the valuation process and may include but are not limited to review of scope of work, data reviews, model validations, recalculation, back testing and fact checking.

30.4. Quality controls should be designed to identify whether valuations are neutral and free from bias.

30.5. All quality controls must be consistently followed and apply to all people and systems involved in the valuation process.

30.6. The extent of the quality controls should depend on the intended use, intended user and complexity of the valuation.

30.7. Valuers may perform monitoring procedures with respect to their own compliance and their quality control policies and procedures, but only if valuers are able to address and assess the valuation risk.

30.8. A valuer must apply quality controls to reduce the valuation risk to an acceptable level. A valuer unable to reduce the valuation risk to an acceptable level must decline the engagement.

30.9. Quality controls should include a degree of review and challenge. Review and challenge should assess the judgements made including their reasonableness and freedom from bias during the valuation and in determining the value.

30.10. Quality controls must be documented. The documentation must contain sufficient detail to allow a peer, applying professional judgement, to understand the quality control process.

30.11. There must be periodic assessment of the quality control process to ensure that the integrity and completeness of the control environment is appropriate as of the valuation date. The periodic assessment must be documented.
40. **Use of a Specialist**

40.1. If a valuer does not possess all of the necessary technical skills, experience, and knowledge to perform all aspects of a valuation, it is acceptable for the valuer to seek assistance from specialists, providing this is disclosed in the scope of work (see IVS 101 Scope of Work) and the applicable reporting (see IVS 106 Documentation and Reporting).

40.2. Prior to using a specialist, the valuer must assess and document the knowledge skill and ability of the specialist. Relevant factors may include the following:

(a) experience in the type of work performed;
(b) professional certification, licence, or professional accreditation of the specialist in the particular field;
(c) reputation and standing of the specialist in the particular field.

40.3. The valuer must have the technical skills, experience, and knowledge to:

(a) obtain an understanding of the specialist’s process and findings; and
(b) evaluate the work of the specialist.

40.4. The valuer must ensure that the information received from the specialist is sufficient for the valuer to meet the requirements of IVS. This applies both to specialists that are internally employed or externally engaged by the valuer.

40.5. In certain circumstances, the quality control process may require the use of a specialist. In such cases, quality controls must be in place and IVS 100 Valuation Framework, paras 40.2 to 40.4, must be applied.

50. **Use of a Service Organisation**

50.1. If a valuer does not possess all of the necessary data, inputs or valuation models to perform all aspects of the valuation, it is acceptable for the valuer to engage service organisations.

50.2. Prior to using a service organisation, the valuer must assess and document their capabilities, for example, the completeness and accuracy of inputs received.

60. **Compliance**

60.1. IVS consist of mandatory requirements that must be followed in order to state that a valuation was performed in compliance with IVS. Certain aspects of IVS do not direct or mandate any particular course of action but provide fundamental principles and concepts that must be considered in undertaking a valuation. In order to be IVS compliant, the valuation must meet the requirements of the General Standards as well as the applicable Asset Standards.

60.2. When a statement is made that a valuation will be, or has been, undertaken in accordance with IVS, it is implicit that the valuation must be prepared in compliance with all relevant standards issued by the IVSC.
60.3. In applying IVS the following compliance hierarchy must be followed:

1. IVS General Standards (IVS 100 *Valuation Framework* to IVS 106 *Documentation and Reporting*, including appendices);
2. IVS Asset Standards (IVS 200 *Businesses and Business Interests* to IVS 500 *Financial Instruments*, including appendices);
3. legal, statutory, and regulatory or other authoritative requirements appropriate to the purpose and jurisdiction of the valuation. If in conflict with IVS the requirements should be prioritised, explained, documented and reported.

Any other deviations would render the valuation not compliant with IVS.

60.4. For assets and/or liabilities that may fall within multiple Asset Standards (IVS 200 *Businesses and Business Interests* to IVS 500 *Financial Instruments*), the valuer should follow the General Standards and explain, justify and document, which of the Asset Standard(s) were used.

60.5. In certain instances, a valuer may be asked to conduct a valuation review for compliance with IVS. In such instances, the valuer should comply with IVS and the applicable review framework as defined in the scope of work.

70. Effective Date

70.1. This version of International Valuation Standards is published on 31 January 2024, with an effective date of 31 July 2024 for valuations performed on or after this date. The IVSC permits early adoption from the date of publication.

70.2. When undertaking valuations or valuation reviews with a retrospective or historical valuation date, the valuer should explain and document the editions of IVS that (i) they have relied upon, and (ii) are applicable at the date of valuation. The form and location of documentation will vary based on scope of work.
10. Introduction

10.1. A scope of work (sometimes referred to as terms or letter of engagement) describes the fundamental terms of a valuation or valuation review. These include but are not limited to the asset(s) and liability(ies) being valued, the intended use of the valuation and the responsibilities of parties involved in the valuation.

10.2. A scope of work for a valuation review describes the fundamental terms such as the components of the valuation or conclusion of value being reviewed.

10.3. A scope of work is required for all valuations and valuation reviews whether the values are for internal or external use.

10.4. The client and the valuer must agree on the scope of work and that the valuation or valuation review scope is appropriate for the intended use. In determining the scope of work, the client and the valuer may need to consider the requirements of the intended users.

20. Valuation Requirements

20.1. The scope of work must define the following:

(a) asset(s) and/or liabilities being valued: the subject asset and liability in the valuation must be clearly identified and the client is responsible for the accuracy and completeness of that information;

(b) client(s): the person, persons, or entity who appoints the valuer for a given valuation. Clients may be internal (ie, valuations performed for an employer) or external (ie, when a valuer is engaged by a third-party client);

(c) intended use (if any): the reason for which a valuation is developed;

(d) intended user (if any): any party, as identified, by the client in the scope of work as a user of the valuation;
(e) valuer: the valuer may be an individual, group of individuals, or individual within an entity, regardless of whether employed (internal) or engaged (contracted/external), possessing the necessary qualifications, ability and experience to execute a valuation in an objective, unbiased, ethical and competent manner. The valuer must disclose any potential conflict of interest or bias;

(f) valuation currency: the currency for the valuation and the final valuation report or conclusion must be established;

(g) valuation date: the valuation date must be stated. If the valuation date is different from the date on which the valuation is reported, then that date should also be stated;

(h) basis/bases of value used: as required by IVS 102 Bases of Value, the valuation basis must be appropriate for the intended use. The source of the definition of any basis of value used must be cited or the basis explained;

(i) the nature and extent of the valuer’s work and any limitations thereon: any limitations or restrictions on the inspection, enquiry and/or analysis in the value must be identified. If relevant information is not available because the conditions of the valuation restrict the investigation, these restrictions and any necessary assumptions or special assumptions (see IVS 102 Bases of Value, paras 50.1–50.5) made as a result of the restriction must be identified;

(j) the nature and sources of information upon which the valuer relies: the nature and source of information upon which the valuer relies and any verification or controls to ensure the accuracy of that information;

(k) special assumptions: any agreed special assumptions that are known prior to the valuation should be recorded in the scope of work;

(l) Environmental, Social and Governance Factors: any requirements in relation to the consideration of environmental, social and governance factors;

(m) the type of report or other documentation being prepared: a clear description of how the valuation results will be reported or a sample of the deliverable that will be supplied to the client. This should include a description of the type and extent of supporting documentation that will be supplied;

(n) restrictions on use, distribution, and publication of the report: where it is necessary or desirable to restrict the use of the valuation or those relying on it, the intended users and restrictions must be clearly communicated;

(o) IVS compliance: a statement that the valuation will be prepared in compliance with IVS must be disclosed in the scope of work and that the valuer will assess the appropriateness of all significant inputs. If, during the course of a valuation, it becomes clear to the valuer that the scope of work will not result in an IVS compliant valuation, this must be communicated to the client in writing.

20.2. The scope of work must be established and agreed between the client and the valuer in writing prior to the completion of the valuation report. Any changes to the scope of work prior to the completion of the valuation must be communicated and agreed upon in writing.
20.3. If, during the course of a valuation engagement, it becomes clear that the scope of work will not result in an IVS compliant value, the valuation will not comply with IVS.

30. Valuation Review Requirements

30.1. The scope of work must state whether the review is a valuation process review or a value conclusion review.

• a valuation process review addresses compliance with IVS applicable at the valuation date;
• a value conclusion review addresses the reasonableness of a value conclusion applicable at the valuation date.

30.2. The scope of work for a valuation review must include the following, at a minimum:

(a) agreed scope of the valuation review;
(b) assets and/or liabilities being reviewed;
(c) the identity of the valuation reviewer;
(d) the identity of the client;
(e) intended use;
(f) the identity of intended users;
(g) significant or special assumptions and/or limiting conditions pertaining to the valuation to be reviewed;
(h) the identity of any specialist or service provider, if used, as part of the valuation review;
(i) procedures to be undertaken, and the documentation to be reviewed.
IVS 102 Bases of Value

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This section requires a valuer to select the appropriate basis (or bases) of value for the agreed-upon scope of work and follow all applicable requirements associated with that basis of value, whether those requirements are included as part of this section (for IVS-defined bases of value) or not (for non-IVS-defined bases of value).

10. Introduction

10.1. Bases of value (sometimes called standards of value) describe the fundamental context or requirements on which the reported values will be based. It is critical that the basis (or bases) of value be appropriate to the terms and intended use of the valuation, as a basis of value.
may influence or dictate a valuer’s selection of methods, inputs and assumptions, and the ultimate conclusion of value.

10.2. There are different bases of value used in valuations. A valuer may be required to use bases of value that are defined by statute, regulation, private contract or another framework.

10.3. A premise of value or assumed use describes the circumstances of how an asset or liability is used. Different bases of value may require a particular premise of value or allow the consideration of multiple premises of value. The most common premises of value used in IVS are (see IVS 102 Bases of Value, Appendix A90–A120 for further description):

(a) highest and best use;
(b) current use/existing use;
(c) orderly liquidation; and
(d) forced sale.

10.4. The valuation date will influence what information and data a valuer considers in a valuation. Valuers should be aware that most bases of value prohibit the consideration of information or market sentiment that would not be known or knowable with reasonable due diligence on the measurement/valuation date by participants.

10.5. Most bases of value reflect assumptions that may include one or more of the following characteristics, such as:

(a) hypothetical buyer or seller;
(b) known or specific parties;
(c) members of an identified/described group of potential parties;
(d) whether the parties are subject to particular conditions or motivations at the assumed date (eg, duress); and/or
(e) an assumed knowledge level.

20. Bases of Value

20.1. IVS-defined bases of value are listed at para 20.2 below. Other non-IVS defined bases of value may be prescribed by individual jurisdictional law, local regulators, applicable standards, or recognised and adopted by international agreement.

20.2. IVS-defined bases of value are (see IVS 102 Bases of Value Appendix A10–A60);

1. market value A10;
2. market rent A20;
3. equitable value A30;
4. investment value/worth A40;
5. synergistic value A50; and
6. liquidation value A60.
20.3. Other bases of value may be required for financial reporting, tax reporting, or in other legal or regulatory contexts. Depending on the promulgator of the basis of value, the same words may be defined differently or require different valuation approaches. Therefore, care should be taken to identify, articulate and apply the appropriate basis of value for a given valuation. (A non-exhaustive illustrative list of other bases of value is included at IVS 102 Bases of Value, Appendix A70–A80).

20.4. In accordance with IVS 101 Scope of Work, the basis of value must be appropriate for the intended use and the source of the definition of any basis of value used must be cited or the basis explained.

20.5. Valuers are expected to understand the regulation, case law and other interpretive guidance related to all bases of value used.

20.7. The bases of value illustrated in IVS 102 Bases of Value, Appendix A70–A80, are defined by organisations other than the IVSC and the onus is on the valuer to ensure they are using the relevant definition.

30. Entity-Specific Factors

30.1. For most bases of value, the factors that are specific to a particular buyer or seller and not available to participants generally are excluded from the inputs used in a market-based valuation. Examples of entity-specific factors that may not be available to participants include:

(a) additional value or reduction in value derived from the creation of a portfolio of similar assets;
(b) unique synergies between the asset and other assets owned by the entity;
(c) legal rights or restrictions applicable only to the entity;
(d) tax benefits or tax burdens unique to the entity; and
(e) an ability to exploit an asset that is unique to that entity.

30.2. Whether such factors are specific to the entity or would be available to others in the market generally is determined on a case-by-case basis. For example, an asset may not normally be transacted as a stand-alone item but as part of a group of assets. Any synergies with related assets would transfer to participants along with the transfer of the group and therefore are not entity specific.

30.3. If the objective of the basis of value used in a valuation is to determine the value to a specific owner (such as investment value/worth discussed in IVS 102 Bases of Value, Appendix A40), entity-specific factors are reflected in the valuation of the asset and/or liability. Situations in which the value to a specific owner may be required include but are not limited to the following examples:

(a) supporting investment decisions; and
(b) reviewing the performance of an asset.
40. **Synergies**

40.1. Synergies refer to the benefits associated with combining assets and/or liabilities. When synergies are present, the value of a group of assets and liabilities is greater than the sum of the values of the individual assets and liabilities on a stand-alone basis. Synergies typically relate to a reduction in costs, and/or an increase in revenue, and/or a reduction in risk.

40.2. Whether synergies should be considered in a valuation depends on the basis of value. For most bases of value, only those synergies available to other participants generally will be considered (see discussion of Entity-Specific Factors in section 30 of this standard).

40.3. An assessment of whether synergies are available to other participants may be based on the amount of the synergies rather than a specific way to achieve that synergy.

50. **Assumptions and Special Assumptions**

50.1. In addition to stating the basis of value, it is often necessary to make an assumption or multiple assumptions to clarify either the state of the asset and liability in the hypothetical exchange or the circumstances under which the asset and liability is assumed to be exchanged. Such assumptions can have a significant impact on value.

50.2. These types of assumptions generally fall into one of two categories:

(a) assumed facts that are consistent with, or could be consistent with, those existing at the valuation date; and

(b) assumed facts that differ from those existing at the valuation date.

50.3. Assumptions related to facts that are consistent with, or could be consistent with, those existing at the valuation date may be the result of a limitation on the extent of the investigations or enquiries undertaken by the valuer. Examples of such assumptions include, without limitation:

(a) an assumption that a business is transferred as a complete operational entity;

(b) an assumption that assets and/or liabilities employed in a business are transferred without the business, either individually or as a group;

(c) an assumption that an individually valued asset and/or liability is transferred together with other complementary assets and/or liabilities; and

(d) an assumption that a holding of shares is transferred either as a block or individually.
50.4. Where assumed facts differ from those existing at the valuation date, it is referred to as a “special assumption”. Special assumptions are often used to illustrate the effect of possible changes on the value of an asset and/or liability. They are designated as “special” so as to highlight to a valuation user that the valuation conclusion is contingent upon a change in the current circumstances or that it reflects a view that would not be taken by participants generally on the valuation date. Examples of such assumptions include, but are not limited to:

(a) an assumption that a property is freehold with vacant possession;
(b) an assumption that a proposed building had actually been completed on the valuation date;
(c) an assumption that a specific contract was in existence on the valuation date which had not actually been completed; and
(d) an assumption that a financial instrument is valued using a yield curve that is different from that which would be used by a participant.

50.5. All assumptions and special assumptions must be reasonable under the circumstances, be supported by evidence, and be relevant having regard to the intended use for which the valuation is required.

60. Transaction Costs

60.1. Most bases of value represent the estimated price of an asset without adjustment for the seller’s costs of sale or the buyer’s costs of purchase and any taxes payable by either party as a direct result of the transaction.

70. Allocation of Value

70.1 Allocation of value is the separate apportionment of value of an asset(s) and or liability(ies) on an individual or component basis.

70.2 When apportioning value, the allocation method must be consistent with the overall valuation premise/basis and the valuer must:

(a) follow any applicable legal or regulatory requirements;
(b) set out a clear and accurate description of the intended use of the allocation;
(c) consider the facts and circumstances, such as the relevant characteristic(s) of the items(s) being apportioned;
(d) adopt appropriate methodology(ies) in the circumstances.
IVS 102 Bases of Value: Appendix

The bases of value appear in the Appendix. The Appendix must be followed when using the stated bases of value as applicable.

A10. IVS-Defined Basis of Value – Market Value

A10.1. Market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s-length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

A10.2. The definition of market value must be applied in accordance with the following conceptual framework:

(a) “the estimated amount” refers to a price expressed in terms of money payable for the asset in an arm’s-length market transaction. Market value is the most probable price reasonably obtainable in the market on the valuation date in keeping with the market value definition. It is the best price reasonably obtainable by the seller and the most advantageous price reasonably obtainable by the buyer. This estimate specifically excludes an estimated price inflated or deflated by special terms or circumstances such as atypical financing, sale and leaseback arrangements, special considerations or concessions granted by anyone associated with the sale, or any element of value available only to a specific owner or purchaser;

(b) “an asset or liability should exchange” refers to the fact that the value of an asset or liability is an estimated amount rather than a pre-determined amount or actual sale price. It is the price in a transaction that meets all the elements of the market value definition at the valuation date;

(c) “on the valuation date” requires that the value is time-specific as of a given date. Because markets and market conditions may change, the estimated value may be incorrect or inappropriate at another time. The valuation amount will reflect the market state and circumstances as at the valuation date, not those at any other date;

(d) “between a willing buyer” refers to one who is motivated, but not compelled to buy. This buyer is neither over-eager nor determined to buy at any price. This buyer is also one who purchases in accordance with the realities of the current market and with current market expectations, rather than in relation to an imaginary or hypothetical market that cannot be demonstrated or anticipated to exist. The assumed buyer would not pay a higher price than the market requires. The present owner is included among those who constitute “the market”;
(e) “and a willing seller” is neither an over-eager nor a forced seller prepared to sell at any price, nor one prepared to hold out for a price not considered reasonable in the current market. The willing seller is motivated to sell the asset at market terms for the best price attainable in the open market after proper marketing, whatever that price may be. The factual circumstances of the actual owner are not a part of this consideration because the willing seller is a hypothetical owner;

(f) “in an arm’s-length transaction” is one between parties who do not have a particular or special relationship, eg, parent and subsidiary companies or landlord and tenant, that may make the price level uncharacteristic of the market or inflated. The market value transaction is presumed to be between unrelated parties, each acting independently;

(g) “after proper marketing” means that the asset has been exposed to the market in the most appropriate manner to affect its disposal at the best price reasonably obtainable in accordance with the market value definition. The method of sale is deemed to be that most appropriate to obtain the best price in the market to which the seller has access. The length of exposure time is not a fixed period but will vary according to the type of asset and market conditions. The only criterion is that there must have been sufficient time to allow the asset to be brought to the attention of an adequate number of market participants. The exposure period occurs prior to the valuation date;

(h) “where the parties had each acted knowledgeably, prudently” presumes that both the willing buyer and the willing seller are reasonably informed about the nature and characteristics of the asset, its actual and potential uses, and the state of the market as of the valuation date. Each is further presumed to use that knowledge prudently to seek the price that is most favourable for their respective positions in the transaction. Prudence is assessed by referring to the state of the market at the valuation date, not with the benefit of hindsight at some later date. For example, it is not necessarily imprudent for a seller to sell assets in a market with falling prices at a price that is lower than previous market levels. In such cases, as is true for other exchanges in markets with changing prices, the prudent buyer or seller will act in accordance with the best market information available at the time;

(i) “and without compulsion” establishes that each party is motivated to undertake the transaction, but neither is forced or unduly coerced to complete it.

A10.3. The concept of market value presumes a price negotiated in an open and competitive market where the participants are acting freely. The market for an asset could be an international market or a local market. The market could consist of numerous buyers and sellers or could be one characterised by a limited number of market participants. The market in which the asset is presumed exposed for sale is the one in which the asset notionally being exchanged is normally exchanged.
A10.4. The market value of an asset will reflect its highest and best use (see IVS 102 Bases of Value, Appendix A90). The highest and best use is the use of an asset that maximises its potential and that is possible, legally permissible and financially feasible. The highest and best use may be for continuation of an asset’s existing use or for some alternative use. This is determined by the use that a market participant would have in mind for the asset when formulating the price that it would be willing to bid.

A10.5. The nature and source of the valuation inputs must be consistent with the basis of value, which in turn must have regard to the valuation intended use. For example, various valuation approaches and valuation methods may be used to arrive at an opinion of value providing they use market-derived data. The market approach will, by definition, use market-derived inputs. To indicate market value, the income approach should be applied, using inputs and assumptions that would be adopted by participants. To indicate market value using the cost approach, the cost of an asset of equal utility and the appropriate adjustments for physical, functional and economic obsolescence should be determined by analysis of market-based costs and depreciation.

A10.6. The data available and the circumstances relating to the market for the asset being valued must determine which valuation method or methods are most relevant and appropriate. If based on appropriately analysed market-derived data, each valuation approach or valuation method used should provide an indication of market value.

A10.7. Market value does not reflect attributes of an asset that are of value to a specific owner or purchaser that are not available to other buyers in the market. Such advantages may relate to the physical, geographic, economic, or legal characteristics of an asset. Market value requires the disregard of any such element of value because, at any given date, it is only assumed that there is a willing buyer, not a particular willing buyer.

A20. IVS-Defined Basis of Value – Market Rent

A20.1. Market rent is the estimated amount for which an interest in real property should be leased on the valuation date between a willing lessor and a willing lessee on appropriate lease terms in an arm’s-length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

A20.2. Market rent may be used as a basis of value when valuing a lease or an interest created by a lease. In such cases, it is necessary to consider the contract rent and, where it is different, the market rent.

A20.3. The conceptual framework supporting the definition of market value shown above can be applied to assist in the interpretation of market rent. In particular, the estimated amount excludes a rent inflated or deflated by special terms, considerations or concessions. The “appropriate lease terms” are terms that would typically be agreed in the market for the type of property on the valuation date between market participants. An indication of market rent should only be provided in conjunction with an indication of the principal lease terms that have been assumed.
A20.4. Contract rent is the rent payable under the terms of an actual lease. It may be fixed for the duration of the lease, or variable. The frequency and basis of calculating variations in the rent will be set out in the lease and must be identified and understood in order to establish the total benefits accruing to the lessor and the liability of the lessee.

A20.5. In some circumstances the market rent may have to be assessed based on terms of an existing lease (eg, for rental determination purposes where the lease terms are existing and therefore not to be assumed as part of a notional lease).

A20.6. In calculating market rent, the valuer must consider the following:

(a) in regard to a market rent subject to a lease, the terms and conditions of that lease are the appropriate lease terms unless those terms and conditions are illegal or contrary to overarching legislation, and

(b) in regard to a market rent that is not subject to a lease, the assumed terms and conditions are the terms of a notional lease that would typically be agreed in a market for the type of property on the valuation date between market participants.

A30. **IVS-Defined Basis of Value – Equitable Value**

A30.1. *Equitable value* is the estimated price for the transfer of an asset or liability between identified, knowledgeable and willing parties that reflects the respective interests of those parties.

A30.2. *Equitable value* requires the assessment of the price that is fair between two specific identified parties considering the respective advantages or disadvantages that each will gain from the transaction. In contrast, *market value* requires any advantages or disadvantages that would not be available to, or incurred by, market participants generally to be disregarded.

A30.3. *Equitable value* is a broader concept than *market value*. Although in many cases the price that is fair between two parties will equate to that obtainable in the market, there will be cases where the assessment of *equitable value* will involve taking into account matters that have to be disregarded in the assessment of *market value*, such as certain elements of *synergistic value* arising because of the combination of the interests.

A30.4. Examples of the use of *equitable value* include:

(a) determination of a price that is equitable for a shareholding in a non-quoted business, where the holdings of two specific parties may mean that the price that is equitable between them is different from the price that might be obtainable in the market; and

(b) determination of a price that would be equitable between a lessor and a lessee for either the permanent transfer of the leased asset or the cancellation of the lease liability.
A40. **IVS-Defined Basis of Value – Investment Value/Worth**

A40.1. *Investment value* is the value of an asset to a particular owner or prospective owner for individual investment or operational objectives.

A40.2. *Investment value* is an entity-specific basis of value. Although the value of an asset to the owner may be the same as the amount that could be realised from its sale to another party, this basis of value reflects the benefits received by an entity from holding the asset and, therefore, does not involve a presumed exchange. *Investment value* reflects the circumstances and financial objectives of the entity for which the valuation is being produced. It is often used for measuring investment performance.

A50. **IVS-Defined Basis of Value – Synergistic Value**

A50.1. *Synergistic value* is the result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values. If the synergies are only available to one specific buyer, then *synergistic value* will differ from *market value*, as the *synergistic value* will reflect particular attributes of an asset that are only of value to a specific purchaser. The added value above the aggregate of the respective interests is referred to as “marriage value” in some jurisdictions.

A60. **IVS-Defined Basis of Value – Liquidation Value**

A60.1. *Liquidation value* is the gross amount that would be realised when an asset or group of assets are sold from a liquidation sale, with the seller being compelled to sell as of a specific date. *Liquidation value* can be determined under two different premises of value:

(a) an orderly transaction with a typical marketing period; or
(b) a forced transaction with a shortened marketing period.

A60.2. A *valuer must* disclose which premise of value is assumed.
A70. **Other Basis of Value – Fair Value**

*International Financial Reporting Standards*

A70.1. IFRS 13 defines fair value as the *price* that would be received to sell an *asset* or paid to transfer a *liability* in an orderly transaction between market participants at the measurement date.

A70.2. For financial reporting purposes, over 130 countries require or permit the use of International Accounting Standards published by the International Accounting Standards Board. In addition, the Financial Accounting Standards Board in the United States uses the same definition of fair value in Topic 820.

A80. **Other Basis of Value – Fair Value (Legal/Statutory) in different jurisdictions**

A80.1. Many national, state and local agencies use fair value as a *basis of value* in a legal context. The definitions can vary significantly and may be the result of legislative action or those established by courts in prior cases.
IVS 102 Premise of Value: Appendix

The premises of value appear in the Appendix. The Appendix must be followed when using the stated premises of value as applicable.

A90. IVS Defined Premise of Value – Highest and Best Use

A90.1. Highest and best use is the use, from a participant perspective, that would produce the highest value for an asset.

A90.2. The concept of highest and best use is most frequently applied to non-financial assets as many financial assets do not have alternative uses. There may be circumstances where the highest and best use of financial assets needs to be considered.

A90.3. The highest and best use must be physically possible (where applicable), financially feasible, legally permissible and result in the highest value. If different from the current use, the costs and timing to convert an asset to its highest and best use would impact the value.

A90.4. The highest and best use for an asset may be its current or existing use when it is being used optimally.

A90.5. The highest and best use of an asset valued on a stand-alone basis may be different from its highest and best use as part of a group of assets, when its contribution to the overall value of the group must be considered.

A90.6. The determination of the highest and best use involves consideration of the following:

(a) to establish whether a use is physically possible, regard will be had to what would be considered reasonable by participants;

(b) to reflect the requirement to be legally permissible, any legal restrictions on the use of the asset, eg, town planning/zoning designations, need to be taken into account as well as the likelihood that these restrictions will change;

(c) the requirement that the use be financially feasible takes into account whether an alternative use that is physically possible and legally permissible will generate sufficient return to a typical participant, after taking into account the costs of conversion to that use, over and above the return on the existing use.

A100. IVS Defined Premise of Value – Current Use/Existing Use

A100.1. Current use-existing use is the current way an asset, liability, or group of assets and/or liabilities is used. The current use may be, but is not necessarily, also the highest and best use.
A110. **IVS Defined Premise of Value – Orderly Liquidation**

A110.1. An orderly liquidation describes the value of a group of assets that could be realised in a liquidation sale, given a reasonable period of time to find a purchaser (or purchasers), with the seller being compelled to sell on an as-is, where-is basis.

A110.2. The reasonable period of time to find a purchaser (or purchasers) may vary by asset type and market conditions.

A120. **IVS Defined Premise of Value – Forced Sale**

A120.1. The term “forced sale” is often used in circumstances where a seller is under compulsion to sell and that, as a consequence, a proper marketing period is not possible, and buyers may not be able to undertake adequate due diligence. The price that could be obtained in these circumstances will depend upon the nature of the pressure on the seller and the reasons why proper marketing cannot be undertaken. It may also reflect the consequences for the seller of failing to sell within the period available. Unless the nature of, and the reason for, the constraints on the seller are known, the price obtainable in a forced sale cannot be realistically estimated. The price that a seller will accept in a forced sale will reflect its particular circumstances, rather than those of the hypothetical willing seller in the market value definition. A “forced sale” is a description of the situation under which the exchange takes place, not a distinct basis of value.

A120.2. If an indication of the price obtainable under forced sale circumstances is required, it will be necessary to clearly identify the reasons for the constraint on the seller, including the consequences of failing to sell in the specified period by setting out appropriate assumptions. If these circumstances do not exist at the valuation date, these must be clearly identified as special assumptions.

A120.3. A forced sale typically reflects the most probable price that a specified property is likely to bring under all of the following conditions:

(a) consummation of a sale within a short time period;
(b) the asset is subjected to market conditions prevailing as of the valuation date or assumed timescale within which the transaction is to be completed;
(c) both the buyer and the seller are acting prudently and knowledgeably;
(d) the seller is under compulsion to sell;
(e) the buyer would derive no material benefit(s) from the transaction, not available to other market participants (previously said typically motivated);
(f) both parties are acting in what they consider their best interests; and
(g) a normal marketing effort is not possible due to the brief exposure time.
A120.4. Sales in an inactive or falling market are not automatically “forced sales” simply because a seller might hope for a better price if conditions improved. Unless the seller is compelled to sell by a deadline that prevents proper marketing, the seller will be a willing seller within the definition of *market value* (see IVS 102 *Bases of Value*, Appendix A10).

A120.5. While confirmed “forced sale” transactions would generally be excluded from consideration in a *valuation* where the *basis of value* is *market value*, it can be difficult to verify that an arm’s-length transaction in a market was a forced sale.
10. Introduction

10.1. Consideration **must** be given to the relevant and appropriate **valuation approaches**. One or more **valuation approaches** may be used in order to arrive at the **value** in accordance with the **basis of value**. The three approaches described and defined below are the main approaches used in **valuation**.

The principal **valuation approaches** are:

(a) **market approach**;
(b) **income approach**; and
(c) **cost approach**.

10.2. The selection of the approach should seek to maximise the use of observable inputs, as appropriate.

10.3 Each of these **valuation approaches** includes different, detailed methods of application (see IVS 103 **Valuation Approaches**, Appendix A10–A30).

10.4. The goal in selecting **valuation approaches** and **methods** for an **asset and/or liability** is to find the most appropriate method under the particular circumstances. No one method is suitable in every possible situation. The selection process **should** consider, at a minimum:

(a) the appropriate **basis(es) of value** and premise(s) of value, determined by the terms and **intended use** of the **valuation**;
(b) the respective strengths and weaknesses of the possible **valuation approaches** and **methods**;
(c) the appropriateness of each method in view of the nature of the asset, and the valuation approaches or valuation methods used by participants in the relevant market; and

(d) the availability of reliable information needed to apply the method(s).

10.5. **Valuers** are not required to use more than one method for the valuation of an asset and/or liability, particularly when the valuer has a high degree of confidence in the accuracy and reliability of a single method, given the facts and circumstances of the valuation. However, valuers should consider the use of multiple approaches and methods and more than one valuation approach or method should be considered and may be used to arrive at an indication of value, particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion. Where more than one approach and method are used, or even multiple methods within a single approach, the conclusion of value based on those multiple approaches and/or methods should be reasonable and the process of analysing and reconciling the differing values into a single conclusion, without averaging, should be described by the valuer in the report.

10.6. While this standard includes discussion of certain methods within the market, income and cost approaches, it does not provide a comprehensive list of all possible methods that may be appropriate. It is the valuer's responsibility to choose the appropriate method(s) for each valuation. Compliance with IVS may require the valuer to use a method not defined or mentioned in IVS.

10.7. When different valuation approaches and/or valuation methods result in widely divergent indications of value, a valuer should perform procedures to understand why the value indications differ, as it is generally not appropriate to simply weight two or more divergent indications of value. In such cases, valuers should reconsider the guidance in IVS 103 Valuation Approaches, para 10.4 to determine whether one of the approaches/methods provides a better or more reliable indication of value.

10.8. **Valuers should** maximise the use of relevant observable market information in all three approaches. Regardless of the source of the inputs and assumptions used in a valuation, a valuer must perform appropriate analysis to evaluate those inputs and assumptions and their appropriateness for the intended use.

10.9. Although no one approach or method is applicable in all circumstances, price information from an active market is generally considered to be the strongest evidence of value. Some bases of value may prohibit a valuer from making subjective adjustments to price information from an active market. Price information from an inactive market may still be good evidence of value, but subjective adjustments may be needed.

10.10 In certain circumstances, the valuer and the client may agree on the valuation approaches, methods, and procedures the valuer will use or the extent of procedures the valuer will perform. Depending on the limitations placed on the valuer and procedures performed, such circumstances may result in a valuation that is not IVS compliant.
10.11. A valuation may be limited or restricted where the valuer is not able to employ the valuation approaches, methods and procedures that a reasonable and informed third party would perform, and it is reasonable to expect that the effect of the limitation or restriction on the estimate of value could be material.

20. Market Approach

20.1. The market approach provides an indication of value by comparing the asset with identical or comparable (that is similar) assets for which price information is available.

20.2. A market approach should always take into account trading volume, range of observed prices, and proximity to valuation date. The market approach should be applied and afforded significant weight under the following circumstances:

(a) the subject asset has recently been sold in a transaction appropriate for consideration under the basis of value;
(b) the subject asset or substantially similar assets are actively publicly traded; and/or
(c) there are frequent and/or recent observable transactions in substantially similar assets.

20.3. Although the above circumstances would indicate that the market approach should be applied and afforded significant weight, when the above criteria are not met, the following are additional circumstances where any other approaches can be applied and weighted to corroborate the value indication from market approach:

(a) transactions involving the subject asset or substantially similar assets are not recent enough considering the levels of volatility and activity in the market;
(b) the asset or substantially similar assets are publicly traded, but not actively;
(c) information on market transactions is available, but the comparable assets have significant differences to the subject asset, potentially requiring subjective adjustments;
(d) information on recent transactions is not reliable (ie, hearsay, missing information, synergistic purchaser, not arm's-length, distressed sale, etc).

20.4. The heterogeneous nature of many assets means that it is often not possible to find market evidence of transactions involving identical or similar assets. Even in circumstances where the market approach is not used, the use of market-based inputs should be maximised in the application of other approaches (eg, market-based valuation metrics such as effective yields and rates of return).

20.5. When comparable market information does not relate to the exact or substantially the same asset, the valuer must perform a comparative analysis of qualitative and quantitative similarities and differences between the comparable assets and the subject asset. It will often be necessary to make adjustments based on this comparative analysis.
Those adjustments must be reasonable, and valuers must document the reasons for the adjustments and how they were quantified.

20.6. The market approach often uses market multiples derived from a set of comparables, each with different multiples. The selection of the appropriate multiple within the range requires judgement, considering qualitative and quantitative factors.

30. **Income Approach**

30.1. The income approach provides an indication of value by converting future cash flow to a single current value. Under the income approach, the value of an asset is determined by reference to the value of income, cash flow or cost savings generated by the asset.

30.2. The income approach should be applied and afforded significant weight under the following circumstances:

(a) the income-producing ability of the asset is the critical element affecting value from a participant perspective; and/or

(b) reasonable projections of the amount and timing of future income are available for the subject asset, but there are few, if any, relevant market comparables.

30.3. Although the above circumstances would indicate that the income approach should be applied and afforded significant weight, when using the income approach under the following circumstances, a valuer should consider whether any other approaches can be applied and weighted to corroborate the value indication from the income approach:

(a) the income-producing ability of the subject asset is only one of several factors affecting value from a participant perspective;

(b) there is significant uncertainty regarding the amount and timing of future income-related to the subject asset;

(c) there is a lack of access to information related to the subject asset (for example, a minority owner may have access to historical financial statements but not forecasts/budgets); and/or

(d) the subject asset has not yet begun generating income but is projected to do so.

30.4. A fundamental basis for the income approach is that investors expect to receive a return on their investments and that such a return should reflect the perceived level of risk in the investment.

30.5. Generally, investors can only expect to be compensated for systematic risk (also known as “market risk” or “undiversifiable risk”).
40. **Cost Approach**

40.1. The cost approach provides an indication of *value* using the economic principle that a buyer will pay no more for an *asset* than the *cost* to obtain an *asset* of equal utility, whether by purchase or by construction, unless undue time, inconvenience, risk or other factors are involved. The approach provides an indication of *value* by calculating the current replacement or reproduction cost of an *asset* and making deductions for physical deterioration and all other relevant forms of obsolescence.

40.2. The cost approach *should* be applied and afforded *significant weight* under the following circumstances:

(a) participants would be able to recreate an *asset* with substantially the same utility as the subject *asset*, without regulatory or legal restrictions, and the *asset* could be recreated quickly enough that a participant would not be willing to pay a *significant* premium for the ability to use the subject *asset* immediately;

(b) the *asset* is not directly income-generating, and the unique nature of the *asset* makes using an income approach or market approach unfeasible; and/or

(c) the *basis of value* being used is fundamentally based on replacement cost, such as replacement value;

(d) the *asset* was recently issued and sold to market participants, such that there is a high degree of reliability in the assumptions used in the cost approach;

(e) the *asset* was recently created, such that there is a high degree of reliability in the assumptions used in the cost approach.

40.3. Although the above circumstances would indicate that the cost approach *should* be applied and afforded *significant weight*, when using the cost approach under the following circumstances, a *valuer* should consider whether any other approaches can be applied and *weighted* to corroborate the value indication from the cost approach:

(a) participants might consider recreating an *asset* of similar utility, but there are potential legal or regulatory hurdles or *significant* time involved in recreating the *asset*;

(b) when the cost approach is being used as a reasonableness check to other approaches (for example, using the cost approach to confirm whether a business valued as a going concern might be more valuable on a liquidation basis); and/or

40.4. The *value* of a partially completed *asset* will generally reflect the *costs* incurred to date in the creation of the *asset* (and whether those *costs* contributed to *value*) and the expectations of participants regarding the *value* of the property when complete, but consider the *costs* and time required to complete the *asset* and appropriate adjustments for profit and risk.
IVS 103 Valuation Approaches: Appendix

The methods provided in this appendix may not apply to all asset classes or use cases. However, the appendix should be followed when using the stated valuation methods as applicable.

A10. Market Approach Methods

Comparative Transactions Method

A10.1. The comparable transactions method, also known as the guideline transactions method, utilises information on transactions involving assets that are the same or similar to the subject asset to arrive at an indication of value.

A10.2. When the comparable transactions considered involve the subject asset, this method is sometimes referred to as the prior transactions' method.

A10.3. If few recent transactions have occurred, the valuer may consider the prices of identical or similar assets that are listed or offered for sale, provided the relevance of this information is clearly established, critically analysed and documented. This is sometimes referred to as the comparable listings method and should not be used as the sole indication of value but can be appropriate for consideration together with other methods. When considering listings or offers to buy or sell, the weight afforded to the listings/offer price should consider the level of commitment inherent in the price and how long the listing/offer has been on the market. For example, an offer that represents a binding commitment to purchase or sell an asset at a given price may be given more weight than a quoted price without such a binding commitment.

A10.4. The comparable transaction method can use a variety of different comparable evidence, also known as units of comparison, which form the basis of the comparison. For example, a few of the many common units of comparison used for real property interests include price per square foot (or per square metre), rent per square foot (or per square metre) and capitalisation rates. A few of the many common units of comparison used in business valuation include EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) multiples, earnings multiples, revenue multiples and book value multiples. A few of the many common units of comparison used in the valuation of financial instruments include metrics such as yields and interest rate spreads. The units of comparison used by participants can differ between asset classes and across industries and geographies.

A10.5. A subset of the comparable transaction's method is matrix pricing, which is principally used to value some types of financial instruments, such as debt securities, without relying exclusively on quoted prices for the specific securities, but rather relying on the securities' relationship to other benchmark quoted securities and their attributes (ie, yield).

A10.6. The key steps in the comparable transactions' method are:

(a) identify the units of comparison that are used by participants in the relevant market;
(b) identify the relevant comparable transactions and calculate the key valuation metrics for those transactions;

(c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the comparable assets and the subject asset;

(d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject asset and the comparable assets;

(e) apply the adjusted valuation metrics to the subject asset; and

(f) if multiple valuation metrics were used, reconcile the indications of value.

A10.7. A valuer should choose comparable transactions within the following context:

(a) evidence of several transactions is generally preferable to a single transaction or event;

(b) evidence from transactions of very similar assets (ideally identical) provides a better indication of value than assets where the transaction prices require significant adjustments;

(c) transactions that happen closer to the valuation date are more representative of the market at that date than older/dated transactions, particularly in volatile markets;

(d) for most bases of value, the transactions should be “arm’s-length” between unrelated parties;

(e) sufficient information on the transaction should be available to allow the valuer to develop a reasonable understanding of the comparable asset and assess the valuation metrics/comparable evidence;

(f) information on the comparable transactions should be from a reliable and trusted source; and

(g) actual transactions provide better valuation evidence than intended transactions.

A10.8. A valuer should analyse and make adjustments for any significant differences between the comparable transactions and the subject asset. Examples of common differences that could warrant adjustments may include, but are not limited to:

(a) material characteristics (age, size, specifications, etc);

(b) relevant restrictions on either the subject asset or the comparable assets;

(c) geographical location (location of the asset and/or location of where the asset is likely to be transacted/used) and the related economic and regulatory environments;

(d) profitability or profit-making capability of the assets;

(e) historical and expected growth;

(f) yields/coupon rates;

(g) types of collateral;

(h) unusual terms in the comparable transactions;
(i) differences related to marketability and control characteristics of the comparable and the subject asset;
(j) differences in ESG considerations; and
(k) ownership characteristics (eg, legal form of ownership, amount percentage held).

**Guideline publicly-traded comparable method**

A10.9. The guideline publicly-traded method utilises information on publicly-traded comparables that are the same or similar to the subject asset to arrive at an indication of value.

A10.10. This method is similar to the comparable transactions method. However, there are several differences due to the comparables being publicly traded, as follows:

(a) the valuation metrics/comparable evidence are available as of the valuation date;
(b) detailed information on the comparables is readily available in public filings; and
(c) the information contained in public filings is prepared under well-understood accounting standards.

A10.11. The method should be used only when the subject asset is sufficiently similar to the publicly-traded comparables to allow for meaningful comparison.

A10.12. The key steps in the guideline publicly-traded comparable method are to:

(a) identify the valuation metrics/comparable evidence that are used by participants in the relevant market;
(b) identify the relevant guideline publicly-traded comparables and calculate the key valuation metrics for those transactions;
(c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the publicly-traded comparables and the subject asset;
(d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject asset and the publicly-traded comparables;
(e) apply the adjusted valuation metrics to the subject asset; and
(f) if multiple valuation metrics were used, weight the indications of value.

A10.13. A valuer should choose publicly-traded comparables within the following context:

(a) consideration of multiple publicly-traded comparables is preferred to the use of a single comparable;
(b) evidence from similar publicly-traded comparables (for example, with similar market segment, geographic area, size in revenue and/or assets, growth rates, profit margins, leverage, liquidity and diversification) provides a better indication of value than comparables that require significant adjustments; and
(c) securities that are actively traded provide more meaningful evidence than thinly-traded securities.

A10.14. A valuer should analyse and make adjustments for any material differences between the guideline publicly-traded comparables and the subject asset. Examples of common differences that could warrant adjustments may include, but are not limited to:

(a) material characteristics (age, size, specifications, etc);
(b) relevant discounts and premiums (see IVS 103 Valuation Approaches, para 30.17);
(c) relevant restrictions on either the subject asset or the comparable assets;
(d) geographical location of the underlying company and the related economic and regulatory environments;
(e) profitability or profit-making capability of the assets;
(f) historical and expected growth;
(g) differences related to marketability and control characteristics of the comparable and the subject asset;
(h) differences in ESG considerations; and
(i) type of ownership.

Other Market Approach Considerations

A10.15. The following paragraphs address a non-exhaustive list of certain special considerations that may form part of a market approach valuation.

A10.16. Anecdotal or “rule-of-thumb” valuation benchmarks are sometimes considered to be a market approach. However, value indications derived from the use of such rules should not be given substantial weight unless it can be shown that buyers and sellers place significant reliance on them.

A10.17. In the market approach, the fundamental basis for making adjustments is to adjust for differences between the subject asset and the guideline transactions or publicly-traded securities. Some of the most common adjustments made in the market approach are known as discounts and premiums.

(a) Discounts for Lack of Marketability (DLOM) should be applied when the comparables are deemed to have superior marketability to the subject asset. A DLOM reflects the concept that when comparing otherwise identical assets, a readily marketable asset would have a higher value than an asset with a long marketing period or restrictions on the ability to sell the asset. For example, publicly-traded securities can be bought and sold nearly instantaneously while shares in a private company may require a significant amount of time to identify potential buyers and complete a transaction. Many bases of value allow the consideration of restrictions on marketability that are inherent in the subject asset but prohibit consideration of marketability restrictions that are specific to a particular owner. DLOMs may be quantified using any reasonable method, but are typically calculated using option pricing models, studies that compare the value of publicly-traded...
shares and restricted shares in the same company, or studies that compare the value of shares in a company before and after an initial public offering;

(b) Control Premiums (sometimes referred to as Market Participant Acquisition Premiums or MPAPs) and Discounts for Lack of Control (DLOC) are applied to reflect differences between the comparables and the subject asset with regard to the ability to make decisions and the changes that can be made as a result of exercising control. All else being equal, participants would generally prefer to have control over a subject asset than not. However, participants’ willingness to pay a Control Premium or DLOC will generally be a factor of whether the ability to exercise control enhances the economic benefits available to the owner of the subject asset. Control Premiums and DLOCs may be quantified using any reasonable method but are typically calculated based on either an analysis of the specific cash flow enhancements or reductions in risk associated with control or by comparing observed prices paid for controlling interests in publicly-traded securities to the publicly-traded price before such a transaction is announced. Examples of circumstances where Control Premiums and DLOC should be considered include where:

1. Shares of public companies generally do not have the ability to make decisions related to the operations of the company (they lack control). As such, when applying the guideline public comparable method to value a subject asset that reflects a controlling interest, a control premium may be appropriate; or

2. The guideline transactions in the guideline transaction method often reflect transactions of controlling interests. When using that method to value a subject asset that reflects a minority interest, a DLOC may be appropriate;

(c) blockage discounts are sometimes applied when the subject asset represents a large block of shares in a publicly-traded security such that an owner would not be able to quickly sell the block in the public market without negatively influencing the publicly-traded price. Blockage discounts may be quantified using any reasonable method but typically a model is used that considers the length of time over which a participant could sell the subject shares without negatively impacting the publicly-traded price (i.e., selling a relatively small portion of the security’s typical daily trading volume each day). Under certain bases of value, particularly fair value for financial reporting purposes, blockage discounts are prohibited.

A20 Income Approach Methods

A20.1. Although there are many ways to implement the income approach, methods under the income approach are effectively based on discounting future amounts of cash flow to present value. They are variations of the Discounted Cash Flow (DCF) method, and the concepts below apply in part or in full to all income approach methods.

Discounted Cash Flow (DCF) Method

A20.2. Under the DCF method the forecasted cash flow is discounted back to the valuation date, resulting in a present value of the asset.
A20.3. In some circumstances for long-lived or indefinite-lived assets, DCF may include a terminal value which represents the value of the asset at the end of the explicit projection period. In other circumstances, the value of an asset may be calculated solely using a terminal value with no explicit projection period. This is sometimes referred to as an income capitalisation method.

A20.4. The key steps in the DCF method are:

(a) choose the most appropriate type of cash flow for the nature of the subject asset and the valuation (i.e., pre-tax or post-tax, total cash flows or cash flows to equity, real or nominal, etc);

(b) determine the most appropriate explicit period, if any, over which the cash flow will be forecast;

(c) prepare cash flow forecasts for that period;

(d) determine whether a terminal value is appropriate for the subject asset at the end of the explicit forecast period (if any) and then determine the appropriate terminal value for the nature of the asset;

(e) determine the appropriate discount rate; and

(f) apply the discount rate to the forecasted future cash flow, including the terminal value, if any.

Type of Cash Flow

A20.5. When selecting the appropriate type of cash flow for the nature of asset or valuation, valuers must consider the factors below. In addition, the discount rate and other inputs must be consistent with the type of cash flow chosen.

(a) cash flow to whole asset or partial interest: typically, cash flow to the whole asset is used. However, occasionally other levels of income may be used as well, such as cash flow to equity (after payment of interest and principal on debt) or dividends (only the cash flow distributed to equity owners). Cash flow to the whole asset is most commonly used because an asset should theoretically have a single value that is independent of how it is financed or whether income is paid as dividends or reinvested;

(b) the cash flow can be pre-tax or post-tax: the tax rate applied should be consistent with the basis of value and in many instances would be a participant tax rate rather than an owner-specific one;

(c) nominal versus real: real cash flow does not consider inflation whereas nominal cash flows include expectations regarding inflation. If expected cash flow incorporates an expected inflation rate, the discount rate has to include an adjustment for inflation as well;

(d) currency: the choice of currency used may have an impact on assumptions related to inflation and risk. This is particularly true in emerging markets or in currencies with high inflation rates. The currency in which the forecast is prepared, and related risks are separate and distinct from risks associated with the country(ies) in which the asset resides or operates;

(e) the type of cash flow contained in the forecast: for example, a cash flow forecast may represent expected cash flows, i.e,
probability-weighted scenarios), most likely cash flows, contractual cash flows, etc.

A20.6. The type of cash flow chosen should be in accordance with participant’s viewpoints. For example, cash flows and discount rates for real property are customarily developed on a pre-tax basis while cash flows and discount rates for businesses are normally developed on a post-tax basis. Adjusting between pre-tax and post-tax rates can be complex and prone to error and should be approached with caution.

A20.7. When a valuation is being developed in a currency (“the valuation currency”) that differs from the currency used in the cash flow projections (“the functional currency”), a valuer should use one of the following two currency translation methods:

(a) discount the cash flows in the functional currency using a discount rate appropriate for that functional currency. Convert the present value of the cash flows to the valuation currency at the spot rate on the valuation date;

(b) use a currency exchange forward curve to translate the functional currency projections into valuation currency projections and discount the projections using a discount rate appropriate for the valuation currency. When a reliable currency exchange forward curve is not available (for example, due to lack of liquidity in the relevant currency exchange markets), it may not be possible to use this method and only the method described in para A20.7(a) can be applied.

Explicit Forecast Period

A20.8. The selection criteria will depend upon the intended use of the valuation, the nature of the asset, the information available and the required bases of value. For an asset with a short life, it is more likely to be both possible and relevant to project cash flow over its entire life.

A20.9. Valuers should consider the following factors when selecting the explicit forecast period:

(a) the life of the asset;

(b) a reasonable period for which reliable data is available on which to base the projections;

(c) the minimum explicit forecast period which should be sufficient for an asset to achieve a stabilised level of growth and profits, after which a terminal value can be used;

(d) in the valuation of cyclical assets, the explicit forecast period should generally include an entire cycle, when possible; and

(e) for finite-lived assets such as most financial instruments, the cash flows will typically be forecast over the full life of the asset.

A20.10. In some instances, particularly when the asset is operating at a stabilised level of growth and profits at the valuation date, it may not be necessary to consider an explicit forecast period and a terminal value may form the only basis for value (sometimes referred to as an income capitalisation method).
A20.11. The intended holding period for one investor should not be the only consideration in selecting an explicit forecast period and should not impact the value of an asset. However, the period over which an asset is intended to be held may be considered in determining the explicit forecast period if the objective of the valuation is to determine its investment value.

Cash Flow Forecasts

A20.12. Cash flow for the explicit forecast period is constructed using prospective financial information (PFI) (projected income/inflows and expenditure/outflows).

A20.13. As required by IVS 103 Valuation Approaches, regardless of the source of the PFI (eg, management forecast), a valuer must perform analysis to evaluate the PFI, the assumptions underlying the PFI and their appropriateness for the intended use of the valuation. The suitability of the PFI and the underlying assumptions will depend upon the intended use and the required bases of value. For example, cash flow used to determine market value should reflect PFI that would be anticipated by participants; in contrast, investment value can be measured using cash flow that is based on the reasonable forecasts from the perspective of a particular investor.

A20.14. The cash flow is divided into suitable periodic intervals (eg, weekly, monthly, quarterly or annually) with the choice of interval depending upon the nature of the asset, the pattern of the cash flow, the data available, and the length of the forecast period.

A20.15. The projected cash flow should capture the amount and timing of all future cash inflows and outflows associated with the subject asset from the perspective appropriate to the basis of value.

A20.16. Typically, the projected cash flow will reflect one of the following:

(a) contractual or promised cash flow;
(b) the single most likely set of cash flow;
(c) the probability-weighted expected cash flow; or
(d) multiple scenarios of possible future cash flow.

A20.17. Different types of cash flow often reflect different levels of risk and may require different discount rates. For example, probability-weighted expected cash flows incorporate expectations regarding all possible outcomes and are not dependent on any particular conditions or events (note that when a probability-weighted expected cash flow is used, it is not always necessary for valuers to take into account distributions of all possible cash flows using complex valuation models and techniques. Rather, valuers may develop a limited number of discrete scenarios and probabilities that capture the array of possible cash flows). A single most likely set of cash flows may be conditional on certain future events and therefore could reflect different risks and warrant a different discount rate.

A20.18. While valuers often receive PFI that reflects accounting income and expenses, it is generally preferable to use cash flow that would be
anticipated by participants as the basis for valuations. For example, accounting non-cash expenses, such as depreciation and amortisation, should be added back, and expected cash outflows relating to capital expenditures or to changes in working capital should be deducted in calculating cash flow.

A20.19. Valuers must ensure that seasonality and cyclicality in the subject has been appropriately considered in the cash flow forecasts.

**Terminal Value**

A20.20. Where the asset is expected to continue beyond the explicit forecast period, valuers must estimate the value of the asset at the end of that period. The terminal value is then discounted back to the valuation date, normally using the same discount rate as applied to the forecast cash flow.

A20.21. The terminal value should consider:

(a) whether the asset is deteriorating/finite-lived in nature or indefinite-lived, as this will influence the method used to calculate a terminal value;
(b) whether there is future growth potential for the asset beyond the explicit forecast period;
(c) whether there is a pre-determined fixed capital amount, capital expenditure or return condition expected to be received at the end of the explicit forecast period;
(d) the expected risk level of the asset at the time the terminal value is calculated;
(e) for cyclical assets, the terminal value should consider the cyclical nature of the asset and should not be performed in a way that assumes “peak” or “trough” levels of cash flows in perpetuity; and
(f) the tax attributes inherent in the asset at the end of the explicit forecast period (if any) and whether those tax attributes would be expected to continue into perpetuity;
(g) risks and opportunities associated with environmental, social, and governance characteristics of the subject asset;

A20.22. Valuers may apply any reasonable method for calculating a terminal value. While there are many different approaches to calculating a terminal value, the three most commonly used methods for calculating a terminal value are:

(a) Gordon growth model/constant growth model (appropriate only for indefinite-lived assets);
(b) market approach/exit value (appropriate for both deteriorating/finite-lived assets and indefinite-lived assets); and
(c) salvage value/disposal cost (appropriate only for deteriorating/finitely-lived assets).

**Gordon Growth Model/Constant Growth Model**

A20.23. The constant growth model assumes that the asset grows (or declines) at a constant rate into perpetuity.
**Market Approach/Exit Value**

A20.24. The market approach/exit value method can be performed in a number of ways, but the ultimate goal is to calculate the *value* of the *asset* at the end of the explicit cash flow forecast.

A20.25. Common ways to calculate the terminal value under this method include application of a market-evidence based capitalisation factor or a market multiple.

A20.26. When a market approach/exit value is used, *valuers should* comply with the requirements in the market approach and market approach methods section of this chapter (see IVS 103 Valuation Approaches, section 20 and Appendix A10). However, *valuers should* also consider the expected market conditions at the end of the explicit forecast period and make adjustments accordingly.

**Salvage Value/Disposal Cost**

A20.27. The terminal value of some *assets* may have little or no relationship to the preceding cash flow. Examples of such *assets* include wasting assets such as a mine or an oil well.

A20.28. In such cases, the terminal value is typically calculated as the salvage value of the *asset*, less costs to dispose of the *asset*. In circumstances where the costs exceed the salvage value, the terminal value is negative and referred to as a disposal cost or an *asset* retirement obligation.

**Discount Rate**

A20.29. The rate at which the forecast cash flow is discounted *should* reflect not only the time value of money, but also the risks associated with the type of cash flow and the future operations of the *asset*.

A20.30. The *discount rate* *must* be consistent with the type of cash flow.

A20.31. *Valuers* may use any reasonable method for developing an appropriate *discount rate*. While there are many methods for developing a *discount rate* or determining the reasonableness of a *discount rate*, a non-exhaustive list of common methods includes:

(a) a capital asset pricing model (CAPM);
(b) a weighted-average-cost-of-capital (WACC);
(c) observed or inferred rates/yields;
(d) a build-up method.

A20.32. *Valuers should* consider corroborative analyses when assessing the appropriateness of a *discount rate*. A non-exhaustive list of common analyses *should* include:

(a) an internal-rate-of-return (IRR);
(b) a weighted-average-return-on-assets (WARA);
(c) value indications from other approaches, such as market approach, or comparing implied multiples from the income approach with guideline company market multiples or transaction multiples.
A20.33. In developing a *discount rate*, a *valuer should* consider:

- (a) the *type of asset* being valued. For example, *discount rates* used in valuing debt would be different to those used when valuing real property or a business;
- (b) the rates implicit in comparable transactions in the market;
- (c) the geographic location of the *asset* and/or the location of the markets in which it would trade;
- (d) the life/term and/or maturity of the *asset* and the consistency of inputs. For example, the maturity of the risk-free rate applied will depend on the circumstances, but a common approach is to match the maturity of the risk-free rate to the time horizon of the cash flows being considered;
- (e) the *bases of value* being applied;
- (f) the currency denomination of the projected cash flows.

A20.34. In developing a *discount rate*, the *valuer must*:

- (a) document the method used for developing the *discount rate* and support its use;
- (b) provide evidence for the derivation of the *discount rate*, including the identification of the significant inputs and support for their derivation or source.

A20.35. *Valuers must* consider the *intended use* for which the forecast was prepared and whether the forecast assumptions are consistent with the *basis of value* being applied. If the forecast assumptions are not consistent with the *basis of value*, it could be necessary to adjust the forecast or *discount rate*.

A20.36. *Valuers must* consider the risk of achieving the forecast cash flow of the *asset* when developing the *discount rate*. Specifically, the *valuer must* evaluate whether the risk underlying the forecast cash flow assumptions are captured in the *discount rate*.

A20.37. While there are many ways to assess the risk of achieving the forecast cash flow, a non-exhaustive list of common procedures includes:

- (a) identify the key components of the forecast cash flow and compare the forecast cash flow key components to:
  - historical operating and financial performance of the *asset*;
  - historical and expected performance of comparable *assets*;
  - historical and expected performance for the industry; and
  - expected near-term and long-term growth rates of the country or region in which the *asset* primarily operates;
- (b) confirm whether the forecast cash flow represents expected cash flows (ie, *probability-weighted* scenarios), as opposed to most likely cash flows (ie, most probable scenario) of the *asset*, or some other type of cash flow;
(c) if utilising expected cash flows, consider the relative dispersion of potential outcomes used to derive the expected cash flows (e.g., higher dispersion may indicate a need for an adjustment to the discount rate);

(d) compare prior forecasts of the asset to actual results to assess the accuracy and reliability of managements’ estimates;

(e) consider qualitative factors; and

(f) consider the value indications such as those resulting from the market approach;

(g) consider the risks associated with environmental, social, and governance characteristics of the subject asset.

A20.38. If the valuer determines that certain risks included in the forecast cash flow for the asset have not been captured in the discount rate, the valuer must:
1) adjust the forecast; or
2) adjust the discount rate to account for those risks not already captured.

(a) when adjusting the cash flow forecast, the valuer should provide the rationale for why the adjustments were necessary, undertake quantitative procedures to support the adjustments, and document the nature and amount of the adjustments;

(b) when adjusting the discount rate, the valuer should document why it was not appropriate or possible to adjust the cash flow forecast, provide the rationale for why such risks are not otherwise captured in the discount rate, undertake quantitative and qualitative procedures to support the adjustments, and document the nature and amount of the adjustment. The use of quantitative procedures does not necessarily entail quantitative derivation of the adjustment to the discount rate. A valuer need not conduct an exhaustive quantitative process but should take into account all the information that is reasonably available;

A20.39. In developing a discount rate, it may be appropriate to consider the impact the asset’s unit of account has on unsystematic risks and the derivation of the overall discount rate. For example, the valuer should consider whether market participants would assess the discount rate for the asset on a stand-alone basis, or whether market participants would consider the asset in the context of a broader portfolio and therefore consider the potential diversification of unsystematic risks.

A20.40. A valuer should consider the impact of intercompany arrangements and transfer pricing on the discount rate. For example, it is not uncommon for intercompany arrangements to specify fixed or guaranteed returns for some businesses or entities within a larger enterprise, which would lower the risk of the entity forecasted cash flows and reduce the appropriate discount rate. However other businesses or entities within the enterprise are deemed to be residual earners in which both excess return and risk are allocated, thereby increasing the risk of the entity forecasted cash flows and the appropriate discount rate.
A30 Cost Approach Methods

A30.1. Broadly, there are three cost approach methods:

(a) replacement cost method: a method that indicates value by calculating the cost of a similar asset offering equivalent utility;
(b) reproduction cost method: a method under the cost that indicates value by calculating the cost to recreating a replica of an asset; and
(c) summation method: a method that calculates the value of an asset by the addition of the separate values of its component parts.

Replacement Cost Method

A30.2. Generally, replacement cost is the cost that is relevant to determining the price that a participant would pay as it is based on replicating the utility of the asset, not the exact physical properties of the asset.

A30.3. Usually, replacement cost is adjusted for physical deterioration and all relevant forms of obsolescence. After such adjustments, this can be referred to as depreciated replacement cost.

A30.4. The key steps in the replacement cost method are:

(a) calculate all of the costs that would be incurred by a typical participant seeking to create or obtain an asset providing equivalent utility;
(b) determine whether there is any depreciation related to physical, functional and external obsolescence associated with the subject asset; and
(c) deduct total depreciation from the total costs to arrive at a value for the subject asset.

A30.5. The replacement cost is generally that of a modern equivalent asset, which is one that provides similar function and equivalent utility to the asset being valued, but which is of a current design and constructed or made using current cost-effective materials and techniques.

Reproduction Cost Method

A30.6. Reproduction cost is appropriate in circumstances such as the following:

(a) the cost of a modern equivalent asset is greater than the cost of recreating a replica of the subject asset; or
(b) the utility offered by the subject asset could only be provided by a replica rather than a modern equivalent.

A30.7. The key steps in the reproduction cost method are:

(a) calculate all of the costs that would be incurred by a typical participant seeking to create an exact replica of the subject asset;
(b) determine whether there is any depreciation related to physical, functional and external obsolescence associated with the subject asset; and
(c) deduct total depreciation from the total costs to arrive at a value for the subject asset.
**Summation Method**

A30.8. The summation method, also referred to as the underlying asset method, is typically used for investment companies or other types of assets or entities for which value is primarily a factor of the values of their holdings.

A30.9. The key steps in the summation method are:

(a) value each of the component assets that are part of the subject asset using the appropriate valuation approaches and methods; and

(b) add the value of the component assets together to reach the value of the subject asset.

**Cost Considerations**

A30.10. The cost approach should capture all of the costs that would be incurred by a typical participant.

A30.11. The cost elements may differ depending on the type of the asset and should include the direct and indirect costs that would be required to replace/recreate the asset as of the valuation date. Some common items to consider include:

(a) direct costs:
   - materials; and
   - labour;

(b) indirect costs:
   - transport costs;
   - installation costs;
   - professional fees (design, permit, architectural, legal, etc);
   - other fees (commissions, etc);
   - overheads;
   - taxes;
   - finance costs (eg, interest on debt financing); and
   - profit margin/entrepreneurial profit to the creator of the asset (eg, return to investors).

A30.12. An asset acquired from a third party would presumably reflect their costs associated with creating the asset as well as some form of profit margin to provide a return on their investment. As such, under bases of value that assume a hypothetical transaction, it may be appropriate to include an assumed profit margin on certain costs which can be expressed as a target profit, either a lump sum or a percentage return on cost or value. However, financing costs, if included, may already reflect participants’ required return on capital deployed, so valuers should be cautious when including both financing costs and profit margins.

A30.13. When costs are derived from actual, quoted or estimated prices by third party suppliers or contractors, these costs will already include a third parties’ desired level of profit.
A30.14. The actual costs incurred in creating the subject asset (or a comparable reference asset) may be available and provide a relevant indicator of the cost of the asset. However, adjustments may need to be made to reflect the following:

(a) cost fluctuations between the date on which this cost was incurred and the valuation date; and
(b) any atypical or exceptional costs, or savings, that are reflected in the cost data but that would not arise in creating an equivalent.

**Depreciation/Obsolescence**

A30.15. In the context of the cost approach, “depreciation” refers to adjustments made to the estimated cost of creating an asset of equal utility to reflect the impact on value of any obsolescence affecting the subject asset. This meaning is different from the use of the word in financial reporting or tax law where it generally refers to a method for systematically expensing capital expenditure over time.

A30.16. Depreciation adjustments are normally considered for the following types of obsolescence, which may be further divided into subcategories when making adjustments:

(a) physical obsolescence: any loss of utility due to the physical deterioration of the asset or its components resulting from its age and usage;
(b) functional obsolescence: any loss of utility resulting from inefficiencies in the subject asset compared to its replacement such as its design, specification or technology being outdated;
(c) external or economic obsolescence: any loss of utility caused by economic or locational factors external to the asset. This type of obsolescence can be temporary or permanent.

A30.17. Depreciation/obsolescence should consider the physical and economic lives of the asset:

(a) the physical life is how long the asset could be used before it would be worn out or beyond economic repair, assuming routine maintenance but disregarding any potential for refurbishment or reconstruction;
(b) the economic life is how long it is anticipated that the asset could generate financial returns or provide a non-financial benefit in its current use. It will be influenced by the degree of functional or economic obsolescence to which the asset is exposed.

A30.18. Except for some types of economic or external obsolescence, most types of obsolescence are measured by making comparisons between the subject asset and the hypothetical asset on which the estimated replacement or reproduction cost is based. However, when market evidence of the effect of obsolescence on value is available, that evidence should be considered.

A30.19. Physical obsolescence can be measured in two different ways:

(a) curable physical obsolescence, ie, the cost to fix/cure the obsolescence; or
(b) incurable physical obsolescence which considers the asset’s age, expected total and remaining life where the adjustment for physical obsolescence is equivalent to the proportion of the expected total life consumed. Total expected life may be expressed in any reasonable way, including expected life in years, mileage, units produced, etc.

A30.20. There are two forms of functional obsolescence:

(a) excess capital cost, which can be caused by changes in design, materials of construction, technology or manufacturing techniques resulting in the availability of modern equivalent assets with lower capital costs than the subject asset; and

(b) excess operating cost, which can be caused by improvements in design or excess capacity resulting in the availability of modern equivalent assets with lower operating costs than the subject asset.

A30.21. Economic obsolescence may arise when external factors affect an individual asset, or all the assets employed in a business and should be deducted after physical deterioration and functional obsolescence. For real estate, examples of economic obsolescence include:

(a) adverse changes to demand for the products or services produced by the asset;

(b) oversupply in the market for the asset;

(c) a disruption or loss of a supply of labour or raw material; or

(d) the asset being used by a business that cannot afford to pay a market rent for the assets and still generate a market rate of return;

(e) adverse changes in the environmental, social, and governance characteristics of the subject asset.

A30.22. Cash or cash equivalents do not suffer obsolescence and are not adjusted. Marketable assets are not adjusted below their market value determined using the market approach.
## 10. Introduction

10.1. Data and inputs are used in developing *values* for all types of *assets* and *liabilities*. Data and inputs include observable market data such as published *prices* and yields as well as assumptions, and adjustments. Data and inputs *should* be based on factual information (such as measurements or statistics), but often include reasoning and analysis in order to arrive at a numerical input to be used in the *valuation*. In all cases the *valuer* must apply professional scepticism in the selection and use of data and inputs.

10.2. The identification and selection of suitable data and inputs is an important part of the *valuation*. Data and inputs may be observable or unobservable and requiring assessment, judgement and/or adjustments. Inputs *should* be clarified to the extent that such data and inputs would be considered *significant* by a peer applying *professional judgement*.

10.3. The *valuer* may use either a *specialist* or a *service organisation* to obtain either data or inputs, however the *valuer* remains ultimately responsible for using the data and inputs appropriate for the *valuation*.

## 20. Use of Specialist or Service Organisation

20.1. If a *valuer* does not possess all of the necessary data or inputs to perform all aspects of the *valuation*, it is acceptable for the *valuer* to engage a *specialist* or *service organisation*.

20.2. Prior to using a *specialist* or *service organisation*, the *valuer* must ensure their capabilities meet the requirements of the *intended use* and *must* document their capabilities.

20.3. In certain circumstances, the quality control process of the *valuation* may require the involvement of a *specialist* or *service organisation*. 
30. Characteristics of Suitable Data and Inputs

30.1. In selecting data and inputs, a process must be used that maximises as many of the following characteristics as possible. At times, it will not be possible to incorporate all these characteristics. The characteristics of suitable data and inputs are shown below, and suitable is defined as “fitness for use” in terms of client and intended user needs in the context of the intended use, basis of valuation and the asset or liability being valued.

- accurate: data and inputs are free from error and bias and reflect the characteristics that they are designed to measure;
- appropriate: data and inputs are relevant for the asset or liability being valued;
- complete: set of data and inputs are sufficient to address attributes of the assets or liabilities;
- observable: data and inputs are obtainable and visible to multiple users or market participants;
- timely: data and inputs reflect the market conditions as of the valuation date;
- transparent: the source of the data and inputs can be traced from their origin.

40. Data and Input Selection

40.1. In selecting data and inputs, the characteristics described above must be considered. The data and inputs selected must be consistent with the valuation models being used to value the asset. When valuing assets that are similar, data and inputs must be selected in a consistent manner.

40.2. If selected data and inputs do not meet all of the characteristics of suitable data and inputs, the data and inputs may still be used as long as the selection is clearly justified and documented. Any limitations must be explained, justified, and documented.

40.3. Sufficient evidence must be assembled to ensure that the data and inputs used are consistent with what a peer or market participant would consider appropriate. Professional judgement may be required to ensure the data and inputs used are appropriate for the intended use of the valuation.

40.4. If required data and inputs are unavailable, inadequate or cannot be sufficiently justified, the valuation would not comply with IVS.

50. Input Documentation

50.1. The selection and source and use of the data and inputs must be explained, justified, and documented. Documentation must be sufficient to enable a peer applying professional judgement to understand why specific data and inputs were selected and were considered reasonable.

50.2. The form and location of documentation may vary based on the scope of work.
IVS 104 Data and Inputs related to Environmental, Social and Governance factors: Appendix

The *valuer* must be aware of relevant legislation and frameworks in relation to the environmental, social and governance factors within their *valuation(s)*.

A10. Environmental, Social and Governance (ESG)

A10.1. Environmental, Social, and Governance (ESG) factors collectively describe the transparency and robustness of governance processes and the impact on a company/and or assets, which may impact its financial performance, operations and the external environment.

A10.2. ESG factors may impact *valuations* both from a qualitative and quantitative perspective.

A10.3. *Valuers* must consider significant ESG factors. ESG factors may pose risks or opportunities that must be considered, where applicable.

A10.4. Examples of environmental factors may include but are not limited to the following:

- air and water pollution;
- biodiversity;
- climate change (current and future risks);
- clean water and sanitation;
- carbon and other gas emissions;
- deforestation;
- natural disaster;
- resource efficiency (ie, energy, water and raw materials);
- waste management.

A10.5. Examples of social factors may include but are not limited to the following:

- community relations;
- conflict;
- customer satisfaction;
- data protection and privacy;
- development of human capital (health & education);
- employee engagement;
- gender equality and racial equality;
- good health and well being;
- human rights;
- working conditions;
- working environment.
A10.6. Examples of governance factors may include but are not limited to the following:

- audit committee structure;
- board diversity and structure;
- bribery and corruption;
- corporate governance;
- donations;
- ESG reporting standards and regulatory costs;
- executive remuneration;
- institutional strength;
- management succession planning;
- partnerships;
- political lobbying;
- rule of law;
- transparency;
- whistle-blower schemes.

A10.7. All known or readily available ESG information which would affect how a market participant would assess the value of an asset(s) and what they would pay for an asset should be included in each valuation.

A10.8. ESG factors and the ESG regulatory environment should be considered in valuations to the extent that they are measurable and would be considered reasonable by a peer applying professional judgement.
10. Introduction

10.1. *Valuation models* applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to develop *value* (see IVS 103 *Valuation Approaches*).

10.2. *Valuation models* can be developed internally or sourced externally. *Valuation models* must be suitable for the *intended use* of the *value* and consistent with suitable inputs. *Valuation models* used must be tested to ensure accuracy of the output is appropriate for the *intended use*.

10.3. The *valuer* may use either a *specialist* or a *service organisation* to obtain *valuation models* and the *valuer must* assess and understand the *valuation models*.

20. Use of a Specialist or Service Organisation

20.1 If a *valuer* does not possess all of the necessary *valuation models* to perform all aspects of the *valuation*, it is acceptable for the *valuer* to engage a *specialist or service organisation*.

20.2. Prior to using a *specialist or service organisation*, the *valuer must* assess and document their capabilities.

20.3. In certain circumstances, the quality control process may require the use of a *specialist or service organisation*. In such cases, IVS 105 *Valuation Models*, para 20.2 must still be applied.

30. Characteristics of Suitable Valuation Models

30.1 In selecting *valuation models* a process *should* be used that maximises as many of the following characteristics as possible. At times, it will not be possible to incorporate all these characteristics. The characteristics of suitable *valuation models* are shown in the following list, and suitable is
defined as “fitness for use” in terms of user needs in the context of the basis of valuation and the asset being valued.

- accuracy: the valuation model is free from error and functions in a manner consistent with the objectives of the valuation;
- appropriateness: the valuation model is suitable for the asset and/or liability being valued, given market conditions at the valuation date;
- completeness: the valuation model addresses all the features of the asset and/or liability to determine value;
- timeliness: the valuation model reflects the market conditions as of the valuation date;
- transparency: all persons preparing and relying on the valuation model must understand how the valuation model works and its inherent limitations.

40. Model Selection

40.1. Valuation models, whether internally developed and/or externally sourced, must maximise the characteristics of suitable valuation models. In cases in which an intended use requires the use of a specific valuation model, such valuation model would be considered suitable.

40.2. If a chosen model does not meet all these characteristics above, the model may still be compliant so long as the selection is clearly justified and documented.

40.3. Valuation models that do not cover all the features of the asset and/or liability being valued or have other limitations require more judgement. Any such limitations must be explained, justified, and documented.

40.4. In all circumstances, the valuer must ensure that the model meets the needs of the intended use to ensure the model selection is suitable.

50. Valuation Model Use

50.1 The valuation model use must incorporate processes, including:

- design and development: selecting appropriate valuation approaches and techniques;
- implementation: testing and assessing the model including analysing outputs and identifying limitations together with any potential adjustments;
- validation: reviewing the appropriateness, accuracy, and output of a model;
- documentation: documenting the entire model development process which must be consistent with the valuation’s intended use and any limitations or adjustments.

50.2. Regardless of the nature of the valuation model, the valuer must understand the way the valuation model is used, and the valuer must calibrate the valuation model to ensure the valuation model is suitable for use.
50.3. The valuer must also assess any limitations on the valuation model for intended use and the valuer must monitor any limitations to meet that use.

50.4. The valuer should document the policies and procedures undertaken around the entire valuation model use.

50.5. Suitable valuation models used over time should be maintained, monitored, assessed and adjusted to ensure that they remain appropriate, accurate and complete.

60. Valuation Model Documentation

60.1. A suitable valuation model must have documentation that includes the following information:

(a) support for the selection or creation of the valuation model;
(b) description of the inputs and outputs;
(c) significant assumptions;
(d) limitations; and
(e) quality control procedures and results.

60.2. The form and location of documentation will vary based on the scope of work and valuation approach.

60.3. Documentation must be sufficient to describe why the valuation model(s) were selected and be considered reasonable by a peer applying professional judgement.
Valuation reports and documentation are a critical and defining feature of IVS, which collectively assist in creating consistency, professionalism, transparency, comparability and trust in valuation to serve the public interest.

10. Introduction

10.1. An IVS-compliant valuation must have sufficient documentation and reporting to describe and provide transparency to the intended user on the valuation methodologies, inputs, valuation models, professional judgement and resultant value(s).

10.2. The results of a valuation or valuation review must be documented and reported in writing and may include paper, electronic files, or other forms of recorded media.

10.3. Documentation and reporting requirements apply regardless of whether the valuer is employed by the client or externally engaged by the client.

10.4. Documentation must be maintained throughout the valuation and must describe the valuation and the basis of conclusions made. The level of documentation must at a minimum meet the requirements contained in IVS 106 Documentation and Reporting, section 20.

10.5. Reporting must be provided to the client in writing (see para 10.2). The level of reporting must at a minimum meet the requirements contained in section 30 of this standard.

20. Documentation

20.1. Documentation is the written record of the valuation or valuation review and may include communications with the client, working papers, or both, used to support the conclusions reached and compliance with IVS.
20.2. Documentation records must be maintained to describe the valuation or valuation review and must be sufficient to describe the conclusion reached by the valuer. Documentation must be adequate to allow a peer applying professional judgement to understand the scope of the valuation, the work performed, and the conclusions reached.

20.3. In some cases, all documentation is included in the valuation report or valuation review report. In other cases, depending on the agreed scope of work, additional documentation must be maintained. Documentation should include but is not limited to communications with the client, alternate methods explored, additional data and inputs considered, risks and biases addressed, degree of judgement used and quality control and governance procedures followed.

20.4. In all cases, documentation must be sufficient to describe each stage of the valuation or valuation review process and how the valuer managed valuation risk.

30. Valuation Reports

30.1. Valuation reports must describe the valuation conclusion with sufficient detail to provide a clear and well-organised description of the basis for the conclusion of value.

30.2. Valuation reports may include information through reference to other documents (scope of work documents, internal policies and procedures, etc).

30.3. Valuation reports must include all information necessary to provide the client and intended user(s) with a clear description of the scope of work, the work performed, judgements made and the basis for conclusions reached.

30.4. The format of the valuation reports may range from comprehensive narrative reports to abbreviated summary reports.

30.5. Standing engagements that are associated with valuations that are reported on a frequent basis may provide intermittent reporting if it is agreed upon in the scope of work.

30.6. Valuation reports must convey the following, at a minimum:

(a) agreed scope of the work;
(b) assets and/or liabilities being valued;
(c) the identity of the valuer;
(d) client;
(e) intended use;
(f) intended users;
(g) valuation currency(ies) used;
(h) valuation date(s);
(i) basis (bases) of value adopted;
(j) approach or approaches adopted;
(k) method or valuation models applied;
(l) significant data and inputs used;
(m) environmental, social and governance inputs used and considered;
(n) significant or special assumptions and/or limiting conditions;
(o) findings of a specialist or service organisation;
(p) value and rationale for valuation;
(r) IVS compliance statement;
(s) date of the report (which may differ from the valuation date).

30.7. In all instances the valuation report must be sufficient to describe the conclusion reached and be considered reasonable by a peer applying professional judgement.

30.8. If the valuer concludes that a limitation or restriction will impact compliance with IVS, the valuer must not state that the report is compliant with IVS.

40. Valuation Review Reports

40.1. A valuation review is not a valuation. A valuation review must state whether the review is a valuation process review or a valuation conclusion review or both.

- a valuation process review addresses compliance with IVS;
- a value conclusion review addresses the reasonableness of a value conclusion.

40.2. If a value is provided as part of the value conclusion review, then this is a valuation and as such must follow all the valuation requirements within IVS.

40.3. A valuation review must convey the following, at a minimum:

- agreed scope of the valuation review;
- assets and/or liabilities reviewed;
- the identity of the valuation reviewer;
- the identity of the client;
- intended use;
- the identity of the intended users;
- significant or special assumptions and/or limiting conditions pertaining to the valuation reviewed;
- the use of a specialist or service provider, if used, as part of the valuation review;
- procedures undertaken and the documentation reviewed;
- the valuation reviewer’s conclusions about the work under review, including supporting reasons; and
- details of the valuation report that is the subject of the review;
- date of the valuation review report;
- for a valuation process review, the version of IVS that is being reviewed.

40.4. In all instances the valuation review report must be sufficient to describe the conclusion reached and be considered reasonable by a peer applying professional judgement.
Asset Standards
IVS 200 Businesses and Business Interests

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10. Overview

10.1. The principles contained in the General Standards apply to valuations of businesses and business interests. This standard contains additional requirements that apply to valuations of businesses and business interests.

20. Introduction

20.1. The definition of what constitutes a business may differ depending on the intended use of a valuation, but generally involves an organisation or integrated collection of assets and/or liabilities engaged in commercial, industrial, service or investment activity. Generally, a business would include more than one asset (or a single asset and/or liability in which the value is dependent on employing additional assets and/or liabilities) working together to generate economic activity that differs from the outputs that would be generated by the individual assets and/or liabilities on their own.

20.2. Individual intangible assets, or a group of intangible assets might not constitute a business but would nonetheless be within the scope of this standard if such assets generate economic activity that differs from the outputs that would be generated by the individual assets on their own. If the assets do not meet these criteria, a valuer should defer to IVS 210 Intangible Assets and IVS 220 Non-Financial Liabilities.
20.3. The commercial, industrial, service or investment activity of the business may result in greater economic activity (i.e., value), than those assets and/or liabilities would generate separately. The excess value is often referred to as going concern value or goodwill. This excess value may constitute a separate asset under certain bases of value in certain situations. The absence of excess value does not automatically mean that the asset or group of assets does not constitute a business. In addition, economically, substantially all of the value of assets and/or liabilities within a business may reside in a single asset.

20.4. Businesses can take many legal forms, such as corporations, partnerships, joint ventures and sole proprietorships. However, businesses could take other forms such as a division, branch, line of business, segment, cash generating unit and asset group that can consist of parts of one or more legal entities.

20.5. Interests in a business (e.g., securities) can also take many forms. To determine the value of a business interest, a valuer should first determine the value of the underlying business by applying these standards. In such instances, business interests should be within the scope of this standard but depending on the nature of the interest certain other standards may be applicable.

20.6. Valuers must establish whether the valuation is of the entire entity, shares or a shareholding in the entity (whether a controlling or non-controlling interest), or a specific business activity of the entity. The type of value being provided must be appropriate to the intended use of the valuation and communicated as part of the scope of the engagement (see IVS 101 Scope of Work). It is especially critical to clearly define the business or business interest being valued as, even when a valuation is performed on an entire entity, there may be different levels at which that value could be expressed. For example:

(a) enterprise value: often described as the total value of the equity in a business plus the value of its debt or debt-related liabilities, minus any cash or cash equivalents available to meet those liabilities;

(b) total invested capital value: the total amount of money currently invested in a business, regardless of the source, often reflected as the value of total assets less current liabilities and cash;

(c) operating value: the total value of the operations of the business, excluding the value of any non-operating assets and liabilities;

(d) equity value: the value of a business to all of its equity shareholders.

20.7. Valuations of businesses are required for different intended uses including acquisitions, mergers and sales of businesses, taxation, litigation, insolvency proceedings and financial reporting. Business valuations may also be needed as an input or step in other valuations such as the valuation of stock options, particular class(es) of stock, or debt.

30. Bases of Value

30.1. In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis(es) of value when valuing a business or business interest.
30.2. Often, business valuations are performed using bases of value defined by entities/organisations other than the IVSC, some examples of which are mentioned in IVS 102 Bases of Value. It is the valuer’s responsibility to understand and follow the regulation, case law and/or other interpretive guidance related to those bases of value as of the valuation date.

40. Valuation Approaches and Methods

40.1. The three principal valuation approaches described in IVS 103 Valuation Approaches may be applied to the valuation of businesses and business interests.

40.2. When selecting an approach and method, in addition to the requirements of this standard, a valuer must follow the requirements of IVS 103 Valuation Approaches, including para 10.4.

50. Market Approach

50.1. The market approach is frequently applied in the valuation of businesses and business interests as these assets and/or liabilities often meet the criteria in IVS 103 Valuation Approaches, para 20.2 and 20.3. When valuing businesses and business interests under the Market Approach, valuers should follow the requirements of IVS 103 Valuation Approaches, sections 20 and Appendix A10.

50.2. The three most common sources of data used to value businesses and business interests using the market approach are:

(a) public stock markets in which ownership interests of similar businesses are traded;
(b) the acquisition market in which entire businesses or controlling interests in businesses are bought and sold; and
(c) prior transactions in shares or offers for the ownership of the subject business.

50.3. There must be a reasonable basis for comparison with, and reliance upon, similar businesses in the market approach. These similar businesses should be in the same industry as the subject business or in an industry that responds to the same economic variables. Factors that should be considered in assessing whether a reasonable basis for comparison exists include:

(a) similarity to the subject business in terms of qualitative and quantitative business characteristics;
(b) amount and verifiability of data on the similar business; and
(c) whether the price of the similar business represents an arm’s-length and orderly transaction.

50.4. When applying a market multiple, adjustments such as those specified in IVS 103 Valuation Approaches, Appendix A10.14 may be appropriate to both the subject company and the comparable companies.

50.5. Valuers should follow the requirements of IVS 103 Valuation Approaches, Appendix A10.13–A10.14 when selecting and adjusting comparable transactions.
50.6. Valuers should follow the requirements of IVS 103 Valuation Approaches, Appendix A10.12–A10.14 when selecting and adjusting comparable public company information.

60. Income Approach

60.1. The income approach is frequently applied in the valuation of businesses and business interests as these assets and/or liabilities often meet the criteria in IVS 103 Valuation Approaches, paras 30.2 and 30.3.

60.2. When the income approach is applied, valuers should follow the requirements of IVS 103 Valuation Approaches, section 30 and Appendix A20.

60.3. Income and cash flow related to a business or business interest can be measured in a variety of ways and may be on a pre-tax or post-tax basis. The capitalisation or discount rate applied must be consistent with the type of income or cash flow used.

60.4. The type of income or cash flow used should be consistent with the type of interest being valued. For example:

(a) enterprise value is typically derived using cash flows before debt servicing costs and an appropriate discount rate applicable to enterprise-level cash flows, such as a weighted-average cost of capital; and

(b) equity value may be derived using cash flows to equity, that is, after debt servicing costs and an appropriate discount rate applicable to equity-level cash flows, such as a cost of equity.

60.5. The income approach requires the estimation of a capitalisation rate when capitalising income or cash flow and a discount rate when discounting cash flow. In estimating the appropriate rate, factors such as the level of interest rates, rates of return expected by participants for similar investments and the risk inherent in the anticipated benefit stream should be considered (see IVS 103 Valuation Approaches, Appendix A20).

60.6. In methods that employ discounting, expected growth may be explicitly considered in the forecasted income or cash flow. In capitalisation methods, expected growth is usually reflected in the capitalisation rate. If a forecasted cash flow is expressed in nominal terms, a discount rate that takes into account the expectation of future price changes due to inflation or deflation should be used. If a forecasted cash flow is expressed in real terms, a discount rate that takes no account of expected price changes due to inflation or deflation should be used.

60.7. Under the income approach, the historical financial statements of a business entity are often used as a basis to estimate the future income or cash flow of the business. Determining the historical trends over time through ratio analysis may help provide the necessary information to assess the risks inherent in the business operations.
60.8. Adjustments may be appropriate to reflect differences between the actual historic cash flows and those that would be experienced by a buyer of the business interest on the valuation date. Examples include:

(a) adjusting revenues and expenses to levels that are reasonably representative of expected continuing operations;
(b) presenting financial data of the subject business and comparison businesses on a consistent basis;
(c) adjusting non-arm’s length transactions (such as contracts with customers or suppliers) to market rates;
(d) adjusting the cost of labour or of items leased or otherwise contracted from related parties to reflect market prices or rates;
(e) reflecting the impact of non-recurring events from historic revenue and expense items. Examples of non-recurring events include losses caused by strikes, new plant start-up and weather phenomena. However, the forecast cash flows should reflect any non-recurring revenues or expenses that can be reasonably anticipated and past occurrences may be indicative of similar events in the future; and
(f) adjusting the inventory accounting to compare with similar businesses, whose accounts may be kept on a different basis from the subject business, or to more accurately reflect economic reality.

60.9. When using an income approach it may also be necessary to make adjustments to the valuation to reflect matters that are not captured in either the cash flow forecasts or the discount rate adopted. Examples include adjustments for the marketability of the interest being valued or whether the interest being valued is a controlling or non-controlling interest in the business. However, valuers should ensure that adjustments to the valuation do not reflect factors that were already included in the cash flows or discount rate. For example, whether the interest being valued is a controlling or non-controlling interest is often already reflected in the forecasted cash flows.

60.10. While many businesses may be valued using a single cash flow scenario, valuers may also apply multi-scenario or simulation models, particularly when there is significant uncertainty as to the amount and/or timing of future cash flows.

70. Cost Approach

70.1. The cost approach cannot usually be applied in the valuation of businesses and business interests as these assets and/or liabilities seldom meet the criteria in IVS 103 Valuation Approaches, paras 40.2 or 40.3. However, the cost approach is sometimes applied in the valuation of businesses, particularly when:

(a) the business is an early stage or start-up business where profits and/or cash flow cannot be reliably determined and comparisons with other businesses under the market approach is impractical or unreliable;
(b) the business is an investment or holding business, in which case the summation method is as described in IVS 103 Valuation Approaches, Appendix A30.8–A30.9; and/or
(c) the business does not represent a going concern and/or the value of its assets and/or liabilities in a liquidation may exceed the value of a business value as a going concern.

70.2. In the circumstances where a business or business interest is valued using a cost approach, valuers should follow the requirements of IVS 103 Valuation Approaches, section 40 and Appendix A30.

80. **Special Considerations for Businesses and Business Interests**

80.1. The following sections address a non-exhaustive list of topics relevant to the valuation of businesses and business interests:

(a) Ownership Rights (section 90);
(b) Business Information (section 100);
(c) Economic and Industry Considerations (section 110);
(d) Operating and Non-Operating Assets (section 120);
(e) Capital Structure Considerations (section 130).

90. **Ownership Rights**

90.1. The rights, privileges or conditions that attach to the ownership interest, whether held in proprietorship, corporate or partnership form, require consideration in the valuation. Ownership rights are usually defined within a jurisdiction by legal documents such as articles of association, clauses in the memorandum of the business, articles of incorporation, bylaws, partnership agreements and shareholder agreements (collectively “corporate documents”). In some situations, it may also be necessary to distinguish between legal and beneficial ownership.

90.2. Corporate documents may contain restrictions on the transfer of the interest or other provisions relevant to value. For example, corporate documents may stipulate that the interest should be valued as a pro rata fraction of the entire issued share capital regardless of whether it is a controlling or non-controlling interest. In each case, the rights of the interest being valued and the rights attaching to any other class of interest need to be considered at the outset.

90.3. Care should be taken to distinguish between rights and obligations inherent to the interest and those that may be applicable only to a particular shareholder (ie, those contained in an agreement between current shareholders which may not apply to a potential buyer of the ownership interest). Depending on the basis(es) of value used, the valuer may be required to consider only the rights and obligations inherent to the subject interest or both those rights and considerations inherent to the subject interest and those that apply to a particular owner.

90.4. All the rights and preferences associated with a subject business or business interest should be considered in a valuation, including:

(a) if there are multiple classes of stock, the valuation should consider the rights of each different class, including, but not limited to:

1. liquidation preferences;
2. voting rights;
3. redemption, conversion and participation provisions; and
4. put and/or call rights;

(b) when a controlling interest in a business may have a higher value than a non-controlling interest. Control premiums or discounts for lack of control may be appropriate depending on the valuation method(s) applied (see IVS 103 Valuation Approaches, Appendix A10.17.(b)). In respect of actual premiums paid in completed transactions, the valuer should consider whether the synergies and other factors that caused the acquirer to pay those premiums are applicable to the subject asset to a comparable degree.

100. Business Information

100.1. The valuation of a business entity or interest frequently requires reliance upon information received from management, representatives of the management or other experts. As required by IVS 103 Valuation Approaches, para 10.8, a valuer must assess the reasonableness of information received from management, representatives of management or other experts and evaluate whether it is appropriate to rely on that information for the valuation. For example, prospective financial information provided by management may reflect owner-specific synergies that may not be appropriate when using a basis of value that requires a participant perspective.

100.2. Although the value on a given date reflects the anticipated benefits of future ownership, the history of a business is useful in that it may give guidance as to the expectations for the future. Valuers should therefore consider the business’ historical financial statements as part of a valuation. To the extent the future performance of the business is expected to deviate significantly from historical experience, a valuer must understand why historical performance is not representative of the future expectations of the business.

110. Economic and Industry Considerations

110.1. Awareness of relevant economic developments and specific industry trends is essential for all valuations. Matters such as political outlook, government policy, exchange rates, inflation, interest rates and market activity may affect assets and/or liabilities in different locations and/or sectors of the economy quite differently. These factors can be particularly important in the valuation of businesses and business interests, as businesses may have complex structures involving multiple locations and types of operations. For example, a business may be impacted by economic and industry factors specific related to:

(a) the registered location of the business headquarters and legal form of the business;
(b) the nature of the business operations and where each aspect of the business is conducted (i.e., manufacturing may be done in a different location to where research and development is conducted);
(c) where the business sells its goods and/or services;
(d) the currency(ies) the business uses;
(e) where the suppliers of the business are located; and
(f) what tax and legal jurisdictions the business is subject to.

120. Operating and Non-Operating Assets

120.1. The valuation of an ownership interest in a business is only relevant in the context of the financial position of the business at a point in time. It is important to understand the nature of assets and liabilities of the business and to determine which items are required for use in the income-producing operations of the business and which ones are redundant or “excess” to the business at the valuation date.

120.2. Most valuation methods do not capture the value of assets and/or liabilities that are not required for the operation of the business. For example, a business valued using a multiple of EBITDA would only capture the value of the assets utilised in generating that level of EBITDA. If the business had non-operating assets or liabilities, such as an idle manufacturing plant, the value of that non-operating plant would not be captured in the value. Depending on the level of value appropriate for the valuation engagement (see para 20.3 of this standard), the value of non-operating assets and/or liabilities may need to be separately determined and added to the operating value of the business.

120.3. Businesses may have unrecorded assets and/or liabilities that are not reflected on the balance sheet. Such assets and/or liabilities could include intangible assets, machinery and equipment that is fully depreciated and legal liabilities/lawsuits.

120.4. When separately considering non-operating assets and liabilities, a valuer should ensure that the income and expenses associated with non-operating assets and/or liabilities are excluded from the cash flow measurements and projections used in the valuation. For example, if a business has a significant liability associated with an underfunded pension and that liability is valued separately, the cash flows used in the valuation of the business should exclude any “catch-up” payments related to that liability.

120.5. If the valuation considers information from publicly-traded businesses, the publicly-traded stock prices implicitly include the value of non-operating assets and/or liabilities, if any. As such, valuers must consider adjusting information from publicly traded businesses to exclude the value, income and expenses associated with non-operating assets and/or liabilities.

130. Capital Structure Considerations

130.1. Businesses are often financed through a combination of debt and equity. However, in many cases, valuers are asked to value only equity, a particular class of equity, or some other form of ownership interest. While equity or a particular class of equity can occasionally be valued directly, more often the enterprise value of the business is determined and then that value is allocated between the various classes of debt and equity.

130.2. While there are many ownership interests in an asset which a valuer could be asked to value, a non-exhaustive list of such interests includes:

(a) bonds;
(b) convertible debt;
(c) partnership interest;
(d) minority interest;
(e) common equity;
(f) preferred equity;
(g) options;
(h) warrants.

130.3. When a valuer is asked to value only equity, or determine how the business value as a whole is distributed among the various debt and equity classes, a valuer must determine and consider the different rights and preferences associated with each class of debt and equity. Rights and preferences can broadly be categorised as economic rights or control rights.

A non-exhaustive list of such rights and preferences includes:

(a) dividend or preferred dividend rights;
(b) liquidation preferences;
(c) voting rights;
(d) redemption rights;
(e) conversion rights;
(f) participation rights;
(g) anti-dilution rights;
(h) registration rights; and
(i) put and/or call rights.

130.4. For simple capital structures that include only common stock and simple debt structures (such as bonds, loans and overdrafts), it may be possible to estimate the value of all of the common stock within the enterprise by directly estimating the value of debt, subtracting that value from the enterprise value, then allocating the residual equity value pro rata to all of the common stock. This method is not appropriate for all companies with simple capital structures, for example it may not be appropriate for distressed or highly leveraged companies.

130.5. For complex capital structures, being those that include a form of equity other than just common stock, valuers may use any reasonable method to determine the value of equity or a particular class of equity. In such cases, typically the enterprise value of the business is determined and then that value is allocated between the various classes of debt and equity. Three methods that valuers could utilise in such instances are discussed in this section, including:

(a) current value method (CVM);
(b) option pricing method (OPM); and
(c) probability-weighted expected return method (PWERM).
130.6. While the CVM is not forward looking, both the OPM and PWERM estimate values assuming various future outcomes. The PWERM relies on discrete assumptions for future events and the OPM estimates the future distribution of outcomes using a lognormal distribution around the current value.

130.7. A valuer should consider any potential differences between a “pre-money” and “post-money” valuation, particularly for early stage companies with complex capital structures. For example, an infusion of cash (i.e., “post-money valuation”) for such companies may impact the overall risk profile of the enterprise as well as the relative value allocation between share classes.

130.8. A valuer should consider recent transactions in the subject equity or a particular class of equity and ensure the assumptions used in the subject valuation are updated as necessary to reflect changes in the investment structure and changes in market conditions.

**Current Value Method (CVM)**

130.9. The current value method (CVM) allocates the enterprise value to the various debt and equity securities assuming an immediate sale of the enterprise. Under the CVM, the obligations to debt holders, or debt equivalent securities, is first deducted from the enterprise value to calculate residual equity value (valuers should consider if the enterprise value includes or excludes cash, and the resulting use of gross or net debt for allocation purposes). Next, value is allocated to the various series of preferred stock based on the series’ liquidation preferences or conversion values, whichever would be greater. Finally, any residual value is allocated to any common equity, options and warrants.

130.10. A limitation of the CVM is that it is not forward looking and fails to consider the option-like payoffs of many share classes.

130.11. The CVM should only be used when 1) a liquidity event of the enterprise is imminent, 2) when an enterprise is at such an early stage of its development that no significant common equity value above the liquidation preference on any preferred equity has been created, 3) no material progress has been made on the company’s business plan, or 4) no reasonable basis exists for estimating the amount and timing of any such value above the liquidation preference that might be created in the future.

130.12. Valuers should not assume that the value of debt, or debt-like securities, and its book value are equal without rationale for the determination.

**Option Pricing Method (OPM)**

130.13. The OPM values the different share classes by treating each share class as an option on the cash flows from the enterprise. The OPM is often applied to capital structures in which the payout to different share classes changes at different levels of total equity value, for instance, where there are convertible preferred shares, management incentive units, options, or other classes of shares that have certain liquidation preferences. The OPM may be performed on the enterprise value, thereby including any debt in the OPM, or on an equity basis after separate consideration of the debt.
130.14. The OPM considers the various terms of the stockholder agreements that would affect the distributions to each class of equity upon a liquidity event, including the level of seniority among the securities, dividend policy, conversion ratios and cash allocations.

130.15. The starting point for the OPM is the value of total equity for the asset. The OPM is then applied to allocate the total equity value among equity securities.

130.16. The OPM (or a related hybrid method) is suited to circumstances where specific future liquidity events are difficult to forecast or the company is in an early stage of development.

130.17. The OPM most frequently relies on the Black–Scholes option pricing model to determine the value associated with distributions above certain value thresholds.

130.18. When applying the OPM, a non-exhaustive list of the steps valuers should perform includes:

(a) determine the total equity value of the asset;
(b) identify the liquidation preferences, preferred dividend accruals, conversion prices, and other features attached to the relevant securities that influences the cash distribution;
(c) determine the different total equity value points (breakpoints) in which the liquidation preferences and conversion prices become effective;
(d) determine the inputs to the Black-Scholes model:
   1. determine a reasonable time horizon for the OPM;
   2. select a risk-free rate corresponding to the time horizon;
   3. determine the appropriate volatility factor for the equity of the asset; and
   4. determine the expected dividend yield.
(e) calculate a value for the various call options and determine the value allocated to each interval between the breakpoints;
(f) determine the relative allocation to each class of shares in each interval between the calculated breakpoints;
(g) allocate the value between the breakpoints (calculated as the call options) among the share classes based on the allocation determined in step (f) and the value determined in step (e);
(h) consider additional adjustments to the share classes as necessary, consistent with the basis of value. For example, it may be appropriate to apply discounts or premiums.

130.19. When determining the appropriate volatility assumption valuers should consider:

1. the development stage of the asset and the relative impact to the volatility when compared to that observed by the comparable companies; and
2. the relative financial leverage of the asset.
130.20. In addition to the method discussed above, the OPM can be used to back solve for the value of total equity value when there is a known price for an individual security. The inputs to a back solve analysis are the same as above. Valuers will then solve for the price of the known security by changing the value of total equity. The back solve method will also provide a value for all other equity securities.

**Probability-Weighted Expected Return Method (PWERM)**

130.21. Under a PWERM, the value of the various equity securities are estimated based upon an analysis of future values for the asset, assuming various future outcomes. Share value is based upon the probability-weighted present value of expected future investment returns, considering each of the possible future outcomes available to the asset, as well as the rights and preferences of the share classes.

130.22. Typically, the PWERM is used when the company is close to exit and does not plan to raise additional capital.

130.23. When applying the PWERM, a non-exhaustive list of the steps valuers should perform includes:

(a) determine the possible future outcomes available to the asset;
(b) estimate the future value of the asset under each outcome;
(c) allocate the estimated future value of the asset to each class of debt and equity under each possible outcome;
(d) discount the expected value allocated to each class of debt and equity to present value using a risk-adjusted discount rate;
(e) weight each possible outcome by its respective probability to estimate the expected future probability-weighted cash flows to each class of debt and equity;
(f) consider additional adjustments to the share classes as necessary, consistent with the basis of value. For example, it may be appropriate to apply discounts or premiums.

130.24. Valuers should reconcile the probability-weighted present values of the future exit values to the overall asset value to make sure that the overall valuation of the enterprise is reasonable.

130.25. Valuers can combine elements of the OPM with the PWERM to create a hybrid methodology by using the OPM to estimate the allocation of value within one or more of the probability-weighted scenarios.
10. Overview
10.1. The principles contained in the General Standards apply to valuations of intangible assets and valuations with an intangible assets component. This standard contains additional requirements that apply to valuations of intangible assets.

20. Introduction
20.1. An intangible asset is a non-monetary asset that manifests itself by its economic properties. It does not have physical substance but grants rights and/or economic benefits to its owner.

20.2. Specific intangible assets are defined and described by characteristics such as their ownership, function, market position and image. These characteristics differentiate intangible assets from one another.

20.3. There are many types of intangible assets, but they are often considered to fall into one or more of the following categories, or into goodwill:

(a) marketing-related: marketing-related intangible assets are used primarily in the marketing or promotion of products or services. Examples include trademarks, trade names, unique trade design and internet domain names;

(b) customer-related: customer-related intangible assets include customer lists, backlog, customer contracts, and contractual and non-contractual customer relationships;
(c) artistic-related: artistic-related intangible assets arise from the right to benefits from artistic works such as plays, books, films and music, and from non-contractual copyright protection;

(d) contract-related: contract-related intangible assets represent the value of rights that arise from contractual agreements. Examples include licensing and royalty agreements, service or supply contracts, lease agreements, permits, broadcast rights, servicing contracts, employment contracts and non-competition agreements and natural resource rights;

(e) technology-based: technology-related intangible assets arise from contractual or non-contractual rights to use patented technology, unpatented technology, databases, formulae, designs, software, processes or recipes.

20.4. Although similar intangible assets within the same class will share some characteristics with one another, they will also have differentiating characteristics that will vary according to the type of intangible asset. In addition, certain intangible assets, such as brands, may represent a combination of several categories listed in para 20.3.

20.5. When valuing an intangible asset, valuers must understand specifically what needs to be valued and the intended use of the valuation. For example, customer data (names, addresses, etc) typically have very different values from customer contracts (those contracts in place on the valuation date) and from customer relationships (the value of the ongoing customer relationship including existing and future contracts). What intangible assets need to be valued and the definition of those intangible assets may differ depending on the intended use of the valuation. Differences in how intangible assets are defined can lead to significant differences in value.

20.6. Generally, goodwill is any future economic benefit arising from a business, an interest in a business or from the use of a group of assets which has not been separately recognised in another asset. The value of goodwill is typically measured as the residual amount remaining after the values of all identifiable tangible, intangible and monetary assets, adjusted for actual or potential liabilities, have been deducted from the value of a business. It is often represented as the excess of the price paid in a real or hypothetical acquisition of a company over the value of the company’s other identified assets and liabilities. For some intended uses, goodwill may need to be further divided into transferable goodwill (that which can be transferred to third parties) and non-transferable or “personal” goodwill.

20.7. Since the amount of goodwill is dependent on which other tangible and intangible assets are recognised, its value can be different when calculated for different intended uses. For example, in a business combination accounted for under IFRS or US GAAP, an intangible asset is only recognised to the extent that it:

(a) is separable, ie, capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or
(b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

20.8. While the aspects of goodwill can vary depending on the intended use of the valuation, goodwill frequently includes elements such as:

(a) company-specific synergies arising from a combination of two or more businesses (eg, reductions in operating costs, economies of scale or product mix dynamics);

(b) opportunities to expand the business into new and different markets;

(c) the benefit of an assembled workforce (but generally not any intellectual property developed by members of that workforce);

(d) the benefit to be derived from future assets, such as new customers and future technologies; and

(e) assemblage and going concern value.

20.9. Valuers may perform direct valuations of intangible assets where the value of the intangible assets is the intended use of the analysis or one part of the analysis. However, when valuing businesses, business interests, real property, and machinery and equipment, valuers should consider whether there are intangible assets associated with those assets and whether those directly or indirectly impact the asset being valued. For example, when valuing a hotel based on an income approach, the contribution to value of the hotel's brand may already be reflected in the profit generated by the hotel.

20.10. Intangible asset valuations are performed for a variety of intended uses. It is the valuer's responsibility to understand the intended use of a valuation. It is also the valuer's responsibility to understand whether intangible assets should be valued separately or grouped with other assets. A non-exhaustive list of examples of circumstances that commonly include an intangible asset valuation component is provided below:

(a) for financial reporting purposes, valuations of intangible assets are often required in connection with accounting for business combinations, asset acquisitions and sales, and impairment analysis;

(b) for tax reporting purposes, intangible asset valuations are frequently needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses;

(c) intangible assets may be the subject of litigation, requiring valuations in circumstances such as shareholder disputes, damage calculations and marital dissolutions (divorce);

(d) other statutory or legal events may require the valuation of intangible assets such as compulsory purchases/eminent domain proceedings;

(e) valuers are often asked to value intangible assets as part of general consulting, collateral lending and transactional support engagements.

30. Bases of Value

30.1. In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis(es) of value when valuing intangible assets.
30.2. Often, intangible asset valuations are performed using bases of value defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 102 Bases of Value). The valuer must understand and follow the regulation, case law and other interpretive guidance related to those bases of value as of the valuation date.

40. Valuation Approaches and Methods

40.1. The three valuation approaches described in IVS 103 Valuation Approaches can all be applied to the valuation of intangible assets.

40.2. When selecting an approach and method, in addition to the requirements of this standard, a valuer must follow the requirements of IVS 103 Valuation Approaches, including para 10.4.

50. Market Approach

50.1. Under the market approach, the value of an intangible asset is determined by reference to market activity (for example, transactions involving identical or similar assets).

50.2. Transactions involving intangible assets frequently also include other assets, such as a business combination that includes intangible assets.

50.3. Valuers must comply with paras 20.2 and 20.3 of IVS 103 Valuation Approaches when determining whether to apply the market approach to the valuation of intangible assets. In addition, valuers should only apply the market approach to value intangible assets if both of the following criteria are met:

(a) information is available on arm’s-length transactions involving identical or similar intangible assets on or near the valuation date; and

(b) sufficient information is available to allow the valuer to adjust for all significant differences between the subject intangible asset and those involved in the transactions.

50.4. The heterogeneous nature of intangible assets and the fact that intangible assets seldom transact separately from other assets means that it is rarely possible to find market evidence of transactions involving identical assets. If there is market evidence at all, it is usually in respect of assets that are similar, but not identical.

50.5. Where evidence of either prices or valuation multiples is available, valuers should make adjustments to these to reflect differences between the subject asset and those involved in the transactions. These adjustments reflect the differentiating characteristics of the subject intangible asset and the assets involved in the transactions. Such adjustments may only be determinable at a qualitative, rather than quantitative, level. However, the need for significant qualitative adjustments may indicate that another approach would be more appropriate for the valuation.

50.6. Examples of intangible assets for which the market approach is sometimes used include:

(a) broadcast spectrum;

(b) internet domain names; and

(c) taxi licenses (“medallions”).
50.7. The guideline transactions method is generally the only market approach method that can be applied to intangible assets.

50.8. In rare circumstances, a security sufficiently similar to a subject intangible asset may be publicly traded, allowing the use of the guideline public company method. One example is contingent value rights (CVRs) that are tied to the performance of a particular product or technology.

60. **Income Approach**

60.1. Under the income approach, the value of an intangible asset is determined by reference to the present value of income, cash flows or cost savings attributable to the intangible asset over its economic life.

60.2. Valuers must comply with paras 30.2 and 30.3 of IVS 103 Valuation Approaches when determining whether to apply the income approach to the valuation of intangible assets.

60.3. Income related to intangible assets is frequently included in the price paid for goods or a service. It may be challenging to separate the income related to the intangible asset from income related to other tangible and intangible assets. Many of the income approach methods are designed to separate the economic benefits associated with a subject intangible asset.

60.4. The income approach is the most common method applied to the valuation of intangible assets and is frequently used to value intangible assets including the following:

(a) technology;
(b) customer-related intangibles (e.g., backlog, contracts, relationships);
(c) tradenames/trademarks/brands;
(d) operating licenses (e.g., franchise agreements, gaming licenses, broadcast spectrum); and
(e) non-competition agreements.

**Income Approach Methods**

60.5. There are many income approach methods. The following methods are discussed in this standard in more detail:

(a) excess earnings method;
(b) relief-from-royalty method;
(c) premium profit method or with-and-without method;
(d) greenfield method; and
(e) distributor method.

**Excess Earnings Method**

60.6. The excess earnings method estimates the value of an intangible asset as the present value of the cash flows attributable to the subject intangible asset after excluding the proportion of the cash flows that are attributable to other assets required to generate the cash flows (“contributory assets”). It is often used for valuations where there is a requirement for the acquirer to allocate the overall price paid for
a business between tangible assets, identifiable intangible assets and goodwill.

60.7. Contributory assets are assets that are used in conjunction with the subject intangible asset in the realisation of prospective cash flows associated with the subject intangible asset. Assets that do not contribute to the prospective cash flows associated with the subject intangible asset are not contributory assets.

60.8. The excess earnings method can be applied using several periods of forecasted cash flows (“multi-period excess earnings method” or “MPEEM”), a single period of forecasted cash flows (“single-period excess earnings method”) or by capitalising a single period of forecasted cash flows (“capitalised excess earnings method” or the “formula method”).

60.9. The capitalised excess earnings method or formula method is generally only appropriate if the intangible asset is operating in a steady state with stable growth/decay rates, constant profit margins and consistent contributory asset levels/charges.

60.10. As most intangible assets have economic lives exceeding one period, frequently follow non-linear growth/decay patterns and may require different levels of contributory assets over time, the MPEEM is the most commonly used excess earnings method as it offers the most flexibility and allows valuers to explicitly forecast changes in such inputs.

60.11. Whether applied in a single-period, multi-period or capitalised manner, the key steps in applying an excess earnings method are to:

(a) forecast the amount and timing of future revenues driven by the subject intangible asset and related contributory assets;
(b) forecast the amount and timing of expenses that are required to generate the revenue from the subject intangible asset and related contributory assets;
(c) adjust the expenses to exclude those related to creation of new intangible assets that are not required to generate the forecasted revenue and expenses. Profit margins in the excess earnings method may be higher than profit margins for the overall business because the excess earnings method excludes investment in certain new intangible assets. For example:

1. research and development expenditures related to development of new technology would not be required when valuing only existing technology; and
2. marketing expenses related to obtaining new customers would not be required when valuing existing customer-related intangible assets;
(d) identify the contributory assets that are needed to achieve the forecasted revenue and expenses. Contributory assets often include working capital, fixed assets, assembled workforce and identified intangible assets other than the subject intangible asset;
(e) determine the appropriate rate of return on each contributory asset based on an assessment of the risk associated with that asset. For
example, low risk assets like working capital will typically have a relatively lower required return. Contributory intangible assets and highly specialised machinery and equipment often require relatively higher rates of return;

(f) in each forecast period, deduct the required returns on contributory assets from the forecast profit to arrive at the excess earnings attributable to only the subject intangible asset;

(g) determine the appropriate discount rate for the subject intangible asset and present value or capitalise the excess earnings; and

(h) if appropriate for the intended use of the valuation (see paras 110.1-110.4), calculate and add the tax amortisation benefit (TAB) for the subject intangible asset.

60.12. Contributory asset charges (CACs) should be made for all the current and future tangible, intangible and financial assets that contribute to the generation of the cash flow, and if an asset for which a CAC is required is involved in more than one line of business, its CAC should be allocated to the different lines of business involved.

60.13. The determination of whether a CAC for elements of goodwill is appropriate should be based on an assessment of the relevant facts and circumstances of the situation, and the valuer should not mechanically apply CACs or alternative adjustments for elements of goodwill if the circumstances do not warrant such a charge. Assembled workforce, as it is quantifiable, is typically the only element of goodwill for which a CAC should be taken. Accordingly, valuers must ensure they have a strong basis for applying CACs for any elements of goodwill other than assembled workforce.

60.14. CACs are generally computed on an after-tax basis as a fair return on the value of the contributory asset, and in some cases a return of the contributory asset is also deducted. The appropriate return on a contributory asset is the investment return a typical participant would require on the asset. The return of a contributory asset is a recovery of the initial investment in the asset. There should be no difference in value regardless of whether CACs are computed on a pre-tax or after-tax basis.

60.15. If the contributory asset is not wasting in nature, like working capital, only a fair return on the asset is required.

60.16. For contributory intangible assets that were valued under a relief-from-royalty method, the CAC should be equal to the royalty (generally adjusted to an aftertax royalty rate).

60.17. The excess earnings method should be applied only to a single intangible asset for a given stream of revenue and income. The excess earnings method is generally applied to the primary or most important intangible asset. For example, in valuing the intangible assets of a company utilising both technology and a tradename in delivering a product or service (ie, the revenue associated with the technology and the tradename is the same), the excess earnings method should only be used to value one of the intangible assets and an alternative method should be used for the other asset. However, if the company had multiple product lines, each using a different technology and each generating distinct
revenue and profit, the excess earnings method may be applied in the valuation of the multiple different technologies.

**Relief-from-Royalty Method**

60.18. Under the relief-from-royalty method, the value of an intangible asset is determined by reference to the value of the hypothetical royalty payments that would be saved through owning the asset as compared with licensing the intangible asset from a third party. Conceptually, the method may also be viewed as a discounted cash flow method applied to the cash flow that the owner of the intangible asset could receive through licensing the intangible asset to third parties.

60.19. The key steps in applying a relief-from-royalty method are to:

(a) develop projections associated with the intangible asset being valued for the life of the subject intangible asset. The most common metric projected is revenue, as most royalties are paid as a percentage of revenue. However, other metrics such as a per-unit royalty may be appropriate in certain valuations;

(b) develop a royalty rate for the subject intangible asset. Two methods can be used to derive a hypothetical royalty rate. The first is based on market royalty rates for comparable or similar transactions. A prerequisite for this method is the existence of comparable intangible assets that are licensed at arm's-length on a regular basis. The second method is based on a split of profits that would hypothetically be paid in an arm's length transaction by a willing licensee to a willing licensor for the rights to use the subject intangible asset;

(c) apply the selected royalty rate to the projections to calculate the royalty payments avoided by owning the intangible asset;

(d) estimate any additional expenses for which a licensee of the subject asset would be responsible. This can include upfront payments required by some licensors. A royalty rate should be analysed to determine whether it assumes expenses (such as maintenance, marketing and advertising) are the responsibility of the licensor or the licensee. A royalty rate that is “gross” would consider all responsibilities and expenses associated with ownership of a licensed asset to reside with the licensor, while a royalty that is “net” would consider some or all responsibilities and expenses associated with the licensed asset to reside with the licensee. Depending on whether the royalty is “gross” or “net”, the valuation should exclude or include, respectively, a deduction for expenses such as maintenance, marketing or advertising expenses related to the hypothetically licensed asset;

(e) if the hypothetical costs and royalty payments are tax deductible, it may be appropriate to apply the appropriate tax rate to determine the aftertax savings associated with ownership of the intangible asset. However, for certain intended uses (such as transfer pricing), the effects of taxes are generally not considered in the valuation and this step should be skipped;
(f) determine the appropriate discount rate for the subject intangible asset and present value or capitalise the savings associated with ownership of the intangible asset; and

(g) if appropriate for the intended use of the valuation (see section 110 of this standard), calculate and add the TAB for the subject intangible asset.

60.20. Whether a royalty rate is based on market transactions or a profit split method (or both), its selection should consider the characteristics of the subject intangible asset and the environment in which it is utilised. The consideration of those characteristics form the basis for selection of a royalty rate within a range of observed transactions and/or the range of profit available to the subject intangible asset in a profit split. Factors that should be considered include the following:

(a) competitive environment: the size of the market for the intangible asset, the availability of realistic alternatives, the number of competitors, barriers to entry and presence (or absence) of switching costs;

(b) importance of the subject intangible to the owner: whether the subject asset is a key factor of differentiation from competitors, the importance it plays in the owner’s marketing strategy, its relative importance compared with other tangible and intangible assets, and the amount the owner spends on creation, upkeep and improvement of the subject asset;

(c) life cycle of the subject intangible: the expected economic life of the subject asset and any risks of the subject intangible becoming obsolete.

60.21. When selecting a royalty rate, a valuer should also consider the following:

(a) when entering a licence arrangement, the royalty rate participants would be willing to pay depends on their profit levels and the relative contribution of the licensed intangible asset to that profit. For example, a manufacturer of consumer products would not license a tradename at a royalty rate that leads to the manufacturer realising a lower profit selling branded products compared with selling generic products;

(b) when considering observed royalty transactions, a valuer should understand the specific rights transferred to the licensee and any limitations. For example, royalty agreements may include significant restrictions on the use of a licensed intangible asset such as a restriction to a particular geographic area or for a product. In addition, the valuer should understand how the payments under the licensing agreement are structured, including whether there are upfront payments, milestone payments, puts/calls to acquire the licensed property outright, etc.

With-and-Without Method

60.22. The with-and-without method indicates the value of an intangible asset by comparing two scenarios: one in which the business uses the subject intangible asset and one in which the business does not use the subject intangible asset (but all other factors are kept constant).
60.23. The comparison of the two scenarios can be done in two ways:

(a) calculating the value of the business under each scenario with the difference in the business values being the value of the subject intangible asset; and

(b) calculating, for each future period, the difference between the profits in the two scenarios. The present value of those amounts is then used to reach the value of the subject intangible asset.

60.24. In theory, either method should reach a similar value for the intangible asset provided the valuer considers not only the impact on the entity’s profit, but additional factors such as differences between the two scenarios in working capital needs and capital expenditures.

60.25. The with-and-without method is frequently used in the valuation of non-competition agreements but may be appropriate in the valuation of other intangible assets in certain circumstances.

60.26. The key steps in applying the with-and-without method are to:

(a) prepare projections of revenue, expenses, capital expenditures and working capital needs for the business assuming the use of all of the assets of the business including the subject intangible asset. These are the cash flows in the “with” scenario;

(b) use an appropriate discount rate to present value the future cash flows in the “with” scenario, and/or calculate the value of the business in the “with” scenario;

(c) prepare projections of revenue, expenses, capital expenditures and working capital needs for the business assuming the use of all of the assets of the business except the subject intangible asset. These are the cash flows in the “without” scenario;

(d) use an appropriate discount rate for the business, present value the future cash flows in the “with” scenario and/or calculate the value of the business in the “with” scenario;

(e) deduct the present value of cash flows or the value of the business in the “without” scenario from the present value of cash flows or value of the business in the “with” scenario; and

(f) if appropriate for the intended use of the valuation (see paras 110.1–110.4), calculate and add the Tax Amortisation Benefit (TAB) for the subject intangible asset.

60.27. As an additional step, the difference between the two scenarios may need to be probability-weighted. For example, when valuing a non-competition agreement, the individual or business subject to the agreement may choose not to compete, even if the agreement were not in place.

60.28. The differences in value between the two scenarios should be reflected solely in the cash flow projections rather than by using different discount rates in the two scenarios.
Greenfield Method

60.29. Under the greenfield method, the value of the subject intangible is determined using cash flow projections that assume the only asset of the business at the valuation date is the subject intangible asset. All other tangible and intangible assets must be bought, built or rented.

60.30. The greenfield method is conceptually similar to the excess earnings method. However, instead of subtracting contributory asset charges from the cash flow to reflect the contribution of contributory assets, the greenfield method assumes that the owner of the subject asset would have to build, buy or rent the contributory assets. When building or buying the contributory assets, the cost of a replacement asset of equivalent utility is used rather than a reproduction cost.

60.31. The greenfield method is often used to estimate the value of ”enabling” intangible assets such as franchise agreements and broadcast spectrum.

60.32. The key steps in applying the greenfield method are to:

(a) prepare projections of revenue, expenses, capital expenditures and working capital needs for the business assuming the subject intangible asset is the only asset owned by the subject business at the valuation date, including the time period needed to “ramp up” to stabilised levels;

(b) estimate the timing and amount of expenditures related to the acquisition, creation or rental of all other assets needed to operate the subject business;

(c) using an appropriate discount rate for the business, present value the future cash flows to determine the value of the subject business with only the subject intangible in place; and

(d) if appropriate for the intended use of the valuation (see section 110 of this standard), calculate and add the TAB for the subject intangible asset.

Distributor Method

60.33. The distributor method, sometimes referred to as the disaggregated method, is a variation of the multi-period excess earnings method sometimes used to value customer-related intangible assets. The underlying theory of the distributor method is that businesses that are comprised of various functions are expected to generate profits associated with each function. As distributors generally only perform functions related to distribution of products to customers rather than development of intellectual property or manufacturing, information on profit margins earned by distributors is used to estimate the excess earnings attributable to customer-related intangible assets.

60.34. The distributor method is appropriate to value customer-related intangible assets when another intangible asset (for example, technology or a brand) is deemed to be the primary or most significant intangible asset and is valued under a multi-period excess earnings method.
60.35. The key steps in applying the distributor method are to:

(a) prepare projections of revenue associated with existing customer relationships. This should reflect expected growth in revenue from existing customers as well as the effects of customer attrition;

(b) identify comparable distributors that have customer relationships similar to the subject business and calculate the profit margins achieved by those distributors;

(c) apply the distributor profit margin to the projected revenue;

(d) identify the contributory assets related to performing a distribution function that are needed to achieve the forecast revenue and expenses. Generally distributor contributory assets include working capital, fixed assets and workforce. However, distributors seldom require other assets such as trademarks or technology. The level of required contributory assets should also be consistent with participants performing only a distribution function;

(e) determine the appropriate rate of return on each contributory asset based on an assessment of the risk associated with that asset;

(f) in each forecast period, deduct the required returns on contributory assets from the forecast distributor profit to arrive at the excess earnings attributable to only the subject intangible asset;

(g) determine the appropriate discount rate for the subject intangible asset and present value the excess earnings; and

(h) if appropriate for the intended use of the valuation (see section 110 of this standard), calculate and add the TAB for the subject intangible asset.

70. Cost Approach

70.1. Under the cost approach, the value of an intangible asset is determined based on the replacement cost of a similar asset or an asset providing similar service potential or utility.

70.2. Valuers must comply with paras 40.2 and 40.3 of IVS 103 Valuation Approaches when determining whether to apply the cost approach to the valuation of intangible assets.

70.3. The cost approach is commonly used for intangible assets such as the following:

(a) acquired third-party software;

(b) internally-developed and internally-used, non-marketable software; and

(c) assembled workforce.

70.4. The cost approach should be used when no other approach can be applied satisfactorily. However, a valuer should attempt to identify an alternative method before applying the cost approach in situations where the subject asset does not meet the criteria in paras 40.2 and 40.3 of IVS 103 Valuation Approaches.

70.5. Two main methods fall under the cost approach: replacement cost and reproduction cost. However, many intangible assets do not have physical
form that can be reproduced and assets such as software, which can be reproduced, generally derive value from their function/utility rather than their exact lines of code. As such, the replacement cost is most commonly applied to the valuation of intangible assets.

70.6. The replacement cost method assumes that a participant would pay no more for the asset than the cost that would be incurred to replace the asset with a substitute of comparable utility or functionality.

70.7. Valuers should consider the following when applying the replacement cost method:

(a) the direct and indirect costs of replacing the utility of the asset, including labour, materials and overhead;

(b) whether the subject intangible asset is subject to obsolescence. While intangible assets do not become functionally or physically obsolete, they can be subject to economic obsolescence;

(c) whether it is appropriate to include a profit mark-up on the included costs. An asset acquired from a third party would presumably reflect their costs associated with creating the asset as well as some form of profit to provide a return on investment. As such, under bases of value (see IVS 102 Bases of Value) that assume a hypothetical transaction, it may be appropriate to include an assumed profit mark-up on costs. As noted in IVS 103 Valuation Approaches, costs developed based on estimates from third parties would be presumed to already reflect a profit mark-up; and

(d) opportunity costs may also be included, which reflect costs associated with not having the subject intangible asset in place for some period of time during its creation.

80. Special Considerations for Intangible Assets

80.1. The following sections address a non-exhaustive list of topics relevant to the valuation of intangible assets.

(a) Discount rates/Rates of Return for Intangible Assets (section 90);

(b) Intangible Asset Economic Lives (section 100);

(c) Tax Amortisation Benefit (section 110).

90. Discount Rates/Rates of Return for Intangible Assets

90.1. Selecting discount rates for intangible assets can be challenging, as observable market evidence of discount rates for intangible assets is rare. The selection of a discount rate for an intangible asset generally requires significant professional judgement.

90.2. In selecting a discount rate for an intangible asset, valuers should perform an assessment of the risks associated with the subject intangible asset and consider observable discount rate benchmarks.

90.3. When assessing the risks associated with an intangible asset, a valuer should consider factors including the following:

(a) intangible assets often have higher risk than tangible assets;
(b) if an intangible asset is highly specialised to its current use, it may have higher risk than assets with multiple potential uses;
(c) single intangible assets may have more risk than groups of assets (or businesses);
(d) intangible assets used in risky (sometimes referred to as non-routine) functions may have higher risk than intangible assets used in more low-risk or routine activities. For example, intangible assets used in research and development activities may be higher risk than those used in delivering existing products or services;
(e) the life of the asset. Similar to other investments, intangible assets with longer lives are often considered to have higher risk, all else being equal;
(f) intangible assets with more readily estimable cash flow streams, such as backlog, may have lower risk than similar intangible assets with less estimable cash flows, such as customer relationships.

90.4. Discount rate benchmarks are rates that are observable based on market evidence or observed transactions. The following are some of the benchmark rates that a valuer should consider:

(a) risk-free rates with similar maturities to the life of the subject intangible asset;
(b) cost of debt or borrowing rates with maturities similar to the life of the subject intangible asset;
(c) cost of equity or equity rates or return for participants for the subject intangible asset;
(d) weighted-average-cost-of-capital (WACC) of participants for the subject intangible asset or of the company owning/using the subject intangible asset;
(e) in contexts involving a recent business acquisition including the subject intangible asset, the internal-rate-of-return for the transaction should be considered; and
(f) in contexts involving a valuation of all assets of a business, the valuer should perform a weighted-average-return-on-assets (WARA) analysis to confirm reasonableness of selected discount rates.

100. Intangible Asset Economic Lives

100.1. An important consideration in the valuation of an intangible asset, particularly under the income approach, is the economic life of the asset. This may be a finite period limited by legal, technological, functional or economic factors; other assets may have an indefinite life. The economic life of an intangible asset is a different concept than the remaining useful life for accounting or tax purposes.

100.2. Legal, technological, functional and economic factors must be considered individually and together in making an assessment of the economic life. For example, a pharmaceutical technology protected by a patent may have a remaining legal life of five years before expiry of the patent, but a competitor drug with improved efficacy may be expected to reach the market in three years. This might cause the economic life of the patent
to be assessed as only three years. In contrast, the expected economic life of the technology could extend beyond the life of the patent if the knowhow associated with the technology would have value in production of a generic drug beyond the expiration of the patent.

100.3. In estimating the economic life of an intangible asset, a valuer should also consider the pattern of use or replacement. Certain intangible assets may be abruptly replaced when a new, better or cheaper alternative becomes available, while others may be replaced slowly over time, such as when a software developer releases a new version of software every year but only replaces a portion of the existing code with each new release.

100.4. For customer-related intangibles, attrition is a key factor in estimating an economic life as well as the cash flows used to value the customer-related intangibles. Attrition applied in the valuation of intangible assets is a quantification of expectations regarding future losses of customers. While it is a forward-looking estimate, attrition is often based on historical observations of attrition.

100.5. There are a number of ways to measure and apply historical attrition:

(a) a constant rate of loss (as a percentage of prior year balance) over the life of the customer relationships may be assumed if customer loss does not appear to be dependent on age of the customer relationship;

(b) a variable rate of loss may be used over the life of the customer relationships if customer loss is dependent on age of the customer relationship. In such circumstances, generally younger/new customers are lost at a higher rate than older, more established customer relationships;

(c) attrition may be measured based on either revenue or number of customers/customer count as appropriate, based on the characteristics of the customer group;

(d) customers may need to be segregated into different groups. For example, a company that sells products to distributors and retailers may experience different attrition rates for each group. Customers may also be segregated based on other factors such as geography, size of customer and type of product or service purchased; and

(e) the period used to measure attrition may vary depending on circumstances. For example, for a business with monthly subscribers, one month without revenue from a particular customer would indicate a loss of that customer. In contrast, for larger industrial products, a customer might not be considered "lost" unless there have been no sales to that customer for a year or more.

100.6. The application of any attrition factor should be consistent with the way attrition is measured. Correct application of an attrition factor in the first projection year (and therefore all subsequent years) must be consistent with form of measurement.

(a) if attrition is measured based on the number of customers at the beginning-of-period versus end-of-period (typically a year), the attrition factor should be applied using a “mid-period” convention for the first projection year (as it is usually assumed that customers were
lost throughout the year). For example, if attrition is measured by looking at the number of customers at the beginning of the year (100) versus the number remaining at the end of the year (90), on average the company had 95 customers during that year, assuming they were lost evenly throughout the year. Although the attrition rate could be described as 10%, only half of that should be applied in the first year;

(b) if attrition is measured by analysing year-on-year revenue or customer count, the resulting attrition factor should generally be applied without a mid-period adjustment. For example, if attrition is measured by looking at the number of customers that generated revenue in Year 1 (100) versus the number of those same customers that had revenue in Year 2 (90), the application would be different even though the attrition rate could again be described as 10%.

100.7. Revenue-based attrition may include growth in revenue from existing customers unless adjustments are made. It is generally best practice to make adjustments to separate growth and attrition in measurement and application.

100.8. It is a best practice for valuers to input historical revenue into the model being used and check how closely it predicts actual revenue from existing customers in subsequent years. If attrition has been measured and applied appropriately, the model should be reasonably accurate. For example, if estimates of future attrition were developed based on historical attrition observed from 20X0 through 20X5, a valuer should input the 20X0 customer revenue into the model and check whether it accurately predicts the revenue achieved from existing customers in 20X1, 20X2, etc.

110. Tax Amortisation Benefit (TAB)

110.1. In many tax jurisdictions, intangible assets can be amortised for tax purposes, reducing a taxpayer’s tax burden and effectively increasing cash flows. Depending on the intended use of a valuation and the valuation method used, it may be appropriate to include the value of the TAB in the value of the intangible.

110.2. If the market or cost approach is used to value an intangible asset, the price paid to create or purchase the asset would already reflect the ability to amortise the asset. However, in the income approach, a TAB needs to be explicitly calculated and included, if appropriate.

110.3. For some valuation purposes, such as financial reporting, the appropriate basis of value assumes a hypothetical sale of the subject intangible asset. Generally, for those purposes, a TAB should be included when the income approach is used because a typical participant would be able to amortise an intangible asset acquired in such a hypothetical transaction. For other valuation intended uses, the assumed transaction might be of a business or group of assets. For those bases of value, it may be appropriate to include a TAB only if the transaction would result in a step-up in basis for the intangible assets.

110.4. There is some diversity in practice related to the appropriate discount rate to be used in calculating a TAB. Valuers may use either of the following:

(a) a discount rate appropriate for a business utilising the subject
asset, such as a WACC. Proponents of this view believe that, since amortisation can be used to offset the taxes on any income produced by the business, a discount rate appropriate for the business as a whole should be used; or

(b) a discount rate appropriate for the subject asset (ie, the one used in the valuation of the asset). Proponents of this view believe that the valuation should not assume the owner of the subject asset has operations and income separate from the subject asset and that the discount rate used in the TAB calculation should be the same as that used in the valuation of the subject asset.
10. **Overview**

10.1. The principles contained in the General Standards apply to *valuations* of non-financial *liabilities* and *valuations* with a non-financial *liability* component. This standard contains additional requirements that apply to *valuations* of non-financial liabilities.

10.2. With regard to the determination of *discount rates* and risk margins, in circumstances in which IVS 103 *Valuation Approaches* (see Appendix A20.29–A20.40) conflicts with IVS 220 *Non-Financial Liabilities*, valuers must apply the principles in sections 90 and 100 of this standard in *valuations* of non-financial *liabilities*.

20. **Introduction**

20.1. For purposes of IVS 220 *Non-Financial Liabilities*, non-financial *liabilities* are defined as those *liabilities* requiring a non-cash performance obligation to provide goods or services.

20.2. A non-exhaustive list of *liabilities* that may in part or in full require a non-cash fulfilment and be subject to IVS 220 *Non-Financial Liabilities* includes: deferred revenue or contract liabilities, warranties, environmental liabilities, *asset* retirement obligations, certain contingent consideration obligations, loyalty programmes, power purchase agreements, certain litigation reserves and contingencies, and certain indemnifications and guarantees.
20.3. Although certain contingent consideration liabilities may require a non-cash performance obligation, such liabilities are not included in the scope of IVS 220 Non-Financial Liabilities.

20.4. The party assuming a non-financial liability typically requires a profit margin on the fulfilment effort to compensate for the effort incurred and risk borne for the delivery of goods or services.

20.5. For financial liabilities, cash fulfilment is typically the only performance obligation and no additional compensation is needed for the fulfilment effort. Given that cash fulfilment is the only performance obligation for financial liabilities, asset-liability symmetry most often enables valuers to assess the subject liability using an asset framework.

20.6. Asset-liability symmetry typically does not exist for non-financial liabilities due to the performance obligation to provide goods and services to satisfy the liability and additional compensation for such effort. As such, non-financial liabilities will most often be valued using a liability framework.

20.7. In instances in which a corresponding asset is recognised by the counterparty, the valuer must assess if the values would reflect asset-liability symmetry under circumstances consistent with the basis of value. Certain bases of value issued by entities/organisations other than the IVSC require specific consideration and reconciliation to a corresponding asset under certain circumstances. The valuer must understand and follow the regulation, case law, and other interpretive guidance related to those bases of value as of the valuation date (see IVS 200 Businesses and Business Interests, para 30.2). Instances in which the valuer should reconcile to a corresponding asset value will be rare, reasons include:

(a) non-financial liabilities often do not have a recorded corresponding asset recognised by the counterparty (eg, environmental liability), or can only be transferred in conjunction with another asset (eg, an automobile and related warranty are only transferred together);

(b) the corresponding asset of a non-financial liability may be held by numerous parties for which it is impractical to identify and reconcile the asset values;

(c) the market for the non-financial asset and liability is often highly illiquid, thus resulting in asymmetric information, high bid ask spreads, and asset-liability asymmetry.

20.8. Participants that most often transact in the subject non-financial liability may not be the comparable companies and competitors of the entity holding the subject non-financial liability. Examples include insurance companies, third party warranty issuers, and more. The valuer should consider if a market, or participants, exist outside the immediate industry in which the entity holding the subject non-financial liability operates.

20.9. Non-financial liability valuations are performed for a variety of intended uses. It is the valuer’s responsibility to understand the intended use of a valuation. It is the valuer’s responsibility to understand whether the non-financial liabilities should be valued, separately
or grouped with other assets. A non-exhaustive list of examples of circumstances that commonly include a non-financial liability valuation component is provided below:

(a) for financial reporting purposes, valuations of non-financial liabilities are often required in connection with accounting for business combinations, asset acquisitions and sales, and impairment analysis;
(b) for tax reporting purposes, non-financial liability valuations are often needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses;
(c) non-financial liabilities may be the subject of litigation, requiring valuation analysis in certain circumstances;
(d) valuation of non-financial liabilities as part of general consulting, collateral lending and transactional support engagements.

30. Bases of Value

30.1. In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis(es) of value when valuing non-financial liabilities.

30.2. Often, non-financial liability valuations are performed using bases of value defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 102 Bases of Value). The valuer must understand and follow the regulation, case law and other interpretive guidance related to those bases of value as of the valuation date (see IVS 200 Businesses and Business Interests, para 30.2).

40. Valuation Approaches and Methods

40.1. Elements of the three valuation approaches described in IVS 103 Valuation Approaches (market, income and cost approach) can all be applied to the valuation of non-financial liabilities. The methods described in sections 50–70 may exhibit elements of more than one approach. If it is necessary for the valuer to classify a method under one of the three approaches, the valuer should use judgement in making the determination and not necessarily rely on the classification below.

40.2. When selecting an approach and method, in addition to the requirements of this standard, a valuer must follow the requirements of IVS 103 Valuation Approaches, including para 10.4.

50. Market Approach

50.1. Under the market approach, the value of a non-financial liability is determined by reference to market activity (for example, transactions involving identical or similar non-financial liabilities).

50.2. Transactions involving non-financial liabilities frequently also include other assets, such as a business combinations that include tangible and intangible assets.

50.3. Transactions involving stand-alone non-financial liabilities are infrequent as compared with transactions for businesses and assets.

50.4. While stand-alone transactions of non-financial liabilities are infrequent, valuers should consider relevant market-based indications of value.
Although such market-based indications may not provide sufficient information with which to apply the market approach, the use of market-based inputs should be maximised in the application of other approaches.

50.5. A non-exhaustive list of such market indications of value includes:
   (a) pricing from third parties to provide identical or similar products as the subject non-financial liability (e.g., deferred revenue);
   (b) pricing for warranty policies issued by third parties for identical or similar obligations;
   (c) the prescribed monetary conversion amount as published by participants for certain loyalty reward obligations;
   (d) the traded price for contingent value rights (CVRs) with similarities to the subject non-financial liability (e.g., contingent consideration);
   (e) observed rates of return for investment funds that invest in non-financial liabilities (e.g., litigation finance).

50.6. Valuers must comply with paras 20.2 and 20.3 of IVS 103 Valuation Approaches when determining whether to apply the market approach to the valuation of non-financial liabilities.

50.7. The diverse nature of many non-financial liabilities and the fact that non-financial liabilities seldom transact separately from other assets means that it is rarely possible to find market evidence of transactions involving similar non-financial liabilities.

50.8. Where evidence of market prices is available, valuers should consider adjustments to these to reflect differences between the subject non-financial liability and those involved in the transactions. These adjustments are necessary to reflect the differentiating characteristics of the subject non-financial liability and those involved in the transactions. Such adjustments may only be determinable at a qualitative, rather than quantitative, level. However, the need for significant qualitative adjustments could indicate that another approach would be more appropriate for the valuation.

50.9. In certain instances a valuer may rely on market prices or evidence for an asset corresponding to the subject non-financial liability. In such instances, the valuer should consider an entity's ability to transfer the subject non-financial liability, whether the asset and related price of the asset reflect those same restrictions, and whether adjustments to reflect the restrictions should be included. The valuer should take care to determine if the transfer restrictions are characteristics of the subject non-financial liability (for example, an illiquid market) or restrictions that are characteristics of the entity (for example, financial distress).

50.10. The comparable transaction method, also known as the guideline transactions method, is generally the only market approach method that can be applied to value non-financial liabilities.

50.11. In rare circumstances, a security sufficiently similar to a subject non-financial liability could be publicly traded, allowing the use of the guideline public company method. One example of such securities is
contingent value rights that are tied to the performance of a particular product or technology.

**Market Approach Methods**

50.12. A method to value non-financial liabilities under the Market Approach is often referred to as the Top-Down Method.

**Top-Down Method**

50.13. Under the Top-Down Method, valuing non-financial liabilities is based on the premise that reliable market-based indications of pricing are available for the performance obligation.

50.14. A participant fulfilling the obligation to deliver the product or services associated with the non-financial liability could theoretically price the liability by deducting costs already incurred toward the fulfilment obligation, plus a markup on those costs, from the market price of services.

50.15. When market information is used to determine the value of the subject non-financial liability, discounting is typically not necessary because the effects of discounting are incorporated into observed market prices.

50.16. The key steps in applying a Top-Down Method are to:

(a) determine the market price of the non-cash fulfilment;

(b) determine the costs already incurred and assets utilised by the transferor. The nature of such costs will differ depending on the subject non-financial liability. For example, for deferred revenue the costs will primarily consist of sales and marketing costs that have already been incurred in generating the non-financial liability;

(c) determine a reasonable profit margin on the costs already incurred;

(d) subtract costs incurred and profit from the market price.

**Income Approach**

60.1. Under the income approach, the value of a non-financial liability is often determined by reference to the present value of the costs to fulfil the obligation plus a profit margin that would be required to assume the liability.

60.2. **Valuers must** comply with paras 30.2 and 30.3 of IVS 103 Valuation Approaches when determining whether to apply the income approach to the valuation of non-financial liabilities.

**Income Approach Methods**

60.3. The primary method to value non-financial liabilities under the Income Approach is often referred to as the Bottom-Up Method.

**Bottom-Up Method**

60.4. Under the Bottom-Up Method, the non-financial liability is measured as the costs required to fulfil the performance obligation, plus a reasonable mark-up on those costs, discounted to present value. These costs may or may not include certain overhead items.
60.5. The key steps in applying a Bottom-Up Method are to:

(a) determine the costs required to fulfil the performance obligation. Such costs will include the direct costs to fulfil the performance obligation, but may also include indirect costs such as charges for the use of contributory assets. Fulfilment costs represent those costs that are related to fulfilling the performance obligation that generates the non-financial liability. Costs incurred as part of the selling activities before the acquisition date should be excluded from the fulfilment effort;

1. contributory asset charges should be included in the fulfilment costs when such assets would be required to fulfil the obligation and the related cost is not otherwise captured in the income statement;
2. in limited instances, in addition to direct and indirect costs, it may be appropriate to include opportunity costs. For example, in the licensing of symbolic intellectual property, the direct and indirect costs of fulfilment may be nominal. However, if the obligation reduces the ability to monetise the underlying asset (in an exclusive licensing arrangement for example), then the valuer should consider how participants would account for the potential opportunity costs associated with the non-financial liability;

(b) determine a reasonable mark-up on the fulfilment effort. In most cases it may be appropriate to include an assumed profit margin on certain costs which can be expressed as a target profit, either a lump sum or a percentage return on cost or value. An initial starting point may be to utilise the operating profit of the entity holding the subject non-financial liability. However, this methodology assumes the profit margin would be proportional to the costs incurred. In many circumstances there is rationale to assume profit margins which are not proportional to costs. In such cases the risks assumed, value added, or intangibles contributed to the fulfilment effort are not the same as those contributed pre-measurement date. When costs are derived from actual, quoted or estimated prices by third party suppliers or contractors, these costs will already include a third party’s desired level of profit;

(c) determine timing of fulfilment and discount to present value. The discount rate should account for the time value of money and non-performance risk. Typically it is preferable to reflect the impact of uncertainty such as changes in anticipated fulfilment costs and fulfilment margin through the cash flows, rather than in the discount rate;

(d) when fulfilment costs are derived through a percent of revenue, valuers should consider whether the fulfilment costs already implicitly include the impact of discounting. For example, prepayment for services may result in a discount as one would expect to pay less for the same service as compared with paying throughout the contract term. As a result, the derived costs may also contain an implicit discount and further discounting may not be necessary.
70. **Cost Approach**

70.1. The cost approach has limited application for non-financial *liabilities* as participants typically expect a return on the fulfilment effort.

70.2. *Valuers must* comply with paras 40.2 and 40.3 of IVS 103 *Valuation Approaches* when determining whether to apply the cost approach to the *valuation* of non-financial *liabilities*.

80. **Special Considerations for Non-Financial Liabilities**

80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of non-financial *liabilities*.

(a) *Discount Rates for Non-Financial Liabilities* (section 90);
(b) Estimating Cash Flows and Risk Margins (section 100);
(c) Restrictions on Transfer (section 110);
(d) Taxes (section 120).

90. **Discount Rates for Non-Financial Liabilities**

90.1. A fundamental basis for the income approach is that investors expect to receive a return on their investments and that such a return should reflect the perceived level of risk in the investment.

90.2. The *discount rate* should account for the time value of money and non-performance risk. Non-performance risk is typically a function of counterparty risk (ie, credit risk of the entity obligated to fulfil the liability) (see para 60.5c of this standard).

90.3. Certain *bases of value* issued by entities/organisations other than the IVSC may require the *discount rate* to specifically account for liability-specific risks. The valuer must understand and follow the regulation, case law, and other interpretive guidance related to those *bases of value* as of the *valuation date* (see IVS 200 *Businesses and Business Interests*, para 30.2).

90.4. *Valuers should* consider the term of the subject non-financial liability when determining the appropriate inputs for the time value of money and non-performance risk.

90.5. In certain circumstances, the valuer may explicitly adjust the cash flows for non-performance risk.

90.6. What a participant would have to pay to borrow the funds necessary to satisfy the obligation may provide insights to help quantify the non-performance risk.

90.7. Given the long-term nature of certain non-financial liabilities, the valuer must consider if inflation has been incorporated into the estimated cash flows, and must ensure that the *discount rate* and cash flow estimates are prepared on a consistent basis.

100. **Estimating Cash Flows and Risk Margins**

100.1. The principles contained in IVS 103 *Valuation Approaches* may not apply to *valuations* of non-financial *liabilities* and *valuations* with a non-financial
liability component (see IVS 103 Valuation Approaches, Appendix A20.12–A20.19). Valuers must apply the principles in sections 90 and 100 of this standard in valuations of non-financial liabilities.

100.2. Non-financial liability cash flow forecasts often involve the explicit modelling of multiple scenarios of possible future cash flow to derive a probability-weighted expected cash flow forecast. This method is often referred to as the Scenario Based Method (SBM). The SBM also includes certain simulation techniques such as the Monte Carlo simulation. The SBM is commonly used when future payments are not contractually defined but rather vary depending upon future events. When the non-financial liability cash flows are a function of systematic risk factors, the valuer should consider the appropriateness of the SBM, and may need to utilise other methods such as option pricing models (OPMs).

100.3. Considerations in estimating cash flows include developing and incorporating explicit assumptions, to the extent possible. A non-exhaustive list of such assumptions may include:

(a) the costs that a third party would incur in performing the tasks necessary to fulfil the obligation;
(b) other amounts that a third party would include in determining the price of the transfer, including, for example, inflation, overhead, equipment charges, profit margin, and advances in technology;
(c) the extent to which the amount of a third party's costs or the timing of its costs would vary under different future scenarios and the relative probabilities of those scenarios; and
(d) the price that a third party would demand and could expect to receive for bearing the uncertainties and unforeseeable circumstances inherent in the obligation.

100.4. While expected cash flows (ie, the probability-weighted average of possible future cash flows) incorporate the variable expected outcomes of the asset’s cash flows, they do not account for the compensation that participants demand for bearing the uncertainty of the cash flows. For non-financial liabilities, forecast risk may include uncertainty such as changes in anticipated fulfilment costs and fulfilment margin. The compensation for bearing such risk should be incorporated into the expected payoff through a cash flow risk margin or the discount rate.

100.5. Given the inverse relationship between the discount rate and value, the discount rate should be decreased to reflect the impact of forecast risk (ie, the compensation for bearing risk due to uncertainty about the amount and timing of cash flows).

100.6. While possible to account for forecast risk by reducing the discount rate, given its limited practical application, the valuer must explain the rationale for reducing the discount rate rather than incorporating a risk margin, or specifically note the regulation, case law, or other interpretive guidance that requires the accounting for forecast risk of non-financial liabilities through the discount rate rather than a risk margin (see IVS 200 Businesses and Business Interests, para 30.2).
100.7. In developing a risk margin, a **valuer must**:

(a) document the method used for developing the risk margin, including support for its use; and

(b) provide evidence for the derivation of the risk margin, including the identification of the **significant** inputs and support for their derivation or source.

100.8. In developing a cash flow risk margin, a **valuer must** consider:

(a) the life/term and/or maturity of the **asset** and the consistency of inputs;

(b) the geographic location of the **asset** and/or the location of the markets in which it would trade;

(c) the currency denomination of the projected cash flows; and

(d) the type of cash flow contained in the forecast, for example, a cash flow forecast may represent expected cash flows (i.e., **probability-weighted** scenarios), most likely cash flows, contractual cash flows, etc.

100.9. In developing a cash flow risk margin, a **valuer should** consider:

(a) the less certainty there is in the anticipated fulfilment costs and fulfilment margin, the higher the risk margin **should** be;

(b) given the finite term of most non-financial **liabilities**, as opposed to indefinite for many business and asset **valuations**, to the extent that emerging experience reduces uncertainty, risk margins **should** decrease, and vice versa;

(c) the expected distribution of outcomes, and the potential for certain non-financial **liabilities** to have high ‘tail risk’ or severity. Non-financial **liabilities** with wide distributions and high severity **should** have higher risk margins;

(d) the respective rights and preferences of the non-financial **liability**, and/or related **asset** in the event of a liquidation and its relative position within the liquidation waterfall.

100.10. The cash flow risk margin **should** be the compensation that would be required for a party to be indifferent between fulfilling a **liability** that has a range of possible outcomes, and one that will generate fixed cash outflows.

100.11. A **valuer** need not conduct an exhaustive quantitative process, but **should** take into account all the information that is reasonably available.

### 110. Restrictions on Transfer

110.1. Non-financial **liabilities** often have restrictions on the ability to transfer. Such restrictions can be either contractual in nature, or a function of an illiquid market for the subject non-financial **liability**.

110.2. When relying on market evidence, a **valuer should** consider an entity’s ability to transfer such non-financial **liabilities** and whether adjustments to reflect the restrictions **should** be included. The **valuer** may need
to determine if the transfer restrictions are characteristics of the non-financial liability or restrictions that are characteristics of an entity, as certain basis of value may specify one or the other be considered (see IVS 220 Non-Financial Liabilities, para 50.9).

110.3. When relying on an income approach in which the non-financial liability value is estimated through a fulfilment approach, the valuer should determine if an investor would require an additional risk margin to account for the limitations on transfer.

120. Taxes

120.1. Valuers should use pre-tax cash flows and a pre-tax discount rate for the valuation of non-financial liabilities.

120.2. In certain circumstances, it may be appropriate to perform the analysis with after tax cash flows and discount rates. In such instances, the valuer must explain the rationale for use of after tax inputs, or specifically note the regulation, case law, or other interpretive guidance that requires the use of after tax inputs (see IVS 200 Businesses and Business Interests, para 30.2).

120.3. If after tax inputs are used, it may be appropriate to include the tax benefit created by the projected cash outflow associated with the non-financial liability.
10. **Overview**

10.1. The principles contained in the General Standards apply to *valuations* of inventory and *valuations* with an inventory component. This standard contains additional requirements for *valuations* of inventory.

20. **Introduction**

20.1. Inventory broadly includes goods which will be used in future production processes (ie, raw materials, parts, supplies), goods used in the production process (ie, work-in-process), and goods awaiting sale (ie, finished goods).

20.2. This standard focuses on *valuation* of inventory of physical goods that are not real property, as the numerous and varied aspects of real property inventory were not considered or contemplated in the preparation of this standard. The *valuation* of real property is covered in IVS 400 *Real Property Interests* and IVS 410 *Development Property*.

20.3. While the book value of inventory only includes historical costs, the profits earned in the production process, which reflect returns on the *assets* utilised in manufacturing (including working capital, property, plant, and equipment, and *intangible assets*), are not capitalised into book value. As a result, the *market value* of inventory typically differs from, and is usually higher than, the book value of inventory.
20.4. As inventory is seldom transacted at an interim stage (e.g., work-in-process) or may not be frequently sold to a third party to conduct the selling effort (e.g., finished goods sold via distributor networks), the valuation techniques and considerations for inventory frequently vary from those of other.

20.5. Inventory valuations are performed for a variety of intended uses. It is the valuer’s responsibility to understand the intended use of a valuation. It is also the valuer’s responsibility to understand whether the inventory should be valued separately or grouped with other assets.

A non-exhaustive list of examples of circumstances that commonly include an inventory valuation component is provided below:

(a) for financial reporting purposes, valuations of inventory are often required in connection with accounting for business combinations, asset acquisitions and sales, and impairment analysis;
(b) for tax reporting purposes, inventory valuations are frequently needed for transfer pricing analyses, estate and gift tax planning and reporting, and ad valorem taxation analyses;
(c) inventory valuation may be the subject of litigation, requiring valuation analysis in certain circumstances;
(d) valuers are sometimes asked to value inventory as part of general consulting, collateral lending, transactional support engagements and insolvency.

30. Bases of Value

30.1. In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis(es) of value when valuing inventory.

30.2. Often, inventory valuations are performed using bases of value defined by entities/organisations other than the IVSC (some examples of which are mentioned in IVS 102 Bases of Value) and the valuer must understand and follow the regulation, case law, and other interpretive guidance related to those bases of value as of the valuation date.

40. Valuation Approaches and Methods

40.1. The three valuation approaches described in IVS 103 Valuation Approaches can all be applied to the valuation of inventory. The methods described below simultaneously exhibit elements of the cost approach, market approach, and income approach. If necessary for the valuer to classify a method under one of the three approaches, the valuer should use judgement in making the determination and not necessarily rely on the classification in the following sections 50–70.

40.2. When selecting an approach and method, in addition to the requirements of this standard, a valuer must follow the requirements of IVS 103 Valuation Approaches, including para 10.4.

50. Market Approach

50.1. The market approach, ie, reference to market activity involving identical or similar goods, has only narrow direct application for the valuation of inventory. Such applications typically include, 1) inventory
of commoditised products, or 2) inventory in which a market exists for the inventory at an interim stage in the production process. For non-commodity traded products or products that a market exists at an interim production stage, such selling prices must be adjusted downward to account for the disposal effort and related profit.

50.2. While the market approach is not directly applicable in most instances, valuers should consider market-based indications to determine the selling price as an input for other methods.

50.3. Other observable markets may provide insights on the returns attributable to the manufacturing and disposition of assets that can also be leveraged for inputs into other methods. Such returns are typically considered to exclude returns attributable to intellectual property. For example:

(a) distributor profit margins represent a meaningful market proxy for returns on the disposition process, if an appropriate base of comparable companies is identified;

(b) contract manufacturers, to the extent available, may provide a proxy for margins earned through the manufacturing process.

50.4. Valuers must comply with paras 20.2 and 20.3 of IVS 103 Valuation Approaches when determining whether to apply the market approach to the valuation of inventory. In addition, valuers should only apply the market approach to value inventory if both of the following criteria are met:

(a) information is available on arms-length transactions involving identical or similar inventory on or near the valuation date; and

(b) sufficient information is available to allow the valuer to adjust for all significant differences between the subject inventory and those involved in the transactions.

50.5. Where evidence of market prices is available, valuers should make adjustments to reflect differences between the subject inventory and those involved in the transactions. These adjustments are necessary to reflect the differentiating characteristics of the subject inventory and those involved in the transactions. Such adjustments may only be determinable at a qualitative, rather than quantitative, level. However, the need for significant qualitative adjustments may indicate that another approach would be more appropriate for the valuation (see IVS 103 Valuation Approaches, section 10).

60. Income Approach

60.1. The valuation of inventory using the income approach requires the allocation of profit (value) contributed pre-valuation date versus the profit (value) contributed post-valuation date.

60.2. Valuers must comply with paras 30.2 and 30.3 of IVS 103 Valuation Approaches when determining whether to apply the income approach to the valuation of inventory.
Top-Down Method

60.3. The top-down method is a residual method that begins with the estimated selling price and deducts remaining costs and estimated profit.

60.4. The top-down method attempts to bifurcate the efforts, and related value, that were completed before the measurement date versus those efforts that are to be completed after the measurement date.

60.5. The key steps in applying the top-down method are to:

(a) estimate the selling price. The valuer should rely on direct observations of selling prices when the information is available. However, such data is often not available and the selling price is often estimated by applying an appropriate gross profit margin to the net book value of finished goods at the product level or aggregate level. Typically, the projected gross profit margin in the period the inventory will be sold is used;

(b) estimate the costs to complete (for work-in-process only). Completion costs should include all of the expenditures directly or indirectly remaining to be incurred post-valuation date in bringing the work in progress inventory to its finished condition. Costs to complete should be adjusted to remove expenses benefitting future periods;

(c) subtract the costs of disposal. Costs of disposal represent costs that would be incurred post-valuation date in order to deliver the finished goods to the end customer. Costs of disposal should be adjusted to remove expenses benefitting future periods. Disposal costs generally include selling and marketing expenses while procurement and manufacturing expenses have typically already been incurred for finished goods inventory. In order to properly determine costs of disposal, each expense in the inventory cycle (including indirect overhead) should be categorised as having been incurred and, therefore, contributed to the value of the finished goods inventory or remaining to be incurred during the disposal process;

(d) subtract the profit allowance on the completion effort (for work-in-process only) and the disposal process. An initial starting point may be to utilise the operating profit of the company. However, this methodology assumes the profit margin would be proportional to the costs incurred. In most circumstances, there is rationale to assume profit margins which are not proportional to costs (see section 90);

(e) consider any necessary holding costs. Holding costs may need to be estimated in order to account for the opportunity cost associated with the time required to sell the inventory. Additionally, the valuer should consider the risk born during the holding period when determining the required rate of return. Risks may be a function of the length of inventory life cycle and the contractual arrangements with end customers (eg, manufacturer bears the risk of fluctuation in costs of completion and disposal). Holding costs may be immaterial if the inventory turnover is high and/or the borrowing rate is low;

60.6. When determining the cost to complete, costs of disposal and profit allowance, the valuer should identify and exclude any expenses that are intended to provide future economic benefit and are not necessary
to generate the current period revenue. Examples of future-benefit expenses may include research and development (R&D) related to new product development; marketing for a new product; recruiting to increase the size of the workforce; expansion into a new territory; depreciation of an R&D facility dedicated to future research; or restructuring costs.

60.7. Internally developed intangible assets should either be modelled as 1) a cost as if they were hypothetically licensed, and therefore included in either the cost of production or disposal, or 2) considered as part of a functional apportionment when determining the appropriate profit allowance.

60.8. When utilising the top-down method, valuers should consider whether sufficient data are available to appropriately apply the key steps. If sufficient data are not available, it may be appropriate to apply other methods or techniques.

60.9. The valuer may use the bottom-up method (see para 60.10 of this standard) to corroborate the value derived from the top-down method.

**Bottom-Up Method**

60.10. The key steps in applying the bottom-up method are to:

(a) determine the book value of the subject inventory. The book value may need to be adjusted for multiple considerations (see para 70.4 and section 110 of this standard);

(b) add any cost of buying and holding already incurred;

(c) add any cost toward completion already incurred. Such costs typically include procurement and manufacturing expenses;

(d) add profit on total costs already incurred. An initial starting point may be to utilise the operating profit of the company. However, this methodology assumes the profit margin would be proportional to the costs incurred. In most circumstances there is rationale to assume profit margins which are not proportional to costs (see section 90).

60.11. When determining the costs already incurred, valuers should consider internally developed intangible assets that have contributed toward the completion effort.

70. **Cost Approach**

70.1. The primary method to value inventory is the replacement cost method. Raw materials inventory is typically valued using the current replacement cost method.

70.2. *Valuers must* comply with paras 40.2 and 40.3 of IVS 103 *Valuation Approaches* when determining whether to apply the cost approach to the valuation of inventory.

**Current Replacement Cost Method (CRCM)**

70.3. The current replacement cost method (CRCM) may provide a good indication of market value if inventory is readily replaceable in a wholesale or retail business (eg, raw materials inventory).
70.4. The *market value* of raw materials and other inventory may be similar to the net book value as of the *valuation date* but certain adjustments *should* be considered.

(a) the book value may need to be adjusted to FIFO basis;
(b) if raw material *prices* fluctuate and/or the inventory turnover is slow, the book value may need to be adjusted for changes in market prices;
(c) the book value of raw materials may also be decreased to account for obsolete and defective goods;
(d) the book value may also need to be decreased for shrinkage, which is the difference between inventory listed in the accounting records and the actual inventory due to theft, damage, miscounting, incorrect units of measure, evaporation, etc;
(e) the book value may need to be increased for any *costs* incurred in connection with raw material preparation (eg, purchasing, storage and handling).

80. **Special Considerations for Inventory**

80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of inventory.

(a) identification of value-added processes and returns on *intangible assets* (section 90);
(b) relationship to other acquired assets (section 100);
(c) obsolete inventory reserves (section 110);
(d) unit of account (section 120).

90. **Identification of Value-Added Processes and Returns on Intangible Assets**

90.1. The *valuation* of inventory involves an allocation of profit between the profit earned pre-measurement date and the profit earned post-measurement date. In practice, profit earned may not be proportional to expenses. In most cases the risks assumed, value added, or intangibles contributed to the inventory pre-measurement date are not the same as those contributed post-measurement date.

90.2. *Valuers* typically *should* not simply allocate profit in proportion to disposition and manufacturing costs. This assumption can misallocate profit, as it presupposes that a company’s production process earns profit on a pro-rata basis based on *costs* incurred. For manufacturers, this method is inappropriate if the *costs* of materials represent an initial outflow without *significant* efforts. Such an assumption also fails to recognise the contribution of internally-generated *intangible assets* with minimal associated costs.

90.3. *Valuers* *should* distinguish between value-added costs and those that are not value-added. The materials portion of Cost-of-Goods-Sold (COGS) may not be a value-added cost because it does not contribute any of the profit to the inventory.
90.4. For a company that owns internally-developed intangible assets that contribute to an increase in the level of profitability, the return on and of those intangible assets would be included in the total profit margin of the business. However, whether intangible assets are owned or licensed, the market value of the inventory should be the same.

90.5. The valuer should determine the extent to which the technology, trademarks and customer relationships support the manufacturing and distribution processes and whether the returns are applicable to the entire base of revenue. If the intangible asset has been utilised to create the inventory (eg, a manufacturing process intangible), then the value of the inventory would be increased. Conversely, if the intangible asset is expected to be utilised in the future, at the time of disposal, the value of the inventory would be decreased.

90.6. For marketing intangibles, the determination of whether the intangible is an attribute of the inventory may be difficult. To assist with the determination, the valuer may consider how the inventory would be marketed by a market participant to its customers – pull vs push model. A push model requires significant disposal efforts for inventory and is less reliant on marketing intangibles, while a pull model depends on strong brand development and recognition to pull customers to the product.

90.7. A non-exhaustive list of other considerations for evaluating when intangible assets are contributed may include the amount of marketing spend, whether products are sold through a distributor, level of attrition for customer relationships and any legal rights associated with the intangible assets.

90.8. In some cases, the intangible asset may consist of several elements that contribute to various aspects of the value creation, such as a pharmaceutical product intangible asset that is comprised of technology and tradename. This requires an assessment of how the overall profit related to each element of the intangible asset should be apportioned to manufacturing the inventory versus in the disposal effort.

90.9. Similarly, although a single intangible asset may only contribute to either the manufacturing or disposal effort, it is possible for a portion of the intangible to be contributed pre-measurement date and a portion contributed post-measurement date. For example, when assessing the contribution of symbolic Intellectual Property (IP) for finished goods, although the product bears the respective branding associated with the symbolic IP, the related right to sell the branded product may not be conveyed with the transfer of inventory. As such, it may be appropriate to consider such rights in the costs of disposal.

100. Relationship to Other Acquired Assets

100.1. The valuer should maintain consistency, as appropriate, between assumptions used in the inventory valuation relative to valuation of other assets or liabilities.

110. Obsolete Inventory Reserves

110.1. The valuer should account for obsolete inventory reserve balances. The inventory reserve balances should be applied to the inventory in which
the reserve applies, rather than netted against the entire inventory balance.

110.2. Typically, the obsolete inventory adjusted for the inventory reserve would not be valued as it has been adjusted to net realisable value. However, the valuer may need to consider further write-downs if market value is lower than net realisable value.

120. **Unit of Account**

120.1. For purposes of inventory valuation, it is often appropriate to assume inventory is one homogenous set of assets. However, it is possible for the profit margins, risk and intangible asset contributions to vary by product or product group.

120.2. If the profit margins, risk and intangible asset contributions vary by product or product group, and the relative mix of inventory being valued does not match the assumed sales mix used to develop the assumptions for the valuation, the valuer should assess the different groups of inventory separately.
10. Overview

10.1. The principles contained in the General Standards apply to valuations of plant, equipment and infrastructure (PEI). This chapter includes only modifications, additional principles or specific examples of how the General Standards apply for valuations to which this standard applies.

20. Introduction

20.1. Items of PEI (which may sometimes be categorised as a type of personal property) are tangible assets that are usually held by an entity for use in the manufacturing/production or supply of goods or services, for rental by others or for administrative purposes and that are expected to be used over a period of time. PEI may also include infrastructure assets, which are typically part of a specialised system or network. Where applicable, valuation relating to infrastructure should also have consideration to IVS 400 Real Property Interests and IVS 410 Development Property.

20.2. For lease of machinery and equipment, the right to use an item of machinery and equipment (such as a right arising from a lease) would also follow the guidance of this chapter. It must also be noted that the “right to use” an asset might have a different life span than the service life (that takes into consideration both preventive and predictive maintenance) of the underlying machinery and equipment itself and, in such circumstances the difference must be stated.
20.3. Consistent with the highest and best use premise, a group of assets may have greater value individually than when considered as part of group of assets, or vice versa. PEI for which the highest and best use is “in use” as part of a group of assets must be valued using consistent assumptions.

20.4. Intangible assets fall outside the classification of PEI assets. However, an intangible asset may have an impact on the value of PEI assets. Operating software, technical data, production records and patents are examples of intangible assets that can have an impact on the value of PEI assets, depending on whether or not they are included in the valuation. In such cases, the valuation will involve consideration of the inclusion of intangible assets and their impact on the valuation of the PEI assets. When there is an intangible asset component, the valuer should also follow IVS 210 Intangible Assets.

20.5. A valuation of PEI will normally require consideration of a range of factors relating to the asset itself, its environment and physical, functional and economic potential. Therefore, all PEI valuers should inspect the subject assets to ascertain their condition and also to determine if the information provided to them is usable and related to the subject assets being valued. Examples of factors that may need to be considered under each of these headings include the following:

(a) asset-related factors:

1. the asset’s technical specification;
2. the remaining useful, economic, or effective life, considering both preventive and predictive maintenance;
3. the asset’s condition, including maintenance history;
4. any functional, physical, and technological obsolescence;
5. if the asset is not valued in its current location, the costs of decommissioning and removal, and any costs associated with the asset’s existing in-place location, such as installation and re-commissioning of assets to its optimum status;
6. for an asset that is used in a leasing context, the lease renewal options and other end-of-lease possibilities (often referred to as terminal value);
7. any potential loss of a complementary asset, eg, the operational life of an asset may be curtailed by the length of lease on the building in which it is located;
8. additional costs associated with additional equipment, transport, installation and commissioning, etc; and
9. in cases where the historical costs are not available for the asset that may reside within a plant during a construction, the valuer may take references from the Engineering, Procurement, Construction (EPC) contract.

(b) environment or external-related factors:

1. the location in relation to the source of raw material and market for the product. The suitability of a location may also have a limited life, eg, where raw materials are finite or where demand is transitory;
2. the impact of any legislation or external related factors that either restricts utilisation, imposes additional operating or decommissioning costs or reduces demand for a product;

3. radioactive substances that may be in certain machinery and equipment have a severe impact if not used or disposed of appropriately. This will have a major impact on expense consideration and the environment;

4. toxic wastes which may be chemical in the form of a solid, liquid or gaseous state need to be professionally stored or disposed of. This is critical for all industrial manufacturing;

5. licences to operate certain assets in certain jurisdictions may be restricted, or may have a limited life; and

6. factors associated with environmental, social, and governance (ESG) characteristics that impacts the desirability of an asset (see IVS 104 Data and Inputs, Appendix).

(c) Economic-related factors:

1. the actual or potential profitability of the asset, which might be based on comparison of operating costs with earnings or potential earnings of the business within which the asset belongs (see IVS 200 Business and Business Interests);

2. the demand for the product manufactured by the asset with regard to both macro- and micro-economic factors could impact on demand; and

3. the potential for the asset to be put to a more valuable use than the current use (ie, highest and best use).

20.6. Valuations of PEI should reflect the impact of all forms of obsolescence on value.

30. Valuation Framework

30.1. In accordance with IVS 100 Valuation Framework, the valuer must comply with the valuer principles and valuation principles (see IVS 100 Valuation Framework, sections 10–20).

40. Scope of Work

40.1. To comply with the requirement to identify the asset to be valued in IVS 101 Scope of Work, section 20 to the extent it impacts on value, consideration must be given to the degree to which the asset is attached to, or integrated with, other assets. For example:

(a) assets may be permanently attached to the land and could not be removed without substantial demolition of either the asset or any surrounding structure or building;

(b) an individual asset may be part of an integrated production line where its functionality is dependent upon other assets;

(c) an asset may be considered to be classified as a component of the real property (eg, a Heating, Ventilation and Air Conditioning System (HVAC));
In such cases, it will be necessary to define clearly what is to be included or excluded from the valuation. Any special assumptions relating to the availability of any complementary assets must also be stated.

40.2. PEI connected with the supply or provision of services to a building are often integrated within the building and once installed, are often difficult to separate from it. These items will normally form part of the real property interest and therefore the requirements contained within IVS 400 Real Property Interests and IVS 410 Development Property must also be considered, where appropriate. Examples include assets with the primary function of supplying electricity, gas, heating, cooling or ventilation to a building and equipment such as elevators. If the purpose of the valuation requires these items to be valued separately, the scope of work must include a statement to the effect that the value of these items would normally be included in the real property interest and may not be separately realisable.

40.3. Because of the diverse nature and transportability of many items of PEI, additional assumptions will normally be required to describe the situation and circumstances in which the assets are valued. In order to comply with IVS 101 Scope of Work, para 20.1.(k) these must be considered and included in the scope of work. Examples of assumptions that should be appropriate in different circumstances include:

(a) that the assets are valued as a whole, in place and as part of an operating business;
(b) that the assets are valued as a whole, in place but on the assumption that the business is not yet in production;
(c) that the assets are valued as a whole, in place but on the assumption that the business is closed;
(d) that the assets are valued as a whole, in place but on the assumption that it is a forced sale (see IVS 102 Bases of Value, Appendix A120);
(e) that the assets are valued as individual items for removal from their current location.

40.4. In some circumstances, it may be appropriate to report on more than one set of assumptions, eg, in order to illustrate the effect of business closure or cessation of operations on the value of assets.

40.5. In addition to the requirements contained within IVS 101 Scope of Work, sections 20 and 30, investigations made during the course of a valuation engagement must be appropriate for the intended use of the valuation engagement and the basis(es) of value.

40.6. Sufficient investigations and evidence must be assembled by means such as inspection, inquiry, research, computation and analysis to ensure that the valuation is properly supported. When determining the extent of investigations and evidence necessary, professional judgement is required to ensure it is adequate for the purpose of the valuation.

40.7. When a valuation engagement involves reliance on information supplied by a party other than the valuer, consideration should be given as to whether the information is credible or that the information may
otherwise be relied upon without adversely affecting the credibility of the valuation. Significant inputs provided to the valuer (eg, by management/owners) should be considered, investigated and/or corroborated. In cases where credibility or reliability of information supplied cannot be supported, consideration should be given as to whether or how such information is used (see IVS 101 Scope of Work, para 20.1(j)).

40.8. In considering the credibility and reliability of information provided, valuers should consider matters such as:

(a) the intended use of the valuation;
(b) the significance of the information to the valuation conclusion;
(c) the expertise of the source in relation to the subject matter; and
(d) whether the source is independent of either the subject asset and/or the intended user of the valuation (see IVS 101 Scope of Work, para 20.1(a)).

40.9. The intended use of the valuation, the basis of value, the extent and limits on the investigations and any sources of information that may be relied upon are part of the valuation engagement’s scope of work that must be communicated to all parties to the valuation engagement (see IVS 101 Scope of Work).

40.10. If, during the course of a valuation assignment, it becomes clear that the investigations or limitations included in the scope of work will not result in a credible valuation, or information to be provided by third parties is either unavailable or inadequate, or limitations on investigations such as inspection are so substantial that it will not result in a valuation outcome that is adequate for the purpose of the valuation, the valuation must explicitly state that the valuation is not in compliance with IVS (see IVS 100 Valuation Framework, section 60 and IVS 101 Scope of Work, para 20.3).

50. Bases of Value

50.1. In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis(es) of value when valuing PEI.

50.2. Using the appropriate basis(es) of value and associated premise of value (see IVS 102 Bases of Value, Appendix A90–A120) is particularly crucial in the valuation of PEI because differences in value can be pronounced, depending on whether an asset is valued under an “in use” premise, orderly liquidation or forced liquidation (see IVS 102 Bases of Value, Appendix A60). The value of most PEI is particularly sensitive to different premises of value.

Liquidation value

50.3. In determining any premise of liquidation value, it should be made clear as to whether the premise is required to be on an in-place (in-situ) or removed (ex-situ) basis. The characteristics associated with the asset or group of assets location, and underlying land tenure or lease term, will often impact on the in-place or removed consideration.

50.4. Regardless of whether the asset or group of assets is being considered on an in-place (in-situ) or removed (ex-situ) basis, the premise should try to
maximise the gross amount that would be realised having consideration to the premise of value under consideration. This may be achieved by selling the assets on a piecemeal basis, or alternatively may be achieved by selling the assets as a group, depending upon the market.

50.5. It should be noted that for plant and equipment, selling an asset on a removed (ex-situ) or piecemeal basis may be quite common. For infrastructure, selling an asset on a removed (ex-situ) or piecemeal basis may or may not be possible and will vary depending upon the characteristics of the asset.

50.6. The proposition of a removed (ex-situ) basis raises the possibility that there will be certain asset components (or originally incurred indirect costs) that are not recoverable once the asset is removed (either physically or economically). Such items might include (but not be limited to) foundations, electrical and process piping, transportation costs, installation and commissioning costs, fixed buildings, safety and protection equipment, etc.

50.7. When being considered on a removed basis, the buyer is typically responsible for all costs associated with de-installing and removing the assets. As such, the gross amount should not make any deductions for these costs as these are already taken into account by the buyer.

50.8. The premise may be considered on an as-is, where-is basis. Alternatively, the premise may require costs to be incurred to turn the asset or group of assets into a saleable condition to maximise the gross amount that would be realised (assuming time permits such). In the latter situation where there are costs to be incurred, the nature and quantum of these costs should be made clear, along with the rationale as to why incurring these costs would maximise the gross amount that would be realised. Such costs might include transport costs to an alternative market, overhaul, maintenance and/or servicing costs, holding or similar other costs.

50.9. In the event that a scope of work specifically requires the determination of a net amount (as opposed to gross amount) that would be realised from a liquidation sale, the nature and quantum of the costs that will likely be incurred by the seller to get from the gross to the net amount should be made clear.

60. Valuation Approaches

60.1. The three principal valuation approaches described in IVS 103 Valuation Approaches may all be applied to the valuation of PEI assets and/or depending on the nature of the assets, the information available and the facts and circumstances surrounding the valuation.

70. Market Approach

70.1. For classes of plant and equipment that are homogenous, eg, cranes, construction equipment, motor vehicles (light and heavy) and earthmoving equipment, the market approach is commonly used, given there is sufficient sales data for similar assets. However, many types of plant and equipment are specialised and in these instances, care must be exercised in offering a valuation using a market approach when available market data is either poor or non-existent. In such circumstances it may
be appropriate to adopt either an income approach or cost approach to the valuation (see IVS 103 Valuation Approaches, para 20.3).

70.2. When using the market approach, types of evidence will include (see section 100, para 100.2 of this standard):
   (a) actual sales of identical assets;
   (b) actual sales of similar assets;
   (c) asking prices for identical assets;
   (d) asking prices for similar assets.

70.3. Depending upon the asset(s) being valued, market evidence may be considered in a variety of ways including:
   (a) piecemeal (ie, individual asset basis);
   (b) production line (ie, a group of assets together forming an operating unit);
   (c) whole of plant/facility (ie, a production facility producing X units per day);
   (d) portfolio (ie, a group of assets operating across a region).

70.4. Highest and best use considerations should always be a primary consideration for the valuer when considering the above types of evidence. Specifically, a portfolio of assets may have greater value if considered individually as opposed to as part of a portfolio, and vice-versa. Where this is the case, the valuer must explicitly state that this is the case and provide reasoning as to the difference in forming their conclusion.

70.5. Actual sales must take preference over asking prices and evidence available just prior to the valuation date should be preferred to that further from the valuation date.

70.6. The reliability of the evidence should be weighted according to its source. Depending upon the asset class considered as part of the valuation, evidence may be considered at a local, national or international level.

70.7. The market approach for actual sales of identical assets includes all forms of depreciation and obsolescence relating to an asset and no adjustment will be required (although such evidence is rare).

70.8. When considering actual sales or asking prices of similar assets (and asking prices for identical assets), various adjustments may need to be considered to bring the evidence in line with the subject asset, and may include but not limited to adjustments for:
   (a) technical factors (size, capacity, rating, units of production, specification, etc);
   (b) deterioration and obsolescence factors (condition, intensity of use, age, maintenance, overhaul status, operating costs);
   (c) market-related factors (location, currency, quantities, asking price versus actual sales, environmental/licensing/compliance status, etc);
(d) time or basis of value factors (date of sale versus valuation date, market sale versus liquidation sale, installed as-is/where-is versus removed, etc.)

70.9. In making adjustments to bring the evidence in line with the subject asset, the valuer may use various methods including:
   (a) direct adjustment (ie, a currency or amount adjustment);
   (b) indirect adjustment (ie, to adjust the evidence by a percentage).

70.10. Evidence in an active and transparent market should always be preferred to an inactive and opaque market. Similarly, evidence will be more comparable when fewer adjustments are required to bring it in line with the subject asset. In all instances, professional judgement must be used to ensure that the evidence being considered is appropriate having consideration to the nature of the valuation being performed.

80. Income Approach

80.1. The income approach to the valuation of PEI can be used where specific cash flows can be identified for the asset or a group of complementary assets, eg, where a group of assets forming a process plant is operating to produce a marketable product/service or generating income from a lease. When PEI is valued on an income approach, elements of value that may be attributable to intangible assets and other contributory assets should be excluded (see IVS 210 Intangible Assets). In certain cases, intangible assets may be included, where appropriate based on the scope of work and the intended use of the valuation (see IVS 101 Scope of Work and IVS 210 Intangible Assets).

80.2. The income approach can also be utilised, in conjunction with other approaches, in assessing the existence and quantum of economic obsolescence and/or goodwill for an asset or group of complementary assets. Care should be taken when using the income approach because it may be challenging to apportion aggregated cash flows relating to a group of complementary assets down into individual assets (where necessary).

80.3. When an income approach is used to value PEI, the valuation must consider the cash flows expected to be generated over the remaining economic life of the asset(s) as well as the value of the asset at the end of its life, often referred to as terminal value (see IVS 103 Valuation Approaches, Appendix A20.2–A20.22).

80.4. In accordance with IVS 103 Valuation Approaches, the income approach for an asset or group of complementary assets may be used where the main driver of value is largely driven by its income producing ability and afforded weight under the following circumstances such as:

   (a) the asset or group of complimentary assets have a high barrier to entry for market participants;
   (b) there is significant time involved to create an asset or group of complementary assets of equal utility, whether by purchase or construction;
   (c) there are potential legal or regulatory hurdles to create an asset or group of complimentary assets of equal utility;
(d) a purchaser would be willing to pay a significant premium for the ability to use the asset or group of complimentary assets immediately, due to favourable market economics and/or more immediate cash-flow certainty;

(e) there is undue inconvenience, risk or other factors involved in obtaining an asset or group of complimentary assets of equal utility, whether by purchase or construction.

80.5. In addition, the income approach should also be afforded significant weight for an asset or group of complimentary assets under the following circumstances:

(a) the use of the market approach is either not practicable or inconclusive to value the asset or group of complimentary assets;

(b) the valuation only needs to consider the asset or group of complimentary assets as a whole, and not the value of individual component assets;

(c) the income-producing ability of the asset or group of complimentary assets is set by market rates, or via contracts that are frequently marked-to-market;

(d) the cash flow generated for an asset or group of complimentary assets is discrete and clearly distinguishable from other parts of the business;

(e) the value of other contributory assets that are inherently included within the income generated are either immaterial relative to the value of the asset or group of complimentary assets or can be readily valued in isolation from the asset or group of complimentary assets using other valuation methodologies.

90. Cost Approach

90.1. The cost approach is commonly adopted for PEI, particularly in the case of individual assets that are specialised or special-use facilities. The first step is to estimate the cost to a market participant of replacing the subject asset by reference to the lower of either reproduction or replacement cost. The replacement cost is the cost of obtaining an alternative asset of equivalent utility; this can either be a modern equivalent providing the same functionality or the cost of reproducing an exact replica of the subject asset. After concluding on a replacement cost, the value should be adjusted to reflect the impact on value of physical, functional, technological, and economic obsolescence on value. In any event, adjustments made to any particular replacement cost should be designed to produce the same cost as the modern equivalent asset from an output and utility point of view.

90.2. An entity’s actual costs incurred in the acquisition or construction of an asset may be appropriate for use as the replacement cost of an asset under certain circumstances. However, prior to using such historical cost information, the valuer should consider the following:

(a) timing of the historical expenditures: an entity's actual costs may not be relevant or may need to be adjusted for inflation/indexation to an equivalent as of the valuation date, if they were not incurred recently due to changes in market prices, inflation/deflation or other factors;
(b) the *basis of value*: care must be taken when adopting a particular market participant's own costings or profit margins, as they may not represent what typical market participants might have paid. The *valuer must* also consider the possibility that the entity's costs incurred may not be historical in nature due to prior purchase accounting or the purchase of used PEI assets. In any case, historical costs must be trended using appropriate indices;

(c) specific costs included: a *valuer must* consider all *significant costs* that have been included and whether those costs contribute to the *value* of the *asset* and for some *bases of value*, some amount of profit margin on costs incurred may be appropriate;

(d) non-market components: any costs, discounts or rebates that would not be incurred by, or available to, typical market participants *should* be excluded.

90.3. Having established the replacement cost, deductions must be made to reflect the physical, functional, technological, and economic obsolescence as applicable (see IVS 103 *Valuation Approaches*, Appendix A30.15–A30.22).

**Cost-to-Capacity Method**

90.4. Under the cost-to-capacity method, the replacement cost of an *asset* with an actual or required capacity can be determined by reference to the *cost* of a similar *asset* with a different capacity.

90.5. The cost-to-capacity method is generally used in one of two ways:

(a) to estimate the replacement cost for an *asset* or *assets* with one capacity where the replacement costs of an *asset* or *assets* with a different capacity are known (such as when the capacity of two subject *assets* could be replaced by a single *asset* with a known *cost*); or

(b) to estimate the replacement cost for a modern equivalent *asset* with capacity that matches foreseeable demand where the subject *asset* has excess capacity (as a means of measuring the penalty for the lack of utility to be applied as part of an economic obsolescence adjustment).

90.6. This method could be used as a primary method for determining replacement cost on a top-down basis, or could be used as a check method to the replacement cost determined on a bottom-up basis. However, the existence of an exact comparison plant of the same designed capacity that resides within the same geographical area would always take preference over a cost-to-capacity method.

90.7. It is noted that the relationship between *cost* and capacity is often not linear, so some form of exponential adjustment may also be required. However, the *valuer* should exercise caution in performing this adjustment when large differences in capacity are being used as evidence relative to the subject *asset* as this may not lead to credible outcomes.

**Trending Method**

90.8. Trending is a method of estimating an asset’s reproduction cost by applying an index (trend factor) to the *asset’s* historical cost which reflects the price inflation/deflation of the *asset* over time.
90.9. Historical cost comprises the expenditure that was involved in acquiring the asset when it was first placed into service by its first owner. This is to be distinguished from original cost, which is the actual cost of a property when acquired by its present owner, who may not be the first owner and who may have purchased the asset at a price greater or less than the historical cost.

90.10. Indexes may be obtained from statistical offices or similar government agencies, institutions or research organisations. Selection of the most appropriate index is crucial when using the trending method.

90.11. Whilst the application of a trending method (often termed an indirect method which involves the application of indexing) can be an appropriate way to determine replacement cost when using the cost approach, care should be taken in relation to the following:

(a) trending should not be applied to anything other than historical cost (the cost of an asset when it was first placed into service by its first owner);

(b) historical costs represent a range of direct and indirect costs (ie, equipment, labour, delivery, electrical, foundations, buildings, IT, etc) that might not correlate to a certain index;

(c) trending long-dated historical costs can create erroneous and anomalous outcomes because of the various factors that impact indices over time;

(d) using an index/trend that is derived in different jurisdictions to the subject asset can create erroneous and anomalous outcomes because of the various factors that impact indices in differing jurisdictions;

(e) trending historical costs using a local index/trend for assets that were sourced in a foreign jurisdiction where there have been exchange rate movements over time.

90.12. In all instances, professional judgement is required to ensure the trending method to determine replacement cost as part of a cost approach is appropriate having consideration to the nature of the valuation being performed. If it is likely to lead to erroneous or anomalous valuation outcomes, the application of alternate approaches to determine replacement cost must be utilised (ie, a direct approach to estimating replacement cost).

100. Data and Inputs

100.1. In accordance with IVS 104 Data and Inputs, the valuer must maximise the characteristics of suitable data and inputs.

100.2. In addition to the requirements contained within IVS 104 Data and Inputs there is the following hierarchy of comparable evidence, which should be followed for PEI valuations:

- direct comparable evidence;
- indirect comparable evidence;
- general market data;
- other sources.
100.3. When applying the hierarchy of comparable evidence, the valuer must ensure that the characteristics of suitable data and inputs contained within IVS 104 Data and Inputs are fully applied.

100.4. The inputs selected must be consistent with the models being used to value the asset (see IVS 104 Data and Inputs, para 40.1).

100.5. The selection, source and use of the inputs must be explained, justified, and documented.

110. Valuation Models

110.1. In accordance with IVS 105 Valuation Models, the valuer must maximise as many of the characteristics of suitable valuation models, as possible.

110.2. Valuation models must be suitable for the intended use of the valuation and consistent with suitable inputs.

110.3. Valuation models used must be explained, justified, tested and this must be documented.

120. Documentation and Reporting

120.1. In addition to the requirements contained within IVS 106 Documentation and Reporting, paras 30.1–30.9 a valuation report must be issued for a valuation and must include appropriate references to all matters addressed in the agreed scope of work (see IVS 101 Scope of Work). The report must also include comment on the effect on the reported value of any associated tangible or intangible assets excluded from the actual or assumed transaction scenario.

120.2. Moreover, in addition to the requirements contained within IVS 106 Documentation and Reporting, paras 40.1–40.3 a valuation review report must be issued for a valuation review and the valuation review report must state whether the review is a valuation process review or a value conclusion review.

130. Special Considerations for Plant, Equipment and Infrastructure

130.1. The following section addresses a non-exhaustive list of topics relevant to the valuation of PEI.

Allocation of value

130.2. Further to IVS 102 Bases of Value, section 70 and this standard, where a group of assets have been valued as part of a portfolio, but allocated on an individual basis, the valuer must explicitly state that this is the case and provide rationale as to their allocation methodology.
10. Overview

10.1. The principles contained in the General Standards apply to valuations of real property interests. This standard only includes modifications, additional requirements or specific examples of how the General Standards apply for valuations to which this standard applies. Valuations of infrastructure must also follow IVS 300 Plant, Equipment and Infrastructure, and valuations of development property must also follow IVS 410 Development Property.

20. Introduction

20.1. Property interests are normally defined by state or the law of individual jurisdictions and are often regulated by national or local legislation. In some instances, legitimate individual, communal/community and/or collective rights over land and buildings are held in an informal, traditional, undocumented and unregistered manner. Before undertaking a valuation of a real property interest, a valuer must understand the relevant legal framework that affects the interest being valued.

20.2. A real property interest is a right of ownership, control, use or occupation of land and buildings. A real property interest includes informal tenure rights for communal/community and or collective or tribal land and
urban/rural informal settlements or transition economies, which can take the form of possession, occupation and rights to use.

There are three main types of interest:

(a) the superior interest in any defined area of land. The owner of this interest has an absolute right of possession and control of the land and any buildings upon it in perpetuity, subject only to any subordinate interests and any statutory or other legally enforceable constraints;

(b) a subordinate interest that normally gives the holder rights of exclusive possession and control of a defined area of land and/or buildings for a defined period, eg, under the terms of a lease contract; and/or

(c) a right to use land or buildings but without a right of exclusive possession or control, eg, a right to pass over land or to use it only for a specified activity.

20.3. Intangible assets normally fall outside the classification of real property assets and/or liabilities. However, an intangible asset may be associated with, and have a material impact on, the cash flows associated with real property assets. It is therefore essential to be clear in the scope of work precisely what the intended use of the valuation is to include or exclude. When there is an intangible asset component, the valuer should also follow IVS 210 Intangible Assets.

20.4. Although different words and terms are used to describe these types of real property interest in different jurisdictions, the concepts of an unlimited absolute right of ownership, an exclusive interest for a limited period or a non-exclusive right for a specified intended use are common to most. The immovability of land and buildings means that it is the right that a party holds that is transferred in an exchange, not the physical land and buildings. The value, therefore, attaches to the legal interest rather than to the physical land and buildings.

20.5. Valuations of real property interests are often required for different intended uses including secured lending, sales and purchases, taxation, litigation, compensation, insolvency proceedings and financial reporting.

30. Valuation Framework

30.1. In accordance with IVS 100 Valuation Framework, the valuer must comply with the valuer principles and valuation principles (see IVS 100 Valuation Framework, sections 10 and 20).

40. Scope of Work

40.1. To comply with the requirement to identify the asset and/or liability to be valued in IVS 101 Scope of Work, para 20.3 (a) the following matters must be included:

(a) a description of the real property interest to be valued; and

(b) identification of any superior interest, subordinate interests or right to use that affect the interest to be valued.
40.2. In accordance with requirements contained within IVS 101 Scope of Work, sections 20 and 30, investigations made during the course of a valuation engagement must be appropriate for the intended use of the valuation engagement and the basis(es) of value. In the case of a valuation review the scope of work must state whether the review is a valuation process review or a value conclusion review.

40.3. Sufficient investigations and evidence must be assembled by means such as inspection, inquiry, research, computation and analysis to ensure that the valuation is properly supported. When determining the extent of investigations and evidence necessary, professional judgement is required to ensure it is adequate for the purpose of the valuation.

40.4. When a valuation engagement involves reliance on information supplied by a party other than the valuer, consideration should be given as to whether the information is credible or that the information may otherwise be relied upon without adversely affecting the credibility of the valuation opinion. Significant inputs provided to the valuer (eg, by management/owners) should be considered, investigated and/or corroborated. In cases where credibility or reliability of information supplied cannot be supported, consideration should be given as to whether or how such information is used (see IVS 101 Scope of Work, para 20.1(j)).

40.5. In considering the credibility and reliability of information provided, valuers should consider matters such as:

(a) the intended use of the valuation;
(b) the significance of the information to the valuation conclusion;
(c) the expertise of the source in relation to the subject matter; and
(d) whether the source is independent of either the subject asset and/or the recipient of the valuation (see IVS 101 Scope of Work, para 20.1 (a)).

40.7. The intended use of the valuation, the basis of value, the extent and limits on the investigations and any sources of information that may be relied upon are part of the valuation engagement’s scope of work that must be communicated to all parties to the valuation engagement (see IVS 101 Scope of Work).

40.8. If, during the course of an engagement, it becomes clear that the investigations or limitations included in the scope of work will not result in a credible valuation, or information to be provided by third parties is either unavailable or inadequate, or limitations on investigations such as inspection are so substantial that it will not result in a valuation outcome that is adequate for the purpose of the valuation, the valuation must explicitly state that the valuation is not in compliance with IVS (see IVS 100 Valuation Framework, section 60 and IVS 101 Scope of Work, para 20.3).

40.9. In addition to the requirements to state the extent of the investigation and the nature and source of the information to be relied upon in IVS 101 Scope of Work, the following matters should be considered:

(a) the evidence, if available, required to verify the real property interest and any relevant related interests;
(b) the extent of any inspection;
(c) responsibility for information on the site area, site characteristics (eg, ground condition), building characteristics or building floor areas;
(d) responsibility for information on the area, characteristics (eg, soil conditions) and productivity generating attributes of land (eg, fertility of the soil, plantation area);
(e) responsibility for confirming the specification and condition of any building;
(f) responsibility for confirming the specification and condition of the plantation, vegetation, forest or crop;
(g) responsibility for confirming the quantity and quality of reserves and any extraction and remedial measures post extraction;
(h) the extent of investigation into the nature, specification and adequacy of services and facilities;
(i) responsibility for the identification of actual or potential environmental factors;
(j) legal permissions or restrictions on the use of the property and any buildings, as well as any anticipated or potential changes to legal permissions and restrictions.

40.10. Typical examples of special assumptions that needs to be agreed and confirmed in order to comply with IVS 101 Scope of Work, para 20.3.(k) (see IVS 102 Bases of Value, para 50.4) include but are not limited to:

(a) that a defined physical change had occurred, eg, a proposed building is valued as if complete at the valuation date;
(b) that there had been a change in the status of the property, eg, a vacant building had been leased or a leased building had become vacant at the valuation date;
(c) that the interest is being valued without taking into account other existing interests;
(d) that the property is free from contamination or other environmental risks;
(e) that the economic activity will continue into perpetuity; and
(f) that planning permission will be granted for the proposed change of use.

50. Bases of Value

50.1. In accordance with IVS 102 Bases of Value, a valuer must select the appropriate basis(es) of value for the intended use when valuing real property interests.

50.2. Under most bases of value, a valuer must consider the highest and best use of the real property, which may differ from its current use (see IVS 102 Bases of Value, Appendix A90–A120). This assessment is particularly important to real property interests which can be changed from one use to another or that have development potential.
50.3. In addition to the requirements contained within IVS 102 Bases of Value, section 70 on allocation of value, if the sum-of-the-value of the individual allocated components differs from the value of the assets and/or liabilities on an aggregate basis, then the valuer should expressly state the primary reason(s) for the difference.

60. Valuation Approaches and Methods

60.1. The three valuation approaches described in IVS 103 Valuation Approaches can all be applicable for the valuation of a real property interest.

60.2. When selecting an approach and method, in addition to the requirements of this standard, a valuer must follow the requirements of IVS 103 Valuation Approaches, including paras 10.3 and 10.4.

70. Market Approach

70.1. Property interests are generally heterogeneous (ie, with different characteristics). Even if the land and buildings have identical physical characteristics to others being exchanged in the market, the location will be different. Notwithstanding these dissimilarities, the market approach is commonly applied for the valuation of real property interests.

70.2. In order to compare the subject of the valuation with the price of other real property interests, valuers should adopt generally accepted and appropriate units of comparison that are considered by participants, dependent upon the type of asset and/or liability being valued. Units of comparison that are commonly used might include:

(a) price per square metre (or per square foot) of a building or per hectare (or per acre) for land;
(b) price per room; and
(c) price per unit or output (eg, megawatt, crop yields).

70.3. A unit of comparison is only useful when it is consistently selected and applied to the subject property and the comparable properties in each analysis. To the extent possible, any unit of comparison used should be one commonly used by participants in the appropriate market.

70.4. The reliance that can be applied to any comparable price data in the valuation is determined by comparing various characteristics of the property and transaction from which the data was derived with the property being valued. Differences between the following should be considered in accordance with IVS 103 Valuation Approaches, Appendix A10.1-10.8. Specific differences that should be considered in valuing real property interests include, but are not limited to:

(a) the type of interest providing the price evidence and the type of interest being valued;
(b) the respective locations;
(c) the respective quality of the land;
(d) the age and specification of the improvements;
(e) the permitted use or zoning at each property;
(f) the circumstances under which the price was determined and the basis of value required;
(g) the effective date of the price evidence and the valuation date; and
(h) market conditions at the time of the relevant transactions and how they differ from conditions at the valuation date.

80. Income Approach

80.1. Various methods are used to indicate value under the general heading of the income approach, all of which share the common characteristic that the value is based upon an actual or estimated income that either is, or could be, generated by an owner of the interest. In the case of an investment property, that income could be in the form of rent (see IVS 104 Data and Inputs and IVS 105 Valuation Models); in an owner-occupied building, it could be an assumed rent (or rent saved) based on what it would cost the owner to lease equivalent space.

80.2. For some real property interests, the income-generating ability of the property is closely tied to a particular use or business/trading activity (for example cinemas, old age homes, clinics, hotels etc). Where a building is suitable for only a particular type of trading activity, the income is often related to the actual or potential cash flows that would accrue to the owner of that building from the trading activity. The use of a property’s trading potential to indicate its value is often referred to as the “profits method” (see following para 80.3).

80.3. When the potential income used in the income approach represents cash flow from a business/trading activity (rather than cash flow related to rent, maintenance and other real property-specific costs) and includes intangible assets then this is no longer solely a real property interest valuation and the valuer should also comply as appropriate with the requirements of IVS 200 Businesses and Business Interests and, where applicable, IVS 210 Intangible Assets.

80.4. For real property interests, various forms of discounted cash flow models may be used. These vary in detail but share the basic characteristic that the cash flow for a defined future period is adjusted to a present value using a discount rate. The sum of the present day values for the individual periods represents an estimate of the capital value. The discount rate in a discounted cash flow model will be based on the time cost of money and the risks and rewards of the income stream in question.

80.5. Further information on the derivation of discount rates is included in IVS 103 Valuation Approaches, Appendix A20.29–A20.40. The development of a yield or discount rate should be influenced by the objective of the valuation. For example:

(a) if the objective of the valuation is to establish the market value, the discount rate may be derived from observation of the returns implicit in the price paid for real property interests traded in the market between participants or from hypothetical participants’ required rates or return. When a discount rate is based on an analysis of market transactions, valuers should also follow the guidance contained in IVS 103 Valuation Approaches, Appendix A10.7 and A10.8; and

(b) if the objective of the valuation is to establish the value to a particular owner or potential owner based on their own investment criteria, the rate used may reflect their required rate of return or their weighted-average-cost-of-capital.
80.6. An appropriate discount rate may also be built up from a typical risk-free return adjusted for the additional risks and opportunities specific to the particular real property interest.

90. **Cost Approach**

90.1. In applying the cost approach, valuers must follow the guidance contained in IVS 103 *Valuation Approaches*, Appendix A30.

90.2. This approach is generally applied to the valuation of real property interests through the depreciated replacement cost method (see IVS 103 *Valuation Approaches*, Appendix A30).

90.3. It may be used as the primary approach when there is either no evidence of transaction prices for similar property or no identifiable actual or notional income stream that would accrue to the owner of the relevant interest.

90.4. In some cases, even when evidence of market transaction prices or an identifiable income stream is available, the cost approach may be used as a secondary or corroborating approach.

90.5. The first step requires a replacement cost to be calculated. This is normally the cost of replacing the property with a modern equivalent at the relevant valuation date. An exception is where an equivalent property would need to be a replica of the subject property in order to provide a participant with the same utility, in which case the replacement cost would be that of reproducing or replicating the subject building rather than replacing it with a modern equivalent. The replacement cost must reflect all costs, as appropriate, such as the value of the land, infrastructure, design fees, finance costs and developer profit that would be incurred by a participant in creating an equivalent asset.

90.6. The cost of the modern equivalent must then, as appropriate, be subject to adjustment for physical, functional, technological and economic obsolescence (see IVS 103 *Valuation Approaches*, Appendix A30). The objective of an adjustment for obsolescence is to estimate how much less valuable the subject property might, or would be, to a potential buyer than the modern equivalent. Obsolescence considers the physical condition, functionality and economic utility of the subject property compared to the modern equivalent.

100. **Data and Inputs**

100.1. In accordance with IVS 104 *Data and Inputs*, the valuer must maximise the characteristics of suitable data and inputs.

100.2. In addition to the requirements contained within IVS 104 *Data and Inputs* there is the following hierarchy of comparable evidence, which should be followed for real property interest valuations:

- direct comparable evidence;
- indirect comparable evidence;
- general market data;
- other sources.
100.3. When applying the hierarchy of comparable evidence the **valuer must** ensure that the characteristics of suitable data and inputs contained within IVS 104 *Data and Inputs* are fully applied.

100.4. The inputs selected **must** be consistent with the models being used to value the **asset** and/or **liability** (see IVS 104 *Data and Inputs*, section 40).

100.5. The selection, source and use of the inputs **must** be explained, justified, and documented.

110. **Valuation Models**

110.1. In accordance with IVS 105 *Valuation Models*, the **valuer must** maximise as many of the characteristics of suitable **valuation models**, as possible.

110.2. **Valuation models must** be suitable for the **intended use** of the **valuation** and consistent with suitable inputs.

110.3. **Valuation models used must** be explained, justified, tested and the use **must** be documented.

120. **Documentation and Reporting**

120.1. In addition to the requirements contained within IVS 106 *Documentation and Reporting*, section 30, a valuation report must be issued for a **valuation** and must include appropriate references to all matters addressed in the agreed scope of **work** (see IVS 101 *Scope of Work*). The report must also include comment on the effect on the reported value of any associated **tangible or intangible assets** excluded from the actual or assumed transaction scenario.

120.2. Moreover, in addition to the requirements contained within IVS 106 *Documentation and Reporting*, section 40 a valuation review report **must** be issued for a **valuation review** and the valuation review report **must** state whether the review is a **valuation process review** or a **value conclusion review**.

130. **Special Considerations for Real Property Interests**

130.1. The following sections address a non-exhaustive list of topics relevant to the **valuation** of real property interests.

   (a) Hierarchy of Interests (section 140);

   (b) Rent (section 150).

140. **Hierarchy of Interests**

140.1. The different types of real property interests are not mutually exclusive. For example, a superior interest may be subject to one or more subordinate interests. The owner of the absolute interest may grant a lease interest in respect of part or all of his interest. Lease interests granted directly by the owner of the absolute interest are “head lease” interests. Unless prohibited by the terms of the lease contract, the holder of a head lease interest can grant a lease of part or all of that interest to a third party, which is known as a sub-lease interest. A sub-lease interest will always be shorter than, or coterminous with, the head lease out of which it is created.
140.2. These property interests will have their own characteristics, as illustrated in the following examples:

(a) although an absolute interest provides outright ownership in perpetuity, it may be subject to the effect of subordinate interests. These subordinate interests could include leases, restrictions imposed by a previous owner or restrictions imposed by statute;

(b) a lease interest will be for a defined period, at the end of which the property reverts to the holder of the superior interest out of which it was created. The lease contract will normally impose obligations on the lessee, eg, the payment of rent and other expenses. It may also impose conditions or restrictions, such as in the way the property may be used or on any transfer of the interest to a third party;

(c) a right of use may be held in perpetuity or may be for a defined period. The right may be dependent on the holder making payments or complying with certain other conditions.

140.3. When valuing a real property interest it is therefore necessary to identify the nature of the rights accruing to the holder of that interest and reflect any constraints or encumbrances imposed by the existence of other interests in the same property. The sum of the individual values of various different interests in the same property will frequently differ from the value of the unencumbered superior interest.

150. Rent

150.1. Market rent is addressed as a basis of value in IVS 102 Bases of Value.

150.2. When valuing either a superior interest that is subject to a lease or an interest created by a lease, valuers must consider the contract rent and, in cases where it is different, the market rent.

150.3. The contract rent is the rent payable under the terms of an actual lease. It may be fixed for the duration of the lease or variable. The frequency and basis of calculating variations in the rent will be set out in the lease and must be identified and understood in order to establish the total benefits accruing to the lessor and the liability of the lessee.
IVS 410 Development Property

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### 10. Overview

10.1. The principles contained in the General Standards apply to *valuations* of development property. This standard only includes modifications, additional requirements or specific examples of how the General Standards apply for *valuations* to which this standard applies. *Valuations* of development property *must* also follow IVS 400 *Real Property Interests* and IVS 300 *Plant, Equipment and Infrastructure*, where applicable.

### 20. Introduction

20.1. In the context of this standard, development properties are defined as interests where development is required to achieve the highest and best use, or where improvements are either being contemplated or are in progress at the *valuation date* and include:

(a) the construction of buildings;
(b) previously undeveloped land which is being provided with infrastructure (see IVS 300 *Plant, Equipment and Infrastructure*);
(c) the redevelopment of previously developed land;
(d) the improvement or alteration of existing buildings or structures;
(e) land allocated for development in a statutory plan or by the
permission of the relevant authorities; and

(f) land allocated for a higher value uses or higher density in a statutory
plan. or by the permission of the relevant authorities.

20.2. Valuations of development property may be required for different
intended uses. It is the valuer’s responsibility to understand the
intended use. A non-exhaustive list of examples of circumstances that
should require a development valuation is provided below:

(a) when establishing whether proposed projects are financially feasible;

(b) as part of general consulting and transactional support engagements
for acquisition and loan security;

(c) for tax reporting purposes, development valuations are frequently
needed for ad valorem taxation analyses;

(d) for litigation requiring valuation analysis in circumstances such as
shareholder disputes and damage calculations;

(e) for financial reporting purposes, valuation of a development property
is often required in connection with accounting for business
combinations, asset acquisitions and sales, and impairment analysis;
and

(f) for other statutory or legal events that may require the valuation of
development property such as compulsory purchases.

20.3. When valuing development property, valuers must follow the applicable
standard for that type of asset (IVS 400 Real Property Interests and IVS 300
Plant, Equipment and Infrastructure).

20.4. The residual value or land value of a development property can be
very sensitive to changes in assumptions or projections concerning the
income or revenue to be derived from the completed project or any of the
development costs that will be incurred. This remains the case regardless
of the method or methods used or however diligently the various inputs
are researched in relation to the valuation date (see IVS 104 Data and
Inputs).

20.5. This sensitivity also applies to the impact of significant changes in either
the costs of the project or the value on completion. If the valuation is
required for an intended use where significant changes in value over
the duration of a construction project may be of concern to the user
(eg, where the valuation is for loan security or to establish a project’s
viability), the valuer must highlight the potentially disproportionate effect
of possible changes in either the construction costs or end value on
the profitability of the project and the value of the partially completed
property. A sensitivity analysis may be useful for this intended use
provided it is accompanied by a suitable explanation.

30. Valuation Framework

30.1. In accordance with IVS 100 Valuation Framework, the valuer must comply
with the valuer principles and valuation principles.
40. **Scope of Work**

40.1. In addition to the requirements contained within IVS 101 *Scope of Work*, sections 20 and 30, investigations made during the course of a valuation engagement must be appropriate for the *intended use* of the *valuation* and the *basis(es) of value*. In the case of a *valuation review* the scope of work must state whether the review is a *valuation process review* or a *value conclusion review*.

40.2. Sufficient investigations and evidence must be assembled by means such as inspection, inquiry, research, computation and analysis to ensure that the valuation is properly supported. When determining the extent of investigations and evidence necessary, *professional judgement* is required to ensure it is adequate for the purpose of the valuation.

40.3. When a *valuation* involves reliance on information supplied by a party other than the *valuer*, consideration *should* be given as to whether the information is credible or that the information may otherwise be relied upon without adversely affecting the credibility of the *valuation*. *Significant inputs* provided to the *valuer* (eg, by management/owners) *should* be considered, investigated and/or corroborated (see IVS 101 *Scope of Work*, para 20.1(j)).

40.4. In considering the credibility and reliability of information provided, *valuers should* consider matters such as:

   (a) the *intended use* of the *valuation*;

   (b) the significance of the information to the *valuation conclusion*;

   (c) the expertise of the source in relation to the subject matter; and

   (d) whether the source is independent of either the *subject asset* and/or *subject liability* and/or the recipient of the *valuation* (see IVS 101 *Scope of Work*, para 20.1(a)).

40.5. The *intended use* of the *valuation*, the *basis of value*, the extent and limits on the investigations and any sources of information that may be relied upon are part of the *valuation’s* scope of work that *must* be communicated to all parties to the *valuation* (see IVS 101 *Scope of Work*).

40.6. If, during the course of an assignment, it becomes clear that the investigations included in the scope of work will not result in a credible *valuation*, or information to be provided by third parties is either unavailable or inadequate, or limitations on investigations are so substantial that the *valuer* cannot sufficiently evaluate the inputs and assumptions, the *valuation* will not comply with IVS (see IVS 101 *Scope of Work*, para 20.1).

50. **Bases of Value**

50.1. In accordance with IVS 102 *Bases of Value*, a *valuer must* select the appropriate *basis(es) of value* for the *intended use* when valuing development property.

50.2. However, in considering the *value* of a development property, regard *should* be given to the probability that any contracts in place, eg, for construction or for the sale or leasing of the completed project may,
become void or voidable in the event of one of the parties being the subject of formal insolvency proceedings. Further regard should be given to any contractual obligations that may have a material impact on market value. Therefore, it may be appropriate to highlight the risk to a lender caused by a prospective buyer of the property not having the benefit of existing building contracts and/or pre-leases, and pre-sales and any associated warrantees and guarantees in the event of a default by the borrower.

50.3. The valuation of development property often includes a significant number of assumptions and special assumptions regarding the condition or status of the project when complete. For example, special assumptions may be made that the development has been completed or that the property is fully leased. As required by IVS 101 Scope of Work, significant assumptions and special assumptions used in a valuation must be communicated to all parties to the valuation and must be agreed and confirmed in the scope of work. Particular care may also be required where reliance may be placed by third parties on the valuation outcome.

50.4. Frequently it will be either impracticable or impossible to verify every feature of a development property which could have an impact on potential future development, such as where ground conditions have yet to be investigated. When this is the case, it may be appropriate to make assumptions (eg, that there are no abnormal ground conditions that would result in significantly increased costs). If this was an assumption that a participant would not make, it would need to be presented as a special assumption.

50.5. In situations where there has been a change in the market since a project was originally conceived, a project under construction may no longer represent the highest and best use of the land. In such cases, the costs to complete the project originally proposed may be irrelevant as a buyer in the market would either demolish any partially completed structures or adapt them for an alternative project. The value of the development property under construction would need to reflect the current value of the alternative project and the costs and risks associated with completing that project.

50.6. For some development properties, the property is closely tied to a particular use or business/trading activity or a special assumption is made that the completed property will trade at specified and sustainable levels. In such cases, the valuer must, as appropriate, also comply with the requirements of IVS 200 Businesses and Business Interests and, where applicable, IVS 210 Intangible Assets.

50.7. Special assumptions used for valuation of a development property must follow IVS 102 Bases of Value, section 50.

60. Valuation Approaches and Methods

60.1. There are three main approaches and one main method in relation to the valuation of the development property. These are:

(a) the Market Approach (see section 70);
(b) the Income Approach (see section 80); and
(c) the Cost Approach (see section 90); and
(d) the Residual Method: a hybrid of either the market approach, the income approach and/or the cost approach, which is commonly known as the residual method (see section 100).

60.2. When selecting an approach and method, in addition to the requirements of this standard, a valuer must follow the requirements of IVS (see IVS 103 Valuation Approaches, including para 10.4).

60.3. The valuation approach to be used will depend on the required basis of value as well as specific facts and circumstances, eg, the level of recent transactions, the stage of development of the project and movements in property markets since the project started and should always be that which is most appropriate to those circumstances. Therefore, the exercise of judgement in the selection of the most suitable approach is critical.

70. Market Approach

70.1. Some types of development property can be sufficiently homogenous and frequently exchanged in a market for there to be sufficient data from recent sales to use as a direct comparison where a valuation is required (see para 100.9–100.16 of this standard).

70.2. In most markets, the market approach may have limitations for larger or more complex development property, or smaller properties where the proposed improvements are heterogeneous. This is because the number and extent of the variables between different properties make direct comparisons of all variables inapplicable, although correctly adjusted market evidence (see IVS 103 Valuation Approaches, section 20) may be used as the basis for a number of variables within the valuation.

70.3. For development property where work on the improvements has commenced but is incomplete, the application of the market approach is even more problematic. Such properties are rarely transferred between participants in their partially-completed state, except as either part of a transfer of the owning entity or where the seller is either insolvent or facing insolvency and therefore unable to complete the project. Even in the unlikely event of there being evidence of a transfer of another partially-completed development property close to the valuation date, the degree to which work has been completed would almost certainly differ, even if the properties were otherwise similar.

70.4. The market approach may also be appropriate for establishing the value of a completed property as one of the inputs required under the residual method, which is explained more fully in the section on the residual method (section 100 of this standard).

80. Income Approach

80.1. Establishing the residual value of a development property may involve the use of a cash flow model in some markets (see paras 100.9–100.16 of this chapter).

80.2. The income approach may also be appropriate for establishing the value of a completed property as one of the inputs required under the residual
method, which is explained more fully in the section on the residual method (see section 100 of this standard).

90. Cost Approach

90.1. Establishing development costs is a key component of the residual method (see section 100 of this standard).

90.2. The cost approach may also exclusively be used as a means of indicating the value of development property such as a proposed development of a building or other structure and infrastructure for which there is no active market on completion.

90.3. The cost approach is based on the economic principle that a buyer will pay no more for an asset than the amount to create an asset of equal utility. To apply this principle to development property, the valuer must consider the cost that a prospective buyer would incur in acquiring a similar asset with the potential to earn a similar profit from development as could be obtained from development of the subject property. However, unless there are unusual circumstances affecting the subject development property, the process of analysing a proposed development and determining the anticipated costs for a hypothetical alternative would effectively replicate either the market approach or the residual method as described above, which can be applied directly to the subject property.

90.4. Another difficulty in applying the cost approach to development property is in determining the profit level, which is its utility to a prospective buyer. Although a developer may have a target profit at the commencement of a project, the actual profit is normally determined by the value of the property at completion. Moreover, as the property approaches completion, some of the risks associated with development are likely to reduce, which may impact on the required return of a buyer. Unless a fixed price has been agreed, profit is not determined by the costs incurred in acquiring the land and undertaking the improvements.

100. Residual Method

100.1. The residual method is normally a combination of market approach, income approach and cost approach.

100.2. The market approach may be appropriate for estimating the gross development value of a property as one of the inputs required under the residual method.

100.3. The residual method is so called because it indicates the residual amount after deducting all known or anticipated costs required to complete the development from the anticipated value of the project when completed after consideration of the risks associated with completion of the project. This is known as the residual value.

100.4. The residual value can be highly sensitive to relatively small changes in the forecast cash flows and the practitioner should provide separate sensitivity analyses for each significant factor.

100.5. Caution is required in the use of this method because of the sensitivity of the result to changes in many of the inputs, which may not be precisely known on the valuation date and therefore have to be estimated with the use of assumptions.
100.6. The models used to apply the residual method vary considerably in complexity and sophistication, with the more complex models allowing for greater granularity of inputs, multiple development phases and sophisticated analytical tools. The most suitable model will depend on the size, duration and complexity of the proposed development.

100.7. In applying the residual method, a valuer should consider and evaluate the reasonableness and reliability of the following:

(a) the source of information on any proposed building or structure, eg, any plans and specification that are to be relied on in the valuation; and
(b) any source of information on the construction and other costs that will be incurred in completing the project and which will be used in the valuation;
(c) any source of information on the estimation of yield/discount rate that will be used in the valuation.

100.8. The following basic elements should be considered in the application of the residual method.

(a) completed property value;
(b) construction costs;
(c) consultants fees;
(d) statutory fees;
(e) marketing costs;
(f) timetable;
(g) finance costs;
(h) development profit (on both land and building);
(i) discount rate.

Value of Completed Property

100.9. The first step requires an estimate of the value of the relevant interest in the real property following notional completion of the development project, which should be developed in accordance with IVS 103 Valuation Methods and Approaches.

100.10. Regardless of the methods adopted under either the market or income approach, the valuer must adopt one of the two basic underlying assumptions:

(a) the estimated value on completion is based on values that are current on the valuation date on the special assumption the project had already been completed in accordance with the defined plans and specification; or

(b) the estimated value on completion is based on the special assumption that the project will be completed in accordance with the defined plans as of the valuation date and specification on the anticipated date of completion.
100.11. Market practice and availability of relevant data and inputs should determine which of these assumptions is more appropriate. However, it is important that there is clarity as to whether current or projected values are being used.

100.12. If estimated gross development value is used, it should be made clear that these are based on special assumptions that a participant would make based on information available on the valuation date.

100.13. It is also important that care is taken to ensure that consistent assumptions are used throughout the residual value calculation, ie, if current values are used then the costs should also be current and discount rates derived from analysis of current prices.

100.14. If there is a pre-sale or pre-lease agreement in place that is conditional on the project, or a relevant part, being completed, this will be reflected in the valuation of the completed property. Care should be taken to establish whether the price in a pre-sale agreement or the rent and other terms in a pre-lease agreement reflect those that would be agreed between participants on the valuation date.

100.15. If the terms are not reflective of the market, adjustments may need to be made to the valuation.

100.16. It would also be appropriate to establish if these agreements would be assignable to a purchaser of the relevant interest in the development property prior to the completion of the project.

**Construction Costs**

100.17. The costs of all work required at the valuation date to complete the project to the defined specification need to be identified. Where no work has started, this will include any preparatory work required prior to the main building contract, such as the costs of obtaining statutory permissions, demolition or off-site enabling work.

100.18. Where work has commenced, or is about to commence, there will normally be a contract or contracts in place that can provide the independent confirmation of cost. However, if there are no contracts in place, or if the actual contract costs are not typical of those that would be agreed in the market on the valuation date, then it may be necessary to estimate these costs reflecting the reasonable expectation of participants on the valuation date of the probable costs.

100.19. The benefit of any work carried out prior to the valuation date will be reflected in the value, but will not determine that value. Similarly, previous payments under the actual building contract for work completed prior to the valuation date are not relevant to current value.

100.20. In contrast, if payments under a building contract are geared to the work completed, the sums remaining to be paid for work not yet undertaken at the valuation date may be the best evidence of the construction costs required to complete the work.

100.21. However, contractual costs may include special requirements of a specific end user and therefore may not reflect the general requirements of participants.
100.22. Moreover, if there is a material risk that the contract may not be fulfilled, (eg, due to a dispute or insolvency of one of the parties), it may be more appropriate to reflect the cost of engaging a new contractor to complete the outstanding work.

100.23. When valuing a partly completed development property, it is not appropriate to rely solely on projected costs and income contained in any project plan or feasibility study produced at the commencement of the project.

100.24. Once the project has commenced, this is not a reliable tool for measuring value as the inputs will be historic. Likewise, an approach based on estimating the percentage of the project that has been completed prior to the valuation date is unlikely to be relevant in determining the current market value.

**Consultants’ Fees**

100.25. These include legal and professional costs that would be reasonably incurred by a participant at various stages through the completion of the project.

**Statutory fees**

100.26. These are the fees associated with getting necessary permissions and approvals, which include but are not limited to building approvals, environmental clearance and fire safety.

**Marketing Costs**

100.27. If there is no identified buyer or lessee for the completed project, it will normally be appropriate to allow for the costs associated with appropriate marketing, and for any leasing commissions and consultants’ fees incurred for marketing not included under para 100.25 of this standard.

**Timetable**

100.28. The duration of the project from the valuation date to the expected date of completion of the project needs to be considered, together with the phasing of all cash outflows for construction costs, consultants’ fees, etc.

100.29. If there is no sale agreement in place for the relevant interest in the development property following practical completion, an estimate should be made of the marketing period that might typically be required following completion of construction until a sale is achieved.

100.30. If the property is to be held for investment after completion and if there are no pre-leasing agreements, the time required to reach stabilised occupancy needs to be considered (ie, the period required to reach a realistic long-term occupancy level). For a project where there will be individual letting units, the stabilised occupancy levels may be less than 100 percent if market experience indicates that a number of units may be expected to always be vacant, and allowance should be considered for costs incurred by the owner during this period such as additional marketing costs, incentives, maintenance and/or unrecoverable service charges.
Financial Costs

100.31. These represent the cost of finance for the project from the valuation date through to the completion of the project, including any period required after physical completion to either sell the interest or achieve stabilised occupancy. As a lender may perceive the risks during construction to differ substantially from the risks following completion of construction, the finance cost during each period may also need to be considered separately. Even if an entity is intending to self-fund the project, an allowance should be made for interest at a rate which would be obtainable by a participant for borrowing to fund the completion of the project on the valuation date.

Development Profit

100.32. Allowance should be made for development profit, or the return that would be required by a buyer of the development property in the market place for taking on the risks associated with completion of the project on the valuation date. This will include the risks involved in achieving the anticipated income or capital value following physical completion of the project. Development profit should be considered for both land as well as building(s).

100.33. This target profit can be expressed as a lump sum, a percentage return on the costs incurred on purchase of land as well as construction of the building/structure or a percentage of the anticipated value of the project on completion or a rate of return. Market practice for the type of property in question will normally indicate the most appropriate option. The amount of profit that would be required will reflect the level of risk that would be perceived by a prospective buyer on the valuation date and will vary according to factors such as:

(a) the stage which the project has reached on the valuation date. A project which is nearing completion will normally be viewed as being less risky than one at an early stage, with the exception of situations where a party to the development is insolvent;

(b) whether a buyer or lessee has been secured for the completed project; and

(c) the size and anticipated remaining duration of the project. The longer the project, the greater the risk caused by exposure to fluctuations in future costs and receipts and changing economic conditions generally.

100.34. The following are examples of factors that should typically need to be considered in an assessment of the relative risks associated with the completion of a development project:

(a) unforeseen complications that increase construction costs;

(b) potential for contract delays caused by adverse weather or other matters outside of developer’s control;

(c) delays in obtaining statutory approvals;

(d) supplier failures;

(e) entitlement risk and changes in entitlements over the development period;
(f) changes in environmental, social and governance requirements in relation to the proposed development;

(g) regulatory changes;

(h) delays in finding a buyer or lessee;

(i) delays in obtaining funding for the project;

(j) discovery of irregularities in documentation such as deed or land titling during or post project commencement.

100.35. Whilst all of the above factors will impact the perceived risk of a project and the profit that a buyer or the development property would require, care must be taken to avoid double counting, either where contingencies are already reflected in the residual valuation model or risks in the discount rate used to bring future cash flows to present value.

100.36. The risk of the estimated value of the completed development project changing due to changed market conditions over the duration of the project will normally be reflected in the discount rate or capitalisation rate used to value the completed project.

100.37. The profit anticipated by the owner of an interest in development property at the commencement of a development project will vary according to the valuation of its interest in the project once construction has commenced. The valuation should reflect those risks remaining at the valuation date and the discount or return that a buyer of the partially completed project would require for bringing it to a successful completion.

**Discount Rate**

100.38. In order to arrive at an indication of the value of the development property on the valuation date, the residual method requires the application of a discount rate to all future cash flows in order to arrive at a net present value. This discount rate may be derived using a variety of methods (see IVS 103 Valuation Approaches, Appendix A20.29–A20.40).

100.39. If the cash flows are based on values and costs that are current on the valuation date, the risk of these changing between the valuation date and the anticipated completion date should be considered and reflected in the discount rate used to determine the present value. If the cash flows are based on prospective values and costs, the risk of those projections proving to be inaccurate should be considered and reflected in the discount rate.

110. **Existing Asset**

110.1. In the valuation of development property, it is necessary to establish the suitability of the real property in question for the proposed development. Some matters may be within the valuer’s knowledge and experience, but some may require information or reports from other specialists. Matters that typically need to be considered for specific investigation when undertaking a valuation of a development property before a project commences include:

(a) whether or not there is a market for the proposed development;
(b) is the proposed development the highest and best use of the property in the current market;
(c) whether there are other non-financial obligations that need to be considered (political, environmental or social criteria);
(d) legal permissions or zoning, including any conditions or constraints on permitted development;
(e) limitations, encumbrances or conditions imposed on the relevant interest by private contract;
(f) rights of access to public roads or other public areas;
(g) geotechnical conditions, including potential for contamination or other environmental risks;
(h) the availability of, and requirements to provide or improve, necessary services, eg, water, drainage, sewerage and power;
(i) the need for any off-site infrastructure improvements and the rights required to undertake this work;
(j) any archaeological constraints or the need for archaeological investigations;
(k) sustainability and any client requirements in relation to green buildings;
(l) economic conditions and trends and their potential impact on costs and receipts during the development period;
(m) current and projected supply and demand for the proposed future uses;
(n) the availability and cost of funding;
(o) the expected time required to deal with preparatory matters prior to starting work, for the completion of the work and, if appropriate, to rent or sell the completed property; and
(p) any other risks associated with the proposed development.

110.2. Where a project is in progress, additional enquiries or investigations will typically be needed into the contracts in place for the design of the project, for its construction and for supervision of the construction.

120. Data and Inputs

120.1. In accordance with IVS 104 Data and Inputs, the valuer must maximise the characteristics of suitable data and inputs.

120.2. In addition to the requirements contained within IVS 104 Data and Inputs there is the following hierarchy of comparable evidence which should be followed for development property valuations:

- direct comparable evidence;
- indirect comparable evidence;
- general market data;
- other sources.
120.3. When applying the hierarchy of comparable evidence the valuer must ensure that the characteristics of suitable data and inputs contained within IVS 104 Data and Inputs are fully applied.

120.4. The inputs selected must be consistent with the valuation models being used to value the asset and/or liability (see IVS 104 Data and Inputs).

120.5. The selection, source and use of the inputs must be explained, justified, and documented.

130. Valuation Models

130.1. In accordance with IVS 105 Valuation Models, the valuer must maximise as many of the characteristics of suitable valuation models, as possible.

130.2. Valuation models must be suitable for the intended use of the valuation and consistent with suitable inputs.

130.3. Valuation models used must be explained, justified, tested and the use must be documented.

140. Documentation and Reporting

140.1. In addition to the minimum requirements in IVS 106 Documentation and Reporting, section 30, a valuation report on development property must include appropriate references to all matters addressed in the agreed scope of work (see IVS 101 Scope of Work). The report must also include comment on the effect on the reported value of any associated tangible or intangible assets excluded from the actual or assumed transaction scenario.

140.2. Moreover, in addition to the requirements contained within IVS 106 Documentation and Reporting, section 40, a valuation review report must be issued for a valuation review and the valuation review report must state whether the review is a valuation process review or a value conclusion review.

150. Special Considerations for Secured Lending for a Development Property

150.1. The appropriate basis of value for secured lending is normally market value. However, in considering the value of a development property, regard should be given to the probability that any contracts in place, eg, for construction or for the sale or leasing of the completed project may become void or voidable in the event of one of the parties being the subject of formal insolvency proceedings. Further regard should be given to any contractual obligations that may have a material impact on market value. Therefore, it may be appropriate to highlight the risk to a lender caused by a prospective buyer of the property not having the benefit of existing building contracts and/or pre-leases, and pre-sales and any associated warrantees and guarantees in the event of a default by the borrower.

150.2. To demonstrate an appreciation of the risks involved in valuing development property for secured lending or other intended uses, the valuer may apply a minimum of two appropriate and recognised methods to valuing development property for each valuation project, as this is an area where there is often "insufficient factual or observable inputs for a
single method to produce a reliable conclusion” (see IVS 103 *Valuation Approaches*, para 10.5).

150.3. The *valuer must* be able to justify the selection of the *valuation approach(es)* reported and *should* provide an “as is” (existing stage of development) and an “as proposed” (completed development) *value* for the development property and record the process undertaken and a rationale for the reported *value* (see IVS 106 *Documentation and Reporting*, section 30).
10. Objective

10.1. The principles contained in the General Standards apply to valuations of financial instruments. This standard contains additional requirements or specific examples of how the General Standards apply to valuations.
of financial instruments in the areas of Data and Inputs, Methods and Models, and Quality Control.

20. **Scope**

20.1. This Asset Standard must be applied in all valuations of financial instruments used for, but not limited to, financial, tax or regulatory reporting.

30. **Valuations of financial instruments**

30.1. There are a number of approaches to valuing financial instruments. In certain cases, values for financial instruments are observable and readily available based on documented trading in the exact security. In other cases, values are developed using industry-standard models based on inputs and adjustments with varying degrees of observability. For more complex or less liquid products, values may require bespoke models or be developed using internally-developed inputs or assumptions. In determining values, professional judgements may be required in the areas of data and inputs, models, and controls.

30.2. In assessing the appropriateness of the valuation approach to be used in developing a valuation and implementing associated quality controls, the valuer must understand the contractual, structural, and performance features of the financial instrument to be valued, as well as its liquidity and other information, such as legal or regulatory factors, potentially impacting the value.

30.3. Valuation risk exists in the valuation of financial instruments. As such, throughout the valuation, procedures and controls must be put in place that enable valuation risk to be assessed and managed to help ensure that the value is appropriate for its intended use. Any valuation risk identified during the design and implementation of the valuation must have quality controls and should have an appropriate level of review and challenge (see IVS 100 Valuation Framework, section 30).

30.4. In applying this standard, the valuer must have regard to significance. Significance determines the nature and extent of effort that an entity needs to expend in applying this chapter. For instruments with high valuation risk, the level of quality control and documentation required will be significantly greater than that required for valuations with low valuation risk.

40. **Functions within a valuation for financial instruments**

40.1. The valuer is an individual, group of individuals or individual within an entity, regardless of whether employed (internal) or engaged (contracted/external), possessing the necessary qualifications, ability and experience to execute a valuation in an objective, unbiased, ethical and competent manner. In some jurisdictions, licensing is required before one can act as a valuer. The valuer must design, implement and execute processes applicable to each part of the valuation, including quality controls. The valuer must ensure that there is sufficient documentation of the valuation process and related controls of the execution of the valuation and of the calculation of values to allow for meaningful review and challenge by a peer of the valuation and the value.
40.2. A valuer may consider delegating aspects of a valuation to additional parties either within an organisation or outside it, such as specialists or service organisations. To perform a valuation in these circumstances, the valuer must inform these parties of the nature of the procedures to be performed. In addition, the valuer must determine that these parties have performed their specific procedures in a manner that is consistent with the valuation being prepared in full compliance with IVS and the conclusion of value.

40.3. As part of a valuation, quality controls must be in place. Quality controls should include a degree of review and challenge. Review and challenge should assess the process implemented and judgements made during the valuation and in determining the value. The review and challenge function must be independent from the valuation function (see IVS 100 Valuation Framework, para 30.9).

40.4. For the valuation of financial instruments in larger organisations or for more complex financial instruments, the review and challenge processes may be performed by a technical function or challenger, such as a product control group or a model validation team and an operational function or assessor, such as internal audit.

40.5. The functions involved in the review and challenge of a valuation, including any delegation to other specialist or service organisations, must be clearly described, documented and understood by the parties involved.

40.6. The responsibility for the performance of individual functions within the valuation may vary depending on organisational structure but the assignment of responsibilities must be documented and reviewed periodically to ensure that the accountability for the execution of all components is clearly assigned.

50. Data and Inputs

Overview

50.1. This data and inputs section supplements IVS 104 Data and Inputs, adding greater detail as it relates to financial instruments.

50.2. A broad range of data and inputs are used in developing values for financial instruments. Data and inputs may include observable market data such as published prices and yields but may also require the use of proxies and assumptions and may require adjustments. Data and inputs should be based on factual information (such as measurements or statistics), but often include professional judgement and analysis in order to arrive at a numerical input to be used in the valuation.

50.3. The characteristics of the selected data must be fully understood by the valuer. A disciplined selection of appropriate data to ensure objectivity and minimise bias, coupled with implementing appropriate processes and controls over data, mitigates risk. In all cases, the valuer must apply professional scepticism in the selection and use of data and inputs. A specialist or a service organisation may be used to obtain either data or inputs. The valuer, however, remains ultimately responsible for using data and inputs appropriate for the valuation.
50.4. In larger organisations or for more complex financial instruments, a valuation governance framework should be considered to assist the valuer and to assist in the assessment as to whether parties involved in valuation effectively performed their roles.

60. Core principles for data and input

60.1. For a valuation to produce values consistent with the intended use, a valuation must use data and inputs that are suitable for the valuation approach for the financial instrument.

60.2. The use of data and inputs inherently presents valuation risk. Valuation risk may arise due to: 1) the use of incorrect data or inputs; or, 2) the misapplication of data or inputs. The identification and selection of suitable data and inputs and applying them appropriately is an important part of the valuation to produce values consistent with the intended use.

70. Characteristics of Suitable Data and Inputs

70.1. In selecting data and inputs that are suitable for financial instruments, a process must be used that maximises as many of the following characteristics as possible. The characteristics of suitable data and inputs are shown below, and suitable is defined as “fitness for use” in terms of client and intended user needs in the context of the intended use, basis of value and the asset and/or liability being valued. Suitable data and inputs, as of a valuation date, must maximise the following characteristics (see IVS 104 Data and Inputs):

(a) accuracy: data and inputs are free from error and bias and reflect the characteristics that they are designed to measure;

(b) appropriateness: data and inputs are relevant for the asset and/or liability being valued;

(c) completeness: set of data and inputs are sufficient to address attributes of the assets and/or liabilities;

(d) observability: data and inputs are obtainable and visible to multiple users or market participants;

(e) timeliness: data and inputs reflect the market conditions as of the valuation date;

(f) transparency: the source of the data and inputs can be traced from their origin.

70.2. A documented process must be implemented over the selection and use of data and inputs to help ensure that the valuation produces a value consistent with the intended use and in a transparent manner. In addition, documentation must identify any valuation risk resulting from decisions in the development and use of data and describe associated quality controls to mitigate such valuation risk (see IVS 104 Data and Inputs, section 50).
80. **Characteristics of Data and Inputs for Financial Instruments**

80.1. There are many types of data and inputs used in the *valuation* of a *financial instrument*. The characterisation of these data types is meant to facilitate these standards, not to require specific labels. The following three types of data are considered in this chapter.

(a) static data is observed once and is unchanged for the life of the valued instrument. Static data, while generally set upon the origination of an instrument, may be modified, or amended and includes characteristics of the instrument, security, or contract such as notional amount or coupon rate;

(b) dynamic data is observed on a regular basis (eg, daily or monthly) and can be considered extrinsic to the instrument. Dynamic data include but are not limited to the *prices*, rates, and other market-based data as of the *valuation date*. They may be from broker feeds, trade reporting, official sector, exchanges, and other aggregators;

(c) performance data is observed in a regular cadence and can be considered as intrinsic to the instrument. Performance data include the cash flow, profit/loss, or behavioral features of the instrument. They are collected over time, change from *valuation date* to *valuation date*, and are needed to determine the *valuation*.

80.2. If a *valuation* is recurring, the process should be implemented to be consistent across *valuation dates*. Since certain data and inputs will be collected and used over time, data and inputs must be reassessed as of any *valuation date* to determine if they continue to be suitable.

80.3. When data and inputs are not transparent, the valuer should consider using indicative, judgmental or internal data and inputs.

(a) indicative data is market data that is intended to be for a specified security but is an estimate and not an actual transaction, as such it carries greater potential for valuation uncertainty. It should be contemporaneous with the *valuation date*. This data may have the characteristics of market data, but it is not captured specifically from actual market transactions, instead being sourced from pricing data vendors, brokers and proxies;

(b) judgmental data is data that has been manipulated into a form required by the valuation process. The development of judgmental data involves using available market data and modifying it using assumptions, interpolation, extrapolations and other techniques required to generate data that is appropriate for the *valuation* being performed. Given the qualitative considerations required in the development of judgmental data, the valuer must be document the basis for judgment data used and how it was developed;

(c) internal data is that which is derived from the entity’s own observed transactions, *valuations*, spread matrices, and other calculated or transacted markets where data is collected but remains private or proprietary.
80.4. Regardless of transparency, when data and inputs are used in a valuation, they create valuation risk. The types of valuation risks for data and inputs that are transparent generally are operational while for other data and inputs valuation risks are generally related to assumptions made by the valuer. In selecting and using data and inputs, any significant valuation risk should be mitigated.

80.5. Individuals with the appropriate experience shall be responsible for identifying and ensuring that these data elements are incorporated in the design of the valuation.

80.6. In order to categorise and manage data and inputs used in valuations, a taxonomy (a data dictionary) should be implemented. That taxonomy will contribute to a standardised application of process and inform participant expectations of the valuers and other parties included in the valuation.

90. Selecting Data and Inputs

90.1. It is the valuer who is responsible for the data used to prepare the valuation and the result of the valuation. Valuers must be aware of market conventions to be able to determine the appropriateness of data and inputs as of a valuation date. Conventions such as quoted prices, spread or yield, ticks or basis points, cash flow standard assumptions, etc, must be understood and documented to maximise data quality (see IVS 104 Data and Inputs, section 40).

90.2. Valuation data must, where possible, reflect the market where the instrument is traded, but its reliability will vary with the nature of the market as of the valuation date, for example, whether data is from a two-way market, a wholesale broker-dealer market, or arises from new originations.

90.3. The liquidity of a market price (ie, bid/offer width) must be assessed to determine if the data being used represents normal or unusual market conditions such as stressed conditions, liquidity constraints and otherwise unusual market activity.

90.4. In circumstances where proxy data is used, the valuer must;
(a) assess that there are enough features with the original instrument to be sufficiently similar to the proxy;
(b) for valuations over time, that the degree of similarity remains valid over time through a periodic or triggered review to confirm or reject the similarity or correlation.

90.5. The valuer must identify and assess the source of data and inputs to determine any limitations, assumptions or bias. This includes data and inputs that are internally sourced and acquired externally from service organisations and specialists. The valuer should perform procedures including but not limited to reading policies of service organisations and specialists, testing availability of comparable historical data, performing due diligence over the data extraction or collection processes, and reviewing information rights of instrument owners. In addition, any relationship between the entity and the source of the data or any bias of
the parties involved in the transaction must be identified and assessed for its impact on the valuation.

90.6. The valuer must consider data that is proximate to the valuation date. In the absence of timely data, the valuer may consider data that can be reasonably be believed to approximate the data that would have been timely. For example, the valuer’s professional judgement determines which is the best proxy of the valuation date price during a market’s closing time, either the stale price of the previous session closing time or any available price before closing on the current trading session.

90.7. To the extent the valuer is unable to obtain data or inputs of a sufficient quality, and suitable proxy or other data can also not be identified, the valuer must pursue other methodologies to perform the valuation or consider its ability to perform the valuation appropriate for the intended use.

90.8. In selecting data for the valuation of portfolios of similar financial instruments, the valuer must determine the similarity to the instruments being valued. The features to be considered include but are not limited to: type of instrument, sector or nature of the underlying asset and/or liability, currency, issuing amount, term, market conditions, such as the jurisdiction or market size, credit risk, contingent payments or other optionality, and any other relevant terms and conditions or restrictions relevant to the instrument.

100. Using Data and Inputs

100.1. The valuer must determine that data and inputs are appropriate as of the valuation date. As such, the valuer must perform quality control procedures over the data and inputs used for valuation. Such procedures must address any valuation risks associated with the data and controls. A set of procedures may include but not be limited to: quantitative testing by comparing to known authoritative sources, qualitative generalised testing of source or vendor, internal consistency identifying gaps or outliers, and factor attribution which correlates changes in data with changes in valuation results:

(a) while a full range of data must be considered, data cleansing or calibration may be required to remove outliers for a more precise range of inputs and comparable items;

1. the valuer must consider the significance of data or inputs relative to the valuation process as a whole when determining the efforts to obtain data or inputs;

2. any proxy data that is used should be selected after evaluating a range of potential proxies to ensure that the selected data represent the most reliable proxy possible;

(b) the valuer must ensure that quality controls exist as of the valuation date to maintain confidence in the methodology of data collection and to assure its integrity. This includes data and inputs that are internally sourced and acquired externally from service organisations and specialists;
(c) the valuer must use data and inputs that are as recent to the valuation date. As such, the valuer must design and implement quality controls to assess the timeliness of data and eliminate stale data:

1. in the absence of timely data, the valuer may consider data that can be reasonably believed to approximate the data that would have been timely. For example, the valuer’s judgement determines which is the best proxy of the valuation date price during closing time: either the stale price of the previous session closing time or any available price before closing on the current trading session;

2. the degree to which data that is not as of the valuation date is used must be assessed in valuation risk as well as in the quality controls implemented over such data. For example, historical data may be appropriate as data and inputs for a specified security at a time which is not contemporaneous with the valuation date but must be assessed in the valuation risk to be addressed by the valuer;

3. the valuer must continuously reassess the staleness of data; the staleness of data and its position on the continuum of data may vary based on changing market conditions. Therefore there is no consistent time at which data becomes stale given it will depend on the data being utilised and the market conditions at the time of the data’s derivation and as of the valuation date. For proxies, the degree of similarity remains valid should be assessed.

100.2. Since data and inputs can be used by various parties across a valuation process, individuals with the appropriate experience must be responsible for identifying and ensuring that these data elements are reflected accurately in the valuation. Once captured, data should not be altered or amended. If a valuer wishes to use a data set that is altered, the original data set must remain available for comparison. An error correction process must be used but be rigorously applied and governed.

100.3. While the valuer must perform quality controls to address risks in the valuation, additional review and challenge should be performed for significant or complex valuations. Review and challenge should review and assess:

(a) the assumptions made by the valuer regarding data and the judgemental components in it, if any, and assess the valuer’s data sources as well as disregarded sources. The challenger may suggest these measures to add valuation adjustments and mitigate data risk;

(b) the data sources access operational restrictions. For example, the availability of historical data and real-time data, or data access conditional to certain circumstances;

(c) data alternatives to contrast that of the valuer. The alternative(s) may be more or less accurate, appropriate, timely, observable/transparent or complete than the data selection of the valuer.

100.4. For the valuation of financial instruments in larger organisations or for more complex financial instruments, the review and challenge processes should be performed by a technical function or challenger, such as a product control group or a model validation team, and an operational function or assessor, such as internal audit. Assessment function
reviews the procedures and documentation produced of the valuer and challenger to determine whether they complied with policies and procedures. Such reviews should be documented.

110. Documentation for Data and Inputs

110.1. The valuer must document the overall quality of the data and inputs used in the valuation. Such documentation must include the sources of the data, the steps the valuer took to obtain the data and why the valuer decided to use such data. In addition, the documentation should include quality controls over the data.

110.2. The documentation must be sufficient to allow a peer to understand why data and inputs were selected.

110.3. The procedures of the review and challenge function should be documented to allow a peer to assess the degree of work performed and the basis for conclusions drawn. For recurring valuations, the valuer must explain and document why changes occurred and were appropriate.

120. Methods and Models

Overview

120.1. This section herein supplements IVS 105 Valuation Models, adding greater detail as it relates to financial instruments.

120.2. The objective of this chapter is to set out the standards pertaining to the appropriate development and use of models in a valuation.

120.3. A model is a quantitative implementation of a method in whole or in part that converts input data into outputs used in the development of a value. A model may rely on other models to derive its inputs or adjust its outputs.

120.4. A model may be developed internally or sourced externally.

130. Core principles for Valuation Models

130.1. For a valuation to produce values consistent with the intended use, a valuation must use valuation models that are suitable for the valuation approach for the financial instrument.

130.2. The use of valuation models inherently presents valuation risk. Valuation risk may arise due to: 1) fundamentally incorrect models; or, 2) the misapplication of models. Valuation models may have fundamental errors and may produce inaccurate values when viewed against their design objective and intended use. A fundamentally sound valuation model producing accurate values consistent with the design objective may exhibit valuation risk if it is misapplied or misused.

140. Characteristics of a suitable valuation model

140.1. For a valuation model to be appropriate, it must be suitable for the intended use of the value and consistent with suitable inputs as of the valuation date. At times, it will not be possible to incorporate all these characteristics. The characteristics of a suitable valuation model are shown in this paragraph, and suitable is defined as “fitness for use” in terms of
client and intended user needs in the context of the intended use, basis of value and the asset or liability being valued. A suitable valuation model, as of a valuation date, must maximise the following characteristics (see IVS 105 Valuation Models, section 30):

(a) accuracy: the valuation model is free from error and functions in a manner consistent with the objectives of the valuation;
(b) appropriateness: the valuation model is suitable for the asset and/or liability being valued given market conditions at the valuation date;
(c) completeness: the valuation model addresses all the features of the asset and/or liability to determine value;
(d) timeliness: the valuation model reflects the market conditions as of the valuation date;
(e) transparency: all persons preparing and relying on the valuation model must understand how the valuation model works and its inherent limitations.

140.2. Relevant valuation approaches and methods must be considered in conjunction with an understanding of which would be most appropriate for the intended use of the valuation. If there are instances where the use of multiple approaches and methods could be appropriate, particularly when there are insufficient factual or observable inputs for a single method to produce a reliable value, the basis for selection should be documented.

140.3. A documented process must be implemented over the selection and use of data and inputs to help ensure that the valuation produces a value consistent with the intended use and in a transparent manner. In addition, since it will not be possible to incorporate all these characteristics in all valuations, a documented process helps ensure the identification and mitigation that any valuation risk resulting from decisions in the development and use of models and associated quality controls.

150. Model Selection

150.1. The process of selecting a valuation model that is suitable for the intended use and is consistent with suitable inputs as of the valuation date involves professional judgement. The potential for error in valuation models necessitates the importance of sound and comprehensive processes around valuation model development (see IVS 105 Valuation Models, section 40);

(a) the selecting of a suitable valuation model should include the following processes:

1. design and development: determining the appropriate valuation approaches and techniques;
2. implementation: testing and assessing model outputs and limitations;
3. validation: reviewing the appropriateness, accuracy, and transparency of a model;
4. documentation: documenting the policies and procedures undertaken around the entire model development process and consistent with the valuation's intended use and any limitations or adjustments;
(b) a process should be in place when relying on valuation models developed by a third party to assess such models to a similar level as an internally developed model. When a valuer cannot perform these processes, compensating processes must be performed to (i) assess their appropriateness and accuracy; (ii) understand their limitations; and (iii) assess whether the model is for the intended use. These processes must be documented.

150.2. Selection of a suitable model must consider:

(a) the intended use of the valuation;
(b) the basis of value underlying the valuation;
(c) the specific attributes and characteristics of the financial instrument being valued.

150.3. Appropriate valuation approaches and methods must:

(a) be conceptually sound and theoretically supportable, which often is supported by published research and market practice;
(b) have sufficient, relevant and reliable data available to determine input(s) and determine value.

150.4. A valuation model may not capture all the qualitative and quantitative variables that impact value. Maximising the quality of the information and assumptions will reduce estimation uncertainty but cannot reduce exposure to information that is difficult to capture in a valuation model. Even the best constructed valuation model will be susceptible to such uncertainties. Assumptions and limitations must be transparent to all parties involved in the valuation. As the amount of relevant information omitted from the valuation increases, the potential for valuation risk increases.

160. Testing the valuation model

160.1. All valuation models must be tested prior to use. Testing a valuation model is integral in determining whether the various components and its overall function are performing as intended, and must include:

(a) appropriateness for its intended use;
(b) the suitability of the data incorporated into the model;
(c) mathematical accuracy;
(d) operational accuracy (ie, data links, etc);
(e) robustness (ie, the model outputs are consistent over a range of data or inputs).

160.2. The nature of testing and analysis will depend on the type of valuation model and underlying financial instrument being valued. A variety of tests is likely required to develop a suitable valuation model.

160.3. If valuation model testing reveals the valuation model is not suitable for its intended use, the valuation model must be remediated or rejected.

160.4. It is important to understand a valuation model's capabilities and limitations given its simplifications and assumptions. Limitations come
in part from weaknesses in the valuation model due to its various shortcomings, approximations, and uncertainties. Limitations are also a consequence of assumptions underlying a valuation model that may restrict the scope to a limited set of specific circumstances and situations.

160.5. Testing must be conducted to assess the potential limitations of a valuation model and to evaluate its behaviour over a range of inputs. Testing must also assess the impact of assumptions and identify situations where a valuation model is not suitable for its intended use or becomes unreliable. Testing must be applied under a variety of market conditions, including scenarios that are outside the range of ordinary expectations. Extreme scenarios must be evaluated to identify any boundaries of valuation model effectiveness.

160.6. A suitable valuation model must have documented evidence supporting significant modelling choices, including the valuation methodology, key assumptions, data, and specific mathematical calculations. As part of this process, significant inputs to the valuation model should be subjected to analysis by both evaluating the quality and extent of the model and conducting additional analysis and testing as necessary. The following are core validation processes around evaluating conceptual soundness:

- assessing whether the valuation model is consistent with its intended use and basis of value;
- comparison of valuation methodologies adopted to alternative theories and approaches;
- key assumptions and other inputs must be assessed, with analysis of their impact on model outputs and limitations;
- the relevance and reliability of data used by the valuation model must be evaluated.

160.7. Sensitivity analysis must be conducted to assess the impact of changes in inputs on model outputs to determine if they fall within a reasonable range. Unexpected large changes in outputs in response to small changes in inputs may indicate an unstable model. Varying multiple inputs simultaneously may evaluate unexpected interactions, particularly if the interactions are complex and not intuitively clear. Sensitivity testing may help establish boundaries of model performance by identifying acceptable ranges of inputs as well as conditions under which a valuation model may become unstable or inaccurate.

160.8. If testing indicates that a valuation model may be inaccurate or unstable, there must be policies in place that call for the model to be either modified, have limitations placed on its use, replaced, or abandoned.

160.9. Qualitative information and professional judgement used in a valuation model must be evaluated, including the logic, professional judgement, and types of information used, to establish the conceptual soundness of the model and set appropriate conditions for its use. The validation process must ensure that qualitative and professional judgement assessments are conducted in an appropriate and systematic manner, are supported and are documented.
170. **Validation**

170.1. An independent validation *should* be performed to assess the appropriateness of selected *valuation model* in line with design objectives and *intended use*, to determine if it is performing as designed, and whether model limitations have been identified and the impact of limitations on *value* are understood.

170.2. A validation process *must* be performed by one or more individuals with sufficient knowledge, skills, and expertise relative to the *financial instrument* being valued. In addition, they *must* have the authority to effectively challenge the model and elevate their findings to whomever is ultimately accountable for the *valuation*.

170.3. The validation process *must* be objective and free from bias.

170.4. The extent and rigor of validation procedures *should* be commensurate with significance and the *intended use* of the model. The specific tests performed, and their frequency are matters that depend on the circumstances and *must* be defined and appropriately set as part of the overall valuation framework.

170.5. For models that are intended to be used on an ongoing basis, the validation process *must* continue periodically while the model remains in use. Over time, if a *valuation model* is determined to be no longer suitable or if facts and circumstances change, the *valuation model* *must* either be redeveloped, replaced, or abandoned.

170.6. Validation procedures and the results of the validation must be documented and transparent to the *valuer* and users of the model in a timely manner.

170.7. If *significant* deficiencies are identified from the validation process, use of the model *must* be restricted, limited, or rejected until those issues are resolved.

180. **Validating third-party models**

180.1. Prior to use, third party *valuation models* *must* be analysed to ensure they are appropriate, accurate and transparent.

180.2. Third-party *valuation models* *should* be evaluated to the same standards as internal models to determine whether the *valuation* outputs will be appropriate for the *intended use*.

180.3. There *must* be a process in place for understanding the inputs and outputs required and used within a third-party *valuation model*.

180.4. Limitations related to third-party models *must* be understood to determine whether the *valuation model* is appropriate for the *intended use*.

180.5. Validation procedures and the results of the validation of third-party *valuation models* must be documented and transparent to the valuer and users of the model in a timely manner.
190. **Documentation for Models**

190.1. Documentation *should* be sufficient to provide a record of the valuation and include sufficient information to describe the valuation conclusion reached, such that a peer applying *professional judgement* is able to understand and review the valuation (see IVS 105 Valuation Models, section 60).

190.2. There *should* be documentation of *significant* inputs to the *valuation methods* and *models* including defining the purpose, model design and development, implementation, validation and *intended use*.

190.3. The *valuer must* document all relevant *valuation* information based upon the intended use, including accounting, legal and regulatory requirements, recognising that there is *professional judgement* as to the evidence that *should* be included.

190.4. There *must* be sufficient and relevant documentation providing evidence that the *valuation* was completed in accordance with this chapter.

190.5. A suitable *valuation model must* have documentation that includes the following information:

(a) clear statement of purpose and *intended use*;
(b) *intended users* of the *valuation model* and results;
(c) description of the *financial instrument* being valued;
(d) the *basis of value*;
(e) description of the design of the *valuation model*;
(f) limiting assumptions and conditions inherent in the *valuation model*;
(g) valuation methodology selection process including theoretical approach and supporting research and alternatives assessed;
(h) data and input selection process;
(i) nature and rational for judgmental assumptions;
(j) *valuation model* testing procedures and results;
(k) validation procedures and results;
(l) valuation model limitations and mitigation of limitations, if they exist;
(m) conclusion and any qualifications if applicable.

200. **Appropriate use of a valuation model**

200.1. A suitable *valuation model* may be exposed to *valuation error* if used incorrectly or inappropriately. There *must* be a process in place to ensure the proper usage of *valuation models* and that they are used for their intended purpose. Proper usage of a *valuation model should* include a complete understanding of scope of use, model limitations, uncertainties, and inaccuracies and consistent with the *valuation’s intended use* and any limitations or adjustments (see IVS 105 Valuation Models, section 50).

200.2. Suitable *valuation models* that are relied upon and used over time *must* be maintained to ensure that they remain appropriate, accurate, transparent, and complete. Maintaining a suitable model requires
a monitoring process that involves periodic reviews, undertaken by qualified and objective reviewers, to an extent that is appropriate for the level of valuation risk associated with the continued use of the model. There should also be procedures for responding to any deficiencies that are discovered during the monitoring process.

200.3. Valuation risk may arise when a valuation model is used incorrectly or inappropriately. A fundamentally sound model producing accurate outputs consistent with the design objective of the model may exhibit high valuation risk if it is misapplied or misused.

200.4. Valuation risk is a concern if a model is used outside of the environment for which it was designed. Valuation models must be used for their intended use. A complete understanding and monitoring of a valuation model’s limitations is necessary to avoid using a model in ways that are not consistent with its intended use. There must be controls in place to ensure that limits on model use are complied with, such as monitoring model performance, adjusting or revising models in a timely manner, and supplementing model results with appropriate, approved and timely valuation adjustments.

200.5. Users of a valuation model should provide feedback as to whether a valuation model is functioning effectively and to assess its performance over time as conditions and model applications change. Model users may provide valuable insight into the effectiveness and relevance of model results when compared to real world applications. Model users may question the methods or assumptions underlying valuation models, particularly if users do not agree with the outcome. Although model users may provide challenge and insight into valuation models, it is important to also fully understand the biases and other factors that may influence the objectiveness of their feedback.

**Calibration Analysis**

200.6. Calibration analysis is a comparison of outputs from a valuation model with actual observed and or expected outcomes. Actual outcomes could include prices observed in secondary market trading or prices observed in originations. Expected outcomes may consist of established expected reasonable ranges of values as compared to implied valuation metrics or values from alternative valuation models. Expected outcomes may also consist of professional judgement to confirm whether the resultant values make sense.

200.7. A variety of quantitative and qualitative testing and analytical techniques should be used in the assessment of the calibration analysis. Tests should be based on a valuation model’s methodology, its complexity, data availability and the valuation risk relating to the valuation. Tests should be designed for each situation, as not all tests will be effective or feasible in every circumstance.

200.8. Back testing is one form of calibration analysis, which involves the comparison of a transaction price compared with the corresponding value derived from a model as close as possible to the transaction date.
200.9. If calibration analysis produces evidence of poor model performance, action must be taken to address the nature of the issue and understand the causes and remediation of the variance.

210. Valuation Model Maintenance

210.1. For valuation models that are relied upon on an ongoing basis or in the case of multi-use models, regular monitoring must be performed to evaluate whether they continue to be suitable for their intended use.

210.2. Ongoing monitoring must be performed periodically, with a frequency appropriate to the nature of the model, the availability of new data or modeling approaches, changes in the market environment and the magnitude of the valuation risk involved.

210.3. A process must be in place to monitor the maintenance of a suitable valuation model's core characteristics, including:

(a) ongoing review of appropriateness;
(b) ongoing review of accuracy;
(c) ongoing review of transparency.

210.4. An ongoing monitoring process must have procedures for responding to any deficiencies that are discovered during the monitoring process.

210.5. The ongoing monitoring process must be undertaken by an individual, team or entity who has/have the appropriate expertise, effective authority, and is objective.

210.6. An ongoing monitoring process must evaluate whether a model continues to perform as originally designed. This part of the monitoring would include many of the tests employed as part of the initial model development process:

(a) operational accuracy: there must be process verification checks that all model components are functioning as designed and continues to be operationally accurate. Tests must also be conducted to assess ongoing model robustness and stability;
(b) input verification: there must be a process to verify that all model inputs remain complete, reasonable, and accurate and continue to represent the highest quality available;
(c) model control: valuation models must be subject to change control procedures to ensure that the model logic is correct. Change control procedures should address approval requirements, documenting changes and subsequent validation. Model overrides (impacting model inputs or outputs) should be monitored and assessed by the challenger to determine whether they are valid and have been appropriately documented. Model overrides need to be tracked and analysed to assess their impact on model performance. Some model overrides may indicate that a model is not performing as intended or has limitations.

210.7. An ongoing monitoring process evaluates the impact of change relative to the original model development parameters and environment.
Valuation models must be evaluated to determine whether changes in the financial instrument itself, intended use of the valuation, or market conditions necessitate adjustment, redevelopment or replacement of the valuation model.

210.8. An ongoing monitoring process should also consider new information as it becomes available, particularly if it was not available during the original model develop process. New empirical evidence or theoretical research may suggest the need to modify or even replace original methods.

210.9. Any valuation model limitations and sensitivities identified in the development process must be regularly assessed as part of the ongoing monitoring. If valuation models are known to only work for certain ranges of input values, market conditions, or other factors, they must be monitored to identify situations where these constraints are approached or exceeded.

210.10. As part of the ongoing monitoring process, depending on the availability of benchmarking information, it may be appropriate to compare a given valuation model’s outputs relative to estimates from alternative internal or external models. Discrepancies between the outputs from a valuation model to benchmarks should trigger investigation into the sources and degree of the differences, and examination of whether they are within an expected or appropriate reasonable range given the nature of the comparison. The results of a benchmark analysis may suggest revisions to a valuation model; however, differences do not necessarily indicate that a model is in error. A benchmark itself is an alternative prediction, and the differences may be due to differences in the data or method used. Rather, if a valuation model and benchmark match well, that is evidence in favor of the model.

220. Quality Control

Overview

220.1. This quality control section herein supplements IVS 100 Valuation Framework, section 30, adding greater detail as it relates to financial instruments.

220.2. Quality controls are procedures that check valuation processes are performed consistently in compliance with IVS and allow for the assessment of the valuation and the resulting value. Quality controls must be implemented to address the valuation risk across the entire valuation process. The nature and extent of the quality control process must depend on the nature and complexity of the valuation.

220.3. The valuation risk associated with the potential of a significant valuation error must be mitigated through the implementation of quality controls.

220.4. Quality controls may be automated and/or manual and may include but are not limited to data reviews, model validations, independent recalculation, back testing and fact checking.

220.5. There must be periodic assessment of the quality control process to ensure that the integrity and completeness of the control environment is appropriate as of the valuation date. The periodic assessment must be
documented and should itself be subject to review as part of the review and challenge.

220.6. Quality controls should include a degree of independent review and challenge. Review and challenge should assess the professional judgements made during the valuation and in determining the value.

230. Core principles for quality controls

230.1. Quality controls must be appropriately designed and executed in a manner that is commensurate with the level of valuation risk and affirms the completeness and integrity of the valuation process.

230.2. Quality controls must be appropriately documented to provide transparency to parties involved in the valuation and to enable assessment. The documentation should contain sufficient detail to be considered reasonable by a peer applying professional judgement.

230.3. Quality controls must be periodically assessed to ensure that integrity and completeness of the control environment is appropriate as of the valuation date. The review process must be documented and should be assessed as part of the review and challenge.

230.4. Accountable parties must be assigned for each stage of the valuation process. The valuer may delegate the performance of the process (e.g., engage a service organisation or a specialist) but cannot discharge their accountability for the valuation and the value.

240. Characteristics of suitable quality controls

240.1. In selecting quality controls over the valuation of a financial instrument, a process must be used that maximises as many of the following characteristics as possible. At times, it will not be possible to incorporate all these characteristics. The characteristics of suitable quality controls are shown below, and suitable is defined as “fitness for use” in terms of client and intended user needs in the context of the intended use, basis of value and the asset or liability being valued. Suitable quality controls, as of a valuation date, must maximise the following characteristics:

(a) accuracy: valuations produce values that are free from error and bias and reflect the characteristics that they are designed to measure;
(b) appropriateness: valuations produce values that are “fit for use”;
(c) consistency: valuations produce values that must be consistently followed and apply to all people and systems involved in the valuation;
(d) completeness: valuations produce values that are sufficient to address attributes of the assets or liabilities within the specified population;
(e) timeliness: valuations produce values that reflect the market conditions as of the valuation date and the controls must be executed in a time frame that enables effective remediation of issues without impacting on the timeliness of the reported valuation;
(f) transparency: the purpose, results, and actions to be taken following the performance of a process or control should be documented in sufficient detail to be understood and considered reasonable by a peer applying professional judgement.
250. **Automated and Manual Valuations and Controls**

250.1. Depending on the nature of the financial instrument being valued, the frequency of the valuation and the complexity of the valuation, the valuer may implement a range of processes from highly automated using systematic mappings and data feeds through to one that is highly manual. For example, a valuation of a portfolio of listed equity may be automated and require operational controls around inventory, sourcing of prices and auditability of any adjustments. A complex structured product may require consideration of the model, data, operational process, and subjective judgements (e.g., determination and documentation of unobservable inputs). Whether automated or manual, however, controls must be implemented using the same principles.

260. **Quality Control Design and Implementation**

260.1. Quality controls must be designed and implemented to help ensure that valuations are performed in compliance with IVS. Quality controls must be designed and implemented to provide a clear, consistent, and detailed approach to the valuation process for the determination of fair value for the relevant financial instruments.

260.2. To achieve this, quality controls must confirm as of the valuation date that the valuation was performed to help ensure:

(a) completeness of the population of instruments to be valued;
(b) accuracy of the financial instruments to be valued with sufficient descriptive details to perform the valuation;
(c) appropriate processes have been executed over:
   - data and inputs;
   - the selection of models to determine value;
   - manual or other interventions over the established process;
   - any subjective adjustments or inputs;
   - communication and documentation of the valuation process and the resultant value.

260.3. For valuations that include the delegation to other specialists or service organisations, the valuer must understand and assess the roles and responsibilities, the work performed and the results reached.

260.4. Quality controls should be reassessed over time since financial instruments and the environment in which they can change.

260.5. For the valuation of financial instruments in larger organisations or for more complex financial instruments, the valuer should develop a valuation control framework. The valuation control framework should address:

- clear definition of the roles and responsibilities of each party in the valuation;
- identification of responsible parties, including quality control and review and challenge, and confirmation that responsible parties have correct and sufficient capabilities and resources to fulfil their responsibilities;
• governance, escalation, and remediation procedures;
• the definition of the basis of value;
• the types and extent of valuation risk associated with the valuation;
• for each instrument type either directly identify or define attributes for each of the following:
  ▪ data and inputs;
  ▪ models;
• escalation and assessment;
• requirements for documentation of across the valuation;
• timeline and frequency for valuations.

260.6. The responsibility for the performance of individual processes within the valuation may vary depending on organisational structure but the assignment of responsibilities must be documented and reviewed periodically to ensure that the accountability for the execution of all components is clearly assigned.

260.7. For the valuation of financial instruments in larger organisations or for more complex financial instruments, valuations should be subject to review and challenge to ensure that each valuation is validated by a function independent of the risk taker and the overall process assessed. Review and challenge should be designed and implemented to provide an oversight of the integrity of each stage of the valuation. The review and challenge processes may be performed by a technical function or challenger, such as a product control group or a model validation team, and an operational function or assessor, such as internal audit.

260.8. A valuation must be submitted for quality control and may have review and challenge. Such reviews are a critical component of the valuation process which allows for the value conclusion to be evaluated in a manner maximising an independent and bias-free fair value conclusion.

260.9. In instances where the valuation is not approved, the valuation should: (i) evaluate the information obtained from the review process; (ii) modify the valuation as deemed appropriate, and; (iii) submit the valuation for re-review. A critical component of the valuation process starts a progression which allows for the initial valuation conclusion to be evaluated in a manner maximising an independent and bias-free fair value conclusion.

270. Documentation

270.1. Documentation must be sufficient to describe and provide transparency to the intended user on the quality controls, including any professional judgements made. The documentation must contain sufficient detail to be considered reasonable by a peer applying professional judgement. Such documentation must describe how any valuation risk are addressed.

270.2. Quality control processes must be documented to allow for consistent execution as well as enable assessment and reproducibility. Quality
control processes should include, to the extent required, review and challenge. Such documentation must include a description of any specialist or service organisation.

270.3. To the extent there are issues identified during the quality control process, including review and challenge, the issue(s) identified, along with the bias for decisions made and the resulting actions should be documented.

270.4. Documentation must be reviewed and updated at regular intervals to help ensure that they continue to meet their objectives. In addition, a review must be conducted in the event of significant changes to the financial instruments or their environment.